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CEE Centre for Environment Education
Ahmedabad, India
Final Report

4th International Conference on Environmental Education

Environmental Education towards a Sustainable Future -
Partners for the Decade of Education for Sustainable Development

24 - 28 November 2007

CEE
Centre for Environment Education
Ahmedabad, India
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Preface

It was a pleasure to have more than 1500 participants from 97 countries across the world share with each other the energy and spirit of the event that enlivened the Centre for Environment Education (CEE) campus. It was striking the way people mixed and worked together in a seamless fashion, regardless of whether they represented governments, non-government organizations, the academic world or came from different countries.

The setting was also, I think, inspiring. Seriously, I think the quality of discussion changes when you have them under the trees.

Very early on, while planning for the conference, we had realized that three days would be too short and that an effort should be made to have meetings starting two days before the main conference. As a result, the conference was spread over five days; the first two days of pre-conference saw activities over a weekend! It was amazing to see how people worked to come up with recommendations that are meaningful, practical and which will be carried out. These serious recommendations form a commitment for the entire group that attended the conference.

Another challenge was getting industry to come forward and help us. I remember those first meetings with industry representatives when we were very politely asked to leave the rooms. We were asked, ‘What has Environment Education (EE) got to do with industry, how does it help?’ Only when we put it in an urgent context of Sustainable Development (SD), did industry representatives understand and we finally started getting acceptance.

Mahatma Gandhi was perhaps unique in bringing home the message that we need to look at everything in its multi-dimensions and not in a single dimension. For instance, when he looked at the charkha, he was not only looking at efficient textile manufacturing but at human dignity, decentralization and the quality of life along with the textile it produces. This exemplifies the way of looking at something from multiple points-of-view and optimizing it in the larger environmental, social and economical context.

I want to say again that it was wonderful working with all the participants. We had the planning committees viz. the International Advisory Committee, the National Programmes Committee, the International Cooperation and Coordinating Committee; drafting committees for the recommendations as well as three principal sponsors namely UNESCO, UNEP and the Government of India working together from various offices. As many speakers at the conference emphasised, we are determined to solve problems and move forward. This is the beginning of a charter that we have to take forward in a spirit of cooperation and that is unique.

As CEE, we would like to thank UNESCO, UNEP and the Government of India for the trust placed in the institution to host this Conference. We also thank the many sponsors and partners who made it possible to hold this meeting.

Kartikeya V. Sarabhai
Director
Centre for Environment Education
MESSAGE

On behalf of the Government of India I would like to extend my greetings and good wishes to all delegates and participants from around the world who have gathered in Ahmedabad for the 4th International Conference on Environmental Education. We are glad to be able to host this conference and provide a forum for serious discussion, exchange of views and hopefully for the preparation of a roadmap that should call attention of civil society and governments around the world to the crucial issues of the next decades.

We live in a rapidly developing world and nowhere is this more evident than in India. There are inevitable consequences in terms of environmental degradation, the harmful effects of which are felt most by the poor and the dispossessed, by those who live on the land or who depend upon it for their livelihood. The absence of development harms the poor; but so does thoughtless exploitation in the name of development. Education is the only answer that can enable all citizens in any country to participate in an informed way in discussions relating to development and the establishment of national priorities.

UNESCO is the moving force behind the Decade of Education for Sustainable Development. UNESCO’s original, and still most significant, mandate is to build peace in the minds of men. This can never happen till men and women in every country of the world have learnt to live in harmony both with nature and with each other and have learnt the importance of conservation and resource management. We can and must build for the future but it cannot be at the expense of the world’s natural resources.

I hope and trust the discussions at the 4th International Conference on Environmental Education will be useful and constructive.

(Arjun Singh)
MESSAGE

The Ministry of Environment & Forests (MoEF), Government of India, which is mandated for development and implementation of policies and programmes relating to conservation of the country’s natural environment, has always considered Environment Education (EE) as one of the fundamental tools for conservation of environment.

The Ministry has encouraged and initiated several programmes and schemes to strengthen EE in both formal and non-formal sectors of education. Annual National Environmental Awareness Campaign with the objective of creating environmental awareness at the National level, Strengthening of Environment Education in School System, Global Learning and Observations to Benefit the Environment (GLOBE) – an International Science and Education Programme and National Green Corps (NGC) are some of the initiatives of the Ministry in this field. In order to play a pace setting role, develop educational materials and conduct training and awareness programmes, the Ministry has also set up two Centres of Excellence in EE namely Centre for Environment Education and CPR Environment Education Centre (CPREEC).

The 4th International Conference on Environmental Education is of utmost importance as it provides a platform to people from different parts of the world to share their experiences with relation to EE in their respective countries. We are looking forward to ICEE’s recommendations as these will give us an opportunity to explore new arenas in the field of Environment Education.

I wish the conference great success!

(Namo Narain Meena)
Acknowledgement

We sincerely thank Government of India for providing CEE the opportunity to act as the nodal and host agency for the 4th International Conference on Environmental Education organized in Ahmedabad. We thank Ministry of Human Resource Development, Government of India for the financial and programmatic support towards hosting the Conference at CEE, India. The support of the Permanent Delegate of India to UNESCO and the Ambassador of India in Paris in overall coordination with UNESCO is acknowledged.

We thank Ministry of Environment and Forests, Government of India for being the joint organizers for the event with MHRD and for the support extended towards the development of the programme. We thank the Ministry of External Affairs of the Government of India for their support and cooperation in organizing this Conference.

We thank United National Educational, Scientific and Cultural Organisation (UNESCO) and United Nations Environment Programme (UNEP), sponsors for the Conference for their programmatic support and for organizing the working group sessions at the Conference. We thank the DESD Secretariat at UNESCO for their inputs.

We thank the members of the International Advisory Committee, Programmes Committee, the International Cooperation and Coordination Committee, the Scientific Committee for the review of the Conference papers and the Committee for the drafting of the Ahmedabad Declaration and Overall Recommendations.

We thank the sponsors, technical partners, Coordinators and members of the Advisory Group for each of the thematic Working Sessions held as a part of this Conference.

Our grateful thanks to the technical partners and industry sponsors without whom conducting the Conference would not have been possible. We also acknowledge our event partners venue partners, travel partner and service partners.

Last, but not the least, heartfelt thanks to each and every one of the delegates from different parts of the world for making this Conference a very meaningful, productive and enjoyable experience.

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The 4th International Conference on Environmental Education (4th ICEE) was held at the Centre for Environment Education (CEE), Ahmedabad, India from 24th to 28th November 2007. Over 1500 participants from 97 countries attended the five day conference.

The Centre for Environment Education hosted the conference on behalf of the Government of India. Two ministries of Government of India, namely the Ministry of Human Resource Development and the Ministry of Environment and Forests were co-organizers of the event which was co-sponsored by United Nations Educational, Scientific and Cultural Organization (UNESCO) and United Nations Environment Programme (UNEP).

The conference was the fourth in the series of conferences on Environmental Education since the first Intergovernmental conference held in 1977 at Tbilisi, Georgia. Prior to this, conferences had been held in Moscow, USSR, 1987 and Thessaloniki, Greece, 1997. As this was a UNESCO conference, Government of India had to obtain approval.
from the UNESCO Executive Board for hosting it. The process of preparing the proposal and presenting it to the Executive Board involved considerable negotiation with the UNESCO member states. The Indian Ambassador and India’s Permanent Delegate to UNESCO played a major role in getting it accepted.

The aim of the conference was to understand what has emerged out of the discipline of Environment Education (EE) since Tbilisi and the role of EE within Education for Sustainable Development (ESD). This conference was considered even more significant as it was held in the third year of the on-going United Nations Decade of Education for Sustainable Development (DESD 2005-2014). It provided a forum for practitioners to consider how EE and ESD can partner and strengthen each other towards building a sustainable future.

The 4th ICEE provided a forum for:
- Reviewing the status of EE in the context of DESD
- Reformulating EE to support ESD and bridge gaps
- Sharing good practices and experiences in ESD
- Developing strategies for progressing ESD in the world

Within CEE, meetings dedicated to discussions on the aims and objectives and the possible outcomes of the conference were held on a continuous basis every week. This intense discussion process led to the preparation of concept papers on what would be the working group themes, how the discussions would be organised, who would be responsible for coordination and what the overall outcomes would entail. To guide the development of the programme of the conference, an International Advisory Committee (IAC) was formed almost a year prior to the conference. It consisted of experts in one or more technical areas related to EE as well as ESD. The IAC communicated regularly with the Conference Secretariat, providing feedback and inputs to the decisions taken at CEE. The IAC met thrice before the conference to discuss and plan the programme. During the conference, the IAC led working groups and played strategic roles as members of the drafting committee for the recommendations and declaration amongst others.

A National Programmes Committee of government representatives and EE/ESD experts were formed to give the Indian perspective to the programme content and this committee also met several times in Delhi. The Programmes Committee members took up leading roles as plenary speakers and working session chairs. The International Cooperation and Coordination Committee of joint secretaries from the Ministry of Human Resource Development, Ministry of Environment and Forests and Ministry of External Affairs contributed to the logistical planning for the conference.

The conference followed a format of simultaneous plenary and working sessions. Other than these there were also parallel sessions and side events.

The formal inauguration on 26th November 2007 had representatives from Government of India, UNESCO and UNEP conveying their respective special messages for the conference. Prior and subsequent plenary sessions addressed issues like Climate Change and Water besides discussing the key Conference objectives. The plenary speeches covered a wide range of issues. For example, the opening plenary emphasised introduction of new strategies, giving fresh insights and establishing inter-linkages in the work that is being done in the arena of education for sustainable development. Speakers also spoke about the evolution of the role of environmental education within the sustainable development paradigm. In the Climate Change plenary, speakers talked about climate change mitigation through alternate products and safe technologies and sustainable lifestyle practices. The role of youth in the mitigation efforts was highlighted and ways and means in which children can participate in protecting the ozone layer was also discussed. Besides this, country reports vis-à-vis climate change impact and mitigation were also presented. At the Water plenary, speakers addressed issues related to water and sanitation.
The plenary also looked at the role of education in water and its linkages to the need for understanding the integrated nature of water resources flow and livelihoods dependence.

A special parallel plenary for governments titled ‘Government Session: Sharing Experiences and Promoting Collaboration’ was also held. The focus of the session was on sharing experiences in the development of national approaches to education for sustainable development and identifying areas for potential collaboration. This session had representation from over 40 governments across the world and was led by the Department of Environment and Heritage, Government of Australia.

There were 30 Working Sessions debating and discussing various themes. The thematic Working Group Sessions reflected EE and ESD concerns and issues that have evolved in these areas over the last 30 years since Tbilisi. Each Working Session was responsible for taking stock of its specific area in the context of ESD and identifying the role of EE within this. Working Session themes were cross-cutting and covered issues like values and ethics, health, culture, arts, media, education and environment reflecting the EE and ESD concerns and issues that have evolved over the last 30 years since Tbilisi. While CEE staff coordinated some of the Working Sessions, experts in the relevant areas anchored the rest. Six Working Sessions were coordinated by UNESCO, two by UNEP, one by Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA) and Performing Arts Lab (PAL), one by Earth Charter International and one by the Commonwealth of Learning. A working group session on ‘Efficient Use of Energy and Alternative Systems’ started off on 22nd November 2007. It provided a platform for professionals to share their expertise and discuss the impact of efficient and judicious use of energy in industries.

Each Working Session came up with a set of recommendations for the EE community. These recommendations have been compiled into a common set of recommendations emerging from the overall conference discussions. At the valedictory session, participants formally adopted these recommendations.

There were three major outcomes of the conference. These included overall conference recommendations based on the Working Session recommendations of the 30 thematic discussions, the Ahmedabad Declaration and a special set of recommendations from the Government Session.

In addition to plenary and Working Sessions, there was an exhibition of products that demonstrated EE/ESD experiences of various organizations. Exhibitors include UNEP, ACCU, IUCN-CEC, German Commission for UNESCO etc. Book launches by various organizations, special sessions by Zero Emissions Research Initiatives (ZERI), Japan Council on the UNDESD (ESD-J), Asia Pacific Cultural Centre for UNESCO (ACCU) etc. and cultural programmes were also held as a part of this Conference.

The participants at the conference were from a variety of stakeholder groups including government officials from UNESCO Member States, representatives of UN agencies, civil society/NGOs, Corporates, academics and media. Efforts were made to get representation from diverse fields including environment, health, water and sanitation, human rights, gender, peace, citizenship, social justice and others. The Conference had over 1,500 participants representing 97 countries.
Executive Board

125 EX/50
11 August 2006
Original English

EXPLANATORY NOTE

1. The Government of India has decided to propose to the Executive Board of UNESCO that the Fourth International Conference on Environmental Education be organized in India in November 2007 for the following reasons:

   i. The 2005-2014 decade has been declared by the United Nations as the Decade for Education for Sustainable Development (UNDESD). The DESD aims to promote education as the basis for a sustainable human society and to integrate inter-agency cooperation towards the development of innovative policies, programmes and practices of education for sustainable development.

   ii. The world's first international Conference on Environmental Education was organized by UNESCO in partnership with UNEP in Tbilisi, Georgia in October 1977.

   iii. The year 2007 would mark 30 years of inauguration of the first international E&E Conference held in Tbilisi in October 1977. This year would also be the third year of the DESD by which many of the countries across the world would have launched the decisive and integrated DESD priorities and processes in their national context.

   iv. In light of the above, it is proposed to organize a conference which would look at the foundations of ESD and bridge the gap between these two since this is vital for action on the part of sustainability. The Conference would bring together the governments of various nations as well as the insnumerable non-governmental organizations that work on ESD issues to be a common forum to reformulate all the innumerable contents of the Decade.

2. The Government of India will organize this Conference, using the responsibility of hosting this Conference with the Centre for Environmental Education (CEE) at Ahmedabad. CEE is an internationally acclaimed institution in the field of environment education and education for sustainable development, which was set up as a Centre of Excellence in 1994 by the Ministry of Environment and Forests, Government of India.

   i. CEE has considerable experience and expertise in addressing the primary mandate of improving public awareness and understanding of the environment with a view to promoting the conservation of natural and sustainable use of natural resources.

   ii. CEE has a vast official and project offices across the country with its headquarters located in Ahmedabad. Most importantly, CEE’s unique position at the national level and in the Asia-Pacific region through its network partners will help leverage experience, expertise and resources for ESD programmes in the region.

3. The Government of India has been greatly encouraged in this effort by the assistance provided by the Assistant Director-General of UNESCO for Education in terms of both human and financial resources for the organization of the Conference in 2007.

4. The Government of India proposes that the title for this Conference be Fourth International Conference on Environmental Education: Partners for the Decade of Education for Sustainable Development.

5. Two ministries of the Government of India, namely the Ministry of Human Resources Development and the Ministry of Environment and Forests will support the Conference. Other key
partners would include United Nations agencies such as UNDP, UNICEF and others. The Conference
would involve participation of experts from UNESCO Headquarters, UNESCO regional offices and
UNESCO associated institutions, UNDP, UNICEF, governments, the corporate sector, academics and NGOs.

6. The Conference will review the progress of ESD over the two years since the Decade was launched
and will develop a better understanding of ESD in the context of ESS. It will also review and discuss
regional strategies and work on action plans for priority concerns. The specific outputs expected from
the Conference include:

- Conference Declaration: commitment towards fostering ESD by participants and ways in
  which it would be done;
- Action plans with time frame for key priority concerns – regional, stakeholder-wise and
  thematic;
- Conference reports documented in the ESD Journal which will be launched at this
  Conference;
- Conference proceedings reports;
- Video documentation of the process and specially targeted films.

7. The Conference will be organized from 26 to 28 November 2007 in Cluj-Napoca with pre-
conference workshops on 24 and 25 November 2007. The main Conference, beginning on
26 November 2007, will be structured into multi sessions and thematic workshops. The thematic
sessions would include presentations to share regular status of ESD initiatives by governments
and UNESCO key expert presentations on ISU the integrated and concluding sessions.

8. The Conference will bring together over 1,500 participants from all over the world
representing a variety of stakeholders groups including experts from lead agencies involved in ESD,
UNESCO, UNICEF, UNDP, government, corporate sector, NGOs, donors, youth, university and
school teachers, and others.

9. The Conference budget is expected to be US $246,000.

Proposed draft decision

10. The Executive Board

1. Aims that social and ecological problems faced by contemporary societies, which were
built in large part without regard for environmental viability, constitute a serious challenge for humanity.

2. Also agree that global challenges such as reducing poverty, managing globalization,
addressing climate change and achieving sustainable development are interrelated and
their solution lies in collective efforts enhancing diverse fields of action including better
education opportunities, equitable benefits from development of science and technology
and political empowerment.

3. Recognizing the importance of environmental education in building a sustainable future
and its value as an integral component of education for sustainable development.
Planning for the Conference

A Conference Secretariat was formed at CEE fifteen months prior to the Conference. As this was a major international Conference requiring liaisoning and coordination both in the organisational and programmatic context, a Secretariat was formed to look into these. The Secretariat was also responsible for coordination with the Coordinators of each Working Session, communication with the panelists, key speakers and committee members - both internal and external.

In March 2007, an International Advisory Committee (IAC) was formed to develop the programme content for the conference. The IAC comprised experts in one or more technical areas related to EE as well as ESD. It provided support and expert guidance to the conference and also helped consolidate the outcomes of the conference. During the conference, members of the IAC were either leading working groups or playing strategic roles as members of the drafting committee for the recommendations and declaration. To provide this collective, diverse, technical profile, the IAC members were drawn from existing forums namely, the Decade of Education for Sustainable Development (DESD) high-level expert group, the DESD reference group, editorial team of CEE’s ESD journal and representatives of CEE partner institutions. Before the Conference, the IAC met thrice to discuss and plan the programme content for the conference.

A National Programmes Committee was also formed to give inputs towards reflecting the Indian perspective in the Conference programme. The Secretary, Ministry of Environment and Forests, Government of India was the Chair of this Committee.

An inter-ministerial committee called the International Cooperation and Coordination Committee (ICCC) looked into the budgetary aspects and protocol issues related to the conference. It was chaired by Joint Secretary, Ministry of Human Resource Development of the Government of India.

The schedules of the various meetings for the preparation of the conference are given below:

### International Advisory Committee (IAC):

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<tr>
<td>1st Meeting</td>
<td>4th May 2007</td>
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<td>2nd Meeting</td>
<td>2nd July 2007</td>
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<td>3rd Meeting</td>
<td>20th September 2007</td>
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### Programme Committee Meeting (PC):

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<td>2nd Meeting</td>
<td>11th July 2007</td>
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<td>3rd Meeting</td>
<td>17th August 2007</td>
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<td>4th Meeting</td>
<td>23rd October 2007</td>
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### International Cooperation and Coordination Committee (ICCC):

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<tr>
<td>2nd Meeting</td>
<td>11th January 2007</td>
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<td>3rd Meeting</td>
<td>28th February 2007</td>
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<td>4th Meeting</td>
<td>6th June 2007</td>
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<td>5th Meeting</td>
<td>27th June 2007</td>
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<td>6th Meeting</td>
<td>26th July 2007</td>
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<tr>
<td>7th Meeting</td>
<td>29th October 2007</td>
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A meeting was called by Secretary, Ministry of Human Resource Development to take stock of preparations for the conference on 6th September 2007 in New Delhi.
A website www.tbilisiplus30.org was developed exclusively for the Conference. It was developed almost eighteen months prior to the conference. The website listed out the general aims of the conference and had provisions for registration. As the plans for the conference took concrete shape, the information was continuously updated on the site. Details regarding the 30 themes for the Working sessions that would be held at the conference were listed out which included a concept note on the theme of the working session, schedule, past recommendations from important conferences etc. Thus interested participants could easily choose a particular working session of their choice and register for it.

Besides these, several logistics related information was also readily available on the site for an international participant. This included information on the accommodation facilities, weather at Ahmedabad, pre/post conference tours, a map of the CEE campus, which was the venue for the Conference etc. An email id tbilisiplus30@ceeindia.org was created as the id for contact for all participants.

As soon as the themes for the Conference were finalized, there was a call for papers that would be presented at this conference in relation to the 30 thematic areas chosen. A Scientific Committee for the Review of the Conference papers (SCRCP) was formed. The papers were carefully chosen by the expert team and the abstracts of these papers were then compiled and published as a book which was part of the Conference kit distributed to all the participants at the start of the Conference.

The participants were provided a conference kit at the start of the Conference, which consisted of the following material:

- A Programme Guide that listed out all general information related to the Conference and the schedule and details of all the events. It served as a ready reckoner containing a list of important contact numbers and the campus map.
- Book of Abstracts - a compilation of abstracts of all papers accepted at the Conference.
International Advisory Committee

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UNESCO Chair for Reorienting Teacher Education for Sustainability, York University Toronto

Aline Bory-Adams
Chief, Education for Sustainable Development (DESD Secretariat), Division for the Coordination of UN Priorities in Education, UNESCO, Paris

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4th International Conference on Environmental Education: Final Report
Committee for drafting of the Ahmedabad Declaration and Overall Recommendations

The process of drafting both the overall recommendations and the Ahmedabad declaration was highly participatory. Ms. Mary Paden compiled the recommendations of the working group sessions which was prepared by the rapporteurs of the respective sessions. The Overall recommendations were developed by Dr. Heila Lotz Sisitka with support from Ms. Mamata Pandya and Ms. Kalpana Sharma. Many others like Mr. Peter Blaze Corcoran, Ms. Martha Monroe, Mr. Lawrence Sisitka and Mr. Nalaka Gunawardene were involved in the discussion process and gave inputs towards the development of the Overall Recommendations. The final Ahmedabad Declaration was drafted by Dr. Jim Taylor with support of Mr. Vinod Raina and Mr. Kartikeya V. Sarabhai.

Conference Outcomes

There are three major outcomes of the conference:
1. The Ahmedabad Declaration 2007: A Call to Action
2. The Overall Recommendations
3. Specific recommendations from each Working Session

The Ahmedabad Declaration calls for action and emphasizes on “Education for life: life through education”. It reflects the conviction of conference participants that substance and vigour need to be added to the quest for sustainable living through action and the need to rethink and change the values we live by, the choices we make and the actions we take.

A participatory approach was used to draft the Overall Conference Recommendations. They reflect the essence of Recommendations made at the 30 Working Sessions. Both the Declaration and the Overall Recommendations were adopted by the Conference delegates by a show of hands during the concluding session on 28th November 2007.

The Conference Recommendations draw attention to a new sense of urgency and the need for a new, broader approach to EE. The document recommends changes in thinking about education and learning, patterns of leadership and partnership, conceptualization of environment development relationship, knowledge and communication practices, and sites of learning, participation patterns. It also call upon education, environmental and sustainable development practitioners and institutions to transform words into action.
The Ahmedabad Declaration 2007

A Call to Action

Education for life: life through education
28th November 2007

This declaration was developed from the 24th to the 28th of November 2007. The drafting process involved more than 1,500 participants from 97 countries at the 4th International Conference on Environmental Education. The conference was sponsored by UNESCO, UNEP and the Government of India and was hosted by the Centre for Environment Education at Ahmedabad, India. Since the first international conference was held in Tbilisi, Georgia, in 1977, conferences have been held every ten years, in Moscow in 1987 and in Thessaloniki, Greece, in 1997. This declaration was drafted in the context of the UN Decade of Education for Sustainable Development.

Our vision is a world in which our work and lifestyles contribute to the well-being of all life on Earth. We believe that through education, human lifestyles can be achieved that support ecological integrity, economic and social justice, sustainable livelihoods and respect for all life. Through education we can learn to prevent and resolve conflicts, respect cultural diversity, create a caring society and live in peace. We can learn from indigenous and traditional patterns of living that respect and honour the Earth and its life-support systems and we can adapt this wisdom to our fast-changing world. We can make individual, community, national and even global choices with due consideration for the collective good. Individuals including youth, civil society, governments, businesses, funding partners and other institutions can appreciate that their daily actions can shape a viable future of which all can be proud.

Ever-increasing human production and consumption is rapidly undermining the Earth’s life-support systems and the potential for all life to flourish. Assumptions about what constitutes an acceptable quality of life for some, often means deprivation for others. The gap between rich and poor is widening. The climate crisis, loss of biodiversity, increasing health risks and poverty are indicators of development models and lifestyles that are unsustainable. Alternative models and visions for a sustainable future do exist and urgent action is needed to make them a reality. Human rights, gender equity, social justice and a healthy environment must become global imperatives. Education for Sustainable Development is essential to making this transformation.

Mahatma Gandhi said, “Let my life be my message.” The example we set is all important. Through our actions, we add substance and vigour to the quest for sustainable living. With creativity and imagination we need to re-think and change the values we live by, the choices we make, and the actions we take.

We must reconsider our tools, methods and approaches, our politics and economics, our relationships and partnerships, and the very foundations and purpose of education and how it relates to the lives we lead. In making our choices we draw on, and are inspired by, much work that has gone before us, including the Earth Charter and the Millennium Development Goals.

Environmental Education processes support and champion Education for Sustainable Development. Such education processes must be relevant, responsive and accountable. Research is encouraged to provide additional rigour and credibility and to identify increasingly effective methods of learning and sharing knowledge.

We are all learners as well as teachers. Education for Sustainable Development encourages a shift from viewing education as a delivery mechanism to a lifelong, holistic and inclusive process. We pledge to build partnerships and share our diverse experiences and collective knowledge to refine the vision of sustainability while continually expanding its practice.

In a world with increasing capabilities to network, we embrace our responsibilities and commit ourselves to carry forward the recommendations from this conference. The United Nations system and governments worldwide need to support Environmental Education and develop sound Education for Sustainable Development policy frameworks and commit to their implementation.

We urge all people to join us in pursuing the principles of sustainability with humility, inclusivity, integrity and a strong sense of humanity. We move forward from Ahmedabad in a spirit of hope, enthusiasm and commitment to action.
Overall Recommendations

Moving forward from Ahmedabad

….Environmental Education in the 21st Century

From Tbilisi to Ahmedabad

International conferences mark changes in thinking and approaches. They also set new agendas for action. The first set of international recommendations to guide environmental education were developed in Tbilisi, Georgia, in 1977. Ten years later, in 1987, a conference in Moscow, Russia reviewed progress, and focussed on institutional strategies and action plans to strengthen environmental education. A third international environmental education conference was held in Thessaloniki, Greece in 1997, which debated the role of environmental education in contributing to sustainable development. Following the World Summit on Sustainable Development in 2002, a UN Decade on Education for Sustainable Development (UNDES) (2005–2014) was launched, based on earlier recommendations in Chapter 36 of Agenda 21.

The 4th International Conference on Environmental Education, held in Ahmedabad, India in 2007 within the framework of the UN DESD, marks 30 years after Tbilisi.

This document reflects views and perspectives of over 1,500 people from 97 countries attending the Ahmedabad Conference. It concentrates on common themes raised in the conference, and is complemented by a conference Declaration and recommendations on more than 30 topics discussed by working groups at the conference.

In drafting this set of recommendations, we recognise this document as one in a range of documents that provide orientation to environmental education in the 21st century, most importantly the DESD’s International Implementation Scheme and associated regional, sub-regional, national, and local strategies and action plans being developed to guide implementation of the UN Decade.

Recommendations

How Environmental Education evolved from 1977 to 2007

In 1977, the Tbilisi Declaration made far reaching recommendations that environmental education should be life long, integrated, active and inclusive. This meeting also recognised the complex and multi-dimensional nature of environmental issues, and the need to investigate the root causes of environmental problems.

