ANNUAL REPORT
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Overview

The year 2009-10

The year 2009 was focussed on environment because of the urgency to define actions to address climate change impacts internationally and nationally. Nationally, an institutional framework was set up to direct all activities related to addressing climate change, called the National Action Plans on Climate Change (NAPCC). Eight national missions under the NAPCC will be responsible for planning and coordinating actions to address climate change through 2017. CSE's director has been co-opted as a member of the NAPCC and played a key role by contributing to debates and strategies for climate change action plans.

Given the fact that the Copenhagen Summit was supposed to result in agreements by nations to define actions with specific targets to reduce emissions, with the overarching goal of keeping global temperature rise under 2^0 C, there was a flurry of activities nationally and internationally to prepare for this meeting. Different proposals were put out by different countries and it was increasingly clear as the year wore on that developed countries were unwilling to take on responsibility for their historical contributions to global warming and trying to force developing countries take actions for future contributions. Within the country, new perspectives were being thrown up and it was also clear that there was a tendency to buckle under that pressure and move away from previous positions on per capita emissions. CSE played an active advocacy role as CSE had been the first to demand way back in 1992 that international negotiations should be based on polluters pay principle, and those who did not cause the problem should not be asked to pay for it.

To enable more extensive, considered and in-depth reporting, CSE organised a number of programmes for the media of the south Asian region. It organised fellowship

Union Minister for Environment and Forests Jairam Ramesh and CSE director Sunita Narain at the South Asian Media workshop on climate change

programmes on climate change, a briefing workshop where journalists had the opportunity to interact with top climate scientists, negotiators and experts. CSE published an easily understandable primer on climate change and launched a sub-portal and an ecourse on climate change. It sponsored the participation of select journalists to the Copenhagen Summit, which resulted in nuanced and substantive reporting, from the sidelines of action. CSE staff themselves attended all UNFCCC meetings and sent back reports that were disseminated through *Down to Earth*, CSE website and the India Environment Portal. CSE director, Sunita Narain wrote columns for several national newspapers and also appeared regularly on television from Copenhagen giving a blow-by-blow account of the conference and providing a Southern perspective. Post Copenhagen, CSE advocated that India should not sign the Copenhagen Accord because the Accord is ineffective in addressing climate change impacts and is ineffective in addressing equity issues. Towards the end of the year, CSE also organised a seminar, which brought together scientists and civil society groups, in collaboration with the Indian Institute of Technology, Delhi.

Just before the Copenhagen Summit, the environment minister announced that India would reduce the intensity of pollution by 20-25 percent compared to 2005 levels by 2020. While this generated controversy and heated debates, CSE undertook a study to see where large energy consuming industrial sectors stand with respect to energy efficiencies against global best practices and what it would cost the country to make them more efficient. The study finds that Indian industries are already near the global best practices benchmark and after 2020 there would be little scope for improving efficiencies unless large financial and technology inputs are provided. The study will be published in April 2010.

In terms of other environmental issues, CSE played its advocacy role in many of the new environmental initiatives that were launched last year. CSE has been working on the issue of mining and also on EIAs and realised the need for looking at carrying capacity of given region while giving environmental clearances rather than looking at projects individually. Last year the Central pollution Control Board released a study based on this concept – a Comprehensive Environmental Pollution Index (CEPI) for a region or industrial cluster. CSE had been advocating this concept and was part of the committee that was working to finalise the rating criteria. Based on this study the government said that no further clearance would be given to industrial projects located in most critically polluted clusters. CSE's work in terms of industry and environment focussed on building capacity of regulators and this work was noticed by the Bangladesh government which requested CSE to provide policy guidance as well as capacity building for its own regulators in the area of EIA.

In the area of urban air quality, CSE had been campaigning for revamping the National Ambient Air Quality Standards, by rationalising it and including certain critical pollutants such as PM 2.5 and Ozone under its ambit. Although the standards were revised to include CSE's inputs, the ministry was delaying the announcement of the new standards. CSE continued its campaign and the new standards were announced in November 2009. Similarly, CSE has been campaigning for improved fuel efficiency norms and the new improved emission norms (BSIV) will be implemented from April 2010 in 11 metro and large cities.

As part of the NAPCC, CSE had provided policy inputs on how the transport and building sectors can become more energy efficient and climate friendly. In transport, CSE had advocated a major push for prioritising public transport. In 2009, the Ministry of Urban Development announced financial assistance to cities for purchase of buses, which would be conditional on a number of measures such as parking policy, integration of multi-modal transport etc. CSE launched a programme to help smaller cities make use of this JNNURM funding to move towards more sustainable mobility options. CSE has published a factbook on the reform procedures for cities and information on

cost, efficiency etc of buses to help cities in placing bus purchase orders. CSE also worked with Kanpur city, where it prepared a state of urban air quality and mobility of Kanpur and engaged with policy makers, regulators and officials to chalk out the way forward.

