

# **Building Community Resilience towards Climate Change Adaptation through Awareness & Education**

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"Himalayan glaciers could shrink from the present 500,000 square kilometres (193,051 sq miles) to 100,000 square kilometres (38,610 sq miles) by the 2030s" says report released by Intergovernmental Panel on Climate Change (IPCC) on February 2007. The report also confirmed with a 90 per cent certainty that the global warming caused by human behaviour is responsible for the climate change affecting the ice reserves around the planet. Glaciers in the Himalayas are the headwaters for Asia's nine largest rivers providing water for one-sixth of humanity which now are exposed to climate change threat.

As known, rampant burning of fossil fuels and some other anthropogenic activities have been identified for the production of greenhouse gases (GHGs) creating a green house effect that is believed to be responsible for unpredicted weather conditions or the climate change. GHGs emission patterns have been analyzed and known globally drawing attention of not only the scientific community but have warned action at governance and policy level as well. Thanks to the exhaustive research that has given humanity an opportunity to buy some time to prepare and strategize adaptation and mitigation measures to cope up with the climate change threat. Adaptation refers to the measure taken to minimize the adverse impacts of climate change for example, crop improvement to ensure food security; water management to avoid droughts; improved health support system; better forest cover to contain GHGs; clean energy and energy efficiency to minimise the fossil fuel use.

Per capita energy consumption in India is less than one third of the global average. People living in harmony with nature since thousands of years in the Himalaya have actually negligible contribution to the GHGs that are considered to be the main culprit for climate change but the resultant glacial retreat is expected to affect these people first. The depletion of glaciers will not only result in water shortage but glacial lakes outburst floods (GLOFs) is another potential threat that may affect the well being as well as the livelihoods of the mountain people. There is an emerging concern about the climate change refugees in the developed world which may change the demographic profile of the world. Mountain and coastal communities are at highest risk to fall in the category of these refugees.

Mitigating climate change requires a multifaceted approach, involving all areas of policy and decision making. Comprehensive national development

strategies are a key tool for mitigating climate change and the integration of climate change impacts into development programmes through each sector is crucial to combat climate change. There exists a clear recognition that development and adaptation as well as mitigation efforts must be complementary.

Most of the countries in Asia being more vulnerable to climate change threats are taking concrete measures to combat the climate change impact. Government of India has come up with a National Action Plan on Climate Change (NAPCC) in 2008 comprising of 8 national missions. It reflects on the priorities of GOI that 'Sustaining the Himalayan Ecosystems' has been identified as one of the eight missions. NAPCC gives adequate importance to knowledge dissemination through education and awareness. Building public awareness through curriculum reforms, civil society involvement and media engagement has been considered vital in supporting and implementing the NAPCC.

Local wisdom is not adequate to help communities cope with the unpredictability of agriculture due to the effects of climate change. No education prepares our community on how to cope with future change, yet. It's important to inform the farmers who used frog noises and the flight patterns of birds and the songs of frogs for the timing of rice planting to understand early warning systems and plan their crops accordingly. Environmental education and awareness is significantly important locally and globally in helping the communities particularly from most fragile ecosystems like the mountain and coastal areas. Effective dissemination of information and raising public awareness about the cause and effects of climate change will lead to informed action by individuals which are the key approach to tackle this challenge.

United Nations identifying education as pivotal driver for addressing climate change challenge maintains that educated population aware of the challenges of sustainable development and climate change can successfully respond to these challenges. UN Decade of Education for Sustainable Development (DESD) 2005 – 2014 includes climate change and potential local threats as thematic priority. UNESCO responsible for implementing DESD has focus on mobilizing all sectors of society and available expertise both formal and non-formal education to bring in values and behavioural/attitudinal changes that minimize negative climate impacts through climate change education.

India recognizes education for sustainable development (ESD) as a major driver of change and its commitment to sustainable development is reflected in its policy and programmes. Ministry of Human Resource Development (MHRD) is the National Focal Point for ESD in India and Centre for Environment Education (CEE) has been appointed by the MHRD as the National Implementing Agency for ESD in India. CEE is responsible for preparing the

National Action Plan for DESD. The key thrust areas identified for DESD in India include:

- Developing public understanding and awareness
- Improving access to basic quality education
- Reorienting existing education programmes
- Providing training

Climate change education is cross cutting through out the ESD initiatives addressing issues like sustainable energy production; use of renewable energy sources; management of water and other natural resources, agriculture, health, forests and biodiversity to build community resilience towards climate change impact.