Since 1977 international thinking about environmental education has changed, mainly through a broadening of participation in the field, as well as rapid changes in society, the economy and the global world order. These recommendations build on the strong foundations that environmental education has provided in the evolution of education for sustainable development (ESD) and re-affirm the need to further strengthen environmental education.

A broad review of the evolution of environmental education shows the multi-dimensional nature of these changes:

- **Changes in thinking about education and learning:** In 1987, the emphasis was on education and training, while discussions in 1997 introduced collaborative learning. Today the emphasis is on experimentation and broader social and cultural situated learning processes that take account of context. These changes in thinking about education and learning have been accompanied by changes in pedagogy and methods. However, there are still great challenges to make these approaches to learning work in formal educational settings that are slow to change.

- **Changes in leadership and partnerships:** In 1977, leadership for environmental education was provided mainly by two UN agencies: UNESCO and UNEP. Since then, many international and national NGOs and universities have joined in the process of providing leadership, indicating a growth in institutional contexts for environmental education. Today national governments, national and international organisations are also providing leadership for ESD through various partnerships.
Changes in conceptualising the environment –
development relationship: In 1987 the focus was on
environment in the context of social and economic issues,
while the 1997 conference recommendations noted that
poverty reduction was necessary to achieve sustainability.
Today, environmental educators are considering the inter-
relationships between environment, society, culture and
economics, although many are concerned that economics
dominate the others. This raises issues of equity and social
justice. The concerns and issues of risk and disaster
management have also gained recognition in
environmental education thinking as we begin to experience
global climate change impacts.

Changes in communications and access to knowledge:
The last two decades have seen rapid changes in the
knowledge, communications and access to information
environment. In 1987, communication was mainly through
newsletters, in 1997 worldwide internet communication was
just emerging. Today there are a wide range of communication
possibilities, and the internet has fundamentally changed the
knowledge environment. However, access to communication
technology remains unequal, and education is not accessible
and available to all.

Changes in emphasis on issues: Over the past 30 years the
emphasis on environmental issues has changed; from pollution
and population growth in 1987 to poverty and sustainable
development in 1997 to global climate change, which tops the
international political agenda today. There is a recognition
that environmental issues such as global climate change are
interconnected with a range of related issues such as health,
human rights, the right to education, poverty, pollution,
business responsibility, consumption and production,
biodiversity loss, water quality and quantity, energy, gender,
and environmental ethics amongst others. Environmental
justice and social justice have become closely linked. Although
the widening scope of issues may make the education process
seem more complex, it also requires more holistic,
comprehensive discussions and policy synergy.

Changes in sites of learning and participation in
learning: There has also been a broadening of learning sites,
media and methodologies. In 1987, environmental education
was mainly practised in a narrow range of institutional
contexts such as schools and environmental organisations
while in 1997 it had widened to include people in business,
local government, community development and other areas.
Today, environmental education and ESD is practised in the
health sector, disaster relief and a wide range of other social
and institutional contexts. The widening of learning sites is
accompanied by new media and methodologies that allow for
border crossings and multi-site learning, and a broadening of
participation in the learning process.

Within this changing framework, many thousands of
environmental education programmes, projects and materials
have been developed and used with millions of learners,
community members and decision makers in all countries and
learning contexts around the world. Networks and partnerships
have been formed, official policies have been developed, and
professional courses and qualifications exist. Institutions have
grown and a new professional field has emerged. Many smaller
meetings and conferences have been held, involving both
government and civil society organisations. These programmes
and projects have been driven by extremely committed people
and groups who share a common ethical commitment to a better
world for all people and all life forms. They have concern for the
future, the world, and for equity, democracy, sustainability
and justice.

Despite these efforts, the state of the planet has gone from
bad to worse. To this, we have added the crisis of climate change
which scientists have confirmed is real and requires urgent
action.

Thus, we draw attention to a new sense of urgency and the
need for a new, broader approach to environmental education in
a very different social, economic and political climate, and
knowledge environment to that of 1977 when the Tbilisi
Declaration was formulated.
A New Sense of Urgency and a Need for a New Paradigm

Our recommendations for Environmental Education and Education for Sustainable Development in the year 2007 must be rooted in the harsh reality that not only are we exhausting and plundering the resources of the Earth at unsustainable rates, but we are on the threshold of unimaginable devastation that climate change is likely to bring.

We no longer need recommendations for incremental change; we need recommendations that help alter our economic and production systems, and ways of living radically. We need an educational framework that not only follows such radical changes, but can take the lead. This requires a paradigm shift. The roots of our present education paradigm the world-over can be traced to the Enlightenment era, which gave birth to science as we know it today and influenced all areas of human thought, activity and institutions. This Enlightenment paradigm is based on the ideas that progress is rooted in science and reason, and that science and reason can unravel the mysteries of nature. It encourages us to ‘know’ nature in order to use, transform and consume it for our insatiable needs.

Today, we need a new Enlightenment to redefine our notion of progress. Since we have rapidly exhausted or polluted nature in pursuit of such progress, this new paradigm needs to recognise that we must live within the limits of nature’s systems and that that we need to ‘know’ nature in order to transform societies to live sustainably in happiness, peace and with dignity, amongst them, and in relation to Planet Earth.

Such a new Enlightenment not only requires the specific changes that the following recommendations suggest, but demands fundamental changes in the creation, transmission and application of knowledge in all spheres and at all levels.

To implement these recommendations, we need to work for immediate change even as we acknowledge the current state of the planet, the contemporary paradigm under which society and the education system functions, and the need for a fundamental change in the purpose and practices of education.

Environmental Education in the 21st Century: Making it happen

These recommendations reflect the essence of the hundreds of recommendations made at the conference. They call upon education, environmental and sustainable development practitioners and institutions, including international organisations and national governments, to work individually and collectively to transform the words into actions.

The Fourth International Conference on Environmental Education:

1. Reaffirms the recommendations made by the Third International Environmental Education Conference and the United Nations’ International Implementation Scheme for the Decade of Education for Sustainable Development that education must be recognised as an effective driver of change in conjunction with other drivers, such as ethical actions, government policies and regulations, economic incentives, and technology.

2. Applauds governments that have instituted policies and frameworks for environmental education and ESD, and urges all countries to give greater priority to funding and supporting the implementation of these policies and frameworks. We urge citizens to hold governments accountable for this implementation.

3. Supports the work of communities, groups and institutions that are working towards a secure and sustainable world, and urge these groups to build on and extend their work within a broad partnership framework.

4. Realises that we need to search continuously for new paradigms and innovations as we do not have all the answers for creating sustainable futures. We must stimulate learners in all sectors of society to envision and create new development paths, networks, and social practices to achieve sustainability.

5. Urges everyone to learn from history, nature and natural systems to develop understandings of how to respect and
live within the limits of nature, and to evolve social, production, technological and economic systems that are creative, innovative, equitable and sustainable.

6. Promotes education that builds capacity to engage critically with contemporary (unsustainable) development discourses and practices and that nurtures and strengthens dialogue and advocacy skills.

7. Endorses education for the achievement of equitable and sustainable livelihoods for all people. Such education develops the knowledge, skills and talents necessary for participating with dignity in a range of sustainable livelihood strategies (including employment, self employment, entrepreneurship, and other forms of work). Innovative livelihood strategies, not based on exploitation of nature or other people, need to be developed in all societies around the globe.

8. Endorses Gandhi’s words that “there is enough in the world for everyone’s need, but not for anyone’s greed” and recognises that there are people who are still unable to meet their basic needs, people living within their needs, and systems that are turning greed into need. Environmental education must recognise and critically engage the tension between needs and greed.

9. Encourages the use of monitoring and evaluation practices that are designed to be a valuable learning process for all involved. A learning-oriented view of monitoring and evaluation can build capacity as well as identify best practices.

10. Supports the concept of a Planetary Fund for Environmental Education for building sustainable societies, through development of policies, programmes and initiatives that are equitable, and that are supported and sustained over the long term.

The Conference further recommends changes in several areas of thinking and practice.

1. Change thinking about education and learning

1.1 Promote earth system literacy and systemic thinking skills in environmental education to understand the nature of interdependence within the human family, the biotic community and the planet’s life sustaining processes that explain the causes and solutions for the critical challenges we face.

1.2 Orient education towards preparing people to mitigate, live with and adapt to a new risk environment given the way that climate and ecosystem functions are changing.

1.3 Redirect education, which is a social process, towards bringing change in lifestyles (in consonance with sustainable consumption and production); building social cohesion and respect for cultural diversity; directing organisational practices towards sustainability; and towards including all people in all walks of life at all stages of the life long learning process.

1.4 Take an integrated approach to environmental education so that it can be a process of transformation. Teaching and learning should make use of diverse methodologies and be sufficiently flexible to cater to the various needs of learners in different cultures, contexts and nations. Such teaching and learning should incorporate ethical and critical reflection and creative thinking and learning approaches (such as those that characterise arts, design and creative cultural fields) and be inclusive of various approaches to learning. Educators and learners should explore and draw on local environments and knowledge critically and creatively to inform their work.

1.5 Use education to enhance dialogue among educators, community members and leaders, and empower and encourage people to actively participate in civil society. Develop capacity to engage with wider power relations and the effects of power in society.
1.6 Employ pedagogies in schools and other formal learning institutions as a means of integrating environmental education and ESD principles and transformative learning approaches across all areas of the curriculum and all aspects of the school / formal learning institution’s life. Provide and develop clear direction for formal education curriculum development to enhance progression in environmental learning over time.

1.7 Use non-formal education practices to enhance ties and strengthen the relationship between formal education and the local community.

1.8 Help people to review values in relation to policy and behaviour through mandatory interdisciplinary and / or trans-disciplinary courses of learning for sustainability that employ new research and pedagogical approaches. Such courses can be developed (for formal and non-formal learning contexts), shared and reviewed within a learning network approach.

1.9 Design monitoring and evaluation of environmental education and sustainability practices in such a way that these processes can become a valuable learning process for all involved. A learning oriented view of monitoring and evaluation has the potential to build capacity for critically reflective practices and educational and social change.

2. Change patterns of leadership and partnership formation

2.1 Base partnerships on a common vision and principles of equity, the ultimate goal of which is the benefit of communities, the public good and the sustainability of life.

2.2 Bridge gaps between different groups, ministries, sectors (particularly public - private), student leadership and youth movements, as well as other stakeholders through new partnerships that develop understandings and actions to achieve sustainable practices.

2.3 Encourage new initiatives and organisations where needed, and work towards building synergies through, for example, the use of active coalitions.

2.4 Generate educational practices and research that lead to solutions for cross border environmental problems and stronger environmental education and ESD practices at local, national and global levels through inter-country and regional exchanges and co-operative support within a partnership framework.

2.5 Develop capacity for leadership based on accountability, and the modelling and demonstration of new practices.

2.6 Support the media and other communication and educational organisations to embrace sustainability practices and to lead by example.

2.7 Implement and develop strategies that enable decision makers to make informed and accountable evidence-based decisions in the interest of the public good and the sustainability of life.

2.8 Encourage interested countries from different regions to work in collaboration with UNESCO, UNEP and other UN organisations to continue providing the leadership necessary to exchange knowledge and experience, identify practical ways of working together, including the development of national policy frameworks, pilot programmes and demonstration projects for wider benefit.

3. Change how we understand environmental issues

3.1 Base environmental education on an understanding of the inter-related dynamics of environment, society, culture and economics, and an understanding of the nature and causes of risks and issues that impact on socio-ecological relations, systems and structures at local, national and global levels.

3.2 Recognise the multi-faceted nature of environmental issues, and mainstream them across all disciplines and sectors as a priority.
3.3 Use education to develop capacity for democratic participation in Earth governance through building understandings of the relationship between ethical principles (such as those outlined in the Earth Charter), legal instruments, multi-lateral agreements and national policy frameworks in all areas related to sustainable development.

3.4 Integrate education processes as a substantive part of environmental management and sustainable development plans and strategies in all sectors and organisations concerned with environmental change and sustainable development.

3.5 Document success stories, new practices from communities and educational organisations as well as stories about conservation, innovation and transformation that can be part of a knowledge commons for wider adaptation and/or replication to broaden knowledge of environmental issues and risks and how to respond to them.

4. Change how we conceptualise and engage with the environment – development relationship

4.1 Orient thinking and educational practices that deal with the environment towards concepts and practices of sufficiency and sensibility, in addition to the current focus on efficiency.

4.2 Integrate a philosophy of care (for oneself, one another, future generations and the larger living world), peace, truth, justice, tolerance and kindness amongst people, nations and generations in ways that are informed by values such as those presented in the Earth Charter into environmental education and ESD actions and practices. Also, acknowledge the need for critical ethical reflection in education.

4.3 Treat environment as intrinsic to development decisions, and not as an externality. Educators should engage with decision makers and other stakeholders to include full environmental and social cost accounting in development decisions so all can learn how to avoid past developmental mistakes.

4.4 Use environmental education to build capacity to engage critically with contemporary (unsustainable) development discourses and practices, particularly amongst the poor, marginalised and vulnerable, and amongst development thinkers and planners.

4.5 Build capacity for achieving equitable and sustainable livelihoods, and the knowledge, skills and talents necessary for participation in a range of livelihood strategies (including work, self employment, entrepreneurship and new forms of work). New, more sustainable livelihood strategies are required in all parts of the world, amongst rich and poor.

4.6 Mainstream environment into the development agenda, on an equal par with social and economic concerns, and provide adequate resources for the education and learning processes needed for this mainstreaming.

4.7 Bridge the gap between environment and development through effective use of information and research findings, collaborative planning processes (e.g. scenario planning strategies), and systemic and critical thinking.

5. Change how knowledge is viewed, and our communication practices

5.1 Adapt and use systemic, critical and creative thinking and holistic approaches to knowledge that are grounded in sustainability practices to facilitate ESD in schools, communities and societies.

5.2 Value traditional wisdom and indigenous knowledge for their potential contribution to re-thinking practices and opportunities for sustainability. Accept a multiplicity of knowledge systems as legitimate in the educational process since many of the solutions may be inherent in knowledge systems practiced in indigenous and traditional systems, now and historically.
5.3 Strengthen and extend educational processes based on exploration, negotiation, deliberation and dealing with risks and challenges as these are the basis of a critical mass of ‘people’s and community’ knowledge and coping systems.

5.4 Value conflict, dissonance and diverse points of view in the learning process as a legitimate basis for knowledge creation and learning. Use active networks to link up and juxtapose a plurality of sources and points of view.

5.5 Provide citizens and learners with a dynamic space to share visions, educational practices and resources through applications of ICT and other communication mechanisms, systems of portals and other decentralised communication strategies (e.g. radio). Through this, facilitate joint monitoring and evaluation of the status of the Earth, the status of human and non-human governance processes and provide a self-validating and democratic knowledge commons. Make efforts to link up the knowledge of communities not digitally connected to ensure inclusivity in the creation of such a knowledge commons.

5.6 Nurture and strengthen advocacy (including dialogue) skills to enable better negotiation at all levels (local, regional, national, global) and critical and positive approaches to change. Identify and develop opportunities for developing advocacy skills for change towards sustainability goals.

6. Change sites of learning and participation patterns and practices

6.1 Review and change existing educational structures, roles and forms to allow for effective environmental education and ESD practices.

6.2 Create and strengthen new opportunities for participation in sustainability practices through integrated communication between various stakeholders including the educators, media, communities, men and women, and youth groups etc.

6.3 Create and extend educational efforts to mobilise diverse groups to participate in planning at different levels to regain control over resources to meet livelihood needs and ensure sustainability of ecological systems.

6.4 Strengthen and extend learning capability through participation in communities of practice and networks oriented to existing and new sustainability practices.

6.5 Carefully design and agree upon the components of assessment and evaluation as these are interconnected. All stakeholders should be part of this process so that criteria and processes are transparent, inclusive and change oriented.

6.6 Integrate emancipatory, participatory and other transformative research approaches into international, national and institutional research agendas.

6.7 Emphasise and value the role of teacher education as a catalyst for orienting educators to sustainability practices and real world concerns.

6.8 Draw on the surrounding socio-ecological and cultural environment as a setting for learning and support learning in these settings with appropriate mediation practices.

6.9 Contribute directly to hands on action and change through environmental education and ESD practice.

These recommendations were adopted by the Delegates of the 4th International Conference on Environmental Education on 28th of November 2007 at the Centre for Environment Education, Ahmedabad, India.
Conference Format

The Conference followed a format of simultaneous plenary and working sessions. The event schedule was also marked by a number of parallel plenary sessions, meetings, showcases, exhibitions, launches and other events.

Plenary Sessions
The conference had the following plenary sessions spread over five days.

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<tr>
<th>Date</th>
<th>Plenary</th>
<th>Key Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.11.07</td>
<td>Soft Launch (ONGC)</td>
<td>Dr Mark Ginsberg, Mr Raj Shende, Mr Michael Atchia, Mr B M Singh</td>
</tr>
<tr>
<td>24.11.07</td>
<td>Soft launch plenary</td>
<td>Prof. Charles Hopkins, Mr. Kartikeya V. Sarabhai, Prof. Hella Lutz - Sisitka, Prof. Goolam Mohammedbai Mr. Natarajan Ishwaran, Mr. Michael Atchia</td>
</tr>
<tr>
<td>26.11.07</td>
<td>Inaugural – Conference Launch</td>
<td>Mr. Kartikeya V. Sarabhai, Prof. Charles Hopkins</td>
</tr>
<tr>
<td>26.11.07</td>
<td>Setting the Tone – Conference Launch</td>
<td>Mr. Ashok Khosla, Sir John Daniel, Mr Hans Van Ginkel, Mr Gunter Pauli, Mr. Mark Richmond, Ms. Cheryl Charles, Mr. Oscar Motomura, Mr. H S Anand, Mr. Tomas Hertzman, Ms. Aekta Shah, Ms. Akpozi Ogbiigwe as sutradhar</td>
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<tr>
<td>27.11.07</td>
<td>Addressing Climate Change Concerns</td>
<td>Dr Michael Scoullos, Ms. Pamela Puntenney, Ms. Sunita Narain, Mr Bremley Lyndesh, Ms. Ann Fenner, Mr Francis Kane</td>
</tr>
<tr>
<td>27.11.07</td>
<td>New Directions in Environmental Education</td>
<td>Mr Carl Lindberg, Mr Mohan Menon, Ms Jamie P Cloud, Mr Vinod Raina, Ms Cheryl Charles, Ms Zahabria Matali</td>
</tr>
<tr>
<td>28.11.07</td>
<td>Education for Water Resource Management</td>
<td>Mr. Gourishankar Ghosh, Ms. Lizette Burgers, Dr. Ashok Chatterjee, Mr Francis Odhiambo, Mr Samir Eid, Ms Mogorewera Drocella</td>
</tr>
<tr>
<td>28.11.07</td>
<td>Finalizing Declaration, Finalising Recommendations, Validation</td>
<td>Dr. A. A. Boaz Prof. M. S. Swaminathan His Excellency Mr. Koichi Matsuura, Mr. Kartikeya V. Sarabhai</td>
</tr>
<tr>
<td>25.11.07, 26.11.07, 27.11.07</td>
<td>Special Parallel Plenary ‘Government Session: Sharing Experiences and Promoting Collaboration’</td>
<td>Heads of Governments</td>
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Working Sessions
There were 30 Working Sessions debating and discussing on various themes. The thematic Working Sessions were structured into major themes, reflecting EE and ESD concerns and issues that have evolved over the last 30 years since Tbilisi. Each Working Session was responsible for taking stock of its specific area in the context of ESD and also identifying the role of EE within this area. A Special Session on ‘HIV-AIDS: Building Environments for Responsible Living’ was also held as a part of this Conference.

International Partners like UNESCO, UNEP and The Earth Charter Initiative took responsibility for conducting specific Working Sessions in tandem with their ongoing work on themes such as Monitoring and Evaluating Progress during the DESD, UNEP’s Global Environment Report Volume 4 (GEO 4) 2007: Promoting Environmental Research and Learning for Sustainable Development, Integrating Values of Sustainability into Education: the promise of the Earth Charter to name a few.

Besides the Plenary and the Working Sessions, a number of parallel events were also held on the sidelines and several official meetings were also held in concurrence with this Conference.
### Conference Schedule

#### Time/Date

<table>
<thead>
<tr>
<th>Time/Date</th>
<th>24th Nov</th>
<th>25th Nov</th>
<th>26th Nov</th>
<th>27th Nov</th>
<th>28th Nov</th>
</tr>
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<tbody>
<tr>
<td>8:00</td>
<td>Registration</td>
<td>Working Sessions</td>
<td>Session on 'Using website for studying Climate Change' - UNEP and Samsung</td>
<td>Inauguration of the Conference</td>
<td>Registration</td>
</tr>
<tr>
<td>9:00</td>
<td>Soft Launch</td>
<td>Working Sessions</td>
<td>Tea Break</td>
<td>Climate Change Plenary</td>
<td>Draft Declaration <em>H, I</em></td>
</tr>
<tr>
<td>10:00</td>
<td>Working Sessions</td>
<td>Climate Change and Habitat</td>
<td><em>GCS Showcase Day</em></td>
<td>Special Session on Learning</td>
<td>Group Photo</td>
</tr>
<tr>
<td>11:30</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Government Session</td>
<td>Special Sessions (A)</td>
<td>Special sessions (B)</td>
</tr>
<tr>
<td>12:00</td>
<td>Working Sessions</td>
<td><strong>SGP - NSC meeting</strong></td>
<td>Working Sessions</td>
<td>Government Session</td>
<td>Adoption of Ahmedabad Declaration and Valediction</td>
</tr>
<tr>
<td>1:00</td>
<td>Working Sessions</td>
<td><strong>A Teaching Sustainability and living sustainably</strong></td>
<td>New Voices New Future - Exhibition Launch</td>
<td>Government Session</td>
<td>Gujarati Evening</td>
</tr>
<tr>
<td>2:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Government Session</td>
<td>Working Sessions</td>
<td>High Tea</td>
</tr>
<tr>
<td>3:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Government Session</td>
<td>Working Sessions</td>
<td>Special Sessions (A)</td>
</tr>
<tr>
<td>4:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Sustainability</td>
<td>Working Sessions</td>
<td>Special sessions (B)</td>
</tr>
<tr>
<td>5:00</td>
<td>Lunch Break</td>
<td>Working Sessions</td>
<td>Water Plenary</td>
<td>Journal Editors meeting</td>
<td>Adoption of Ahmedabad Declaration and Valediction</td>
</tr>
<tr>
<td>6:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Special Sessions (A)</td>
<td>Special sessions (B)</td>
<td>Gujarati Evening</td>
</tr>
<tr>
<td>7:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Balbhavan (Children's) Performance</td>
<td>Bikram Ghosh evening</td>
<td>Performance by Darpana</td>
</tr>
<tr>
<td>8:00</td>
<td>Working Sessions</td>
<td>Working Sessions</td>
<td>Government Session</td>
<td>Dinner</td>
<td>Dinner</td>
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</table>

#### Legends

- **Side Events**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)
  - F. Launching of Brochure- Partners for GEF UNDP SGP (25, Wg16, 11:30)
  - G. Climate Change - An Indian Perspective (Book Launch) (27 Nov)
  - H. Asia Pacific Newsletter (28" Nov)
  - I. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)
  - J. Launching of Handprint (28" Nov)
  - K. Childrens’ activity (Van chetna Kendra)

- **Special meetings/side events**
  - A. Event on ‘Using website for studying Climate Change’ - UNEP and Samsung
  - B. Launch of Brochure- Partners for GEF UNDP SGP (25, Wg16, 11:30)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **Plenaries**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **Working Group sessions**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **Parallel/Special session**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **Registrations**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **CEE staff meetings and registration**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)

- **Cultural evening**
  - A. Env't Edu. in Indian School Systems - Status Report 2007 (Nov 25, Plenary Lawn, 4:00 pm)
  - B. Launch of 2nd Issue of CEE's ESD Journal (26 Nov)
  - C. Samvardhan - Building cadre for Sustainable Development (26 Nov)
  - D. Launch of Teachers Education Book 3 English + 3 Hindi (28 Nov)
The first plenary which was a soft launch for the Conference was held on 21st November 2007 at the Oil and National Gas Corporation Ahmedabad who were partners for the event. Since it also launched the first Working Session on “Efficient use of energy & Alternative systems - addressing climate concerns through focused information support and capacity building”, plenary speeches highlighted benefits through initiatives of technology transfer and substitution, either through country-specific developmental agenda like the US government or in response to the need to fulfill commitments to multilateral environmental agreements involving UNEP.

Since many of the Working Sessions were beginning on 24 November 2007 there was a pre conference plenary launch as a prelude to the discussions for the working Sessions which gave perspectives on EE and ESD, highlighting the progress of EE through the decades and illustrating how it is lending itself as a tool for Education for Sustainable Development (ESD) in present times.

The formal inauguration for the event was held on 26 November 2007 and the plenary panel had representation from government of India, UNESCO and UNEP. The Secretary, Ministry of Human Resource Development, Government of India gave the Inaugural Address while the introductory speech was given by Prof. Charles Hopkins who had been a part of the team that had organized the first international conference on EE in 1977. Dr. R.K Pachauri was the guest of Honour at this session. Dr Kirit Parikh, member Planning Commission gave the Presidential address. This session also had a video message from Director General UNEP, Dr Achim Steiner and a speech by Ms Minja Yang, Director, UNESCO Delhi.

After the formal inauguration on 26 November 2007, a plenary session on the theme of ‘Setting the Tone -- Conference Objectives’ set out the background and objectives of the conference. Climate change was a cross-cutting theme for the conference and the resource group formed for climate change identified linkages between climate change and the range of thematic sessions addressed through Working Sessions. A special plenary session on ‘Addressing Climate Change Concerns’ on 27 November 2007, dedicated to climate change brought together the various strands and recommendations discussed in the thematic Working Sessions, and highlighted the current state of debate on global negotiations to combat climate change, and the role of stakeholders such as industry, government, media and youth. It also highlighted the importance of education in all senses including communication, awareness, capacity building, engagement with diverse stakeholders, cooperation, knowledge sharing and partnerships in meeting the challenges posed by climate change to sustainable development. It also highlighted the importance of mainstreaming climate change impacts in development planning and the associated role of and need for education.

Plenary presentations at the special plenary on ‘Education for Water Resource Management’ looked at the role of education in water and its linkages to understanding the integrated nature of water resources flow and the livelihoods dependence of all the end users of water. A Plenary on ‘New Directions in Environmental Education’ was held on 27 November 2007.

A special parallel plenary for governments titled ‘Government Session: Sharing Experiences and Promoting Collaboration’ was also held. At this session, experiences in development of national approaches to Education for Sustainable Development and identifying areas for potential collaboration were shared. Representatives from over 40 governments across the world participated led by the Department of Environment and Heritage, Government of Australia.
It struck me as I was preparing for this speech it is the same feeling of honour I experienced roughly 31 years ago in 1976 when the Canadian Government asked me to take a major role in the preparations for the Tbilisi meeting.

Let me begin by acknowledging the fact that any civilization that has survived the test of time, was the one that somehow mastered a system to embed environmental understanding in to its cultural DNA. The world’s successful cultures, largely its indigenous and traditional cultures have sustained themselves for thousands of years by remaining within their ecological limits - generation after generation. Those cultures that ignored the importance of preparing their next generation with environmental wisdom have become ghostly indicators of their cultural inaptitude. Their remaining purpose is to be a warning for future generations, hopefully generations that are wise enough to heed.