CSE has been working on a campaign to promote walkability and non-motorised transport for the last couple of years. It published a monograph on walkability of Indian cities with policy recommendations in April 2009. In July 2009, the Delhi government constituted the United Traffic and Transportation Infrastructure (Planning and Engineering) (UTTIPEC), with the aim of enhancing mobility and reducing congestion and to look at all aspects of integrated transport management. CSE has been made a member of its working groups and has contributed to the policy discussions on promoting walkability of Delhi. UTTIPEC has now published "Pedestrian Design Guidelines " for immediate implementation and enforcement. This publication has included CSE's inputs on the issue.

In terms of urban water management, there is now an acceptance for incorporating rainwater harvesting and decentralised wastewater management in cities. These are part of optional measures under JNNURM for getting funds for water supply and sanitation. CSE launched a programme to build capacity within city municipalities for implementing decentralised water management technologies through training workshops. Similarly, in the rural water sector, the government is implementing reform measures where districts would devolve authority to panchayats to manage their water supply. CSE was part of the committee set up by the Ministry of Rural Water Development to look at sustainability of sources and CSE has been actively campaigning for water harvesting and catchment protection. CSE is working with the Ministry to develop guidelines for sustainability of sources of water supply and to build capacity among both officials and panchayats on these issues.

CSE has also been saying that water is the starting point for rural sustainability and has been long advocating that government employment programmes should be used to create capital assets such as ponds, trees, etc which will be the basis for a rural economy that in turn will provide basic livelihood options. CSE contributed to policymaking as a member f the Convergence Committee set up by the Ministry of Rural Development to look at ways in which the different programmes run by different government ministries and departments can be converged with the National Rural Employment Guarantee Scheme (NREGS).

While the acute pollution of the river Ganga was the reason for the Ganga Action Plans, the river came into the limelight recently because of the large number of hydro power projects being constructed on the river, reducing the river to a mere channel. Amidst numerous protests from civil society groups, CSE had submitted memorandums to the Ministry of Environment and Forests, recommending a holistic, integrated and participatory management of the river. In 2009, the prime minister announced the setting up of the National Ganga River Basin Authority and CSE director has been made a member of the Committee. CSE's planned work with a focus on the Ganga river basin will take off next year.

CSE also played a key role as a member of an expert committee in the drafting of the new coastal regulation zone guidelines and prepared a draft proposal with comprehensive suggestions for ensuring livelihood security of coastal populations, protecting them from risk of extreme weather events. This proposal, which was submitted in July 2009, and has now been finalised by the Ministry and will shortly be published. CSE built on this work by organising 2 fellowship programmes on the issue of coastal management and we will follow this up with briefing workshops.

In December 2009, civil society groups were organising meetings to highlight the inaction on the part of the government in the Bhopal disaster, CSE took the opportunity to get the attention of the government on the less talked about subject of the contamination of the environment from the

chemical leak. It tested samples of water and soil from in and around the Union Carbide plant and found that even 25 years, the environment showed high levels of chemicals that used to be manufactured by the Union Carbide factory. CSE demanded urgent measures for remediation and disposal of sludge. As a result of the wide media coverage to this story, the government was forced to acknowledge that there is severe contamination and has now constituted an expert group to look into the issue.

CSE's laboratory based studies of lead and pthalates both of which have been in the news nationally and globally. CSE undertook a study of lead in paints and found very high levels of lead, an extremely dangerous chemical particularly to children. The government has set up an expert group within the Department of Industrial Policy and Promotion and Bureau of Indian Standards to come up with mandatory standards. CSE has been co-opted as part of the group to work on this issue. Similarly, the pthalates in toys study has also come to the attention of the government and an expert committee has been set up by the Ministry of Family Health and Welfare to look into the issue of all chemicals in toys.

The Delhi government is the first of the state governments to announce a climate action plan. Part of its action plan agenda is the creation of awareness and consciousness among schools through the eco-clubs programme in all its schools. CSE has been conducting its Green Schools Programmes for the last 5 years and this year several states participated in the exercise, including the Delhi government. The chief minister, Ms. Sheila Dikshit was present at the Gobar Times Green Schools programme Awards ceremony to give away the awards. Following the event, CSE met with the chief minister to chalk out a programme wherein CSE will conduct the Green school programme in all the 2000 schools in Delhi. The Delhi government will provide the finances to enable the schools to implement the green agenda – water harvesting, wastewater recycling, vermin composting, energy audit etc. CSE collaborated with seven state agencies of Andhra Pradesh, Karnataka, Sikkim, Punjab and Andaman and Nicobar Islands to implement the Green School programme.