As energy demand continues to grow, the ability to address energy issues, including energy access, efficiency, renewable, low carbon technologies and security, is crucial. Advances in energy efficiency offer the quickest, most affordable and most sustainable means of reducing emissions. Renewable sources of energy offer a win-win solution by increasing access to energy whilst reducing air pollution and mitigating climate change. Solar energy has great potential in the Himalayan region where sunshine is available in plenty for long hours in high intensity. Another potential renewable option is micro-hydel power generation to meet the local requirements. India has over 7,000 MW of wind energy capacity – the fourth largest in the world. Informed choices can help people adapt better to climate change impact whether it may be the energy & water requirements or the food security through appropriate agricultural options.

CEE is working with an integrated multi-sectoral approach for climate change education at different levels. Climate change education is cross cutting through the thrust areas of CEE and its programmes. CEE is addressing a range of target groups through different programmes. To name a few as follows:

### **Climate change focus in Higher Education**

CEE partnered with Gujrat University, Ahmedabad to set up the Management Education Centre on Climate Change which is to offer short and long term courses on climate change. A 3-day programme on “Understanding Climate Change” was organised by CEE from 31<sup>st</sup> January 2009 to 2<sup>nd</sup> February 2009 which included a public lecture by Dr Tim Flannery (Vikram Sarabhai Memorial Lecture Series) and film screening of Al Gore’s “An Inconvenient Truth” at Gujarat University.

Through a joint programme of Jawaharlal Nehru Port Trust (JNPT), Bombay University & CEE integrated climate change mitigation and adaptation plan is being developed and implemented at Jawaharlal Nehru Port.

## **School Education and Climate Change**

CEE develops, coordinates and conducts a number of educational programmes for school children, in both formal and non-formal streams of education. To this end, on the one hand, it trains teachers, develops materials for EE, and assists other groups in developing such materials. On the other hand, it endeavors to bring a hands-on, field-based dimension to school education through opportunities offered by governmental and non-governmental initiatives such as the National Green Corps, eco-clubs, camping, education in and around Protected Areas, etc. The Centre is implementing disaster preparedness and awareness campaign in five districts of Kashmir valley through above 2000 schools. Teachers training and orientation on climate change education is an integral component of this programme.

## **2000 Rural Students get Climate Change Education**

An interactive presentation on Climate Change was one of the highlights of the five-day event for rural students on the theme "Science in Everyday Life" in Bhavnagar district, Gujarat. Mr. Kartikeya Sarabhai, Director CEE interacted with over 2000 students from 20 Post Basic Schools, weaving in the science of Climate Change with real life examples, as well as linking it with their textbooks. Post Basic Schools are rural residential schools based on Gandhian Principles and managed by NGOs. The presentation emphasised how climate change was closely connected with developmental & lifestyle choices.

## **Campaign**

With support from Ministry of Environment and Forests, CEE initiated a countrywide campaign 'Pick the Right' aimed at creating awareness about climate change and adaptation through the right choices of resource utilization. Honorable President of India launched this campaign on 5<sup>th</sup> June, the World Environment Day 2008. Picking right, making the right choices, can make positive contribution to the future of planet Earth. Individuals, communities, companies and all policy makers need to choose alternatives and good practices that promote energy efficiency, conservation and sustainable consumption.

This campaign has two components:

1. CO<sub>2</sub>: Pick Right Campaign aimed at 2 lakh schools with the objective of generating awareness on Climate Change. Pick Right package developed in 15 Languages including Hindi and English is comprised of a booklet containing information about right choices one can make to reduce the impact of climate change; 2 posters; 2 stickers; one pick right stencil and a postcard for voting.
2. Second component is "Kaun Banega Bharat ka Paryavaran Ambassador" for electing an Environment Ambassador of India. The person thus elected can be an actor, sportsperson, political or local

leader or any one who is perceived to be an able representative. S/he will be a concerned citizen and a role model who would help focus public attention for achieving the mission of sustainability and promote the cause of environment.