In the 1960s, the developed world, as we arrogantly called it then, saw rapid development and largely good economic times. However, with all that affluence, there was a growing feeling of uneasiness. There emerged a cultural quest – we would think of it as a lesser renaissance in the north. Earlier when Gandhi was asked by a North American reporter what he thought of the western civilization at that time, he replied, ’I think it would be a good thing.’

However, in the 1960s, we were indeed questioning our culture and searching for the meaning of life and for peace. There was resurgence in the love for nature and a sense of the planet as a respected limited place. We were just seeing spaceship earth for the first time. But this tiny spaceship had an exploding population problem on board. Now little of this was new to the third world of course. But I am trying to set the context in the northern setting. We were all raised being told that pollution was acceptable and was the necessary price for prosperity and development. But for the first time we questioned if the price we paid was too high for the return. For the first time, we saw that pollution was not longer an isolated lake here, a bad factory there or the unexpected impact of yet another new chemical. The problem seemed to be too frequent and getting more deadly.

Water pollution that originated in one nation was being passed on to next nation downstream. In Sweden a TV nature show host suspected that the disappearance of the fish from the Swedish lakes and rivers was probably due to acid rain and probably the source of the acid rain was Great Britain. So what was happening was that pollution was emerging as a trans-boundary issue and what was needed was an international solution.

So the King of Sweden offered to hold the first international conference on the environment and its international complexities/aspects. The world largely accepted, and the United Nations Conference on the Human Environment, the first of its kind, occurred in 1972 at Stockholm. One of the many outcomes was Resolution 96 - the call for an International Environmental Education Programme (IEEP). UNESCO and the newly formed UNEP (UNEP was a part of the creation of the Stockholm Conference itself) were charged with its creation and the rest is history.

After 30 years and a great deal of both joyful and painful maturation, I have been involved in 30 of these years and all these conferences, environmental education has remained closely associated with these two almost parent bodies UNESCO and UNEP EE has been a partner with them since their inception and that is why they are present here today in a large number, not only with their sleeves rolled up and delivering workshops but actively participating as fellow listeners and learners alongside.

Their unusually strong presence here as we celebrate, as we reflect and more importantly even look forward. Their presence is very significant and when we understand our history, their continued support is also most appropriate. It is also appropriate that they are here in India. Not only is CEE one of the largest EE institutions in the world but also it was India’s Prime Minister Mrs. Indira Gandhi, was the only head of state who cared to attend Stockholm in 1972. This is in sharp contrast to 1992 when a 168 heads of state attended Rio.

There are many perspectives but from my perspective, the IEEP was perceived by the world as an attempt to build the global educational response to the environmental degradation of the planet and to all its life forms including, but not being limited, to humans. Yet, while it was to be global in function, it was designed to be local and regional in its form. It was to be locally and culturally appropriate and dealing with issues using whatever medium that seemed to be appropriate. At the time of its birth in the 1970s, pollution and the emerging scarcity of resources, especially oil (we just had the first major oil shortage), these were the issues that seemed paramount. It is evident to today’s readers.
though, of the speeches of the heads of UNESCO and UNEP and the wonderfully crafted Tbilisi declaration, that the dreamers and the architects of the documents envisioned many more things of EE. Poverty eradication, cultural preservation, etc. it is all there in very rich text.

I can assure you that we as practitioners of that time, we did not see that. We saw the immediate needs of the world around us. We saw end-of-the-pipe solutions. We saw air, soil and water clean up as being needed and resource management. I could not get any support from the 450 delegates at Helsinki except for one. One person supported me on urban studies and that was it. The rest were involved in nature and pollution but yet the crafters of the writing and of the Tbilisi Declaration, the crafters of these papers were so far out and front, but this has served us in EE very well over time. It is important looking back over the last 30 years that environmental educators themselves have largely risen to the broad dreams of these Tbilisi writers. Various EE sectors have either grown to take on new challenges.

For example, when we met in Moscow 10 years later in 1987, we saw the need for pollution prevention through integrated product design rather than pollution clean up. Environmental management emerged from there. The economic issues of poverty, which have been included in the Tbilisi text but largely ignored by the country practitioners also took on larger focus and consumption expanded to include green economics.

In 1987 too, we must remember, we also had to take into account the release of the Brundtland report, ‘Our Common Future’. We had to cope with a new and a controversial paradigm of Sustainable Development (SD). We knew we had not been successful really as we had dreamt in the first 10 years. So environmental educators acted, we made changes, our scope widened and training improved and programmes developed.

Ten more years passed when we met at Thessaloniki in 1997, by then we were fully engaged in the discussion of the relationship between EE and the 1992 Rio Earth Summit call for Education for Sustainable Development (ESD). In fact, as a member of the Agenda 21 drafting team on education, I remember we embedded the suggestion that we learn form the experience of EE as we develop SD’s own education, public awareness training programmes and that appears in the text.

The inclusion of access to basic education, Education for all, as a precursor to any form of development—let alone SD—was a major difference. But we as drafters envisioned synergy between EE, ESD and other educational response to social, environmental and economic threats. This synergy combined with healthy critical reflection has emerged and fortunately EE has been a strong ally in creating ESD for these past many years. We have learnt to rely on the strengths model where no one group, no one discipline can do it all. But we each have our own strengths that we can contribute. Synergizing and aligning these strengths is still difficult but we are improving. Other disciplines, movements and mediums, such as early childhood education, workplace education and many other traditional core disciplines such as science and geography have now come to the rescue. Global education, peace education, development education are with us but the contribution of environmental educators to ESD and the natural synergy between us is real and so their gathering here is part a long journey and an important event. The declaration, the recommendation and the new declaration will be significant for the next 10 years.

Finally, today as we meet 30 years on, with new issues like such as the multi-faceted threat of climate change, including species extinction, forced human migration with its ensuing intolerance and racism facing societies. There, environmental educators will again look to see how they can best serve their societies in a local and regionally appropriate ways over the next 10 years. Now surviving for us in most cases is almost on a token basis. We often feel marginalised and misunderstood but in spite of that, in the spirit of Margaret Mead, the world should not underestimate the power of small groups of very dedicated individuals trying their very best to save something as beautiful, as fragile and necessary, as the planet by finding successful ways to embed environmental literacy, environmental literacy codes in our cultural DNA.
It is a matter of great satisfaction to the Government of India that we are hosting this Conference. I welcome you and wish you all the best in your deliberations.

We are honoured by the presence of a large number of experts and academics present here, many of whom have travelled a long way. Let me extend a special welcome to our Chief Guest, Dr. R.K.Pachauri. As all of us know, the Intergovernmental Panel on Climate Change, under his Chairmanship, has shared the Nobel Peace Prize for this year with former US Vice-President, Mr. Al-Gore. This is a great tribute to the environmental movement worldwide, to the work of countless specialists who have succeeded in focussing the world’s attention on the problems of climate change and, may I add, to Dr. Pachauri’s skilful leadership.

This Conference represents the successful coming together of many institutions and forces. The Government of India has always been acutely sensitive to the need for international attention on issues related to the environment. The notion that the world is one, has been with us since ancient times. The worship of nature, and of its elements, is part of our heritage. I have recently come across a verse from the ‘Varaha-purana’ in Sanskrit, which is at least two thousand years old.

Ashwattham-ekam Pichumardam-ekam Nyagrodham-ekam dasha pushpa-jaati Dec dec tatha daadima-maatulinge panchaanu-ropi sarakam na yaati

When translated in English, it broadly means that ‘he who plants one peepal tree, one neem tree, one banyan tree, ten flowering bushes, creepers, two pomegranate trees, two lemon trees and five mango trees, will never go to hell’. There is also a verse predicting a dire fate for those who pollute lakes and wells.

Sukoopaanaam tadaaqaanaam prapantaaam parentapa Sarasaaam chatra bhethaaaro naraa niraag-qaamina

Roughly translated it means that anybody who pollutes drinking water sources like wells, drinking water ponds or springs, is bound to go to hell. The world has acknowledged our commitment to the environmental protection, conservation and sustainable development since the time of the Stockholm conference of 1972 as well as the leadership role played there by our then Prime Minister Late Shrimati Indira Gandhi. Our commitment as has remained undiminished over the years, through the Rio conference of 1992 and subsequently. It is in every way appropriate that this major conference is being held in India.

We are grateful to UNESCO for so willingly supporting India’s proposal to host this Conference and for passing a resolution at the 175th Session of its Executive Board in September 2006 encouraging all member states to contribute to its success. UNESCO has been at the forefront of activities worldwide during the Decade of Education for Sustainable Development (DES). UNESCO has also produced an International Implementation Plan for DESD which includes launching of a programme for the development of indicators for monitoring progress. India is an active member of this process.

The Centre for Environment Education, which is designated as a Centre of Excellence by the Government of India, has a long and distinguished record in this field. They have undertaken the full responsibility for hosting of this conference and developing the contents and background material besides identifying experts from around the world to participate in our discussions.

We have received a tremendous response from delegates around the world representing both their governments and the National Commissions for Cooperation with UNESCO. Their presence is a source of great encouragement to all of us.

This conference is on the subject of environmental education. Many of you are familiar with India’s impressive record in the field of environmental policy making and legislation, with India’s role in international environmental negotiations and with the record of non-governmental activity in matters relating to conservation, environmental protection and sustainable development. What is probably not so well known is that environmental education is one of the most important core elements of the Government’s Environment Policy. Following an intervention of India’s Supreme Court in 2003, environment education is now a compulsory subject at the school level from Class I to Class XII. All the Boards of secondary school examinations in the country are required to frame syllabi, and develop appropriate material related to environmental education.

We would certainly also benefit greatly from the experience of other countries in this matter.

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We would certainly also benefit greatly from the experience of other countries in this matter.

We also realise that textbooks alone cannot possibly help young learners develop an appreciation of the need for protection of the environment. This needs to be an essential element of the learning process itself, both at school and in society at large. The Indian National Curriculum Framework 2005 emphasises this aspect of the learning process, and recommends an infusion of relevant material into the course material both for sciences and social sciences.
There is another issue to which I would like to call attention. This Conference represents a milestone in a series of Conferences held at decadal intervals since 1977. In the seventies the focus was on environmental education. Afterwards our focus has changed, as is reflected in UNESCO’s programme, to education for sustainable development. The emphasis has shifted from teaching in institutions to a learning process at all levels of society. This paradigm shift implies that education for sustainable development is a continuing and never ending process. I expect that these aspects will also be discussed during this conference.

It would perhaps be presumptuous on my part to speak on climate change in the presence of Dr. R.K.Pachauri. However, all of us as concerned citizens need to have an understanding of the nature of the development process, the concept of the carbon imprint and the question of reduction of emissions. Certainly countries must contain their carbon emissions, and make the necessary sacrifices that this entails, but the maximum contribution must come from the countries where the per capita emissions are the highest. I trust that our Conference will debate on this and on how best an understanding of the issue can be built amongst people; how best awareness about the climate change can be created and how best this can be introduced in school and university curricula.

I wish to conclude by reading the message of Shri Arjun Singh, Honorable Minister of Human Resource Development to all the distinguished delegates and participants to this conference and I quote: “On behalf of the Government of India, I would like to extend my greetings and good wishes to all delegates and participants from around the world who have gathered in Ahmedabad for the 4th International Conference on Environmental Education. We are glad to be able to host this conference and provide a forum for serious discussion, exchange of views and hopefully for the preparation of a road map that should call attention of civil society and governments around the world to the crucial issues of the next decade.

We live in a rapidly developing world and nowhere is this more evident than in India. There are inevitable consequences in terms of environmental degradation, the harmful effects of which are felt most by the poor and the dispossessed, by those who live on the land or who depend upon it for their livelihood. The absence of development harms the poor; but so does thoughtless exploitation in the name of development. Education is the only answer that can enable all citizens in any country to participate in an informed way in discussions relating to development and the establishment of national priorities.

UNESCO is the moving force behind the Decade of Education for Sustainable Development. UNESCO’s original, and still most significant, mandate is to build peace in the minds of men. This can never happen till women and men in every country of the world have learnt to live in harmony both with nature and with each other and have learnt the importance of conservation and resource management. We can and must build for the future but it cannot be at the expense of the world’s natural resources.

I hope and trust the discussions at the 4th International Conference on Environmental Education will be useful and constructive.”
in shaping those responses, will be central in making climate change and global warming not only a phenomenon that most of us need to be scared about but rather we need to understand that we accept and that we respond to as intelligent human beings.

Scientific information and general knowledge about what is happening to our planet is about empowering people. It gives us the opportunity to understand how we can make a difference.

I think we are still learning both in the formal education sector, in the public awareness work that we do, in the media outreach and in general how best to bring to the complexities of our planetary systems, the complexity of ecology, the complexity of global warming, closer to people even though most of us will never fully understand either the science or indeed the mechanics behind those responses. But we are as people able to make choices. Empowering people to make those choices and to make those choices quick and today, ultimately depends on environmental awareness and education reaching literally every person on this planet. And not only at the point where people will wake up one morning, look out of their window at a lake and suddenly see all the fish floating dead on the surface. It is then too late.

What a lot of the environmental knowledge that is available today, the scientific work that the IPCC or the Millennium Eco-system Assessment have put before us is about giving us a chance to respond before it is too late. Before we face the kind of tipping points or thresholds or dead zones in the world’s oceans, that ultimately are proof of humanity having failed to use both its capacity and intelligence to act differently, to accept the laws of nature and to practice both a lifestyle in consumption and production that is sustainable.

A few months ago UNEP launched the Global Environment Outlook Report No. 4. We also were surprised by both its content but even more so by the tremendous response across the world to its findings. It is not a happy report; indeed it is a sobering report. It looks at a threshold or dead zones in the world’s oceans, that ultimately are proof of humanity's failure to use both its capacity and intelligence to act differently, to accept the laws of nature and to practice both a lifestyle in consumption and production that is sustainable.

It is in that sense that learning and environmental education and environmental awareness are in some respects, perhaps the key to now having a global response not only to climate change and global warming but indeed to the whole challenge of environmental change that we have unleashed on our planet, for that response to take place with a different urgency and also capacity and commitment than in the past decades.

It is frustrating to be an environmentalist in the 21st century, frustrating because we have so much knowledge and so many opportunities to respond to what we see so clearly, which is a continuous depreciation in the capacity of our planet to sustain us particularly as we become 9 billion people on this planet.

EE does hold the key to empowering people to make those choices today that will allow us to look perhaps in 20 yrs time at those key indicators for sustainability with more optimism and also with more satisfaction. Satisfaction of having accomplished what we and generations before us have so far failed to do and that is a very simple message. Unless we begin to act more intelligently on our planet we are dooming ourselves to a bleaker and bleaker future.

People across the planet are already paying that price today, whether in terms of hundreds and thousands who die of air pollution or whether the people who are confronted by some of the extreme weather events that are now becoming more frequent and more extreme on our planet or indeed people who are confronted with chemical substances that really should no longer pose a risk to us in a global world that is full of information and knowledge.

These are some of the thoughts that I wanted to share with you, both in terms of encouraging you to look at both your meeting, but also the role that all of you play in your fields of work as immensely important to our work in UNEP, to the work in UNESCO and to humanity to be able to address where we all are trying to head - a more sustainable future.
Address by His Excellency Mr. Koichiro Matsuura
Director-General
UNESCO

It is a great honour and pleasure for me to address you this afternoon at this valedictory session of the Fourth International Conference on Environmental Education (ICEE) here in Ahmedabad, India. Let me take this opportunity to express my gratitude to the Government of India for hosting this international conference, to UNEP for joining with UNESCO in cosponsoring the meeting, to the many organizations and agencies that have associated themselves with this event and, last but not least, to the Centre for Environment Education and its Director, Professor Sarabhai, for all their efforts of preparation and organization and for making everyone feel so welcome. I would like to thank all participants for their valuable contributions. I have learnt that around 1,500 people from nearly 90 countries have travelled from near and far to take part in this major event. Let me congratulate all of you for making this international conference an undoubted success.

As you know, this meeting in Ahmedabad is a follow-up to the three previous international conferences on environmental education organized or co-organized by UNESCO in Tbilisi (1977), Moscow (1987) and Thessaloniki (1997). Each played its part in the unfolding story of the role of education in relation to sustainable development, and this meeting in Ahmedabad will make its own distinctive contribution. It is too early to tell, of course, what that contribution will be. For this, we need the perspective and wisdom of hindsight.

Ladies and Gentlemen,

Although my very busy agenda made it difficult to get here before this afternoon, I am pleased that UNESCO was active and well represented at this conference – through presentations in plenary and working groups, by organizing or co-organizing working groups and side events, and by participating in many activities. I trust we have shown ourselves to be a good and reliable partner in this very interactive endeavour.

A distinctive feature of our involvement is that we have called upon a real cross-section of the Organization – from different sectors at Headquarters; from our specialized institutes, and from regional bureaus and field offices near and far. It has been a real team effort and I would like to thank all of its members for their efforts and contributions, which have ranged from education for sustainable consumption to biosphere reserves and world heritage sites as learning laboratories for sustainable development, and on to media and public awareness-raising.

Finally, my particular thanks go to Minja Yang, Director of the UNESCO office in New Delhi, and her team and to Mark Richmond, Director of the Division for the Coordination of UN Priorities in Education, and Aline Bory-Adams, chief of the Section for Education for Sustainable Development and their team, based at our headquarters in Paris, for their sustained engagement and hard work.

All of our contributions to this conference have occurred in the framework of the Decade of Education for Sustainable Development, for which UNESCO is the lead agency and international coordinator. Please note that this does not make it a UNESCO Decade – it is, of course, a United Nations Decade, voted into being unanimously by the UN General Assembly in 2002. In fulfilling its stewardship role, UNESCO has not sought to impose a particular interpretation of what ESD is or should be, nor has it tried to privilege a particular strategy of implementation. Instead, we have consulted widely and we have paid close attention to the views and concerns of many stakeholders. As a result of this approach, UNESCO has developed a global framework to guide Member States and other partners in implementing the Decade of Education for Sustainable Development that is broad, flexible and inclusive.

In particular, we have recognized that different stakeholders are at different stages of engagement with ESD and the Decade, and we have sought to respect that by making available a range of entry points that correspond to different needs and circumstances. This means that countries are encouraged to take part at the speed, and in the manner, they judge best. Countries must be firmly in the driving seat. Nevertheless, at the same time, we have been acutely conscious of the fact that we are all riding in the same vehicle and we don’t want to lose any passengers. By the way, the energy driving this vehicle, in case you were wondering, is highly renewable – it is a potent mixture of shared concern and good will.

Ladies and Gentlemen,

I would like next to provide a brief overview of the main discussions that took place over the past 2 days and a half – which is a virtually impossible task. In order to do so, I will highlight ten key aspects of the conference which stand out from the point of view of UNESCO.

1. The importance of the contribution of environmental education to education for sustainable development (ESD) and to the Decade of Education for Sustainable Development (DESDE) is very clear and I am pleased to acknowledge this. The Decade can only be enriched by the contributions of environmental education through research, education and training, advocacy and networking.
2. There is a palpable sense of urgency for the right decisions to be made and the right actions to be taken in a timely way, which effectively means before it is too late. This is not alarmism but realism. A great boost to understanding the urgency of the situation has come from the work of the Intergovernmental Panel on Climate Change (IPCC) whose chairman, Dr Pachauri, graciously found time in his busy schedule to address the inaugural session of the conference. I do hope that, ten years from now, we do not look back and say that too little was done too late.

3. All teaching and learning modalities need to be effectively harnessed. This requires that non-formal and informal approaches to environmental education and ESD should be recognized as just as important as the formal education system. This in turn calls for those institutions, organizations and agencies responsible for organizing and delivering these different aspects of education to be respected for their separate and combined contributions. The role of civil society in regard to non-formal education and the key contribution of the media to informal education and awareness-raising are cases in point. To get the best from formal, non-formal and informal education, the roles of different partners must be respected and supported.

4. Teachers are the cornerstone of effective ESD programmes. Therefore, we must put a premium on the initial preparation of new teachers and on their in-service professional development in the area of ESD and environmental education. But there is another aspect of the importance of teachers, namely, teachers are always ‘local’ and, to make ESD relevant and real to learners, they must draw upon local inputs, contexts and values as well as foster community ownership of the curriculum.

5. It is necessary to unpack the category ‘learners’ in order to devise and implement suitably targeted approaches. This in turn requires us to look carefully and strategically at what we really want different types of learners to learn. For example, it is certainly desirable to make leaders – in such fields as politics, business, the media, and the professions – more aware of and sensitive to sustainable development issues. But what exactly should they learn, in what ways and for what purposes? These questions, in fact, must be asked about all learners, recognizing that their learning needs and goals are different and change over time.

6. A clear theme emerging from the conference is the importance of research into ESD along with the effective dissemination and utilization of research results. Given the scarcity of resources, it is essential to determine a research agenda with priorities of focus and emphasis. And the uses of research should not be an afterthought – the research priorities must aim to inform and improve policy and practice.

7. One of the important benefits of the Decade of Education for Sustainable Development thus far is that it has stimulated the launch of serious work on monitoring and evaluation and on the development of indicators. All participants in the conference will surely recognize the importance of this work, though it is evident that there are significant methodological and capacity development issues here that need to be addressed urgently.

8. One of the hallmarks of the sustainable development debate has been the relation between the global and the local. That relation, of course, is mediated at several levels and through a variety of institutions. It is interesting to see in the conference the engagement with different frames of reference for ESD and environmental education, ranging from school-based practices to municipal agreements, from national government strategies on ESD to zoo education strategies. Each of these, and there are many other examples, is a fascinating vector for capturing the dynamic link between the global and the local.

9. This conference reminds us once again that the boundaries of sectors, disciplines of study and fields of expertise constrain our capacities to think and act just as the boundaries of nations, gender, religion and ethnicity are artificial constructs that constrain our common humanity - if we let them. I believe that, as this conference clearly demonstrates, ESD is a great vehicle for respecting our differences and building a common vision.

10. Last but not least, the conference has done a great service by stressing the importance of the voice of youth, to which we must all listen. This can be taken literally to refer to young people and their energy, enthusiasm, commitment and hope. But it can also be taken metaphorically to refer to that spirit of creativity, experiment and openness which is the spark of youth in all of us.

These ten points, together with the Ahmedabad Declaration you have just adopted and the recommendations arising from the plenary and working sessions, provide very good guidelines for UNESCO’s action in education for sustainable development over the next ten years, as well as for the activities of our partners. I hope we can cooperate in their implementation.

Let me close by congratulating you all for making the conference such a rewarding experience. Special thanks again must go to the Centre for Environment Education and its Director for organizing this event and hosting it in this marvellous learning environment. Be assured that UNESCO will engage seriously with the recommendations emerging from the conference and with the Declaration, which is truly a collective effort. Although my own term of office ends in two years’ time, I feel secure in committing UNESCO to continuing its support for this pattern of international conferences. I do so in the firm knowledge that Charles Hopkins, who holds a UNESCO chair relating to ESD at York University, Canada, and has attended all four meetings, will be at the next International Conference on Environmental Education in 2017!
The importance of this Conference, the importance of environmental education (EE), the importance of CEE – all arise from the fact that environmental concerns and environmental problems are very important and that to deal with them requires action which requires certain degree of awareness. Environmental problems arise because of externalities - what I do does not really cost me but it imposes costs on others. When I drive a car, it pollutes the air, it congests the road space and the burden is shared by everyone else. These externalities are all around. When I pump water, it lowers the water table; not only my cost of pumping increases but my neighbour’s cost of pumping also increases because he/she has to deepen the well. These externalities impose burden on the other but not the person who causes it and that is why everyone behaves in a manner which causes degradation of the environment.

I think Climate Change (CC) is really one of the global issues that is another example of this. With industrialized countries, the rich in poor as well as developed countries all around; through their lifestyles emit so much GHGs that causes the huge threat of CC on all, but the burden will largely be borne by the poor in all countries. To deal with this, we need an ethical sense, ethical understanding that will be one way of doing it. But of course that might be not adequate or enough - we might need to create polices and give incentives to people in their own interest to behave better.

It is important for these things to happen that we create awareness about people because environmental concerns have a long time lag. If I pollute air today it does not really become bad immediately but becomes bad after a few years. When everybody starts polluting it, it becomes bad. It is because of this time-difference between action and outcome – one needs to make people aware that your actions are causing damage and awareness is the first step to actions. It is here I think that EE is important. But what actions should one take. How do I deal with this? Environmental action does require a certain level of cooperation, it is not something that one individual can do by himself/herself. Collective action is required and one needs to build a consensus that here is a problem and we all need to deal with it together.

CEE has been involved in creating this environmental awareness and in many areas it has also created consensus and lead to action in certain areas – but mainly related to local situations.

CC requires global efforts. Successive reports by the Inter-governmental Panel on Climate Change have created improved understanding about and created global consensus on the threats of CC. A fourth report has been released recently. There are many other local issues which we must not forget. We have to worry about sustainable use of groundwater, we have to worry about waste disposal, wildlife protection and preservation of habitats and biodiversity. All these require actions which we can take at a much smaller scale, requiring less of an effort to build a consensus.

What to teach is really quite critical because we need to create awareness which is rational. It just does not create a fanatical blind faith into something because that may prevent good actions because we are not always sure of the consequences of the actions we take and I think CEE has over the years have developed lot of teaching material to give that kind of environmental awareness which is much more informed and has made efforts to concern and consult people and see that the material it produces has a right kind of balance.

This Conference has enormous importance and it provided opportunity to take stock to exchange experience in different countries and creating environmental awareness to compare the effect of different tools and approaches. I hope it would also inspire innovations leading to global consensus on the kind of actions we need for sustainable development. A global consensus is critical if we are to have the right kind of action that is based on the understanding of the responsibilities and danger that people feel on this. I hope through this conference we move a step closer towards a consensus not only at the local level but at the global level and the kind of actions we need to take for sustainable development.
What I would like to emphasize in my speech is that the problem of climate change is essentially a symptom of a much larger problem we are facing and that the process of development is clearly not sustainable. Therefore environmental education, which traditionally focussed on the problems associated with environmental degradation and damage, now has to move to a different level where it must focus on solutions by which we promote sustainable development in every sector of the economy, in every part of the globe.

Climate change is unequivocal; I will talk about expected trends and impacts, the cost of mitigation, the key solutions that we must adopt and, of course, the role of education. Climate change is a very serious effect on agriculture, quite apart from water resources in general. Our agricultural productivity - particularly for wheat - has shown signs of going down as a result of climate change. If we look at this in a global context, there are issues of food security that we need to be concerned about.

Let us look at the melting of glaciers throughout the world; the glaciers in the Himalayan range are clearly melting at a very rapid rate which has major implications for water-supply in the northern part of the subcontinent because most of our rivers originate in those glaciers and therefore there is a possibility - or strong likelihood - of reductions in water supply that would not only affect those who derive water from these rivers directly but also the recharge that you get of the ground water. Rivers perform this extremely valuable function. Not only do they supply water directly through what flows through them but also what is recharged as ground water.

All of this has also led to sea-level rise that, during the 20th century, was around 17 centimetres. That is a significant increase and the rate continues to increase; we are likely to find that in the 21st century, sea-level rise could be anywhere between 18 to 59 centimetres. This does not take into account the possibility of collapse of the Greenland and/or the Antarctic ice sheets. If that was to happen, then we will get sea-level rise at several metres and that clearly would change the geographical features of this planet.