CSE also responded to the environmental concerns and happenings of the year by reporting and creating awareness. For instance, water issues were much in the news: the delay and deficiency of the monsoon, the resultant drought and concerns on food security, the ongoing battle between tribals and mining industries, the Bt brinjal story, the Bhopal story, climate change and the resultant focus on renewables, the overexploitation of groundwater in India, the Aila, the vanishing tigers etc were all reflected by detailed and analytical reports published and disseminated through Down To Earth. The stories were well appreciated and in come cases resulted in policy responses. CSE's core function of information gathering and dissemination was enhanced during the year by the revamp of its websites and making the India Environment portal user friendly through open source softwares. The India Environment Portal gets more than 6000 visitors a day and 10 million hits a month showing its usefulness and popularity. To disseminate environmental knowledge and strengthen capacity, CSE organised 25 long and short training workshops targeting 967 persons.

1. Sustainable Urbanisation

1.1. RIGHT TO CLEAN AIR CAMPAIGN

1.1.1. RIGHT TO WALK CAMPAIGN

1.1.1.1 Campaign on pedestrianisation: CSE has initiated a campaign on pedestrianisation to influence urban and road planning that must give priority to public transport supported by the non-motorised transport. Towards this end CSE published its detailed research on how walkable are our cities. For this study extensive surveys were carried out in 10 locations in Delhi based on the walkability indicators. Policy analysis was also carried out to identify the policy action. This report called *Footfalls: obstacle course towards liveable cities* has been published during this period. This has been widely disseminated and well received by the target groups

Based on the findings of the study on walkability, a roundtable on this theme was organised in June 2009. This roundtable highlighted that even today one third of Delhi's daily commuters walk to work. But they face policy neglect and none of the Delhi localities surveyed for walkability have superlative qualities and only the dedicated pedestrian path in BRT corridor is the best amongst all. It flagged off the key policy approaches to make cities more walker friendly. This roundtable was well attended by representatives of Delhi Development Authority, Public Works Department, New Delhi Municipal Council, Central Road Research Institute, Delhi IIT, School of Planning and Architecture, infrastructure consultant, architects and media.

CSE was made a member of the UTTIPEC working group for pedestrian guidelines. We participated in series of consultation with the committee. These guidelines have been finalised and issued. This includes CSE's recommendations and suggestions. We are now building on the walk work in our city programmes to influence urban and road planning.

CSE has also been included in the Non Motorised Transport cell created by Delhi Integrated Multimodal Transport System that is responsible for planning and implementation of the bicycle and walking infrastructure of the city. CSE has begun to participate in their discussions.

1.1.1.2. Fiscal reforms for sustainable mobility: CSE strongly believe that fiscal and regulatory policies can play a significant role in minimising the social, health and environmental costs of motorisation. During June, 2009 CSE worked towards influencing the Union budget to reform taxes related to public transport and efficient and clean vehicles. Based on its analysis it sent a representation to the finance minister demanding a Union Budget that works for bus users, not private car owners. It demanded — tax private cars and waive off duties on buses; hike excise duty on diesel cars to put a stop to rampant dieselisation to reduce toxic pollution and misuse of subsidised diesel for luxury consumption and tax according to the fuel efficiency of cars. This has helped to thwart lowering of the excise duty in face of strong demand from the car industry to lower excise duties and exemption of additional excise duty which the government imposed last year. However, the government did lower the additional excise duty by about of Rs. 5,000

1.1.2. CAMPAIGN FOR FUEL ECONOMY STANDARDS

1.1.2.1. Campaign for fuel economy standards for vehicles: CSE is campaigning for mandatory fuel economy standards for vehicles. During the project period it has

raised this matter with the key ministries and the agencies – Ministry of shipping, road transport and highways, and Bureau of Energy Agency and also the Prime Minister's Office. In August 2009 CSE released a press note, which highlighted its assessment of the CO2 emissions from cars and the implications of the delay in setting these standards for energy security and climate and pressed for the need to set the standard at the earliest. This was also communicated to the concerned agencies. The campaign has reached a decisive moment as government has proceeded on setting fuel economy labelling programme for car models. Through various activities we are keeping the pressure up.

CSE has also briefed the Union Minister of shipping, road transport and highways on the critical policy issues related to the fuel economy standards as this ministry is also involved in the process.