The campaigns aim at involving as many students as possible in electing their Paryavaran Ambassador (PA), initiate educational conservation activities at the schools level, having at least one active school cluster in every district of India which will demonstrate the scope of environmental education through formal, non-formal and extracurricular programmes.

With the slogan "Choices can make a Difference" the campaign advocates for small actions that contribute directly or indirectly towards climate change mitigation. These include:

- Save Trees, Plan Trees: each one of us can be an Ashoka! – A tree not only provides beauty, shade and food, but also acts as lifetime sink of carbon dioxide.
- Use Resources Wisely: generations have been doing! – Do not waste, Save energy, Save fuel, Save water, Save Paper
- Bus, Bicycle, Walk: make it a habit! – Fewer Cars on the roads lesser carbon dioxide in the air
- Be Energy Efficient: save some for tomorrow! - Say yes to CFLs, Pressure cook, save cooking fuel, use solar devices, service your vehicle regularly, check pressure, enjoy natural light and ventilation.
- Recycle Reuse Reduce: it's not new to us! – Refill, Renew, Recover rather than throw, discard or dispose off
- Buy in Season and Local Foods: that's the Indian way! – Tinned preserved and imported foods need more fuel inputs, which means a bigger carbon foot print
- Switch Off when not around! – Do not leave electrical gadgets on. Do not keep TVs, computers, music systems in standby mode. Save electricity, save money, care for the environment
- Conserve Water: every drop counts! – Never waste water, reuse where possible, do not dump hazardous substances in to water bodies, harvest rain water
- No to Plastic Bags Yes to cloth Bag: carry one always! – Plastic do not degrade easily, they clog drains, are threat to animals, release toxic substances on burning

Being implemented through schools the campaign is to address 2 lakh schools in India and is also expected to indirectly involve the community through students and teachers.

### **NGO projects through SGP programme of UNDP**

CEE is the Nodal Host Institution for UNDP's Small Grant Programme (SGP) under Global Environment Facility (GEF) initiative. NGOs are supported for

small scale projects under five thematic areas of which climate change is one. Projects that focus on removing cultural, institutional, technical and economic barriers to energy conservation and energy efficiency and promotion/adoption of renewable energy are being supported through out the country. Projects on eco-sustainable agriculture, livelihoods and renewable energy are being supported in the Himalayan region for example:

“Promotion of Community led Approaches towards Non-Conventional Energy and Management of Land Resources to Reduce GHG Emissions and Desertification/ Deforestation in the Kumaon Himalayas”

“Design and Implementation of Renewable Energy Villages in Papumpare District, Arunachal Pradesh”

Further details at [www.sgpindia.org](http://www.sgpindia.org)

All these education and awareness programmes are being implemented in partnership with government departments; educational institutions, NGOs and community. The overall objective is awareness and education with a locale specific perspective catering to the local environmental needs. The education programmes are innovative in the sense that these ensure participatory and activity based learning to have a real impact.

Environmental education (EE) is mandatory in India by the directive of Honorable Supreme Court. EE always has been seen in the development context in country and therefore is better addressed as ESD which brings about a shift from teaching to learning and has economical, social, environmental and cultural dimensions. CEE's efforts are in the direction of strengthening ESD in the country though building synergies between Government, NGOs and CEE for a comprehensive impact. CEE is supported by the Ministry of Environment and Forests, GOI as a Centre of Excellence in the field of environment education. In addition, there are number of projects supported by national and international agencies being implemented by the Centre.

Over the years CEE and its programmes have created a niche in the field of EE and ESD. CEE is recognized nationally and internationally for its interventions. CEE is the first institution in country to work on environmental education and has played an important role in getting ESD recognized as integral component of conservation initiatives. No conservation effort can succeed without adequate awareness and education. To meet the challenge of climate change, educational strategies would be necessary to address all the stake holders including the community, schools and Institutions of higher learning, decision makers, industry and private sectors and so on. ESD can be implemented in local specific and relevant manner by creating awareness and providing relevant information, capacity building in terms of skills, orientation towards sustainability thinking and practice, developing a

variety of ideas to promote sustainability. Through education, understanding and capacities can be built to help the citizens take informed decisions. Climate change education is already infused into most of the programmes of CEE.