These are some of the impacts that we know of. Extreme precipitation events i.e. droughts and floods, similar to those we saw in Mumbai a few months ago and more severely two years ago, would increase in both frequency and intensity. In the case of India, we have some observed impacts; an increase of 0.68 degrees Celsius in temperatures and warming of land areas has been more pronounced in the post-monsoon and winter period. That has a very serious effect on agriculture, quite apart from water resources in general. Our agricultural productivity - particularly for wheat - has shown signs of going down as a result of climate change. If we look at this in a global context, there are issues of food security that we need to be concerned about.

For projecting temperature increase by the end of the century, we have examined several plausible scenarios of technological, economic and social changes that might take place. At the lower end of these scenarios we get a best estimate of 1.8 degrees centigrade temperature increase by the end of the century and at the upper end of the scenarios we get roughly 4 degrees centigrade increase. Even at the lower end, combined with the 0.74 Celsius increase that we found in the 20th century, we clearly have a serious problem on our hands. Therefore it is absolutely essential that we not only adapt to climate change, but also take vigorous steps to reduce emission of greenhouse gases (GHGs).

If we were to look at stabilization that would limit temperature increase overall - not necessarily in this century, some of this could spill over to next century - in order to limit the temp increase to 2 to 2.4 degrees Celsius, we would have to stabilise carbon dioxide and other GHGs at a level of 445 to 490 parts/million (we are already at the lower end of this range). This would be ensured only if we take care of the fact that emissions of GHGs peak by the year 2015 and decline rapidly thereafter, which means we have a window of opportunity of about seven years. If the world does not act fast enough to see that we reach the peak at the latest by 2015 and then start declining in emissions overall, we would see much higher temperature increases than we can project at this point in time.
Associated with even this very ambitious level of stabilization, a sea-level rise on account of thermal expansion alone would be 0.4 to 1.4 metres. In other words, even if we stabilise temperatures at this level, we have a serious problem in terms of the inertia of the oceans which will warm gradually and therefore expand gradually giving a sea-level rise of anywhere between 0.4 to 1.4 metres. This clearly means doom for several communities and several habitations on this planet. This fact itself requires that we adapt to climate change as rapidly as possible. This would also involve a major global response. If we take a country like Bangladesh or the Maldives islands, you would probably need a great deal of infrastructure to ensure that sea-level rise can be warded off—perhaps similar to what is there in the Netherlands—and that is clearly beyond the economic capabilities of a nation like Bangladesh to be able to manage. The world has to step in because the problem has been caused by a group of countries that have cumulatively added to the concentration of these gases and therefore it’s a moral, ethical and larger responsibility on the part of those nations to help find solutions. Large impacts can be expected due to past emissions and that is the message that we have to understand and act on. There are poor regions of the world that are more vulnerable than others and these extend all over in Africa, Asia and Latin America including malnutrition, water stress and health problems. Because we know that, for instance, heat waves will become more frequent and more severe and that will cause enormous problems of mortality and morbidity. Vector-borne diseases will increase as a result of shifts in climate and we need to be prepared for that. Vulnerability will be particular in areas where you already have existing stresses of poverty, water scarcity and in certain cases it is also a question of poor governance, which will probably not be able to react and withstand the impacts of climate change.

There will be serious impacts on ecosystems; climate change will reduce biodiversity. We have assessed a number of species in which we find 20 to 30 per cent of animal and plant species will be at risk of extinction if increases in global average temperature exceed 1.5. to 2.5 degrees Celsius. And of course some ecosystems are highly vulnerable. Coastal settlements will be most at risk and particularly the mega-deltas in Asia; this includes cities like Kolkata, Dhaka, Shanghai and many other cities across the world. This is a problem that will be spread across the globe and particularly in the mega-deltas that have very high population density. We will need to be vigilant in protection against storm surges, coastal flooding and so on, which could cause substantial loss of life and property.

The cost of mitigation globally is not very high. If you look at what would be required to stabilize the temperatures at 2 to 2.4 degrees centigrade, the cost in 2030 will be less than 3 per cent of the global GDP. If we develop technologies that bring about faster and more cost-effective reduction in emissions then you may even end up with an increase in the GDP. The range of stabilization levels of GHGs can be achieved by the deployment of a portfolio of technologies currently available. We do not need any magic or miracles. These technologies are available and are being deployed and used in several parts of the world. The important thing is that the whole world has to adopt some of these. Also, we need to adopt the right policies and one of the most important policies is a price on carbon.

We need appropriate incentives for development of technologies; we need an effective carbon price because that is the only way these technologies will move through the market. We need appropriate energy infrastructure investments because these will last for 30 or 40 years and therefore we need to take the future into account. And most importantly, we need changes in lifestyle and behaviour; this is going to be an absolutely crucial element in bringing about mitigation of GHGs. We cannot continue on a path that is totally oblivious to the impacts and footprints of our actions on the earth’s ecosystems.

The role of education is important particularly in the case of GHG mitigation policies. Education can help overcome barriers to the acceptance of new practices. Youth are a powerful agent of change and therefore it is critically important that we work with the youth of the world to bring about a change in the mindset, lifestyle and in adoption of new technology.
I want to make three brief points. The first point is what you all may not know is the significance of the location of this very important conference on EE. Forty years ago, the late Dr. Vikram Sarabhai thought we must leap-frog in terms of educated India and wanted to bring the modern satellite technology called SITE (Satellite Instructional TV Programme). I was also with him on the Committee which was planning the curriculum. The very first point Dr. Sarabhai said is we must spread the news about environmental protection with this technique which can cover all over the country. A number of modules were prepared on environmental education. Unfortunately he did not live to see the programme of SITE but it was his far-sighted vision. But we must, as UNESCO is currently doing, tap the most advanced technology to have the last-mile and last-person connectivity and that only satellite education can do.

The second significance of this location is that when this campus was being dedicated, Dr. Vikram Sarabhai was there. Here, he introduced the concept of social sustainability in her address at Stockholm conference in 1972. Mrs. Indira Gandhi whom we all know was a great conservationist who introduced the concept of social sustainability in her address at Stockholm conference in 1972. Mrs. Indira Gandhi who founded the geodesic dome, he brought in to practice two very important principles of life - symbiosis and synergy. He explained that in human behaviour we must all follow the principle of synergy. Gandhiji and Vinobha Bhave gave the other term Sarvodaya society – meaning there are no losers, it is a win-win situation for all. It is a highly synergized society is what we call a Sarvodaya society. It is here, while dedicating this campus, Mr Fuller emphasized the importance in our relationships of the principle of synergy not only in engineering design but also in human behaviour of Sarvodaya. Thirdly, I find Smt. Mrinalini Sarabhai, sitting here. I was reminded when I saw her in 1980 when IUCN produced the first World Conservation Strategy which was launched by Mrs Indira Gandhi whom we all know was a great conservationist who introduced the concept of social sustainability in her address at Stockholm conference in 1972. Mrs. Mrinalini Sarabhai who composed a special ballet for the occasion and I remember the saying, ‘God forgive them, they know not what they are doing’. She reversed the phrase to ‘God, do not forgive them, they know what they are doing.’ In other words, those who are causing climate change, those who are cutting the forests, she said, ‘God do not forgive them.’ Today, this is a very appropriate message from a community of this kind to the others.

The second point I want to make is about the Brundtland report and many other reports which talk about our common future. For a majority of human kind today, what is more important is a common present. You cannot have a common future without a common present and that is why the behaviour of the present population is equally important to safeguard the future. Obviously EE is multi-dimensional and multi-disciplinary but I would like to pick up seven ‘Es’ which are important if we really want to work for a common present.

1. Environment and Ecology: Even at Rio, a point was made by industrialists, that good ecology is good business and bad ecology is bad business. In other words, lot of cooperating occurs only on the basis of enlightened self-interest and not by preaching. Enlightened self-interest of human beings brings them together; and that is how it is more enduring and sustainable. This is why agriculturists have to realise over-exploitation of the ground water, land mining and cultivation have caused damage. When Tsunami occurred on 26th December 2004, for the first time the coastal communities saw the benefits of mangrove plantation. UNESCO has done so much work on saving the mangroves of the world. It was then common fishermen realised the importance of mangroves. Wherever there was a dense mangrove plantation, it acted like a speed breaker; the waves did not come in. There was no loss of life; there was some loss of property. So education and good ecology are important for us in terms of our day-to-day life whatever vocations we are in.

2. Economic Sustainability: Everybody talks about sustainability in terms of economic sustainability. Now we realise it is important to look at economics not only in terms of current generation but inter-generational implications. Ecological economics does not allow any depreciation but allows only appreciation. Our duty is not only conservation but also enhancement of nature.

3. Equity: Equity in terms of ecological behaviour of human beings was a concept introduced by Mrs. Indira Gandhi. Equity in gender terms - women are great conservers of biodiversity; social equity in terms of economic disparities, and inter-generational equity that is equity towards children that are yet to be born are both vital for sustainable development.

4. Ethics: The concept of ethics in environment has become exceedingly important. We must have a concept of trusteeship, whether it is natural resources, material resources and also intellectual property rights (IPR). A large number of new technologies which are environmentally benign and environmentally friendly are being protected by IPR.
is also important that the principle of social inclusion in access to technology is looked at. In the World Trade Agreement, it was agreed that the medicine for HIV-AIDS should be available to all. In other words, there must be compulsory licensing of rights and not exclusivity. I would like to suggest to UNESCO that it should think of a global Patents Bank where all of us can contribute. These could be environmentally benign technology, whether it is a variety or an industrial product - there must be some method of making these new technologies available to all who need them.

5. Energy: Within energy today, there are two major discussions. One is the nuclear energy, some call it nuclear renaissance because it does not release carbon dioxide – there is a discussion on the merits and demerits of nuclear power and the other is the allocation of land - fuel Vs. Food.

6. Employment: We need job-led economic growth that is where ecologically sound technologies have an advantage. Whether it is ecological agriculture or organic agriculture. It is much more decentralized than centralized.

7. Education: Education permeates all; it is cross-cutting in all the earlier points I mentioned. Education is important but here again, we must start at the grassroots level. We have the largest participatory democracy at the grassroots level; we have 3.3 million elected representatives at village level, one-third of who are women. We want one man and one woman in every village to be trained as climate managers who would know how to prevent damage to climate and what to do in case there is a problem.

If you want to plan for a sustainable quality of life, education is very important. The old Chinese proverb, if you are thinking one year ahead, you plant rice, if you are thinking ten years ahead, you plant trees and if you are thinking 100 years ahead, you educate the people. Education is the mother of all innovations; it is also the mother of all enlightenment.

Working Groups

Highlights and Recommendations

1. Reorienting Formal Education towards ESD (Strategies, Pedagogy and Assessment)
2. Teacher Education: A crucial contribution to the UNDESd
3. Enabling Sustainable Development through Open and Distance Learning, including TechMODE
4. Higher Education for Sustainable Development
5. Regional Centres of Expertise (RCEs) on Education for Sustainable Development
6. Non Formal Spaces for Learning
7. Youth: Trend setters of ESD
8. Health Concerns
9. Art, Design and Ecology - The Role of Artists and Designers in Creative Environmental Education for Sustainable Development
10. Workshop on Education for Disaster Risk Reduction (EDRR)
11. Education towards Sustainability concerns of Natural Resources in ‘Fragile Ecosystems’
12. Efficient use of energy & Alternative systems - addressing climate concerns through focused information support and capacity building
13. Education for Innovation and Technology
14. Mobilising Knowledge for Sustainable Development
15. Integrating Values of Sustainability into education : The promise of the Earth Charter
17. Meeting Challenges of Knowledge Management in Water and Sanitation
18. Education for Sustainable Livelihoods
19. Education for Sustainable Cities
20. Sustainable Waste Management
21. Responsible Corporate Citizenship: Key to a Sustainable Future
22. Media & ESD - “Building Public Awareness and Understanding of Sustainability”
23. Roadmap for Creating a Research Foundation to Support the DESD
24. Monitoring and Evaluating Progress during the UN Decade of Education for Sustainable Development
25. Biosphere Reserves and World Heritage Sites: Learning Laboratories for Sustainable Development
26. Making Zoo Education Sustainable with special focus on Fund Raising, PR and Marketing
27. Education for Sustainable Consumption through the DESD
28. Government Session - Sharing experiences and promoting collaboration
30. Role of Education in addressing Livestock, Environment and Development issues

Special Session: HIV - AIDS: Building Environments for Responsible Living
An Advisory Group/Working Session Core Team were identified for each Working Session consisting of experts in that thematic area. This Group consolidated recommendations from past related conferences in this sector and a brainstorming was done in order to identify the objectives, issues and outcomes of a particular Working Session. Then a Concept note for the Working Session was prepared. A coordinator was identified for each Working Session from amongst the members of this group. Though participation at these Sessions were open to all, special invitations were sent to experts from relevant fields and care was taken to see that the participants represented a wide array of varied and diversified experiences. Each Working Session came up with a set of recommendations for the EE and ESD community. The Recommendations Committee then consolidated the recommendations from each Working Session into the Overall Conference Recommendations.

The participants of this working group:

- Recognized that EE has raised the consciousness of the world community towards ESD. EE, in its enhanced role needs to champion ESD and furthermore reorient itself to the challenge. It was agreed that the basic principles for ESD need to be valid, have the same meaning and learning for all countries and cultures and provide sufficient guidance for achieving effective curricular outcomes.

- Reinforced that ESD is an effective way to promote quality teaching and learning and in this pursuit principles relating to pedagogy for ESD need to be flexible, not overly prescriptive, but still have relevance for all contexts.

- Endorsed that capacities of the stakeholders concerned with ESD should be developed so that they can effectively take up non-conventional and engaging ways (participatory and experiential) of teaching and learning. The capacities especially should be enhanced to integrate SD aspects into the existing curriculum and current work.

- Recognized and stressed that assessment is an integral part of the learning process and that assessment should become an essential and a continuous process of ESD so that it enables learners interacting in a social learning process to get feedback of their learning. Assessment strategies should include stakeholders, timelines and responsibilities.

**Recommendations**

**Strategies for ESD**

- Establish a vision for all key players in the formal education systems for the implementation of ESD.

- Frame an agenda for implementation of ESD in schools linked to quality education for all.

The workshop had four sessions and one special session. These four sessions were: EE: The Journey from Tbilisi to Ahmedabad; ESD: Drivers of Change; Institutional Commitment for ESD and Supporting ESD in Formal School System. The special session was on Teaching Sustainability, Living Sustainably: The Challenges for Educators.
ESD in the formal school systems should be stakeholder focused i.e. learners, parents, school community, education institution and private sector, etc., with utmost importance given to teachers and learners being the facilitators and learners respectively.

Base ESD on experiential and participatory learning and lead to a transition from transmissive education to transformative education that includes elements of insight, reflection, learning in the outdoors, and learning through sustainability themes.

Implement ESD in schools through a series of regional hubs with cluster of schools in partnerships with existing tertiary institutions, government and non-government organizations. All strategies should be based on productive partnerships with all key stakeholders.

Encourage schools (in particular secondary level and above) to integrate elements of ESD across subjects and coordinated teaching. Teaching ESD is not an ‘extra’ on top of existing curriculum.

Suggests that ESD in formal school systems take into account the experiences from existing programmes such as Eco Schools (organised by the Foundation for Environmental Education), Green Schools (USA, China and Sweden), Environmental Schools New Zealand, Eco-Log Schools (Austria), ESD Schools under ENSI (Environment and School Initiatives), Sustainable Schools (Australia), ECO club in India, National Green Corps (NGC) in India.

Focus primarily on in-service professional development for all teachers and principals.

Focus on pre-service professional development for all teachers.

Incorporate experiences from research institutions in ESD practices.

Curriculum and Pedagogy for ESD

Focus pedagogical practices leading to improved curricular outcomes on high levels of intellectual quality, importance of the learning environment and in which learning can see the significance of learning.

Align the vision and programmes developed by formal education systems with the principles of a sustainable society as a whole.

Develop a set of principles relating to ESD by each nation using the appropriate pedagogies. A set of minimum level of ESD benchmarks should be evolved based on global recommendations.

Integrate teaching and learning for ESD and be sufficiently flexible to cater to the varied needs of learners in different cultures and nations. Pedagogies employed in schools should be used as a means of integrating ESD principles across all areas of the curriculum and all aspects of school life. Systems thinking and a holistic approach should be adopted to facilitate ESD.

Relate ESD principles to problems, issues and subject matters that are relevant to the society in question and to the global society as a whole.

Encourage partnerships between schools and other stakeholders in order that all learning happens from each other.

Provide long term institutional support and financing for ESD initiatives.

Capacity building of Stakeholders and Networking

Put in place a national ESD policy together with a national ESD strategy in order to support institutional initiatives. Institutions should also have their own policies and strategies addressing their local context enabling ESD practitioners to implement new ideas.

Build closer cooperation between the ministries of Environment, Education and those that directly or indirectly relate to ESD objectives in order to draw upon ESD synergies.
The above working group was planned to provide an opportunity to educationists, teacher educators and other experts to share and express views, thoughts, understandings, experiences on how teacher education should respond to the call of ESD. What should be the curricular/policy and systemic changes required to make teacher education work for ESD? What should be the approaches and strategies for incorporating ESD into teacher education? How can we effect a shift in teacher training paradigm from “teaching” to “learning?”

Chaired by Prof. Charles Hopkins, York University, Canada, the working group was attended by more than 55 delegates representing 19 countries. Including the pre-conference sessions, the deliberations in the workshop were spread over four days. The workshop comprised several components: 1) Keynote addresses by Prof. Charles Hopkins, UNESCO Chair, Dr Rupert Maclean, Director, UNESCO-UNEVOC, Germany, Dr Derek Elias Director ESD, UNESCO-Bangkok and Dr Shardindu, Chairperson, National Council for Teacher Education, India, 2) Paper presentations by several delegates, 3) discussion and open-fora and 4) Group work to develop recommendations for Teacher Education.
As part of the Working Group deliberations, the delegates developed a detailed vision for teacher education in the UNDESD and how it should meet the challenges of sustainability. Keeping this vision in the foreground, the delegates, discussed in smaller groups various aspects of teacher education, such as: What should be the critical role of teacher education in ESD; How should teacher education curriculum be reoriented to address the problems and challenges of sustainable development; What should be the role of technology in capacity building of teacher educators; Broad contents and methodologies of teacher education; Networking and collaborations for sharing and exchange of educational and training materials in ESD.

Relevant documents such as “Guidelines and Recommendations for re-orienting teacher education to address sustainability”, “Education for Sustainable Development – Toolkit”, “UNCED (1992) Rio Declaration on Environment and Development” and TVET and Sustainable Development – Bonn Declaration” were made available to the delegates as Working Group materials.

The delegates came up with several recommendations to make teacher education work for sustainability. These recommendations centered on: Structure, Content and Governance of Teacher Education; Institutional Conditions (climate) for Teacher Competence; Professional Development of Teachers and Teacher Trainees and Monitoring and Evaluation in teacher education.

**Recommendations**

**Structure, content and governance**

1. Individual countries should show their commitment to Education for Sustainability or sustainable future by:
   
   (a) Developing a national ESD policy spanning from pre-school to higher education including teacher education

   (b) Provide the necessary resources and professional development programmes that would ensure the implementation of the policy.

2. Teacher Education system should be re-oriented to:
   
   (a) Include professional development programmes familiarising teachers / teacher educators with ESD issues and methodologies, review the curriculum to ensure that ESD is addressed in all curricular subjects. The teacher education curriculum should emphasize development and promotion of effective and practical skills in teacher trainees in addition to development of knowledge and awareness skills. The pre-service teacher education courses need to be reorganized to embed ESD.

   (b) Teacher education institutions should provide leadership by innovating and developing effective models of ESD teaching practices and methodology.

   (c) Provide opportunities for teachers to learn how to adopt interdisciplinary approaches in their teaching methods for achieving sustainability and teachers should be enabled to use an inclusive and democratic approach that respects all diversity in the environment.

   (d) Ensure that all teachers have access to and are trained in the use of ICT in their teaching.

   (e) Enable teachers to link local sustainability issues with a wider global perspective.

   (f) Enable educational institutions to become Green or Eco institutions.

   (g) An assessment programme that evaluates teacher education institutions at an institutional level and also individual learners should monitor ESD implementation.

   (h) Resource materials in ESD need to be developed to train teachers/ teacher educators. These could include relevant documents such as "Guidelines and Recommendations for re-orienting teacher education to address sustainability", “Education for Sustainable Development – Toolkit”, “UNCED (1992) Rio Declaration on Environment and Development” and TVET and Sustainable Development – Bonn Declaration”.
on-line information and satellite-based communication technologies.

3 Authorities (e.g. Ministry of Education, Local Governments, and Universities) should acknowledge and encourage the ESD expertise of teacher training institutions - teachers' expertise in ESD should be officially certified by the relevant authorities – so that these institutions can carry out more innovative experiments in teaching-learning in ESD and disseminate them to teachers.

4 Where required a separate body/agency/institution should be set up which focuses only on ESD and offers diploma, basic degree, masters and doctoral degrees.

5 Teacher education programmes should include traditional/indigenous/faith-based knowledge (locally relevant and culturally specific) in practices promoting sustainability in order to promote and value diversity.

6 Due to the interdisciplinary nature of ESD contents and diverse methodology, teacher education institutions should have institutional flexibility to implement ESD programmes in order to reflect the local and global realities.

Institutional Conditions for Teacher Competence

7 There is a need to create mandatory and long-term institutional structures and leadership for teacher education to facilitate thorough capacity building amongst teacher educators, pre and in-service teachers.

The following competencies should be given importance in teacher training:

(a) Systematic ethical reflection on values and interests concerning human relationships and care for nature should be an important component of the teacher competence. Skills for active participation and co-construction of educational and ESD practices in society as a whole.

(b) Capabilities to support and handle cultural and social variety.

(c) Ability to identify the connections between social/cultural, ecological, and economic dimensions of the environment.

(d) Ability to identify the connections between global and local environmental conditions and draw meaningful inferences.

(e) Confidence and interest in sharing their experiences, knowledge, skills, values, etc with other people.

8 Mandatory and institutional structures would include research resources, access to national and international networks in ESD, cross-cultural and cross-disciplinary cooperation, and leadership, etc.

Teacher training institutions should work as role models in ESD for schools and teachers by a) facilitating and supporting the formation of heterogeneous teacher teams and b) providing a communication platform which facilitates educators to reflect upon critical literacy, ethical reflections, community development skills etc.

Training institutions should function within norms of sustainable development and set up good examples of sound environmental practices with active participation of students and teacher.

Monitoring and evaluation

9 (a) Evaluation criteria for ESD need to be developed to be context based by participatory processes. Evaluation needs to include individuals, groups, and systems at all levels.

(b) Teachers and students need to be evaluated by measuring how well they modify/reorient their teaching and learning style and change/improve their teaching and learning environment infusing ESD.

4th ICEE
4th International Conference on Environmental Education: Final Report
Sustainable Development (SD) has been a topic of debate. While one of the schools of thought labels it as an oxymoron, some agencies believe it to be pro-economic development, some call it anti-environment, and some call it the judicious way of striking a balance between economy, people and nature. Despite such debates on SD, today a universally accepted fact is that the present trend and approach of human living on the planet would not take us too far in the process of our development. As a result humans need to find judicious ways of living and progressing and making a good quality of life possible for and accessible to all. The UN Millennium Development Goals (MDGs) signify a global commitment to achieving good quality of life for all. Since MDGs and SD are about wise choices, appropriate lifestyles and positive attitudes, education has a big role to play in bringing about SD. The period 2005-2014 has been appropriately declared as the UN Decade of Education for Sustainable Development (UNDESD).

Sustainable Development is about individuals, communities, societies and the nations. Thus education and communication for and about SD need to reach one and all—everyone engaged in various spheres of life and different professions. This is the challenge of SD. Another challenge is the fluidity of this concept. SD as a goal, as well as a process, is highly context-based, dynamic and debatable. Thus communication for SD also needs to be contextual. Further SD entails dialogues, discussions and learnings in every sphere of life—economic, social, political, as well as ecological. This makes SD complex, making the work in the field of education and communication for SD also equally complex.

This workshop supported and facilitated a meaningful process of discussion and deliberation towards emphasizing,
reiterating and highlighting the significant role that Open and Distance Learning (ODL) systems, supported with appropriate information and communication technologies, have played in bringing about SD. The sessions focused on making recommendations for better exploitation of ODL and technology mediated learning for SD.

Recommendations
Open and Distance Learning (ODL) from and for communities
1. Community based knowledge can be generated and managed better with the use of ODL and TechMODE.
2. ODL works better in cases of “Self-directional” learning.
3. ESD requires multidirectional learning and ODL is an effective tool for the same.
4. Education and Learning for Sustainable Development should be in accord with each other.
5. Technology should be assessed and most suitable options should be identified before defining the roadmap.
6. ODL should facilitate multi-stakeholder approach in enhancing the knowledge generation process.

ODL for Strengthening ESD in School Education
1. Web-based Open Education Resources (OER) can make Networking for ESD more effective by providing a platform (web-based) for sharing expertise, educational resources and experiences in ESD among the various institutions.
2. A concern in the use of ODL for School education is “Quality Assurance”
3. ODL and TechMODE can reach out to out-of-school children.
4. In most countries there is a need to first “ESDize” the curriculum. Only then ODL and TechMODE can make the transaction of ESD in schools more effective.

5. ODL and TechMODE can be best applied to fulfil the need of Education and training for SD.

ODL in addressing Preparedness for Climate Change
1. ODL can enable Institutions to play the role of facilitator and help communities in knowledge generation.
2. ODL should be used only as the means and not as the ‘target’. Thus Climate change and community needs should drive the effort and not ODL.
3. TechMODE needs to be all inclusive from Radio to web-based. Appropriate technology should be used for ESD based on the need and the context.
4. ODL can help in making communities empowered and capacity built to face climate change better and ensure livelihoods sustainability.
The tone for the working sessions was set by posing a fundamental question: What does it mean to be a university graduate in the 21st century? More specifically: What sorts of skills, values, perspectives, habits of mind, and behaviours must university graduates of the 21st century have to help build an eco-culturally sustainable world? This set the tone for further discussion on what a university would need to be and to do to be able to produce this ideal graduate.

Discussions of the Higher Education Working Group involved what Higher Education has to offer to sustainable development, how to strengthen ESD in Higher Education, and how it can contribute to the moulding of that ideal human being who can respond to the challenges of sustainability. This was discussed in sessions focusing on the critical issues of Food and ESD where the content and pedagogy are likely to mingle and meld; on the principles and practice of social learning; and on sustainable consumption. Two joint sessions of Higher Education for Sustainable Development and Regional Centres of Expertise (RCE) on ESD highlighted the linkages between Higher Education and other levels of formal education as well as those with non-formal and informal education, and the opportunities that RCE activities can provide to college and university students to gain experience and insight into the workings of the real world and to the challenges of contributing to a sustainable future.

The Working Session on Higher Education for Sustainable Development provided the opportunity for those associated with this sector to explore, discuss, share experiences and ideas, and hence become better equipped to practice and support EE/ESD initiatives in their respective universities. Specifically, the participants shared an understanding of the role and importance of Higher Education in the current social/cultural, economic and environmental context and the role and importance of EE/ESD in Higher Education. There was also a sharing of experiences on integrating EE/ESD in

Higher Education (through curriculum development, capacity building, action projects, etc.) and discussions on some of the crucial/essential areas that Higher Education should focus on, with examples and case studies. The institutional barriers that must be overcome and policy changes that must occur to make Higher Education a more productive environment for EE/ESD initiatives and research and how to showcase good practices and discuss strategies for creating an ideal/model university were also discussed in detail.