1.1.2.2. Analysis and media alert on official delay in setting fuel economy standards: Public voice was raised to state how despite directions from Prime Minister's Office to set fuel economy standards for cars, concerned agencies and ministries were dilly-dallying. Evidence from our studies showed that cars were major emitters of CO_2. Without setting fuel economy standards, government had granted tax concessions to large cars. This was an investment in inefficiency. This, along with rising car numbers, could further erode energy security and risk India's climate action plan.

1.1.2.3. Fuel economy and air pollution score for car models: To build consumer interest in fuel efficient and also clean vehicle technologies we have analysed the fuel economy and emissions data for the car models in the market for benchmarking. This shows in real terms where cars stand both in terms of their fuel economy and air pollution levels. This will help to resolve the trade-off. For instance a diesel car model may show better fuel economy level but may score poorly on air pollution score. This will bring down its overall rank. This strategy is needed to maximise both climate and air quality benefits. We are in the process of finalising the data with experts in this sector. We will use this for wide dissemination and push the current policy on fuel economy labelling.

1.1.3. CONGESTION REDUCTION

1.1.3.1. Working with the government on congestion reduction strategies and ways to create dedicated urban transport funds: CSE has given a proposal to the Delhi government on the possible ways to implement tax measures to create dedicated fund for financing public transport and also restrain personal vehicles. The Delhi government is augmenting bus transport. But it may find it difficult to meet the need of subsidy to offset the differential between the actual operational cost and fare box collection of the private bus operation. A very small percentage of revenue is collected off – bus through advertisement, issuance of passes etc and also there in problem in sharing the off- bus revenue with the private operators. The government will have to find new or additional sources of revenue to create a dedicated fund to meet the financial requirement of the reforms. The proposal has reviewed; i) Tax measures to reduce the cost of the bus itself so that the capital investments can be lowered. ii) Find alternative sources of revenue to create a dedicated fund for funding of public transport and to offset the revenue losses on account of waiving off taxes on buses. These tax measures should also simultaneously work on the principle of reducing car usage and improving public transport ridership.

Delhi government has taken this on board and based on this a Cabinet proposal has been prepared. At the same time the same issues has been taken on board by the UTTIPEC working group in Delhi development Authority to detail out the strategies. CSE is also a member of the working group and has attended a series of meetings during this period.

1.1.3.2. Campaign on bus reforms: Bus sector reforms are one of the key transportation strategies to reduce pollution

and climate impacts. CSE which is represented on the Supreme Court Committee — Environment pollution (Prevention and Control) Authority, has been pushing for augmentation of the bus fleet. Delhi government is now in the process of purchasing a large number of buses – more than 5000. But simultaneously it is also looking at ways to reorganise the bus sector for efficient operations and improve the modal shift of bus ridership and also find resources to fund this initiative. CSE is effectively engaged with this process. It has carried out bus cost analysis, assessed standardisation of bus specifications to be able to create seamless market and to make bus more cost effective etc.

1.1.4. CAMPAIGN FOR NEW AIR QUALITY STANDARDS FOR INDIAN CITIES

We have been campaigning for the revision of the National Ambient Air Quality Standards – for them to be uniform for all landuse classes, inclusion of PM2.5, ozone and air toxics and greater stringency. These have been languishing with the ministry for over three years. We took up this matter with the ministry and provided our inputs. This has now been notified and most of the changes we have been pushing for have been incorporated. We have also done media alert on this issue.

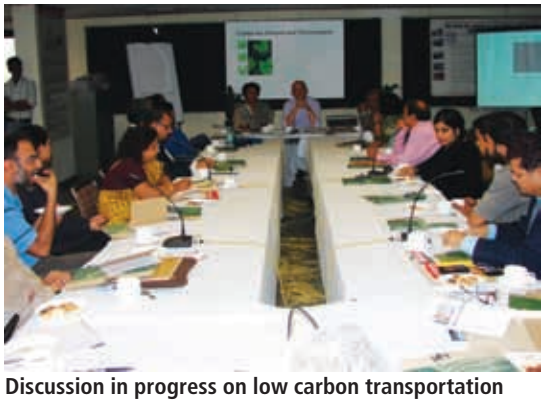
1.1.4.1. Highlighting risk from ozone: During May, 2009 CSE highlighted that Delhi is reeling under high levels of deadly ozone pollution. The study highlighted that during April, ozone levels exceeded the standards proposed by the Union ministry of environment and forests and peak levels have been unusually high. This is a result of a combination of an intensely hot summer with high levels of vehicular pollution in the city. CSE demanded that new air quality standards should be notified. The Union government is delaying notification of its draft standards for ozone and other critical pollutants. Cities like Delhi need to act fast to reduce the cocktail of gases that form ozone in the air.