Recommendations

- Support and value research and teaching in service of people and the planet by making the incentive and promotion structures reflect these goals.
- Establish visible, tangible initiatives, such as centres for Education for Sustainable Development and Environmental Education, on every campus to facilitate and coordinate inter- and trans-disciplinary sustainability research, teaching, continuing education, professional development, outreach to the community, and service activities on campus.
- Develop and institutionalize campus sustainability reporting, monitoring, and assessment procedures, which are directly coupled to policy, so that continuous improvement in campus sustainability practice can be achieved.
- Build institutional capacity by creating professional development opportunities, resources, and incentives for infusing sustainability across the curriculum. High leverage strategies include course development, team teaching, and action research.
- Create mandatory, undergraduate, graduate, and professional interdisciplinary courses in learning for sustainability that employ new research and pedagogical approaches to help people to couple more effectively deeply-held values and concerns to policy and behaviour.
Regional Centres of Expertise (RCE) on Education for Sustainable Development

RCE is a network of existing formal, non-formal and informal education organizations mobilized to deliver Education for Sustainable Development (ESD) to local and regional communities. The session focussed on communicating the concept of RCE, demonstrating how it could be operationalised and exploring factors that could support development of RCEs, major actions and collaboration opportunities.

A network of RCEs worldwide will constitute the Global Learning Space for Sustainable Development. RCEs aspire to achieve the goals of the UN Decade of Education for Sustainable Development (DESD 2005-2014) by translating its global objectives into the context of the local communities in which they operate and promotes four major goals of ESD in a resource effective manner. Currently, there are nearly 50 RCEs recognized worldwide with 21 of them in the Asia-Pacific region.

These four goals are:

- Re-orient education towards SD, covering existing programmes/subjects from the point of ESD and designing integrated SD curricula. ESD programmes are tailored to address issues and local context of the community in which they operate.
- Increase access to quality education that is most needed in the regional context.
- Deliver training programmes and develop methodologies and learning materials for them.
- Lead advocacy and awareness raising efforts to raise public awareness about the importance of educators and the essential role of ESD in achieving a sustainable future. RCEs promote the long-term goals of ESD, such as environment stewardship, social justice and improvement of the quality of life.
- RCEs bring together institutions at the regional/local level to jointly promote ESD. They build innovative platforms to share information and experiences and to promote dialogue among regional/local stakeholders through partnerships for:
  - Marshal resources to promote information exchange and outreach to support community-based non-formal and informal education for sustainability programmes, such as sustainability lecture series, collaborative action research projects, internships, and service-learning.
  - Create and support programmes that address the necessity for supporting lifelong learning for sustainability through integration of formal, non-formal, and informal learning communities such as United Nations University’s Regional Centres of Expertise in Education for Sustainable Development, which may represent the most significant global experiment in social learning for sustainability.
  - Encourage endorsement and implementation of the Earth Charter as an overarching framework to provide a context for the ethical and spiritual dimensions of sustainable living.
  - Form coalitions and consortia of Higher Education institutions to partner with government, the private sector and NGOs to develop strategic plans and marshal resources to implement the above recommendations.

Coordinator: Dr. Zinaida Fadeeva
CEE Contact: Simanta Kalita
An RCE should have four elements:
1. Governance - addressing issues of RCE management and leadership.
2. Collaboration - addressing the engagement of actors from all levels of formal, non-formal and informal education in RCE activities.
3. Research and development - addressing the role of research and its inclusion in RCE activities, as well as contributing to the design of strategies for collaborative activities, including those with other RCEs.
4. Transformative education - contributing to the transformation of the current education and training systems to satisfy ambitions of the region regarding sustainable living and livelihood.

Main issues addressed
- Concept of RCE
- Partnership for development of RCEs
- Flagship programmes of different RCEs
- Evaluation ideas

Recommendations
It was clarified that the evaluation of an RCE should have the following characteristics:
1. It should be an open and consultative process involving all RCEs that wish to participate and their partners.
2. It should seek to mobilise descriptions of practice and encourage reflection processes.
3. The evaluation should be responsive to the immediate needs and issues of the RCEs.
4. The evaluation should hopefully open up learning spaces where participants can describe and think about their work and learning context.
5. The evaluation may have elements of self-reflection.
6. The evaluation should seek to illuminate, clarify, describe and engage with the activities of the RCE.

Non-Formal Spaces for Learning

The Working Group on Non-formal Spaces for Learning was attended by 71 participants of which 33 were international. There were representatives of governments, NGOs, donors and interested individuals. Sustainability concerns being an important issue, a special plenary ‘Teaching sustainability, living sustainably’ was organised for the participants of the Working Groups of Non-Formal Education (NFE), Teacher Training and Youth. Some of the suggestions made during the workshop included setting up a network of all agencies involved in non-formal EE, with well articulated goals and objectives to develop and implement policies in the fields of EE and ESD, that would serve as a focal point.

Recommendations

**General**
- ESD is a strategy to create social, economic and environmental change in mutual balance.
- Education, whether formal or non-formal, is the right of all citizens and responsibility of communities, agencies, schools and organizations around the world.
- Education, whether formal or non-formal, provides knowledge and skills for building understanding, engaging participation and enabling decisions about sustainable lifestyles and livelihood.

**Contents**
- In the context of EE and ESD, non-formal education (NFE) is meant for individuals who are not exposed to formal education, it also enriches the learning of those who are exposed to formal education, at all levels of society.
- NFE is the key vehicle to provide permanent learning opportunities for adults.
- NFE emphasizes experiential learning, including outdoor activities and hands-on interaction with the environment and the local community and culture.

**Targets**
- NFE can play an active role in social matters and encourage people to actively participate in civil society.
NFE should be flexible and appropriate in order to address the various interests and needs of the target groups, using their local environment and resources, addressing local issues, ecosystems, culture, and languages.

NFE should enhance existing skills and provide knowledge and practical skills.

NFE should address sustainable livelihoods and lifestyles (such as awareness regarding consumerism, sustainability, gender issues, poverty, decision making, and HIV/AIDS).

The connectedness and complexity of the issues in programmes should be converted into the didactics of the programme.

**Strategy**

- There should be a network of all agencies involved in non-formal EE. It should serve as a focal point, with well-articulated goals and objectives to develop environmental literacy for ESD. It may appoint a coordinator.

- Successful locale-specific programmes can be shared nationally and modified to serve different audiences.

- In consultation with various regional bodies, the network could participate in framing government policies on NFE, in order to develop guidelines for implementing locale-specific programmes to spread NFE at the grass root level.

- Non-formal educators from each country should interact and exchange information to achieve the goal of the DESD.

- NFE should enhance and involve dialogue between experts, educators, community members, including leaders, women and youngsters and representatives of spaces that can raise the efficacy of NFE.

**Methods**

- The implementing organization of NFE, for example educational bodies, NGOs, associations, rural centres, state governments, tourist operators and nature interpreters should cooperate in order to achieve facilities for NFE.

- The implementing bodies should reach out to the target groups, through locally suitable communication methods.

- Community members should be involved in the planning and implementation of NFE processes and thus make every NFE process unique to its local setting.

- The required resources (such as finance, human resources, materials and spaces) should be generated as a shared responsibility.

- NFE spaces should be made more available, visible and accessible.

- The spaces that encourage and enhance non-formal learning may be physical (such as school yard, forests, nature reserves and waste yards), virtual (such as the Internet) or mental/spiritual (“space in the mind”). These spaces will allow learners and educators to experience the significance of nature, culture and heritage.

- NFE should emphasize discussion, participation, projects and real cases.

**Monitoring**

- Monitoring is a continuous facilitating process from the beginning to the end of the education process.

- First monitoring may be the initiative by the initiators or organizers to attract different target groups to NFE. Further in the process monitoring should engage and involve the target audience and stakeholders.

- Needs assessment with the target-group should be held before the beginning of the programme, and used for the design of the project.

- Purpose of monitoring is to encourage and strengthen the programme for all participants, both givers and takers.

- Monitoring in the final analysis is to measure the meaningful result on the individual and the community. The social impact of the programme should also be looked at through monitoring.

- Monitoring for different activities will require methods appropriate to the nature of each project and group.

- NFE cannot and should not use the standard method of tests or examinations. Different informal tools have to be devised to check the outcomes of the programme.
The Youth Working Group, jointly organized by CEE, UNEP, South Asia Youth Environment Network (SAYEN), Bayer A.G. and Earth Charter Youth Initiative (ECYI), brought together about 80 young people from about 40 countries representing several youth networks such as SAYEN, ECYI, Oxfam International Youth Parliament (OIYP), Sustain US, World Water Youth Alliance, Rwanda Environmental Conservation Organisation (RECOR) amongst many others.

The Working Session focused on the following:
1. Understanding sustainability
2. Current process and mechanisms for change
3. Enlisting values and principles for driving actions involving youth as we progress in ESD and set new benchmarks
4. Existing leverage points to be used by young change agents, and
5. Youth in ESD: the road ahead

The Working Session started with developing a common understanding about sustainable development and a youth definition of sustainable development.

During the working session, about 17 case studies were presented by the participants demonstrating practices adopted by the youth towards achieving sustainable development in their respective countries. These included a case study on initiatives by youth on ESD in Korea and North East Asia, Digital Video Conferencing by youth in Malaysia, youth working as interns or volunteers with national parks in California, initiatives by youth involved in rural higher education institutions in India, an initiative on youth perspectives to policy making and several other youth initiatives. ESD Principles and values that guided actions in these case studies were also discussed. The youngest presenter was Ms. Vodathi (15 years) from Visakha Vidyalaya, Sri Lanka who presented activities of her school eco club.

The participants of the working session also attended a joint session on “Teaching Sustainability, Living Sustainably: Youth: Trendsetters of ESD

The challenges for Educators”, with participants of two other working sessions. The focus of the session was on sustainable consumption.

To ensure participation of other youth present at the conference, participants at the youth working session set up a canvas titled “Our Voices” where youth could come and write their messages. Two youth were also democratically elected to be part of the Drafting Committee of the Ahmedabad Declaration. This was in addition to participation of a democratically elected youth in each of the five plenaries at the conference.

Recommendations

The participants at the youth working session also developed their recommendations emphasizing their participation in all ESD initiatives.

1. In our daily life, we take a number of decisions based on our knowledge and resources available. At policy level, our involvement is limited, though it matters a lot as it has a large impact on our lives. We are neither trained nor do we have enough opportunities and thus our perspectives are not taken into account while policies are getting formulated and implemented. We are creative, innovative, enthusiastic and have a different perspective to SD based on our experience. Thus, we can provide invaluable inputs in policy formulation and implementation. International agencies such as UNEP, UNDP and World Bank should facilitate the process and make it happen worldwide.

Youth must be included and trained to participate in all decision making processes to contribute meaningfully to making sustainable choices.

2. Learning is a continuous process and people of different age groups, strata and stages need to work together for meaningful learning. We have to move away from the conventional ‘teacher-learner’ approach. The ‘peer to peer’ learning model should be adopted which follows the principle - “Education for life; education through life;
The 4th International Conference on Environmental Education was held at the green, wooded campus of CEE, Ahmedabad, India from 24 to 28 November 2007.

This Final Report represents the collective thinking and commitment of over 1500 participants from 97 countries to the UN Decade of Education for Sustainable Development.
education throughout life”. There is always so much to learn pertaining to different individuals. Hence, education has to be a two-way process that includes self acquisition of knowledge, concepts and skills apart from transmission and allows development of both the learner and the teacher.

Thus, youth recommend:

“The adoption of a mutual, collaborative and intergenerational learning model.”

3. Education begins at home. Education cannot be restricted to the class room sessions because there is so much that we learn from our parents, family and community at large. Certain values and principles socio-culturally inherited influence our action. Thus, it becomes important to incorporate these elements of education in all levels apart from formal education.

Thus, youth recommend:

“Integrate ESD into all forms of education, including community-based education, so that education is relevant, appropriate and accessible.”

4. There is a need to bridge the gap between the developed and the developing countries in the context of technology transfer. The developed nations possess the capacity to invest in R&D and come up with state-of-the-art technology which is eco-friendly and sustainable, helping the industry develop products at low cost. However, they do not share these technologies with the developing countries as the latter do not have adequate purchasing power. For a sustainable world, the developed nations should move away from this profit making approach and help the relatively poor nations by sharing efficient technologies and using them effectively.

Thus, youth recommend:

“Use education as a tool to shift the mindset of the nations from profit making paradigm towards developing the world sustainably.”

5. Values and principles of sustainability such as valuing and sharing the resources of the Earth, equity, interdependence, freedom, justice, integrity, peace and harmony should guide our day-to-day actions. Incorporating these values into the education system will encourage their implementation in everyday life.

Thus, youth recommend:

“Incorporate the values of sustainability into learning processes, and focus on putting these values into everyday practice.”

6. At times, curriculum on environment education is seen as an additional burden for students and thus little or no attention is paid to the subject. These are seen as an extra subject to study and score good marks in examination whereas, young people should themselves decide what should be in their curricula and how it should be taught. Thus, a participatory approach should be adopted in which the youth are consulted and involved.

Thus, youth recommend that:

“There must be involvement of youth in the curricula development.”

7. SD issues need to be integrated within and across all departments and policies of the Government and all need to work together for the same.

Thus, youth recommend that:

“There should be inter and intra-sectoral implementation of SD policies across all systems of governance.”

8. There have been many conferences in the past and many young people have put forth their recommendations several times, but most of the time these ‘voices’ have disappeared unheard. Thus, the youth at the Tbilisi plus 30 Conference want to make sure that their voices are heard and these recommendations are adopted by all stakeholders and also implemented effectively.

Thus, youth recommend:

“Urge nations to develop a schedule for the implementation of Ahmedabad Recommendations and a system of transparency and accountability towards the same.”
Health Concerns

The working group on health concerns focused on the vision, scope and perspectives on Education for Sustainable Development (ESD) in health concerns taking into account women and child health, occupational health, urban health. Examples were shared and strategies to enhance government, private and corporate partnerships for ESD were discussed. The working group also provided an opportunity for the people working with environment and health to converge on a single platform and understand the scope for synergies.

The working group on “Health Concerns” discussed the issues in detail over four days and felt that although health, development and environment are linked, health concerns have not been provided their rightful place in EE and ESD. Major concerns in most of the developing countries are problems affecting health-poverty, low status of women, malnourishment, high instances of diseases like malaria, gastroenteritis, respiratory infections etc. Challenges are manifold and regional diversity makes the task of mitigating health concerns difficult. The discussions brought to light the ‘curative approach’ adopted by organizations working for health, rather than a ‘preventive’ one that is more suitable and sustainable but, is difficult to adopt due to constraints like time and targets.

Recommendations

The following actions were recommended by this Working Session:

1. For Health Concerns, the unit of meaningful observation of “Health Concerns” and action needs to be identified and agreed upon. This would also help for monitoring and evaluation of “Health”, as local institutions are the best choice and they need to be capacity built for linking environment with “Health Concerns”. This approach would also help in having differential strategies for mitigating “Health Concerns” as ‘one size fits all’ is not the right approach.

2. There is a need to re-look at the indicators particularly those related to Human Development Index – Shift from the effect to causal indicators and this would lead to sustainable improvement in “Health”.

3. We need to look at the issue holistically and each part of the action for mitigation should be handled effectively by one competent agency.

4. Health Education needs to be gender sensitive particularly in context of “Environmental and Social linkages”.

5. LEADERSHIP thinking is required for mitigating health concerns – From Within the community and process of Education: Motivation for Self reliance (Capacity Building).

6. The focus on environmental health concerns should be prevention rather than curative and education will play an important role. There is need to move away from “Myths” of diseases.

7. Integrated Life Skill Education for behaviour change which would lead to sustainable improvement in health.

8. Governance: Need to prioritize for action at the individual level.

9. Broader determinants of health social, economic, and environment should be seen as infrastructure.

10. The budget for health in terms of GDP should also look at the Health Determinates and there is need for integrating health in all developmental schemes.


12. There is need for broadening the Environmental Impact Assessment of developmental activities by including impact on health and it should be Environment Health Impact Assessment (EHIA).

13. Ensuring Health through implementation of Safety measures at the Workplace.
   a. The Focus on Legal Literacy for implementation of the legal framework.
   b. Public–Private–Community Partnerships and accountability of each.
   c. Communication and education to be reinforced for SD.

14. There is need for promotion of research and documentation in Health Education for SD particularly in light of the “Climate Change”.

15. Promotion of insurance for environmentally related causes of diseases particularly for vulnerable communities.
The arts and design offer practical and imaginative ways and means of involving people in addressing complex issues of our time. We are moving towards an increasingly diverse and individualistic society based on a choice of services and products and threats to our sustainability in which many individuals find it difficult to engage in political processes and/or to contribute to solutions in the public domain.

Artists and designers, through their practice, offer creative insights into current realities and stimulate future possibilities. Arts and design practice, across the creative and cultural industries, in the public sector and through education, addresses key tensions affecting social change.

Artists and designers stimulate, question and encourage others to challenge preconceptions and assumptions from an independent position. Working across many disciplines and areas of interest – artists and designers draw upon complex skills, in very different ways, to encourage lateral thinking and mobility, often across hierarchies and/or institutional boundaries, to address seemingly intractable challenges to sustainable living.

Artists and designers provide society with alternative fresh perspectives, energy and entrepreneurship, in the face of continued global uncertainty, environmental degradation, conflict and poverty.

The working group on Art, Design and Ecology was formed to explore opportunities for collaborations between environmental scientists and educators and to develop multi-disciplinary, creative and unexpected approaches to education for sustainable development. The conference offered the context for bringing together unusual exemplar practitioners and case studies of creative practice in this field to demonstrate the value of this approach. This was, in fact, the very first inclusion of designers and artists into what is now a 35 year series of international events dedicated to developing environmental education.

The conference also offered an opportunity for a network of dedicated practitioners to develop new ideas to take forward after the conference. With this as the key theme for discussion, the main objective of the working group was to identify future possibilities for creative practice in ESD through international networks and partnerships between participating artists and designers, environmental scientists and educators, policy-makers and funding bodies.

Main issues addressed:
- Identification of roles for artists, designers in collaboration with environmental scientists, technologists, and policy-makers in education for sustainable development at a local community level to address the environmental emergencies of the 21st century.
- Locating art and design as a central player in providing creative insights to the environmental challenges facing contemporary society.
- Providing artists with information and contexts in which they can constructively explore the realities of the crisis – climate change, pollution, drought and coastal erosion, and increased conflict due to diminishing resources among others.
- Development of linkages between arts/design and ecology activities in different parts of India and between these with activities in other parts of the world.
- Creation of dedicated spaces for artists and designers to work together with environmental scientists and educators to offer effective ESD across disciplines and borders.
- Development of an integrated educational initiative to artist and designer led projects, on sustainable development in India and elsewhere.

The working group made a unique contribution in the context of this conference by bringing together a network of local and international experienced artists, designers.
environmental scientists and educators to stimulate fresh thinking and ideas around sustainability in creative practice and in environmental education. The term ESD was used in this context in a broad and experimental sense; to include informal education for all ages as well as public engagement. The dynamics of the group and the content of the sessions were created by the participants and workshop team. Intelligence gathering between working group participants and visiting guests from other workshops who attended one or more session, were developed informally throughout the conference.

Speakers shared case studies of their practice followed by group discussion over the three afternoons. The Indian perspective, presented on the first afternoon, looked at the interface between art and teaching sustainable design, the art of making simple toys, the creation of a national crafts centre and an approach to sustainable living in response to natural and man-made disasters. Each of these informed wider discussion around viable alternatives to conspicuous consumption.

Participants came from Russia, Egypt, Hong Kong, Bosnia, Latvia, Ghana, Australia, the South Pacific, America, India and the U.K. These included artist and activist Ravi Agarwal, director of Toxic Links, New Delhi; Adam Cade, Director of Student Force, UK, which promotes and implements sustainable development projects with young people in 50 countries; Anirban Dutta Gupta, designer of a Tsunami-proof house, who works with an anthropologist and Andaman Islanders; Rustam Vania, cartoonist and educator at the prestigious Srishti School of Art, Design & Technology, Bangalore; Alex Wong, a Senior Education Officer at the World Wildlife Fund for Nature, Hong Kong; British artists Jeremy Deller and Kayle Brandon. Curious conference delegates, some who stayed for the entire workshop, included practitioners from the Ministry of Education in Bangkok to the Chief Ecologist at Ecology Trading in New York.

Over the three days, projects showcased included beautiful high fashion products for world markets created from recycled materials through training poor communities to achieve sustainable livelihoods through their craft skills and performing artists using dance and theatre to inform local communities about health and farming issues in Africa. The Indian perspective explored viable alternatives to conspicuous consumption. Two case studies looked at the challenges facing two communities of unskilled workers in Delhi, one by the organisation Chintan, highlighting the issues faced by women waste recyclers, and a video work by Ravi Agarwal focusing on marigold pickers. Web portals featured products designed to reduce toxic waste.

A lack of overall strategic planning for developing creative forms of ESD, engaging artists and designers in this field, was raised and the production of a body of innovative action research, critical review and replicable modelling recommended. Interest in shaping new partnerships and projects on the ground was expressed, supported by forward-thinking institutions and policy makers. The WG participants voiced an appeal to governments and private trusts and foundations to adopt a bold, holistic strategic approach to establishing dedicated cross-sector, cross-disciplinary funds to encourage creative practice in education for sustainable development.

Recommendations

- Recognise the importance of arts and design in addressing the immense environmental challenges through education and learning.
- Develop programmes, supported internationally and nationally, to ensure action through reflective, critical thinking across the arts and design areas with other sectors for the development of sustainable societies.
- Disseminate and network for participatory information exchange, especially on exemplar work in these fields from around the world, is recommended. This should be conducted through all media including electronic. There is international work of a high standard in environmental systems design, urban planning and product design. This appears to be more visible than lesser known work produced by artists who are addressing environmental challenges of our time.
Develop mainstream international curators in the visual and plastic arts, paying attention to the work of exemplar artists who are working in the public realm. Similarly, across the performing arts, commissioners should be encouraged to be courageous in supporting challenging artists who, informed by current scientific understanding, are creating provocative work in this field.

Dedicate support for opportunities to develop international dialogue and practice in ESD within the creative industries is recommended.

Encourage UNESCO, UNEP and CEE need to work together with partners, with committed private trusts and foundations, governments and companies to establish longer term dedicated funding to model and test new forms of ESD.

Focus especially in areas where sustainable livelihoods are threatened over the next decade.

Involve future funders to take part in the strategic planning process to establish a body of significant action research, critical review and replicable modeling of ESD over the next decade.

The workshop objectives were to develop/strengthen systems and mechanisms to accelerate the implementation of priorities of Hyogo Framework for Action (HFA) in the context of United Nations International Decade of Education for Sustainable Development (UNDES); and to enhance collective action in South and Southeast Asian region. The workshop especially centered around HFA priority 3 (Use knowledge, innovation and education to build a culture of safety and resilience at all levels), Bangkok Action Agenda (October 2007) and Delhi Declaration (November 2007) for Disaster Risk Reduction (DRR). With climate change likely to increase the frequency, intensity and spatial distribution of natural disasters, especially the hydro-meteorological ones, Disaster Risk Reduction (DRR) related to hydro-meteorological disasters was discussed at length in a special session.

About 40 international, regional and national experts, policy-makers, policy promoters, practitioners and educators representing UN agencies, Governments, International humanitarian organizations, regional and national centres, specialized institutions and consortia, working in the area of disaster risk reduction participated in the workshop. The workshop was organized by the Centre for Environment Education (CEE) in partnership with UNESCO (New Delhi) and Oxfam.

The workshop focused on the following themes:

- Coping with hydro-meteorological disasters: Focusing on Floods (keeping in view the recent flood incidences).
- Experience sharing and lessons learned in the context of the implementation of the Hyogo framework for internalizing the action. An overview of country experiences in Disaster Risk Reduction (India, Sri Lanka, Bangladesh, Nepal, Bhutan and Pakistan).
Sharing organizational knowledge and initiatives: presentation by Sphere India, Indian Space Research Organization (ISRO), Action Aid International, UNDP and Asian Disaster Preparedness Center (ADPC).

Road ahead: Living with disasters. Recommendations for strengthening systems and mechanisms to accelerate the implementation of HFA for Regional and International cooperation and collective action.

Based on the two-day deliberations and in-depth discussions, the group drafted a 23-point recommendation to improve and accelerate the implementation of the Hyogo framework in the region. Recommendations were made in five areas:

- Holistic, participative and realistic Disaster Risk Reduction (DRR) initiatives
- Science and Technology
- Governance and Delivery Systems
- Adaptation/cop ing mechanisms
- New risks posed by Climate Change

Recommendations

- Sensitize government bodies at various levels (from local to national) and policy-makers to efficient governance and delivery systems to implement the Hyogo Framework of Action (HFA) leading to sustainable development.
- Strengthen the database for vulnerability assessment through science and technology as well as participative methods for efficient risk and resource management.
- Re-examine and reorient the existing information on disaster risk reduction from the point of sustainable development and make it available in a simple form for policy-makers, community and practitioners to plan better coping mechanisms.
- Ensure Education for Disaster Risk Reduction (EDRR) in the new risks posed by climate change, especially those posed by hydro-meteorological events (flood and drought).

Education towards Sustainability concerns of Natural Resources in ‘Fragile Ecosystems’

The working group on Fragile Ecosystems was attended by 48 participants from 10 countries. They included noted scientists with vast experience in areas like climate change, natural resource management, ESD, veteran social activists, wildlife activists, educators, government representatives and NGOs. It was organised in collaboration with International Centre for Integrated Mountain Development (ICIMOD), Nepal. The workshop had following main objectives:

- Addressing the sustainability concerns of fragile ecosystems through environmental education.
- Sharing EE initiatives towards sustainable use of Natural Resources from different parts of the world.
- Sharing sustainable technologies in use for Natural Resource Management through case studies.
- Reviewing existing policies and initiatives.
- Planning Education and Communication strategies to address different target groups.
- Evolving a roadmap for ESD for the decade.
- Developing networks and partnerships.

During the course of two and half days, the workshop reviewed the role of education for sustainable development in the current context when there is a global concern on climate change and its impact on ecosystems. It also focused upon defining the ways for sustainable utilization of natural resources by creating mass awareness, through individual education, towards a sustainable use of resources.

Recommendations

The following were the recommendations made:

Knowledge management

- Develop for use during education programmes, comprehensive documentation of:
  - socially and ecologically valuable species
  - keystone species
  - fragile ecosystems

Coordinator: Dr. Rashmi Gangwar
- local species/landraces that are adapted to extreme conditions and habitats
- social relations in the cultural landscapes
- values/interests of the communities (farmers, conservationists, government, traditional leaders etc.)
- adaptive strategies and mitigation measures to the impacts of climate change
- present and future economic scenarios
- perceptions and attitude towards conservation issues
- power relations between stakeholders.
- Build capacity of communities to gather, access, maintain and update database.

Participation of local people
- Promote advocacy to discourage mega-dams and promote revival of traditional technologies appropriate to local conditions
- Adopt the Ecosystem Approach as one model for involving people in local communities in conservation and sustainable use of their natural resources.
- Enhance the capacity of local communities for advocacy to ensure payment for environmental services.