1.1.4.2. Analysis of air quality based on the new standards: We have analysed the national ambient air status of cities based on the air quality data of the Central Pollution Control Board against the new standards. The purpose was to raise awareness about the air quality and mobility challenge. We found that the tighter standards have changed the air quality status of the industrial locations and increased the number of critically polluted cities. This demands more stringent action.

CSE also raised the issue that the environment ministry had not specified timeline for the implementation of the standards even though the ongoing 11th five-year plan mandates that the major cities should meet monitorable air quality norms by 2011-2012. CSE now demands that meeting air quality standards should be made legally binding.

1.1.5 ROUNDTABLE ON LOW CARBON TRANSPORTATION

We organised Roundtable discussions on *'Transport and climate: building an agenda for action"* along with the Global Partnership on Sustainable, Low Carbon Transport in New Delhi on November 18, 2009. This discussion forum brought together experts, policy makers, and civil society groups to discuss the climate imperatives of the transportation sector. The Partnership on Sustainable, Low Carbon Transport is a multi-stakeholder membership representing development organizations, intergovernmental organizations, governmental organizations, NGOs, private sector, and academe. The Partnership



Discussion in progress on low carbon transportation

is hosted by agencies including UN-DESA and the Asian Development Bank as regional focal points. The Partnership has been established to provide opportunities for coordination and cooperation among organizations working on sustainable, low carbon transport to combat climate change.

CSE is a member of this Partnership. We organized the roundtable to stimulate debate in India on the role of the transportation in climate mitigation and adaptation, and imperatives and opportunities of the developing regions. Solutions to this problem can emerge from a deeper understanding of the diversity of issues and of local mobility imperatives in the region. In the Roundtable meeting two action agendas for policy advocacy were identified and highlighted that include pedestrianisation and a public transport campaign called take a bus campaign. This will be the focal point of interface with the Partnership.

1.1.6 FACT SHEETS ON THE TRANSPORT REFORM AGENDA

In January this year the Union ministry of urban development has announced a stimulus package for buses. It has made a reform agenda conditional to the grant for bus purchase. These include bus sector reforms, parking policy as a travel demand management measure, tax reforms, advertisement policy to generate funds for public transport, etc to meet the objective of the National Urban Transport Policy and reduce congestion, energy and pollution impacts of the motorisation. CSE has prepared fact sheets on this reform agenda for wider dissemination and engagement with the policy makers to support the reform agenda in the cities.

1.1.7. CITY ACTION PLAN

This is part of the effort to engage with the policy makers and people of select cities to strengthen the policy action on air pollution and, and urban mobility and also share lessons from other cities like Delhi to chart the future course of action. Under this initiative, CSE teams up with local groups to first conduct a citizens' survey to get a grip on how people perceive the nature and scale of urban mobility and air quality problem in the city. CSE further undertakes research and prepares a report on the state of air quality and urban mobility of the city. Based on the report, CSE then organises a dialogue with the city's key policymakers and other stakeholders to chart the future course of action for sustainable mobility and clean air for the city. This task is then an ongoing process where CSE closely works with the local authorities to follow up on the plans.

Kanpur was the first of these initiatives and it was chosen because it is one of the rapidly growing cities in the country facing growing motorisation. While the mega cities area assured of large-scale investments and planning efforts, medium cities such as Kanpur are neglected. Kanpur is also one of the cities which was picked for first generation reforms by the Supreme Court and the city has implemented a series of measures such as introduction of Euro II and Euro III norms for vehicles, Initiated the CNG programme, phased out old vehicles and introduced new buses, and several other measures. Efforts to reduce air pollution in Kanpur are in danger of being wasted, as pollution levels are once again creeping up in the city. The city must take steps to reverse this trend fast.

1.1.7.1. Kanpur City Dialogue on Air Quality and Transportation held on Kanpur, December 17, 2009: CSE organised the *Kanpur City Dialogue on Air Quality and Transportation Challenge: An Agenda for Act*ion in collaboration with the Uttar Pradesh State Pollution Control Board in December 2009. The purpose of this public meeting was to find solutions to the scary air pollution and mobility crisis facing Kanpur; engage with policymakers and people of the city to strengthen policy action on air pollution and urban mobility; and, also share lessons from other cities like Delhi to chart the future course of action.

On this occasion CSE released its preliminary findings from the citizens'

Panelists at the Kanpur city Dialogue on air quality and transportation

survey and assessment of the pollution and mobility challenge in the city. The survey results found that 80 per cent of the respondents have said air pollution is worsening, and incidence of respiratory diseases, asthma and eye irritation is on the rise.

The dialogue got overwhelming response. This gathering of nearly 150 people included all who are concerned about the deteriorating air quality and congestion. They debated on the critical strategies needed to move ahead. The UP state government officials including district divisional and administrative agencies, regional transport office, Kanpur municipal corporation, development authority, civil society groups, educational institutions, medical doctors, citizens and media participated in this city dialogue.

Addressing the public forum, Bhure Lal, the Chairperson of the Authority said that EPCA has identified four key areas that have the potential to engineer a fundamental transition. These include gaseous fuels programme, public transport and transport demand management, vehicle inspection and management of transit traffic and phasing out of old vehicles. Yashpal Singh, from the Environment Directorate, UP Government along with the UP State Pollution Control Board presented an overview of the status and progress of action in the city.

Key government officials were part of the dialogue and have shown commitment to carry forward the work to improve air quality and mobility in the city. Some of the key speakers were: Bhure Lal, the Chairperson of the Environment Pollution (Prevention and Control) Authority (EPCA); L Venkateshwaralu, Divisional Commissioner of Kanpur district and also the head of the task force of the city action plan; Anil Kumar Sagar, District Magistrate of Kanpur; Mukesh Sharma, professor, IIT Kanpur; U N Tiwari, Additional Municipal Commissioner, Kanpur Nagar Nigam; and Rakesh Jaiswal, executive secretary of Eco Friends, a well-known civil society group. The meeting was well covered and there were several front page news items on the poor air quality of Kanpur and potential health impacts and the mobility crisis.

Public response: Citizens of Kanpur engaged with a lot enthusiasm and interest in this

dialogue meeting. A large number of concerns from air quality and health to traffic congestion and roads conditions hogged their attention. K K Bhardwaj made a plea that the Government should promote buses and other eco friendly vehicles. Surya Narayan Mishra of Paryavaran Vahini said Kanpur should have a task force for comprehensive decision making on environmental issues. The action plan should have short, medium and long term activities. Strengthen the governance system. H K Mahapatra, Professor, HBTI wanted even the non technical factors like lack of driving discipline, lack of maintenance addressed to improve the air quality.

The event was covered well by both print and electronic media.

1.1.8. TRAINING PROGRAMMES

CSE organised a training programme, 'Urban transport and mobility: Agenda for Reforms' during 16 – 19, September 2009. Many cities of India are in the process of implementing City Development Plans and Comprehensive Mobility Plans that are also linked with the investments under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). Cities are also in the process of expediting the reform process set out as the conditions for the funding of urban public transport buses under the JNNURM. Moreover, cities have also drawn up city action plans to clean up air pollution. These policy opportunities have created enormous need for knowledge mobilisation and experience sharing to give direction to the specific strategies. Regulators from 14 cities had participated in this orientation programme. These cities include – Kanpur, Ujjain, Indore, Gwalior, Guntur, Nagpur, Chennai, Bangalore, Hoskote, Magadi, Kannakpura, sikkim, Angul, Ahmedabad. There was also the Veolia agency that works on transportation issues from Delhi.

Participants of the training programme with EPCA Chairperson Bhure Lal and CSE associate director, Anumita RoyChowdhry

A class room session of the training on urban transport and mobility

Another training was held on 'Clean Air Imperatives of Urban Mobility' in Delhi from December 21 - 24, 2009. Managing air quality is turning out to be a serious governance challenge in Indian cities. More than half of our cities are reeling under serious particulate pollution. More and more cities, even smaller cities are getting extremely polluted with serious health impacts. But many cities in the country have begun to design clean air action plans to combat this problem. The orientation programme on Managing Urban Air Quality therefore aims to support these initiatives that are currently at various stages of progress. This forum intends to further enable regulatory capacity, and facilitate intercity dialogue on common concerns, challenges and solutions through sharing of experiences. The programme intends to deepen the understanding of issues of air pollution challenges of urbanisation, assessment of pollution sources and their relative contribution, mitigation strategies and air quality management and governance. The course also dwells on the use of various air quality management tools

like emission inventories, air pollutant dispersion modelling, use of satellite based techniques and geographic information systems for better designing of clean air action plans that would eventually meet the national ambient air quality targets. The forum also explored the linkages between all these issues and helps institutionalise an integrated approach needed to control air pollution and enable mobility management.

The four-day programme explored a package of planning; regulatory, economic, and technical instruments and also key awareness raising tools necessary for cities in India to make the transition to clean cities.

Participants representing nine cities from Madhya Pradesh, Jammu and Kashmir, Karnataka, Andhra Pradesh participated in the training programme.