Education and training
- Redesign educational curricula incorporating region-specific subject matter at all levels.
- Introduce thematic courses in higher education about region-specific issues relevant to fragile ecosystems.
- Introduce alternative livelihood options, e.g. by training people in developing eco-friendly, economically diversified use of ‘unclassified areas’ (areas without conservation status) such as for eco-tourism and small-scale diverse forest plantations.
- Train local communities, especially women and the marginalized, and local governments on better allocation and utilization of resources.

Target-groups
- Create the enabling conditions for education and awareness raising for all stakeholders including the government about the values and services provided by the ecosystems. This should be done in open communication processes that have the character of experience sharing and mutual learning.
- Provide adaptive forms and methods of education for migratory groups such as practitioners of transhumance in remote areas. Scale up successful models of ‘mobile schools’.
- Visitors and migratory population should be made aware of their co-responsibility to conserve the ecological and cultural qualities of the area.

Educational tools
- Where literacy is low or local language scripts non-existent, use alternative and visual media (pictures of species, films around particular issues, theatre, puppetry, folk arts etc.) for outreach as well as for involving local communities in conservation education.
- Developing the curriculum for graduate and post-graduate level courses to include theories and practical ways of assessing/estimating values of eco-system services, and using them to educate the local communities, to empower them to bargain for their rights to receive compensations.

Educational infrastructure
- Setting up a chain of Institutes of Rural Technology and Management as conduits of appropriate technology for use in the rural sector e.g., traditional water harvesting, land use and management systems and others.
- Strengthen local institutions and foster dialogue to facilitate communication, education and training processes through formal and non-formal sectors.

Continuity
- Design education and communication programmes to ensure follow-up action by the community and promote local ownership of the initiatives introduced for long term sustainability.
Efficient Use of Energy & Alternative Systems - addressing Climate Concerns through focused information support and capacity building

This title reflects a synthesis of the approaches adopted by several bilateral and multilateral institutions, major industrialized countries and a significant segment of the developing world. The latter in particular has derived significant benefits through several initiatives pertaining to technology transfer and substitution, either as part of their own country-specific developmental agenda or in response to the need to fulfill commitments to several multilateral environmental agreements.

Some of the important observations/recommendations in the five technical sessions that emerged included the following:

- Tackle issues pertaining to climate change through a bottom-up approach to ensure that all stakeholders get an opportunity to participate and deliver in corrective action.
- Adopt multidisciplinary approach to solve problems as the scale and diversity of issues is large and the challenges posed by climate change cannot be expected to be tackled by any single technology, company or country.
- Practise energy modesty, improving energy efficiency and developing renewable energy sources.
- Recommend that the UNFCCC evolve a mechanism to involve designated national focal points, meeting of parties and a specific financial mechanism (like Montreal Protocol) to address the goals set with respect to climate change mitigation and adaptation.
- Suggest a three-tier system of classification of countries on the basis of per capita emissions.
- Important avenues where institutions can play a role in facilitating technology transfer given that environmental technology transfer is predominantly driven by global agreements, regulation and public policy and not by market demand alone, include:
  - Awareness generation,
  - Enabling sustained access to information, training and networking,
  - Sensitizing stakeholders to regulations and related policies,
  - Assessment of alternative technologies,
  - Enabling access to environmentally-friendly alternatives for finance, scientific expertise.
- As all international treaties except the Montreal Protocol are soft laws, there is an urgent need to
  - Clearly state treaties in terms of achievable goals
  - Develop treaties based on a common understanding of the framework of goals and approaches emphasizing inclusive and participatory processes to tackle global problems
  - Help adopt judicial litigation and reconfigure institutions; simplify and articulate in a manner by which stakeholders at the grass root level will be able to understand the implications and their roles better.

Some of the important questions which dominate the education-to-action interface relate to the levels of technical preparedness to comprehend specific information and technical assistance needs of stakeholders. This includes aspects relating to the spread and depth of information available, means of accessing information, positioning and building capacities to initiate and sustain action. Establishing industry linkages with institutions working on occupational health, environment, toxicology; improved ongoing education and awareness on long term adverse impacts of chemicals, enabling practice of concepts of waste exchange and eco-industrial parks, facilitating use of strategies as pollution prevention, product stewardship, clean technologies, sustainable chemistry and green production were important points of roadmap.
Recommendations

- Build capacities of small and medium enterprises in particular to use appropriate tools and techniques for documenting relevant information on the quantitative and qualitative correlates of material and energy consumption vis-à-vis release of emissions. It is equally important to develop sector-specific tools and techniques and deliver them at the sites of action in order to overcome barriers in accessing information.

- Provide information on state-of-art tools and techniques to large enterprises by strengthening transfer of knowledge and establish pilots to demonstrate the feasibility of becoming energy and climate efficient even in this context.

- Orient Governments to the fact that equity based frameworks of commitments to avoid emissions should be the basis and help evolve a three-tier system of emissions and reduction commitments. This is to help smoother transitions to energy efficient and climate responsive regimes of production and consumption without compromising on the developmental goals of the countries.

- Give adequate importance to local action as local mitigation and adaptation imperatives are as important as the need to respond to challenges at the regional and global levels. Appropriate legal tools have to be used to justify and enforce compliance by all countries, going beyond the voluntary action framework.

- Develop well-designed information modules, providing information to guide action on a priority basis as citizens, at the individual and collective levels, are not adequate aware of the tools they could use on a priority basis.

- Integrate learnings from the implementation of the Montreal Protocol into the development of communication strategies to provide information in a timely manner with respect to climate change mitigation and adaptation. Extensive involvement of the stakeholders is critical and should be enabled through an extensive network of institutions in a manner similar to the mechanisms of the Montreal Protocol.

To address sustainability issues, we need innovations and technology and also the power to make each one of us innovative thinkers. This calls for an educational technology that will give us not merely gadgets and robots but the creation of teachers and mentors who can, not just teach their protégés math, science, biology, social sciences and languages but through all these, develop a special ability to holistically view the past, gauge the future and act in the present.

The objectives of the working group was to establish a discourse on innovation and sustainable development that will engage policy-makers, government agencies, academic and research institutions and people concerned about the structural and institutional changes needed to make the education for transition to sustainable development possible.

The overall aim of the working group was to discuss how environmental and innovation policies, practices and approach can be utilized to better design and enhance the learning of development and diffusion of innovations responding to environmental and sustainability concerns.

The working group discussed the key factors responsible for directing innovation processes towards sustainability as well as the various triggers and barriers in replicability and scalability of innovations. The issue of strengthening policies in developing countries to tackle local challenges associated with sustainable innovation and technology was also addressed. The role of universities, R&D organizations and entrepreneurs in the innovation cycle was considered an important factor. Case studies highlighting the principles that could apply to design of future technological products were presented. In addition, the need to diffuse sustainable thinking and planning during innovation or technology development was also discussed upon.

Recommendations

The recommendations are meant for students, teachers, all educational and technical institutions, policymakers,
scientists, researchers, innovators, entrepreneurs, promoters, community, government, financial institutions.

It is envisaged that the above mentioned target groups make use of these recommendations to develop methodology and techniques for beneficiaries of the learning process and influence the necessary players for implementing and establishing the innovations & technologies in various sectors.

The objective of innovation and technology should be to enable wellbeing and happiness for all while targeting sustainable development.

**Education for Innovation**

- Simplify all the innovations and technology to make them understandable, adaptable and affordable to the society.
- Identify and prioritise relevant S&T innovations for Sustainable Development. Innovation needs to be solution-based.
- Take the Millennium Development Goals as challenges and triggers for innovations.
- Address an increasing footprint and decreasing biocapacity as one of the barriers to innovations.
- Decentralise the patenting facilitation system to regional, local and grassroots levels. Every educational institution should have patent information and facilitation centre.
- Integrate Sustainable Development in technological institutions through curriculum reform. The soft skills as taught in various institutions should be linked with ESD issues.
- Publicise and promote IPR related awareness down to the school and community level. This will lead to more socially useful innovations to be acknowledged and commercialized.
- Encourage partnership models, such as industry sponsored research/R&D at universities to bridge the gap between innovation and its dissemination. Over time, researchers should become entrepreneurs.

- Identify and evaluate the progress of the recommendations concerning innovations made during earlier conferences.
- Encourage not mere inventions but innovations to address sustainable development.

**Applicability of Innovations**

- Promote innovations for public good rather than commercial goods.
- Encourage equity based innovative models/ products.
- Put systems innovations on par with product innovations. These should also be provided adequate IPR protection and opportunities for growth.
- Go beyond attempts of greening of individual consumer behaviour and attempt to reduce demand for resources that are in the hands of industry and governments.

**Policies for innovations**

- Have long-term vision in terms of time, finances and applicability for promoting innovations.
- Discuss Right to Information and an Open Source knowledge system for accessing innovations.
- Encourage policies that promote science.

**Leveraging Innovations**

- Give special incentives for inventing environmentally sound innovations and technology.
- Leverage the funding support for R&D expenses to foster innovations. Any environmentally sustainable technology and related R&D expenses should be tax free.
- Develop a pool of financial resources to provide support for trying out and experimenting innovative ideas.

**Protecting Innovations**

- Streamline the process of IPR granting so as to make it more innovator friendly.
- Make environmentally sound technologies and innovations free from product patents, so that they can be available to all.
Mobilising Knowledge for Sustainable Development

Recommendations

ESD requires that there is a shared understanding of the core content and habits of mind of sustainable development. We have to learn how to live well in our places without undermining their ability to sustain us overtime. ESD requires both individual and social learning opportunities that contribute to our individual and collective potential and that of the natural systems upon which all life depends.

In this context Knowledge would constitute

- A shift to a sustainability mind set
- Interdependence and Connectedness, systems thinking
- Multiple perspectives; truly valuing and learning from each other’s life experiences, perspectives and cultures
- Enabling people to define well being indicators and monitor them. Visual ways of monitoring that provide feedback to people
- Non negotiable natural laws and ecological principles
- Taking care of the commons
- Rights and Responsibilities of local and global Citizenship
- Creativity/Innovation
- Delivery Systems for Information about best practices/know how

Methods of communication, knowledge generation and transmission:

- Supporting Communication: word of mouth, Radio, Website, Television, Social marketing, formal and non formal educational institutions, NGOs, Street theatre and artistic expressions using effective formats such as story telling

The existing model of knowledge and its mobilization which was based on knowledge developed by experts working within the older unsustainable paradigm of development needs to give way to the co-construction of knowledge and an ongoing successive approximation (sharing of learning through action, reading feedback, harking back to traditional wisdom self correcting and envisioning and tracking indicators towards a common future)
Integrating Values of Sustainability into Education: The promise of the Earth Charter

The main purpose of this working session was to explore the role of values education in ESD efforts and the Earth Charter as an ethical framework and educational tool for operationalizing the UN Decade of Education for Sustainable Development. It also intended to offer a space to exchange views and reflect the values and principles that should be integrated in educational practices. Participants in the session were from universities, government departments, research institutes and a variety of non-governmental organizations, representing 10 countries.

Some of the questions raised in this working session were: How do we integrate values of sustainability into education, and what are these values? How can the Earth Charter be used to advance processes of ESD?

Some of the suggestions made included:

- Contextualize efforts to incorporate values of sustainability into education. Much of it will depend on the cultural context and therefore we need to be sensitive to that.
- Avoid indoctrination and use educational settings to generate an ethical reflection so that students will deepen their sense of responsible choice for decisions made.
- Consider the use of the Earth Charter as an instrument to stimulate such questions and understanding of sustainability concept as well as to stimulate a dialogue about the meaning and interpretation of the principles.
- Use the Earth Charter as a framework for monitoring and evaluating DESD.
- Recognize the Earth Charter as a framework for the Decade. The EC has a broad vision that can well serve educational processes. Reflection about our food system

**Recommendations**

- Ensure community access through decentralized information points (learning kiosks).
- Creation of learning spaces that facilitate creativity, innovation and design besides the guided uptake and application of knowledge.
- Providing transformative learning opportunities which may include capacity building of knowledge/skill facilitators as well as sensitization of potential users.
- Creating monitoring devices that enable mass tracking of key sustainability indicators (feedback) at local and global levels that provide compelling impetus for change in favour of sustainability.
- Creating a range of business models for the mobilization of knowledge which can be financed through both monetary and value exchanges.
and health could be used as a central entry point for stimulating change and experiencing the relationships of the dimensions of sustainability.

- Integrate spiritual and values education more explicitly into all forms of learning, and actively develop identity and consciousness for sustainability. Teachers cannot teach the values to students, but teachers have to be confident that students will come up with those values that will lead to sustainability, through practice and ethical reflection.

- Be aware of politicization for ESD regarding the clashing of interests of rich and poor groups and nations. Also, to consider the dilemmas about universal values and cultural pluralism regarding unsustainable patterns of production and current life styles.

- Cultivate the power of youth to catalyze processes of change.

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**Linking Knowledge, Skills and Practices for Fostering Community Leadership, Education and Benefits - GEF UNDP Small Grants Program**

The thematic workshop on ‘Linking Knowledge, Skills and Practices for Fostering Community Leadership, Education and Benefits’ was organized by the GEF UNDP Small Grants Program in partnership with United Nations Development Program (UNDP) Country Office; PHD Rural Development Foundation and National Hydroelectric Power Corporation (NHPC) Ltd. The purpose of the workshop was to provide a platform to explore how multiple stakeholders, i.e. community leaders, technologists, policy makers, and environmental educators can learn from each other, with the objective of capacity building for community-based education, development and sustainable practices. The lessons and strategies are also being shared with Small Grants Programs of other countries and organizations to strengthen linkages and cross learning, for fostering community leaderships for better sustainability.

The workshop also provided an opportunity to distill and link the knowledge, skills and practices of GEF UNDP SGP partners, development experts and projects, in order to strengthen local leadership for better incomes and environmental benefits at the local and global levels.

The events of the workshop were held over four days. Some of the issues covered were the importance of the link between environment, development and livelihoods, the need of community involvement and the need for convergence of government programmes at the local level. Participants represented government and community based organisations. Participants also highlighted the importance of documentation that would help to replicate and scale up successful efforts.
Recommendations

- Focus government policies and practices on environmental education for institutions and individuals at all levels.
- Work with the nomadic and extremely marginalized, remote tribal communities in India, facilitating a crime free life with dignity for tribal.
- Link SGP projects with watershed programme of the Government of India and use the SGP model of village level micro-planning, rapport and trust building for watershed programmes.
- Promote sustainable development practices (Environmental education includes overcoming physical, cultural, and social barriers).
- Encourage community involvement with the academic institutions and encourage it as an integral part of research.
- Simplify the process of getting (foreign) funds under variety of schemes and programmes.
- Link SGP with the watershed programmes and mainstream with RDs watershed program. About 70% of SGP projects address watershed issues, thus there should be a link promoted through SGP with watershed departments at all regional levels in states and SGP partners.
- Pick up the guidelines of the watershed into the SGP projects and link to District Commissioner (DC) and National Rural Employment Guarantee Scheme (NREGS).
- Involve the private sector with SGP. Industry will be given subsidy by the local governments, if it supports Corporate Social Responsibility (CSR).
- Evolve comprehensive guidelines to use Non-Timber Forest Produce (NTFP) based on the experience of the SGP.
- Promote and Share biodiversity conservation practices that address the eradication of malaria and other diseases by protecting and propagating plants with medicinal values.
- Link up with the gram panchayats, and use simple education techniques for better understanding of the panchayat members.
- Catalyze a holistic approach to sustainable management involving coordination, cooperation, and convergence among diverse and divergent approaches and partners.
- Develop volunteers, at all levels, as drivers of change for effective delivery of sustainable practices.
- Synchronize different policies, programs, and plans to work in tandem to support sustainable practices.
- Encourage NGOs to join hands to reduce processing costs that tend to be prohibitive due to the need for international standardization.
- Focus on equitable ways of education for men and women and creating better opportunities for access of education at all levels and at all regions.
Recommendations

- Intensify and integrate current efforts at decentralization and scaling up in the watsan sector. The convergence of drinking water, sanitation and hygiene is still to emerge.
- Use ‘Knowledge Management’ correctly by understanding that it is different from information management and the application of ICT. While knowledge management includes these aspects, it is distinct in its understanding of knowledge as an individual, intellectual process.
- Integrate the priorities of the Watsan sector into environmental education efforts, as is being done with water education currently in Australia.
- Emphasize IT applications as they provide major new opportunities for developing networks in Knowledge Management.
- Conserve and replenish diminishing water resources as a priority as sanitation promotion cannot succeed without access to water.
- Sanitation success depends on re-constructing minds, not just constructing toilets. Solutions and approaches that seek hygiene attitudes and behaviors succeed only when they are based upon and sensitive to local conditions and cultures. Success in seeking sustainable sanitation actions thus depend on this sensitivity, rather than the one-size-fits-all approach that remains all too common.
- This demands
  (a) listening to households and communities in order to draw on traditional wisdom before setting plans and agendas for action.
  (b) reaching and involving engineering institutions and professionals toward the social and cultural imperatives of sanitation action.
- Pay urgent attention to the need for every school to have basic sanitation facilities, separately for boys and girls, which can give credibility to hygiene education in the classroom. Schools are the essential catalyst of change. Schools should inculcate the dignity of labour in sanitation tasks, including cleaning toilets and other waste.
- Encourage networking to encourage sharing of resources and experience between institutions around the world that have developed curricula and materials for hygiene and sanitation education and training.
- Bridge thedivide on matters of urban and rural watsan. Greater equity is needed in matters of determining need as well as in ensuring access to technologies and financial resources.
- Pay urgent attention to women’s watsan requirements and these should include the requirements of bathing spaces and menstrual hygiene that are most often ignored.
- Integrate and encourage gender studies through formal education systems, as one essential element within environmental learning. There is need for studies through water institutions at every level to determine issues of access from a gender perspective.
- Institute systems of reward for positive gender practices as an incentive to accelerate understanding and application of good practices.
- Bring knowledge institutions, such as those of research and management, closer together to promote interdisciplinary sharing that can strengthen the cases that are built for advocacy.
Education for Sustainable Livelihoods

The Millennium Development Goals (MDGs) spell out clearly the need to eradicate poverty and hunger by 2015. They stress not only upon income parameters but also on issues like gender, equity, primary education and environmental sustainability. Worldwide, sustainable livelihood (SL) has been recognised as dealing with capabilities, assets, activities and relationships within and outside the society. Although generation of financial capital forms the base of sustainable livelihood, it can only be sustainable when it can cope with, and recover from stresses and shocks (natural and human), and maintain/enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

The workshop was an attempt to understand and analyse the role of education in creation of sustainable livelihood through analyses of the following areas.

i. Agriculture – Transfer of technology and knowledge to the community
ii. Animal husbandry – institutional support and mechanisms for the pastoralist community
iii. Migrants or un-organised labour in urban areas – the role of state and civil society

Main issues addressed:

i. Role of education in vulnerability risk reduction with regard to reducing livelihood related shocks and stresses for the community and individuals migrating or being mobile.
ii. Role of education in mainstreaming gender perspective in livelihood planning and policy making
iii. Institution building as a mechanism for sustainable livelihood and the role of education.
iv. Macro level policy change and impact on livelihood sustainability and the role of education.

The expected outcome of the workshop was to develop common understanding and devising/designing appropriate strategies for education and communication intervention for sustainable livelihoods.

Recommendations:

Education at three levels is required for sustainable livelihoods
1. Community level
2. Departments/Extension system/NGO/Local Government level
3. Policy level

At community level the education should aim at
- Exploring the increasing options
- Adaptation
- Resilience

Community level:

1. Education (facilitation and capacity building) for enabling the community to explore their assets, livelihood options and vulnerability in the context of economic, ecological, social, and local. This process of exploration will enable them to identify opportunities, constraints and support required.
2. Information regarding possible options for diversification needs to be provided for reducing shocks and stress related to jobs, market situation and natural resources.

Departments/Extension system/NGO/Local Government (elected representatives):

3. Existing outreach/extension system and programmes should be geared to facilitate the process of exploration by communities. This will make them understand the critical issue involved in sustainable livelihood planning at micro level and provide the required support through linkages with the resource agencies.
4. This understanding can be utilised as input for better policy formation at macro level through lobbying or advocacy.
The critical issues concerning cities pertain to social and environmental conditions within cities and the regional and global impacts and dependencies of cities. Improving the way cities function has the potential to bring great environmental and social gains.

Improvements depend on increasing knowledge bases, and the will of city managers and leaders to make change happen and influence policy. Equally important are governance and public education systems and processes for citizens and various other actors. These have to be such that they enable citizens and other actors to be well-informed, and to exercise their role in moving towards sustainability, by demanding such change from city managers and leaders, and participating in actions at local and other levels.

Most importantly in the context of the ICEE, the EE community and other actors have to be able to locate the role of education as the driver of drivers in addressing some of the major issues that cities face.

Main issues addressed

The overview presented at the beginning of the workshop questioned the words ‘development’ and ‘sustainability’. The speakers posited that a fundamental shift is needed in thinking about these concepts. Definitions such as those that reduce ‘development’ to indicators such as physical access to water and sanitation, disregard the different cultures and communities that have their own understanding of the purpose of human existence and development. The presentations and sessions that followed strove to continue questioning development and sustainability.

The main issues addressed by the workshop are as follows:

**Built Environment**

- Cities are engines of economic growth; yet unsustainable and poor.
- Factors that contribute to sustainability.

**Policy level:**

5. Scenario planning (GEO 4 by UNEP) done by a highly qualified technical committee, can play an effective role for sensitisation of policy makers and world leaders at macro level.

6. Effective and relevant research support by valid database about sustainable and unsustainable models of livelihood is important for advocacy which in turn will affect the policy making.

7. Success stories from the communities needed to be documented and shared (cutting across language barrier) on common platform for stakeholder for wider replication.

8. Standardisation of education (curriculum) can be replaced with more diversity in terms of local context to make formal education relevant and attached to society.
Impact of inadequate and unscientific systems on resources consumption.

Indicators of sustainable urban development.

Liberalization of national economies and its impact on the city’s socio-cultural and economic environments.

Disparity among cities from developing and developed nations.

**Urban Governance**
- The role of localized, decentralized governance in transformation of city management and poverty alleviation
- Issues in participatory planning and localized governance
- Role and nature of education in urban governance

**Urban Transportation**
- Role of roads in community life and social context in addition to transportation of people and goods
- Impact of road design on environment
- Different transport models tried across India and other countries
- Role and nature of education in instituting socially and environmentally appropriate transportation

**Water Management**
- Need for a paradigm shift in management of water resources
- Management strategies that should be ‘people’ driven and not ‘system’ driven.
- Need to consider water management as connected issue among cities and nations and not as an isolated issue

**Poor and Informal Sector**
- Contribution of informal sector in urban livelihoods and economics

- Attitude and actions of other urban stakeholders towards the informal sector
- Role of policy and of educators in enhancing support to the urban poor informal economy

**Recommendations**
- Educators must themselves and in different communities interrogate the notion of sustainability, which has been reduced to a linear set of parameters or definitions derived from a standard development sequence. The present form of development represents genocidal imposition on the right to diversity and denies / destroys the different kinds of knowledge bases that exist in different cultures.
- Educators must pay attention to how a variety of knowledge systems can co-exist without tyrannical influence of modernization forces.
- Educators must interrogate the meanings conveyed by words and the language used and pay attention to what words and a specific discourse communicates and means in different cultural contexts.
- Education for sustainable cities must be predicated on this fundamental understanding of what shapes the present discourse.
- Education for sustainable cities must include formal systems for children and youth and also those involved in decision-making in the governance of cities.
- Decision-making must be informed by a critical consideration of environmental concerns and knowledge of sustainable means of managing cities and the planet.
- The concept of human rights has to underlie the definition of who is a ‘citizen’. A large proportion of the population in cities consists of migrants and floating populations who have no tenure, or even ‘illegal’ space for occupation.
- Educators must reduce the distance between planning and city manager professionals and the ‘creators’ of the city, that is, citizens.
Education is an iterative process, and the role of the educator is to provide the forums for provision of information, discussion, negotiation, and reflection on actions.

The ‘boundaries’ of different systems that a city is a part of, and influences are not co-terminus with municipal limits. The educator’s role it to inform about the different boundaries that apply in different systems such as neighbourhoods, watersheds, transport networks, climatic systems and help create networks of users/stakeholders/knowledge providers at different scales within systems.

Participatory governance systems are themselves a tool for education; engagement is a tool for social learning among individuals and communities, and educators must promote the institution and effective use of such governance systems.

Sustainable Waste Management

The workshop was designed to focus on the present status and issues of waste management and to develop a consensus that waste management is a problem that affects “developed” and “developing” countries although its manifestations vary from place to place and need unique solutions appropriate to their contexts. It also aimed at recognizing that waste is a resource misplaced, and the focus needs to be on ‘treatment’ rather than ‘disposal’. The workshop provided a platform for dialogue between scientists, engineers, practitioners and professionals regarding various strategies towards sustainable waste management and to share the various facets involved in sustainable waste management in the form of case studies and papers.

The overall aim of the workshop was to bring out challenges prevalent in the implementation of sustainable waste management and strategies to overcome them.

Main issues addressed

Issues and challenges in addressing waste management (WM) sustainably are:

1. Identifying technologies and alternatives of waste management.
2. Identifying different approaches of waste management and standards of performances.
3. Identifying educational needs of different stakeholders.
4. Identifying target groups for in-service training in WM and the channels to access them.
5. Identifying the minimum essential components of WM in different streams of formal education at different levels.
6. Identifying the pedagogical tools to implement an ESF strategy for WM.

Recommendations

- Recognise and emulate the cyclical nature of all resource and waste management found in nature and that waste reduction in general is preferable to recovery of materials or energy from waste.
Discourage dumping of municipal, healthcare, biomedical, hazardous and other solid, liquid or gaseous waste in neighbourhood, habitations and and recognise that NIMBY (Not in my backyard) syndrome is not a solution.

Sensitize the more privileged groups of society to the importance of people involved in the collection, transportation and conversion of waste into various products and why effective and safe segregation of hazardous and non-hazardous materials/waste at source and safe and effective transfer of the non-hazardous waste/materials to those engaged in their collection, transportation and conversion helps ensure the health and safety of these stakeholders who generally belong to the less privileged sections of society.

Make the waste management plan of each urban/ rural, semi-urban or semi-rural centre needs inclusive rather than exclusive of those who depend on waste for their livelihood.

Recognize the importance of preventing indiscriminate waste management, reuse and recycling for which people need to be educated on the various legislations throughout the world and in their own countries besides universal methods and techniques promoted through the UN system and the governments of their own countries and states.

Recognize all behaviour including insanitary collection, storage, transportation and conversion technologies which are known to lead to the production of GHGs need to be discouraged through awareness, education, sensitization and training programmes.

Acknowledge the long-term consequences of accidental and inadvertent mishandling of waste. Awareness must be created about sector-specific waste and health hazards associated with them.

This title reflects a synthesis of the growing relevance of proactive environmental initiatives of industry the world over; the willingness of regulatory, bilateral and multilateral institutions to develop mutually reinforcing approaches including technical assistance and knowledge transfer to foster transitions to environmentally and economically efficient and sustainable means of production, consumption and preventive management.