1.1.9. Participation in the exhibition on "Community dialogue on non-motorised transport in India" at the Urban Mobility India 2009 Expo and conference

This space was created to represent the work of groups across India working to promote walking and cycling. Large number of groups brought their posters to show case the problem and the solutions. These include — Centre for Active Transport, Ecomove Solutions, Goa Cycle Club, Graduate Welfare Association Fazilka, Innovative Transport Solutions, Interface for cycling expertise, Mozaic design, Pradeep Sachdeva, Design Associates, Bandra Santa Cruze Foundation, Pune Traffic and Transportation Forum, Ride a Cycle Foundation, TRIPPS, INTACH, UTTIPEC, DIMTS….. It was a good visibility for CSE'S work. We had put up our exhibits as well — our walk monographs, and T Shirts. Those were big hits. We had done awareness posters for this.

1.2. GREEN BUILDING PROGRAMME

During 2009-10 a decision was taken to start a new programme on sustainable buildings. This is still in nascent stage as most part of the year was spent designing the programme, building a team and raising resources for the programme and in carrying out some preliminary analysis.

1.2.1. SCOPE OF THE PROGRAMME

Construction industry in India is growing at a rate of 9.2 per cent per annum as against the world average of 5.5 per cent per annum. The construction industry is 9.8 percent of the GDP. It is one of the largest in terms of economic expenditure, use of raw materials and environmental impacts. The real estate sector is expected to grow phenomenally in the near term in the key sectors of residential, institutional and retail. Retail sector will see prolific growth and retail building expansion will be phenomenal. Most of this development will take place in a concentrated manner in big cities. In fact only the National Capital region of Delhi will hog 20 per cent of the future demand and Mumbai about 16 per cent. The rate of increase will also be very high in Hyderabad, Chennai and Bangalore.

Buildings are the nucleus of urban consumption and represent the core demand for basic resources – water, energy and material in cities and are also responsible for enormous wastes. Demand for housing and commercial space will escalate in India and lock up enormous carbon and energy. The residential and commercial sector consumes more than a quarter of the total electrical supply usage of the country and major portion of this is utilized in the buildings. Commercial development is witnessing rapid growth. Malls, multiplexes, housing conglomerates are springing in cities. An effective environmental management of building provide the opportunity for intensive demand management to reduce overall footprint of urban consumption of water and energy and minimise waste.

Currently, the environmental regulations for India's construction industry are weak. Most building codes are voluntary and not strong enough to ensure scaled up adoption of sustainable practices. Environment impact assessment procedures for the buildings are extremely inadequate. This programme on sustainable buildings will address different

building sectors. In the first phase the primary focus will be on the aggressive commercial and retail developments in cities that have the potential for greater wastefulness.

Policy opportunities for this intervention exist. The government of India has come up with a National Mission on Sustainable Habitat under the National Climate Action Plan. This has a significant focus on the energy efficiency of buildings. The Bureau of Energy Efficiency (BEE), under the Energy Conservation Act, 2001, has released the Energy Conservation Building Code, 2006 (ECBC). ECBC is a set of requirements to be met at the time of design and construction so that operational energy requirements of buildings remain low. Its basically looks at the building envelope, ventilating, heating, cooling and lighting systems of buildings. ECBC covers new large commercial buildings. This is not mandatory but there are plans to make the regulations mandatory. Limited energy audits of selected buildings show that much can be done to save energy even in current constructions. In addition to the ECBC, the recent amendments of the Environment Impact Assessment (EIA) procedures by the Ministry of Environment and Forests have brought large building construction projects in cities within the ambit of EIA regulations. This is a very important opportunity to influence the sustainability indicators of these projects.

In the government sector the Ministry of Urban development has included this in the mission plan in sustainable habitat under the National Climate Action Plan. Bureau of Energy Efficiency has started implementing voluntary energy conservation code. City governments have begun to mandate implementation of rainwater harvesting systems in new buildings. And some of the elements related to green buildings are now being incorporated in the building bye laws and EIA requirements. This programme will help to strengthen and integrate the disparate efforts and scale of the implementation. In addition to this, couple voluntary green rating programmes for buildings have started in the country. But scale of its application is still very limited. Number of buildings that have been rated is miniscule. The scale of these programmes will grow only if multi-stakeholder interest can be aligned and a larger consumer awareness programme can be created. This programme will help to achieve that.

CSE has already launched an extensive programme to reduce water footprint of buildings through technical pilot projects on rain water harvesting, in-situ waste water treatment and recycling etc. Now a more comprehensive programme is being envisaged targeted at the construction industry in cities to assess environment and energy impacts of buildings in a more integrated way to make them energy and resource efficient.