Deliberations at the working session on the stated theme took note of the emerging trends indicated above and suggested ways and means to help deliver “appropriate information in a timely manner” and enable concerned stakeholders to understand and act on it. The objective of such information distribution and educational support is to enable participants in all stakeholder groups to engage in informed action that is economically, environmentally, and socially responsible and sustainable. These insights helped develop a consensus on emerging needs for intensifying focused action and the need to support well-guided processes of information support and technical capacity building; providing valuable inputs for the development of an integrated plan of action in conjunction with the objectives set for the UN DESD. It was therefore essential to understand typologies of CSR interventions from the point of view of the different stakeholder groups. Some of the determinants included:

- The diverse roles taken on by the stakeholder groups,
- Their preparedness to undertake action and,
- Their perceptions regarding the other stakeholders.

In this context the general agreement was that it was essential to:

- Understand the drivers of change,
- Benchmark performance on aspects of good governance in particular,
Help increase transparency to develop a reputation-capital.

Learn particularly from Japan and Germany on the use of environmentally sustainable technology and practice of cleaner production as part of their efforts to sustain economic development. These are integral part of a framework of socially responsible environmental action.

Position the role of the banking sector to mitigate climate change; considering the multiplier effects on the economy.

Develop vocational courses on sustainable production and consumption.

Develop strategically important partnership, participate, ensure equity and reciprocity.

Employ a “green premium framework” for spreading risk-liabilities across all stakeholder groups.

Clearly define spaces and opportunities for exercising legal frameworks in the context of environmental rights and

Use constitutional mandates and tools to access justice.

**Recommendations**

- Orient industries / Corporations to the need to understand the importance of engaging in preventive environmental action rather than adopting remedial action. In this context, the framework of CSR has to be expanded to include the triple bottom-line approach duly integrating economic, environmental and social developmental goals.

- Enhance significantly information and technical assistance support with special reference to small and medium enterprises to enable them to improve their environmental performance and in the process reduce the scale and spread of externalities they generate. CSR in this context implies the vision to suitably use appropriate alternatives and engage in several stakeholder empowering activities. Awareness campaigns on the quality of the products vis-à-vis environmental impacts have to be significantly strengthened.

- Highlight the legal basis of environmental rights, responsibilities, duties and liabilities for the benefit of industry, financial institutions and communities so that appropriate tools of exercising rights and liberties could be used.

- Provide adequate information on the inter-relatedness of environmental systems, impacts with respect to different time scales, location-specificity with special reference to the scientific basis of interpreting impacts. Unless this totality is considered, fragmentary information will not be useful.

- Disseminate case examples of successes with information on constraints for the benefit of all concerned so that the environmental performances of companies are understood in the right perspective.

- Strengthen accountability and transparency so that industries are more accountable than now for their environmental action.

- Focus ESD on empowerment through information support and technical support so that appropriate tools and techniques could be used for tackling challenges at the local level.

- Forge partnerships amongst stake-holders as these are critical to demonstrate that it is feasible to progress beyond concept into environmental action.
The workshop on Media and ESD - Building Public Awareness and Understanding of Sustainability was organised with the following objectives:

- Build capacity for using ESD resources and knowledge to develop ESD related stories at local, national, regional and global levels
- Discuss the development of advocacy actions and strategies on ESD
- Create awareness and understanding among journalists, media professionals and UN and NGO communication officers on the importance of sustainable development and education for sustainable development
- Build the capacity of the media and communication officers to publish relevant sustainable development news stories

The United Nation's Educational, Scientific and Cultural Organization (UNESCO) Paris, in partnership with Angkatan Zaman Mansang (AZAM) Sarawak, Malaysia and Centre for Environment Education, India organized the workshop. The three-day workshop was attended by about 20 media/communication specialists including mainstream newsprint, radio, television, marketing/advertising and communication support from 10 countries.

The workshop participants and experts from different media backgrounds provided an overview of the ESD Resource and Media Kit and the dissemination strategy for the kit. They also discussed an overall ESD media coverage and advocacy campaign strategy that needs to be followed as per the local conditions in a region as well as possible follow-up actions in terms of media and ESD.

Recommendations

1. To make a difference, the importance of positioning ESD in an integrated communication (media, communities, educators etc.) approach and/or campaigns, using various media and engaging multiple partners, is crucial.

2. Encouraging the development of database(s) of media professionals and journalists interested in ESD issues would facilitate the building up of networks, in particular to engage with people sharing the same issues and interests.

3. Success stories of media need to be shared, to encourage developing an “alliance” with the media, and helping media professionals link with educators, researchers, ESD experts, etc.

4. For media professionals to be able to sell their ESD stories to their editors/managers, presenting them under the label of Sustainable lifestyles - human life, well being (needs, aspirations, hopes) - instead of Environmental Education or ESD could ensure better coverage.

5. In terms of dealing with the media, it is important to remember not to preach to the media but rather engage it, by helping provide converging/synergising of issues in relation to sustainability issues, and by remembering that what is most needed is “News you can use”.

Coordinator: Bernard Combes
CEE Contact: Kalpana Sharma
Roadmap for Creating a Research Foundation to Support the DESD

Research and innovation, and monitoring and evaluation, are amongst the seven strategies in the International Implementation Scheme (IIS). UNESCO explicitly recognized research as an essential component of success for the DESD at the onset of the Decade. This workshop links research on ESD to the needs of all types of learning environments, policies, and practices crossing formal, informal, non-formal, adult publics, youth, industries and governments. The Roadmap identifies nine ESD related themes that need research as well as five arenas of activity that need UNESCO’s support so that research on ESD progresses throughout the Decade. The workshop, sponsored by UNESCO, sought to establish a platform for dialogue on the Roadmap and seek recommendations to progress on the nine themes and five arenas of activity.

Main Issues Addressed

Reports and minutes from the IIS, the Monitoring and Evaluation Expert Group (MEEG), the DESD Reference Group, the Setting the Stage workshop, and the Inter-Agency Committee were analyzed and nine recurring themes of ESD research were identified. This workshop spent considerable time on these themes, attempting to clarify and refine the language used to name and describe them.

A second focus was looking at the major thrusts of ESD identified as 1) improving access and retention in quality basic education; 2) reorienting existing education; 3) increasing public awareness and understanding; and 4) providing training. The workshop focused on the ways these thrusts might intersect with the themes, and used papers presented during the workshop to test the functionality of the framework.

The final area of focus for the workshop was to explore the arenas of activity needing UNESCO support in terms of what individual researchers and regional affiliations of researchers might do to address each arena.

Recommendations

Philosophical:
- Research is on and for people: why is it done, how is it done on whom is it conducted, by whom is it done, and who supports it, are all issues of power that must be made explicit in conducting and reporting research.
- Research should examine and put forth multiple approaches to ESD that explicitly include values and beliefs of individuals.

Methodological:
- All research is social, scientific, and political and thus more research philosophies such as participatory action and emancipatory research need to be incorporated into the international EE/ESD research agendas.
- A single model of the nature of science leads to a monocular approach to conducting research. Thus, research in EE/ESD must include indigenous knowledge, traditional knowledge, and alternative perspectives. Researchers need to look at different approaches to, reasons for, and ways of doing research.
- For decades there has been a call to conduct interdisciplinary research in EE. The urgency of environmental concerns necessitates that research on EE/ESD cut across disciplines, fields and methods.
- Research should incorporate qualitative and quantitative indicators of EE/ESD.

Implementation:
- Researchers in EE/ESD should undertake larger scale interpretations of results and meta-analyses of studies in sustainability and how these findings are being used in educational programs and campaigns. Support for such work should be secured at regional and international levels.
- There should be national and regional agendas for research so that individual researchers and practitioners can understand how their work contributes to the larger understanding.
The workshop sought to establish a platform for dialogue on ESD monitoring and evaluation issues particularly issues relating to multi-stakeholder involvement and information gathering processes in countries and regions around the globe.

The purpose of the workshop was to work with people with experience in ESD to develop indicator frameworks to inform the global monitoring and evaluation process. Through participatory learning activities and facilitated discussions, workshop participants were asked to:

i) Take stock of the existing and emerging global milestones enshrined in the DESD International Implementation Scheme (IIS);

ii) Appreciate and input into the global monitoring, evaluation, and reporting framework that is in development facilitated by the UNESCO Secretariat and the MEEG;

iii) Identify ways and means to facilitate multi-stakeholder participation. The workshop was to create a dialogue on the ‘what’, ‘why’, ‘how’, and ‘who’ of participatory monitoring and evaluation in the context of the global monitoring and evaluation framework in development;

iv) Identify a series of recommendations for consideration with regard to the global monitoring and evaluation framework; and

v) Contribute to the final declaration and recommendations of the 4th ICEE.

**Recommendations**

- Promote monitoring and evaluation as a strategy for the implementation of the DESD and not just as a means of assessing the DESD.
- Create opportunities to enable participation of stakeholders throughout the process. Monitoring and Evaluation can provide a basis for engaging stakeholders in the DESD.
- Promote monitoring and evaluation which goes beyond measuring. Providing opportunities to capture experiences, changes and lessons learnt is vital.
- Monitor and evaluate changes in policies, contexts and structures as well as processes that support ESD.
- Monitor and evaluate effectiveness of ESD initiatives and their contribution to DESD objectives.
- Assess gaps, opportunities and possibilities in the implementation of DESD.
- Monitor and evaluate impact and outcomes in and through the DESD.
- Provide capacity building and on-going training to national agencies that play a role during the DESD e.g., UNESCO National Commissions, member state focal points and partners, National ESD Committees, and others.
- The Global Monitoring and Evaluation Framework needs to provide a basis for self-monitoring of member states and partners while at the same time feeding into the global reporting on progress to the UNESCO Executive Board and to the General Assembly.
Biosphere Reserves and World Heritage Sites: Learning Laboratories for Sustainable Development

UNESCO’s world network of biosphere reserves and world heritage sites play an important role in promoting environmental sustainability through linkages between nature and culture particularly biodiversity conservation and socio-economic development.

The workshop was planned to exchange the experiences of biosphere reserves and world heritage sites as well as similarly managed other sites in environmental education and explore further potential and agenda of both sites as learning laboratories for environmental education and education for sustainable development.

The workshop deliberations were organized under three broad themes as follows:

- Culture, Heritage and Ecology
- On-site programmes and activities in biosphere reserves and world heritage sites
- Educational training, products and tool kit from biosphere reserves and world heritage sites.

The workshop sought to establish a platform for dialogue on ESD monitoring and evaluation issues particularly issues relating to multi-stakeholder involvement and information gathering processes in countries and regions around the globe.

Recommendations

- Focus the design and content of nature education in BR and WH sites on dynamic human-nature interface.
- Integrate educational components as part and parcel of the overall plan for BR and WH sites.
- Delineate and give enough weightage to the educational component in any management plan. Educational resources should specifically include cultural diversity as the basis for biodiversity conservation and should also highlight related traditional knowledge.
- Organize annual meet of managers of biosphere reserves and world heritage sites at the national level for promoting exchange of ideas, sharing of experiences and learning, and building networks.
- Prepare model management plans incorporating the ESD component for selected WH sites and BRs in countries of south and south-east Asian region that were represented at ICEE. These could be replicated in other regions also.
- Establish a network for educators involved in education and awareness for BR and WH sites in countries with linkages in the region. This network should also include scientists, researchers and policy-makers.
- Involve existing learning facilities like schools, colleges, camp sites, interpretation facilities in biosphere reserves and world heritage sites, and networks like Green Corps, UNESCO clubs, etc., in generating awareness about the concept of biosphere reserves and world heritage sites.
- Disseminate all available educational material, including UNESCO material, in various local languages with appropriate adaptation to suit local requirements.
- Help communities to develop effective business plans and manage their heritage on business lines as Government schemes may not succeed in funding BRs and WH sites.. For this capacity building programmes for communities and other stakeholders should be included in a major way in these business plans.
Making Zoo Education Sustainable with special focus on Fund Raising, PR and Marketing

In India there are about 150 zoos that are visited by nearly 50 million visitors annually. Zoos need to reach out to a larger audience by developing and sustaining targeted zoo education programmes and activities, both in-house as well as outreach.

Indian zoos work on restricted budgets as a separate budget is not allocated for zoo education. Therefore it is vital for zoos to develop fund raising strategies and try and involve the public to sustain their programmes and activities.

The Zoo Working group provided a good platform to zoo managers in India and abroad to share their experiences and get an exposure on how zoo education activities are designed, developed, conducted and sustained worldwide through effective public relations and marketing strategies.

The purpose of the workshop was:

- To identify and assess how the current education and interpretation programmes of zoos relate to the mission of the Decade for Sustainable Development (DESD),
- To come up with strategies and Plan of Action that zoos and other related facilities will pursue to make Zoo Education sustainable and effective,
- To facilitate Fund Raising, Public Relations (PR), and Marketing and effective networking among zoos and other related institutions, in the light of the Decade
- To develop a set of recommendations and guidelines for action for zoo and other facility educators

Recommendations

- Sensitize media towards zoo education to spread positive messages about zoos and to create public support for zoos.
- To do this, develop guidelines for media and public relations policies in zoos; organize regular orientation programme for media personnel and allocate funds for PR and marketing
- Develop and sustain targeted zoo education programmes - For Zoo education programmes to be effective, they need to be target audience based. Zoos should do regular visitor survey analysis to categorize target audiences; Design and develop appropriate and effective educational packages/modules for the identified target audiences/groups and develop outreach programmes and network with related institutions like natural history museums, botanical gardens, NGOs etc.
- Set Benchmarks to define the role of zoos in contribution towards conservation and wildlife education in the Decade of Education for Sustainable Development (DESD). For this, zoos should have specific and separate units devoted to Education, PR and Marketing, training and capacity building and research; they should develop criteria and indicators for evaluating the effectiveness of all education and capacity building programmes of the zoo and along with environment education, zoo education should be integrated with the school and college curriculum.
- Monitor and Evaluate (M&E) to assess and improve the impact of the varied programmes/activities developed for zoo. Monitoring and evaluation system should assess whether the objectives of the various zoo education programmes have been achieved or not; monitor regulatory baseline or benchmark situation in order to assess the outcome of the programme; develop tools for reviewing outcomes, and assist in modifying programmes; network and share expertise and experiences with other zoos and related institutions and apart from self evaluation, zoos should also involve specialized and expert agencies/institutions in monitoring and evaluation.
Education for Sustainable Consumption through the DESD

The Johannesburg Plan of Implementation, signed at the UN World Summit on Sustainable Development (WSSD) in 2002, called upon all governments to take action to “change unsustainable patterns of consumption and production” (Chapter 3) and invited all institutional and non-institutional subjects to promote the development of a 10-year framework of programmes on sustainable consumption and production (10YFP), as an integral part of the follow-up to the WSSD.

Sustainable Consumption is also one of the Action themes of the UN Decade of Education for Sustainable Development.

Education for Sustainable Consumption therefore cuts across several political processes and the Working Group on Sustainable Consumption illustrated these processes and how they interact and provide a concrete example of what Education for Sustainable Consumption (ESC) can be. Participants exchanged their vision of education for sustainable consumption and lifestyles and considering the vast social and economic differences among countries tried to find commonalities and challenges for ESC. There were discussions on the relevance of ESC for various and diverse curricula subjects (geography, citizenship, science, foreign language etc.) with special emphasis on the Italian task force of Education for Sustainable Consumption and the Marrakech Process on Sustainable Consumption and Production Training on YouthXchange. The participants were also trained on the UNEP/UNESCO YouthXchange training kit in sustainable lifestyles and discussed how best YouthXchange can be used and disseminated in their countries.

Recommendations

Considering that

- ESC is recognized as a pillar of education for sustainable development because it contributes to enhance the individual’s ability to manage their own life as well as responding to the challenges of the global society such as climate change
- ESC is the part of ongoing values debate about quality of life.
- ESC contributes to the development of citizenship through social and ethical responsibility and to a culture of peace.

Governments are urged to

- Integrate ESC in all formal and informal systems of education
- Ensure that ESC respects the importance of indigenous knowledge and alternative lifestyles.
- ESC includes intergenerational learning
- ESC learning arena themselves are models of sustainable consumption and production

Educators should ensure that

- ESC contributes to the development of critical awareness and action skills and ultimately empowers people to make informed choices in the market.
- ESC links learning to daily life context
- ESC is taught in informal and formal learning arena
- ESC involves or has the support of many partners including policy makers and civil society organizations
- ESC is tailored to context: (target group, the learning situation, cultural circumstances).
- ESC priority issues cover consumer rights and responsibilities, media advertising and persuasion; international awareness and future perspectives.
- ESC is thematic and taught in an interdisciplinary manner
- ESC includes reflection on why we consume and understanding of consumption and production processes and systems.
- ESC promotes the analysis of the consequences of our consumption choices and encourages global solidarity.
- ESC contents are based on well-researched information.
- ESC empowers the learner to become active citizens.
Government Session - Sharing Experiences and Promoting Collaboration

Summary

Over 20 countries made presentations on their national approaches to ESD during the government session of the conference.

Recurring themes in the presentations included the following:

- Despite the progress made to date there is still an issue relating to the priority accorded to education as opposed to other measures used by governments to achieve change. Those involved in ESD need to demonstrate the relevance of education to these other measures.
- Education for sustainable development is not just the prerogative of environment and education ministries. If all of the social, economic and environmental dimensions of sustainability are to be addressed, all government ministries must be involved and work together in complementary ways. ESD approaches which address all areas of government need to be implemented.
- Importantly, while the education of young people and all sectors of society must continue, current senior leaders and key decision makers in government, industry and civil society need to be seen as a priority area for change. The timeframes are such that change cannot wait for generational change.
- The terms “sustainability” and “sustainable development” are still contested in terms of their meaning and relative importance. Even where there is acceptance of their importance there are different interpretations of how they should be applied in practice. To be effective the concepts of ESD must be communicated in ways which will resonate with the particular audience. We need to engage effectively with people who do not see themselves as environmentalists.

Many countries have very limited capacities to undertake the scale of ESD activity required to effect change. It is therefore important to use what resources are available efficiently. Even acknowledging the cultural sensitivities of implementing ESD in individual countries, existing sources of expertise and experience in ESD, wherever they exist, should be better utilised and access facilitated through international cooperation and specific initiatives.

Countries in a position to do so due to their economic circumstances and their existing expertise need to identify ways in which they can effectively help others.

- There is a need to continually ask ourselves what impact our ESD activities are having. We need to monitor and evaluate our approaches to ensure we are moving forward and getting the outcome we set out to achieve. The development of appropriate indicators is central to this process.

Representatives of participating governments agreed to note these common themes and take back to their governments for further consideration the recommendations that emerged out of this Conference.

Coordinators: Peter Woods, Prithi Nambiar
A well attended GEO-4 workshop and exhibition hosted by UNEP increased the knowledge and prospective use of the Global Environment Outlook (GEO-4) report as a research and teaching tool in the context of Education for Sustainable Development (ESD). The workshop attracted 36 participants consisting of key university teaching staff and civil society active in ESD from across 20 countries.

**Its aim was to:**

1. Increase knowledge of the fourth Global Environment Outlook (GEO-4) report which was launched on 25 October 2007.
2. Develop a strategy and action plan on how the GEO-4 report can contribute to teaching and research in the context of education for sustainable development.
3. Involve and partner with higher education institutions and other stakeholders in developing a plan for the adaptation of the GEO-4 report findings for actual use in universities teaching and research curricula.
4. Identify key research streams on environment and sustainable development that GEO-4 findings can feed into.

The workshop stressed the need for constructive engagement, including collaboration, coordination and linkages with civil society organizations, especially the private sector. In the specific area of education and knowledge dissemination, the workshop further stressed the...
need to change the mindset of education systems through curriculum infusion at all levels, the need to practicalise the research findings through systematic change in the structure of research to service local communities through change in the statutes of universities as well as the need for paradigm shifts in decision-making by re-engineering education through university students who are well positioned in future leadership positions.

Also, the workshop urged the recognition of values of indigenous cultures and the need to link it to research for adaptation, as well as the adaptation of locally relevant technologies and the promotion of human well being through food, energy and water security.

**Recommendations**

- Organise a programme at national level for educators to facilitate dialogue on the information contained in the GEO-4 process in different educational settings
- Facilitate the use of GEO-4 through active links with existing networks such as International Association of Universities (for universities); International Union for Conservation of Nature (for educators); Educational Associations; International Communication Learning Institute (for local governments) etc.
- To facilitate easy use of the materials in different academic disciplines, the Fact Sheets would be particularly useful. In addition, educators could be supported to develop / adapt the Fact Sheets for use in different disciplinary frameworks and structures (and in cross disciplinary teaching programmes as well).
- Develop a programme specifically for policy makers, planners and decision makers to practically apply and use the scenario planning approach and the information given in the GEO-4 in this regard.
- Make the GEO-4 report available in regional languages so that it can be owned and ‘repackaged’ at all levels.

- Engage constructively (collaboration, coordination, linkages) with civil society organisations, especially the private sector
- In the specific area of education and knowledge dissemination a) Change the mind set of education systems through curriculum infusion, starting from the primary level; b) Need to practicalise the research findings through systemic change within universities through changing the structure of research to service local communities. Can be done through changing the statutes of universities; c) Need for paradigm shifts in decision making by re-engineering education through the youth, particularly university students as immediate future leaders.
- Recognize values of indigenous cultures and link them to research for adaptation, also adapting locally relevant technologies.
- Seek political goodwill for curriculum and policy change to be effective.
- Use GEO-4 to influence decision making / policy makers so that they integrate SD issue into national policies.
- Mainstream GEO-4 findings into teaching and research.
Role of Education in addressing Livestock, Environment and Development Issues

CEE is a partner in LEAD (Livestock, Environment and Development) India along with five other NGOs. The LEAD initiative is an inter-institutional project with its secretariat in the Food and Agriculture Organisation (FAO). The LEAD India platform is supported by the CALPI (Capitalization of Livestock Programme Experiences India) programme of Swiss Agency for Development and Cooperation and Intercooperation. As part of this, CEE’s Rural Programme Group (RPG) coordinates the LEAD Advocacy function in Gujarat state, while the Knowledge for Sustainable Development (KSD) group coordinates the LEAD Communication function including both electronic and non-electronic activities.

The working group addressed the sustainability of the livestock production sector in the present context of industrialisation of production and processing systems. There is a rising concern about the contribution of the livestock sector to climate change, land degradation, pollution, and other phenomena. On the other hand, livestock also play a very positive and supportive role in the farm land management and livelihood generation. Besides products like milk and meat obtained from the livestock, their dung and urine are valued as a good source of manure for the farmlands. They also have a role in the propagation of certain plant species that are region specific. The WG looked at the need to balance the positive and the adverse impacts of the livestock system and take a fresh look at or even redefine the role of livestock in the sustainable development of the region. The LEAD consultation addressed some of the hotspots identified by the platform members. The focus was on understanding the livestock sustainability issues in varied geographical contexts and share experiences and learnings among the participants.

Recommendations

Livestock Forest Issues

- Formulate/enact and implement a comprehensive state grazing policy in all the states of the country. Such a policy is of utmost importance in states where forest is the major source of fodder. All stakeholders including pastoralists should be involved in formulating the policy and detailed discussion is necessary before such a policy is frame.
- Initiate applied research on various aspects related to rangelands/pastures/CPRs, (including fodder trees, bushes, weeds etc) i.e. grass/tree fodder, impact of different systems of grazing/number of livestock grazed and time spent on grazing. All stakeholders including concerned organizations/departments like Forest, Animal Husbandry and dairy departments/Dairy Federation, Agriculture University, Representatives of livestock keepers etc. should be involved. The information gathered should be discussed and widely circulated for creating awareness amongst stakeholders.
- Conduct extensive studies in some of African and South American countries on rangeland/pastures/CPR’s production pattern and impact of different grazing systems. Information from studies carried out in comparable systems should be reviewed and widely disseminated. Such information will help in proper understanding the issue, removing misconceptions and proper planning of studies in India as also utilized for creating awareness and for sensitization of stakeholders, policy makers and planners.
- Include subject relevant to forest-livestock interaction in formal education from primary level to graduate level (veterinary, forestry civil service).
- Support Education by appropriate information dissemination mechanism in the form of workshop, training programmes, experience sharing programmes using mass media for creating awareness and sensitizing farmers, pastoralists on related aspects (including environmental issues).
Livestock-Water Issues
Population growth and changes in production systems and consumption of crop-livestock products is one of the major drivers of future uncertainty of water resources. The problem is both local and global and basically fuelled by inappropriate unhealthy crop-livestock and water interactions. Using framework analysis approach it is revealed that the livestock productivity is fairly high and the problem of water varies both spatially and temporally. It is also closely related to farmer’s livelihood strategies and access to resources. Recommendations and strategies suggested:

- Search and select feed crops with high water productivity
- Develop strategies for enhancing livestock water productivity
- Integrate livestock development with watershed/water resource development programmes for better livestock – water productivity
- Provide sufficient quantity and quality of water
- Empower farmers materially, financially as well as by imparting knowledge and awareness.
- Explore utilization of ‘Halophytes’ (like species of Salicornia) found in the coastal areas of states like Gujarat for animal feeding. These plants do not compete for use of sweet water.
- Promote small-holder systems as these are likely to be more efficient
- Conduct studies to find out water use efficiency of livestock breeds of dry arid zones of the country like North-Western parts of Gujarat and Rajasthan

Industrial Livestock Production
- Create awareness at all levels regarding ‘Pros and Cons of Industrial livestock production’, particularly the risk of pollution in peri-urban/urban areas.
- Support decentralised and small holder production by centralised collection-processing and marketing system of dairy cooperatives may be considered for propagation as it is found to be competitive.
- Promote smallholder production systems that satisfy consumer’s requirements (quantity & quality) and increased urban demand utilized for developing rural production and poverty alleviation.
- Develop policies and infrastructure and carry out vertical integration for private investment and interventions in the livestock sector.
- Formulate rules and regulations related to environmental issues according to the “polluter pays” principle.
- Study pollution from rapidly growing urban/peri-urban commercial livestock production and impose rules and regulations required for protection of public health be imposed.
- Develop and empower producer organisations to influence agricultural policies and strategies adopted.

Livestock-Land Interaction
Shrinking land resource has become a limiting factor for livestock keeping by marginal farmers and the landless, particularly the pastoralists, for whom livestock is a major source of livelihood. These livestock keepers depend largely on Common Property Resources (CPRs) (village commons, grazing lands etc.) and forests for feeding their livestock and CPRs are shrinking rapidly due to a variety of reasons. It is recommended that:

- Restore the status of village commons (grazing lands etc.) and grass lands (like Banni in Kutch or Kawal lands in Karnataka) and support provided to develop this resource.
- Involve all types of livestock keepers (farmers, pastoralists, tribals) in developing these resources and oriented and encouraged to manage them. Discussions on land use policies should also involve landless livestock keepers like pastoralists.
- Develop rational grazing policies (for CPRs, Forests) taking into consideration the traditional grazing rights of the pastoralists also.
- Develop degraded CPRs and Forests into Silvi pastures and participatory approach adopted for development and management. Care should be taken to involve Pastoralists in these initiatives.
- All Natural Resource Development programmes should have livestock components and consider their needs.
- Discourage plantation of bio-fuel plants like Jatropha, that has neither any fodder value nor any beneficial effect on soils, should be discouraged on CPRs and other useful species be chosen e.g. multipurpose tree species that meet the needs of the community.

**Livestock and Biodiversity Issues**
- Undertake education and awareness programmes on critical role of livestock biodiversity in sustainable development, particularly in eco-fragile areas, for the benefit of planners, policy makers and development professional as well as livestock keepers. For this purpose there is a need to study livestock biodiversity and generate information – since there is dearth of information on many species and types of livestock that exist in India.
- Provide positive incentives for conservation and development. For example, niche markets can be developed for products of livestock species/breeds with unique qualities.
- Combine relevant and proven traditional knowledge with appropriate modern scientific methods for maintenance and improvement of indigenous breeds of livestock is recommended. For this purpose ‘Experts amongst traditional livestock breeders’ should be identified and involved. The traditional breeders should be made aware of the value of their livestock as gene resource for sustainable livestock development and supported to develop this resource.

**Recommendations**
1. Thinking of others and thus living responsibly is the only ‘cure’ for the virus, as it is for protecting our environment for future generations.
2. The learning from HIV-AIDS awareness and control efforts over two decades should be integrated urgently into future education for sustainable development. It is about challenging the epidemic through care and respect, and through supportive social environments.
3. Providing such supportive, enabling environments for people living with or affected by HIV-AIDS requires alternative spaces for education that can reach society as a whole, moving away from the ‘target group’ approach.
4. Time-bound project approaches are largely irrelevant to creating and sustaining the supportive social environments that can foster groups and encourage self-esteem and confidence. This requires a drastic overhaul of current practices in HIV-AIDS awareness and control.
5. HIV-AIDS, like challenge to the environment, is here to stay. Awareness and control efforts must therefore move out of the box, and be integrated with other health, social and political concerns.
6. Reaching to youth becomes the priority for promoting such changes in attitude and action.
The conference saw a number of special sessions and parallel events. Many organizations and forums chose to have their official meetings as part of this event.

Listed below are the special and parallel sessions held at the Conference in addition to the main plenaries and working sessions.

**Parallel / Special Sessions**
- Learning Systems for Sustainable Development
- Social Learning Workshop
- Showcasing 'Global Communities for Sustainability (GCS)' Project
- Workshop for Teachers by UNEP
- Climate Change and E-learning for Children - A discussion
- Earth Charter Tools and Opportunities for Sustainability - youth making DESD real
- Humane Sustainable Food System and Education for Sustainable Development
- Workshop on Interpretation
- Children’s Workshop in partnership with National Bal Bhawan - ‘Young Voices for Sustainable Development’
- Using Website for studying Climate Change
- Teaching Sustainability and Living Sustainably

The Conference was also a forum for several launches. These included CEE and non CEE publications and products. A list of publications/products released at the Conference is given below.

**Launches**

**Publications**
- The fascinating ZERI Fables - Keep Dreams Alive and Happening
- Climate Change - an Indian perspective

**Parallel Events**
- Environmental Education in Indian School System - Status Report 2007
- Asia - Pacific Network Newsletter
- Environmental Education - A Resource Book for Teacher Educators (Level 1,2,3) in English and Hindi.
- 2nd Issue of CEE’s Journal of Education for Sustainable Development
- Samvardhan - Building Cadres for Sustainable Development
- Brochure - Partners for GEF UNDP Small Grants Programme

**Products/ Concepts/Campaigns**
- Green Teacher Online
- Launching of Hand Print - action towards sustainability
- IUCN Campaign: A Framework for Forming Intergenerational Partnerships for Sustainable Development
  - In addition to the above the following meetings were also held at the Conference.

**Meetings**
- Sida sponsored EE/EES Alumni Follow up workshop for Asia
- 22nd National Steering Committee Meeting of GEF UNDP Small Grants Programme
- Inaugural Meeting of the Leadership Team of Earth Charter Youth Initiatives
- Meeting of editors of CEE’s Journal of Education for Sustainable Development
- SAYEN Regional Meeting
- ESD - Japan Regional Meeting
- Meeting of Asia /Pacific Cultural Centre for UNESCO (ACCU)
- Regional Centres of Expertise (RCEs) Meeting
Cultural Events

Cultural events were held on every evening of the main Conference days which presented the best of Indian music and dance. There were performances by well-known artists like Bikram Ghosh, a renowned percussionist and a dance-drama by Mallika Sarabhai and her troupe from Darpana Academy of Performing Arts. Kachchh Musicians, who are folk groups from the western region of India were invited to perform during lunch and session breaks in order to add music to the overall ambience. There was a Ballet performance by the children of National Bal Bhawan, India which was on water cycle and water conservation. The conference ended with a Garba, which is a folk dance of Gujarat, India where all participants joined in.

Exhibit Pavilion

The 4th ICEE provided an exciting and continued forum for discussion, debate and professional networking. The Exhibitions were the catalysts in bringing together professionals from all over the globe who sought to develop partnerships. It helped them to share their accumulated knowledge and experience as well as provided an immediate contact to evaluate potential partners and form strategic alliances.

The exhibit pavilion had on display, a collection of EE/ESD experiences/case studies by various organizations working in EE and ESD from all around the globe as well as India. There were representations from Civil Society organizations as well as Governments.

The following institutes and organizations participated in the conference exhibition:

Ehime University, Matsuyama, Japan

Ehime University showcased the new curriculum which it had introduced at the Bachelor’s level in 2006 with the aim to train EESD (Environmental Education for SD) instructors. The most recent outcomes from the curriculum were displayed. A new practical EESD program titled “Forest Education for All” designed for the visually impaired was also showcased.
Australian Government Exhibition
This was an exhibition of strategic policy documents, research reports and educational materials produced by the Australian Government, related to formal schooling, further and higher education, business and industry and community education. The highlighted issues included education for sustainable development relating to climate change, biodiversity conservation, natural resource management, pollution and sustainable schools.

United Nations Environment Programme (UNEP)
UNEP’s exhibition stand at the 4th ICEE included Environmental Education and Training programmes held by UNEP, publications, CDroms and posters. Among the publications was the newly launched Fourth edition of the Global Environment Outlook Report (GEO-4).

Asia/Pacific Cultural Centre for UNESCO (ACCU)
ACCU displayed educational materials, brochures and posters that have been produced by the implementing partners of the “ACCU-UNESCO Asia-Pacific ESD Programme”. Publications included multi-media/multi-lingual educational materials called the "Package Learning Materials on Environment (PLANET)", addressing inter-related themes of water pollution, forest conservation, waste management and natural disaster preparedness.

German Commission for UNESCO
The German Commission for UNESCO displayed the National Plan of Action for Germany; UNESCO Today, a special edition of the journal of the German Commission for UNESCO on the UN Decade; Conference Report of the International Workshop on the UN Decade held in November 2006 in Bonn, Germany; Flyers introducing German Decade implementation. It also displayed the Official German Projects for the UN Decade of Education for Sustainable Development.

IUCN Commission on Education and Communication (CEC)
This stand had brochures and information on IUCN-CEC resources related to the conference, and posters highlighting its work. Also available was recently published Toolkit for Communication, Education and Public Awareness which CEC produced for SCBD and UNESCO in 2007.


New Voices, New Futures
There was also a narrative exhibition on the textiles of the Kachchh region of Gujarat, India titled ‘New Voices, New Futures’, where the artisans found a niche to display their understanding of sustainability and voice their concern for the various issues they faced post a major earthquake that affected their region in 2001. This exhibition project was organised jointly by CEE India, Khamir Craft Resource Centre and Desert Traditions.
Making the 4th ICEE a Sustainable Conference

Venue for the Conference
CEE, sought to make the 4th ICEE a sustainable and eco-friendly conference. The CEE Ahmedabad campus which served as the Conference venue was originally planned based on an environment, society and culture friendly strategy. During the early years, greening of the semi-arid campus was managed with the cooperation of the surrounding inhabitants, for whom the area was a cattle grazing field. A variety of trees from the Gujarat region and regions with similar climatic conditions were planted, which offered a habitat for a variety of wildlife. About 50 different tree species and almost 100 bird species are found on the campus.

Being keen on keeping the campus a green and lively oasis in India’s sixth largest city, CEE constantly improves its waste management system, energy consumption, water use and working conditions. Till today, new employees at CEE are informed about the ‘CEE spirit and culture’ of respecting the environment and following environment friendly practices.

Exhibit Stalls by CEE
CEE utilized this opportunity to showcase its work to the participants at the conference.

CEE - National Bal Bhavan
The stall included selected posters, paintings, publications and educational models on Sustainability developed by children from the National Bal Bhavans across India. Most of these were prize-winning entries from across the country.

Exhibition on ‘Advanced International Training Programme’
This multipartner exhibition titled, ‘ESD, Learning, Change and the Formal Education Sector’ highlighted the contribution of Sida, Ramboll Natura, SADC REEP and CEE in capacity building of ESD and Formal Education professionals. The exhibition also highlighted feedback and opinions of programme Alumni.

CEE/Asia Carbon
At the flight emission offset stand, participants gained knowledge about emission compensation by calculating their flight emissions and purchase the Voluntary Emission Reduction (VER) credits. While offsetting flight emissions, participants received an e-certificate stating the amount of emissions, corresponding the amount of purchase made. Offsetting of flight emissions at the 4th ICEE was a joint initiative of CEE and Asia Carbon Emission Management India Pvt. Ltd.

CEE India, CEE Sri Lanka, CEE Australia
The exhibits at this stall displayed CEE’s journey over the last 24 years and its international presence.
Waste treatment

Waste is a byproduct of every human activity and waste management is a key environmental issue. CEE has a clear strategy for waste management: First of all, waste generation is avoided at CEE. Reuse of products is the second approach. Thirdly, the waste accumulated undergoes sorting. The biodegradable waste is composted and is later used as fertilizer. The non-biodegradable waste is taken away by the municipality and eventually reaches an eco-friendly landfill. Waste papers are collected separately, and taken away by a women’s Self Help Group (SHG) for recycling.

For the conference, plans were made to limit waste generation. For instance, plastic water bottles generally bought only to be thrown away, were not provided. Instead, the participants received a refillable bottle at the beginning of the conference and filtered water coolers were placed all over the campus so that people could refill their bottles.

Water

The dry climate of western India makes it essential to use water economically. The roofs of CEE campus buildings are specially designed for rain water harvesting. The rain water captured in recharge wells and ponds percolates through soil and recharges the ground water. Also, the dense canopy increases soil absorption capacity and avoids runoff. Ground water is the main source of water in the campus and is pumped up to the main tank at the campus’s highest spot and distributed to the buildings with the help of gravity. Water filters are installed in every building to make safe drinking water available at all times.

Electricity

‘Energy modesty’, meaning energy saving and efficiency, is the core principle regarding the use of energy at CEE. This includes sparing use of lighting, air conditioning and fans. The buildings are designed to harness natural light and air to the maximum. The wooded surroundings help in reducing campus and indoor temperature by 2 to 3°C. Renewable energy (solar power) is used to heat water at the campus hostel and canteen. Hence, during the ICEE, air conditioning was not used. Various events, including plenary sessions and exhibitions, took place outdoors which reduced the need for artificial lighting.

Products

Use of locally made products and environmentally friendly materials is preferred at CEE in order to avoid unnecessary transportation of goods and non-biodegradable waste. Recycled paper is preferred for CEE visiting cards, calendars etc. Paper used for CEE publications and office-use including those for the conference were wood free. For the conference, paper cups of wood free material were used for serving beverages.

Plasticot Bags

The Conference Kit for the 4th ICEE was provided in plasticot bags made by CEE’s Ecofriendly Reuse and Recycling Unit (ERU). Each plasticot bag was made by recycling 80 polythene bags of varying thickness. CEE won the ‘Plasticon 2005 Award’ from the Plastindia Foundation for its innovation of a ‘polyloom’. The polyloom is a handloom for weaving such bags, mats etc. from discarded plastic bags. CEE’s Waste and Resource Management Group has popularized this concept throughout the country by setting up units for producing these eco-friendly products.
The Conference had 961 men participants and 625 women participants; thereby 40% of the participants were women.

Conscious effort was made so that all inquiries from women participants across the world especially regarding travel support was acknowledged first.

The Conference saw many women participants play a leading role, for example, Prof. Heila Lotz Sisitka lead the process of drafting the conference declaration. Ms. Mary Paden spear-headed the task of rapporteuring the conference. Ms. Akpezi Ogbuigwe ensured that there was a common thread running through discussions at the 30 working sessions and that the same was suitably presented at the plenary sessions so that no discussion happened in isolation from the other. CEE’s own senior women colleagues played important roles during the Conference by coordinating various working session discussions or by leading various teams managing the logistics.

Also, while drawing up a list of people to be invited to give keynote speeches, care was taken to have a good number of women colleagues.

Gender representation was one of the criterion applied while hand-picking the team for the Conference Secretariat. The Conference Secretariat was headed by Ms. Prarthana Borah who led a team of 10 people which had 8 women members and 2 men.

Also, when the International Advisory Committee (IAC) for the Conference was being formed, gender balance was one of the aspects taken into consideration. The IAC was formed by inviting members of existing relevant forums of UNESCO for example, UNESCO’s high-level panel for the Decade of Education for Sustainable Development, UNESCO’s DESD Reference Group. One-third of the members of these forums were women. The other members invited on the IAC were members of CEE’s Journal on Education for Sustainable Development, half of which were women.

Transport
The biggest source of carbon emissions during any conference is that of participants’ air travel. CEE offered the participants the opportunity to compensate for flight emissions for their trips to Ahmedabad and back through purchase of Voluntary Emission Reduction (VER) credits from projects. The carbon offset projects chosen were community based renewable energy (biogas) projects which had the co-benefit of reducing the drudgery of women in locating fuel-wood and of improving the quality of indoor air.

For local transportation, buses were made available to participants of the ICEE from hotels to the campus and off-campus venues, as a mass transportation medium. For individual transportation, Ahmedabad’s auto-rickshaw network was effectively used as these run on compressed natural gas (CNG). A partnership was developed with the local autorickshaw drivers’ association for the conference duration, under which drivers carried sustainable development slogans on their vehicles and were readily available at the hotels and venues for ICEE participants. A self-explanatory Ahmedabad city map was also provided to the participants as part of the Conference Kit.

Meeting rooms
The campus buildings have been constructed based on the principles of eco-design. The buildings are designed around trees so as to minimize the cutting of trees for construction purposes. In order to maintain optimum temperature, the disaggregated buildings are surrounded by trees. The roof surfaces are covered with light coloured ceramic chips in order to create a high albedo for sunlight reflection. Also, the roofs are specially designed to minimize the use of steel bars. For creating temporary structures, partition walls of mud were used, which is both eco-friendly and involves zero waste. Several open air spaces provided a pleasant outdoor milieu, which at the same time made the meetings environment friendly.

Ensuring Gender Equality at the 4th ICEE

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4th ICEE

International Conference on Environmental Education: Final Report

Over 1500 participants from 97 countries

Geographical Representation

Africa:
- Angola
- Botswana
- Burkina Faso
- Burundi
- Cameroon
- Comoros
- Congo
- Egypt
- Ghana
- Kenya
- Libya
- Malawi
- Mauritius
- Morocco
- Namibia
- Nigeria

Asia:
- Afghanistan
- Bangladesh
- Bhutan
- Brunei
- People's Republic of China
- Cambodia
- Georgia
- India
- Indonesia
- Iran
- Japan
- Jordan
- Laos
- Malaysia
- Maldives
- Mongolia
- Nepal
- Oman
- Pakistan
- Philippines
- Qatar
- Saudi Arabia
- Singapore
- South Korea
- Sri Lanka
- Thailand
- UAE
- Uzbekistan
- Vietnam

Europe:
- Armenia
- Austria
- Belgium
- Denmark
- France
- Germany
- Greece
- Hungary
- Israel
- Italy
- Latvia
- Lithuania
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Russia
- Spain
- Sweden
- Switzerland
- Turkey
- Ukraine
- United Kingdom

Other:
- Fiji
- New Zealand
- North America
- Canada
- Costa Rica
- Cuba
- Dominican Republic
- Mexico
- USA
- Oceania
- Australia
- Palestine
- South America
- Brazil
- Chile
- Peru

24-26 November, 2007 | Centre for Environment Education | Ahmedabad | India
Participants

The Conference had over 1500 participants of which about 650 were women and 150 were youth. Participants came from 97 countries across the globe. There was representation from developing countries, least developed countries and developed countries from all five continents.

There was representation from 40 governments across the world. The government representatives participated in the special session for the governments which was led by Mr Peter Woods, Department of Environment and Heritage, Government of Australia. About 100 participants were from UNESCO, UNEP and other UN organizations. The Conference participants were from varied backgrounds and included policy makers from the government, professionals, researchers, communication specialists, field practitioners, educators, youth representatives as well as persons from various UN and other international agencies.

A list of participants is available at the Conference website www.tbilisi+30.org

Responsibilities

WORKING SESSIONS

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<td>Atul Pandya, Brijpal Patel</td>
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18. Education for Sustainable Livelihoods
   Ranjit Mohanty

19. Education for Sustainable Cities
   Sanskriti Menon

20. Sustainable Waste Management
    Dr. Shyamala Mani
    Shubhangi Wankhade
    Dr. R. Gopichandran

21. Responsible Corporate Citizenship: Key to a Sustainable Future
    Kalpana Sharma

22. Media & ESD – “Building Public Awareness and Understanding of Sustainability”
    Dr. Shyamala Mani
    Vandalarinwami
    Fanai

23. Roadmap for Creating a Research Foundation to Support the DESD
    Kiran Desai

24. Monitoring and Evaluating Progress during the UN DESD
    Meena Nareshwar

25. Biosphere Reserves and World Heritage Sites: Learning Laboratories for Sustainable Development
    Supriya Jhunjhunwala

26. Making Zoo Education Sustainable with special focus on Fund Raising, PR and Marketing
    Priti Nambiar

27. Education for Sustainable Consumption through the DESD
    Prarthana Borah

28. Government Session - Sharing experiences and promoting collaboration
    Priti Nambiar

    Priti Nambiar

30. Role of Education in addressing Livestock, Environment and Development issues
    Priti Nambiar

HIV-AIDS: Special Sessions
   Archana Gehlot
   Sujeept Dongre
   Sarita Thakore
   Snehalata Lakra

Plenary Sessions

Plenary Sessions and Stage Management
   Simanta Kalita

Coordination with Recommendations Committee
   Tanvi Jain

Coordination with Rapporteurs
   Vaishali Kushwaha
   Archana Gehlot

Side Events

SIDA Alumni Meet
   Shivani Jain, Ajanta Sikdar
   Prithi Nambiar, Snehal Bhatt
   Prabjot Sodhi

Showcasing Global Communities for Sustainability Project
   Shweta Khare
   Madhavi Joshi
   Gopal Jain
   Ranjit Mohanty
   Dr. Kiran Chhokar
   Dr. Kiran Chhokar
   Sanskriti Menon
   Madhavi Joshi
   Prithi Nambiar
   Prithi Nambiar
   Shivani Jain
   Vaishali Khushwaha
   Peereti Rawat
   Meena Nareshwar
   Gopal Jain

22nd National Steering Committee Meeting of GEF UNDP Small Grants Programme
   Gunter Pauli/Usha Srinivasan book Launch(Zeri Stories)
   Gunter Pauli/Usha Srinivasan book Launch(Zeri Stories)
   Launch of Climate Change an Indian Perspective
   Launch of Asia Pacific Network News Letter
   Launch of Green Teacher Online
   Launch of Teacher Education Resource Books (3 English + 3 Hindi)
   Launching of Handprint
   Environmental Education in Indian School System Status Report 2007
   Workshop on Interpretation
   SAYEN Regional Meet

Parallel Session Coordinators

Social Learning Workshop
   Dr. Kiran Chhokar
   Dr. Kiran Chhokar

Parallel Session on RCE
   Atul Pandya
   Gopal Jain

ESD- Japan Meet
   Madhavi Joshi

Earth Charter Tools and Opportunities for Sustainability-Youth Making DESD real
   Dr. Kiran Chhokar

Children's Session
   Dr. Kiran Chhokar

Food and Sustainable Lifestyle
   Rasleen Kaur Sahni
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<td>Site, Electricity, Security, Campus, Aesthetics, Water and Sanitation</td>
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<td>7</td>
<td>Exhibit Design</td>
<td>Praful Bilgi, Kalpesh Dave Kaushik Christian, Hemal Shah</td>
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### Feedback Received

The Conference was extremely interesting and was of course a very useful place for networking, meeting other organizations from the region and abroad working on environmental education, and explore opportunities for TVE and our partners. I plan to further develop acquaintances made there which I hope can be of mutual benefit to all of us. I am so grateful to CEE for the invitation to participate and I commend them on their excellent organization of such a large event, with so many delegates, and with the most interesting and relevant speakers possible on a global scale.

- Christopher Miller, Regional Coordinator for South Asia, Television for the Environment

I want to help with the Ecological Handprint. Where can I get more info on the actions and tallying up the actions etc. I have a number of organizations and schools that will chip in and get this launched internationally. I have also thought of a slogan for the children’s consideration. ‘Don’t just stand there – give us a hand!’ The ‘standing’ referring to the footprint of course. I hope they like it. Thanks.

- Charles Hopkins, Chair, IAC, 4th ICEE

Thank you and your team for the excellent support you provided. It was a feeling at home in a sea of chaos… Ahmedabad is pretty hectic! Congratulations and my deepest appreciation. Now I know next time I come to Ahmedabad, there is an excellent team ready to support even the most difficult visitor (me). I am sure you are having a great time, relaxing and recovering from the great efforts you made. Enjoy it.

- Gunter Pauli, Director, Zero Emissions Research Initiative, Japan

The 4th ICEE was really thought-provoking and a great learning experience for me. There was a good exchange of knowledge and information which is highly useful to the work of UN in Pakistan and also to the local communities of north Pakistan which I represented. I am looking forward to having future linkages with CEE.

- Ehsan-ul-Haq, UN Resident Coordinator, Pakistan

I hope you are able to use the session on Innovation and Technology as the starting point. It is an important topic and the group of professionals could become environmental educators.

- Pamela Puntenney, CEO, Environmental and Human Systems Management, USA

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| 22 | Cultural Programme | Trupti Rawal, Puja Asopa |
| 23 | Computer and Internet | Vipul Sanghani |
| 24 | Foreign Exchange and Allowance/Travel Desk | D.N. Surati, Amit Shah, Lalit Joshi |
| 25 | Tours | Rajendra Jadhao |
| 26 | Website Development and Updating | Joginder Rajora, Prarthana Borah, Vanlalrinawmi Fanai |
| 27 | Report Development and Production | Saraswathy H, Kalpana Sharma, Prarthana Borah, Vanlalrinawmi Fanai, Mukesh Panchal, Mahendra Dadhania, Hardik Raval |
| 28 | Conference Secretariat | Prarthana Borah, Trupti Rawal, Twinkle Chopra, Puja Asopa, Vanlalrinawmi Fanai, Priya Nair, Rixa Swarttx, Melissa Thomas, Priya Pillai, Joginder Singh Rajora |
| 29 | Overall Coordination | Kartikeya V. Sarabhai |
I consider myself much privileged to have been accepted as one of your team members and to have worked in this wonderful "organic set-up" which CEE is! On-the-spot quick consultation and team work epitomizes the CEE spirit. Should you not try to transform CEE into an interactive university, dealing with all matters pertaining to education for sustainability, in the context of the Gandhian message.

- Michael Atchia, Convener of the T+10 ICEE

"Besides the organisation of the logistics (which were top quality), the conference was definitely a very valid contribution to the environmental education process. To tell the truth ... I was approaching the conference fearful that it would be yet another conference full of rhetoric and academic debates with little if any valid contribution to the field realities! I'm really happy to say that I was wrong. The conference refused to abandon urgent and pressing issues related to sustainable development in favour of 'safer' yet useless debates. Consequently the declaration and recommendations are spot-on! I feel that this conference has given the process the required momentum for the next 10 years."

- Dr Paul Pace, Director of the Centre for Environmental Education & Research (CEER), Malta

Thanks for your mail and I have enjoyed the conference days in Ahmedabad. Congratulations to you and your team for a job well done and thank you for all the hard work that you put in to make it an exciting experience.

- Ranjith Dedewalage, Head of Science, St. Leonard's College, Melbourne

"Marvelous experience, dynamic, vibrant, multi-faceted. Exciting discussions, great presentations."

- Tomas Hertzman, Planning Director, Ramboll Natura AB, Sweden.
The Ahmedabad Declaration 2007: A Call to Action
Education for Life, Life Through Education

Adopted by the Fourth International Conference on Environmental Education
28 November 2007 (Ahmedabad, India)

This Declaration was developed from the 24th to the 28th of November 2007. The drafting process involved over 1,300 participants from 97 countries at the Fourth International Conference on Environmental Education. The Conference was sponsored by UNESCO, UNEP and the Government of India and was hosted by the Centre for Environment Education at Ahmedabad, India. Since the First International Conference was held in Tbilisi, Georgia, in 1977, conferences have been held every 10 years, in Moscow in 1987, and in Thessaloniki, Greece, in 1997. This Declaration was drafted in the context of the United Nations Decade of Education for Sustainable Development.

Our world is a world in which our work and lifestyles contribute to the well-being of all life on Earth. We believe that through education, human beings can be reached so that sustainable and rational lifestyles and respect for all life. Through education, we can learn to prevent and resolve conflicts, respect cultural diversity, create a caring society and live in peace. We learn from indigenous and traditional patterns of living that respect and honor the Earth and its life-support systems and we can adopt this system to our fast-changing world. We can make individuals, community, national and even global choices with due consideration for the collective good. Individuals including youth, civil society, Governments, businesses, funding partners and other stakeholders can appreciate that their daily actions can shape a viable future in which all can be proud.

Ever-increasing human population and consumption is rapidly undermining the Earth's life-support systems and the potential for all life to thrive. Assumptions about what constitutes an acceptable quality of life for some, often means deprivation for others. The gap between rich and poor is widening. The climate crisis, loss of biodiversity, increasing health risks and poverty are indicators of development models and lifestyles that are unsustainable. Alternatives models and visions for a sustainable future do exist and urgent action is needed to make them a reality. Human rights, gender equity, social justice and a healthy environment must become global imperatives.

Education for Sustainable Development is essential to making this transformation.

Mahatma Gandhi said, “Let my life be my message”. The example we set is all important. Through our actions, we add substance and vigour to the quest for sustainable living. With creativity and imagination, we need to rethink and change the values we live by, the choices we make, and the actions we take.

We must reconsider our tools, methods and approaches, our politics and economics, our relationships and partnerships, and the very foundations and purpose of education and how it relates to the lives we live. In making our choices we draw on, and are inspired by, much work that has gone before us, including the Earth Charter and the Millennium Development Goals. Environmental Education necessitates support and champions Education for Sustainable Development. Such efforts must be relevant, responsive and accountable. Research is encouraged to provide additional rigour and credibility and to identify increasingly effective methods of learning and sharing knowledge.

We call on learners as well as teachers. Education for Sustainable Development encourages a shift from viewing education as a delivery mechanism to a life-long, holistic and integrative process. We

Preliminary unedited text.
CEE is an internationally acclaimed institution in the field of EE and ESD. It has considerable experience and expertise in addressing its primary mandate of improving public awareness and understanding of the environment with a view to promoting the conservation and sustainable use of nature and natural resources. Its programmes are facilitated through 40 regional, state and project offices across the country with its headquarters located at Ahmedabad and affiliates in Australia and Sri Lanka. Over the past twenty three years, CEE has been working in the field of environmental education. It has developed innovative programmes, educational material, undertaken demonstration projects and built capacities in the field of environmental education. Recognizing the complexity and vastness of work in the field of ESD, CEE works in partnership with a range of organizations at the national, regional and international level. The strategy is to collaborate with others to build synergies, achieve a multiplier effect, enhance effectiveness and widen the range of programmes.

CEE is the nodal agency for implementation of DESD in India.
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