2. Sustainable urban water management

2.1. CITY WASTE-WATER MANAGEMENT

2.1.1. SOLID WASTE MANAGEMENT AT CSE

The solid waste generated at CSE office is recycled and reused in the bioculum and compost plant implemented at CSE during December 2009. Following practice is adopted.

Waste from canteen approximately 7-10kg (rises upto 20 kg/day during training programmes) is collected in a drum on daily basis. Molasses is added into it. The liquid collected from the drm after 4-6 weeks is stored and further fermentation is allowed to take place in anaerobic conditions till the pH is 3-4. This bioculum is added into grey water tank daily (0.5 ltr) which acts as a biocatalyst for waste digestion. The shed leaves and uncooked vegetable remains are put into compost pit. Bioculum is also added into it to accelerate the composting process. After 4-6 weeks the compost is ready for use.

2.1.2. WASTEWATER RECYCLING AT AYANAGAR, NEW DELHI

A horizontal flow constructed wetland has been adopted to treat the wastewater at M/s Pradip Sachdeva Design Associates as per the following details.

- Water usage for toilet and kitchen = 2 KLD
- Number of users = 30
- Area of reed bed = 11 sq. m.

Treatment process: Primary treatment takes place in the settler/septic tank where the sludge settles down and scum floats at top. The clear liquid flows to the collection chamber. From this chamber, water is pumped using a manually operated pump to the root zone treatment system for secondary level treatment. The secondary treatment takes place in the root zone system where the removal of nitrates and phosphates takes place and oxygen enrichment of the water flowing in the gravel bed takes place.

2.1.3. IMPROVED SEPTIC TANK AT FARMHOUSE

A farmhouse at Gaul Pahari, Gurgaon has adopted an improved version of the conventional septic tank in November 2009 to collect and treat its wastewater (both grey and black water). The wastewater which is collected in a collection chamber is diverted to the improved septic tank with three chambers. The grey water from kitchen is first collected in a grease trap to separate the oil & grease. The scumm floats at the top which is manually skimmed off. The incoming raw sewage settles in the first chamber and the overflow moves to the next chambers through 75mm PVC pipes provided at the top of each chamber. This turbulent flow helps in directing the fresh influent to the bottom of the next chamber where active biomass is present for proper digestion. Also, it helps to increase the detention time so that the decomposition of suspended and dissolved solids become faster. The treatment takes place under anaerobic conditions. The treated effluent from the septic tank is then directed to a soak pit.

2.1.4. DISSEMINATION OF INFORMATION THROUGH DOWN TO EARTH

Reports were published on ecosan toilets in Trichy (oorani); and Asaltpur; (wastewater treatment). Summary of these reports are as follows.

Ecosan Ghaziabad: After three years of hard work in changing people's mindset and creating awareness, Asaltpur villagers in Uttar Pradesh now use community ecosan toilets where urine and decomposed faeces are collected and later used as fertilizer. Human excreta is rich in nutrients, a person in a year produces 4.56 kg of nitrogen, 0.55 kg phosphorus and 1.28 kg potassium. This compost acts as a soil conditioner; it improves the organic content in the soil and its water holding capacity and thereby

reduces the water consumption. The villagers save Rs.2,500 annually by not applying chemical fertilizers and are able to achieve the same growth in crops by using the waste from the toilet.

Ecosan Trichy: 'Sampal' toilet more commonly known as the Ecosan toilet incorporates a three- in- one model where all streams namely faeces, urine and wash water goes in a separate pipe line, gets treated and reused. The villagers of Kaliyapalayam (40 km from Trichy) have found the Sampal toilets to be the most economical option to defecate. Previously, people from the village would defecate on the banks of the Cauvery river bed but now the village provides manure and fertilizer through its community Ecosan toilet. Near by villages like Sevanthilingapuram have also come forward and adopted a similar model. In Musiri, where it is not possible to convert the existing flush toilets to Ecosan model, rootzone technology is used to treat wastewater and reuse it thus saving the villagers from paying for sludge disposal and from preventing the pollution of the Cauvery river which is considered their lifeline. The cities have a lesson to learn from these villages.

Oorani: 'Oorani' is a Tamil name for a dug-out pond that collects and stores rain water for drinking purpose. Under the pond renovation programme, a pilot project was conducted in Pattikadu village in Tamil Nadu where the oorani was divided into different zones for protection and revival. The storage zone was generally protected by the social taboo attached with the pond that it is located near the temple and is thus holy. The inner and outer zones were protected by use of organic farming and by providing alternative houses to those living in the catchment area of the oorani. Community involvement through creation of Oorani Users Association (OUA) and sharing of costs led to the sustainability of the programme. A water meter is fitted in the out let of the final filter to know how much water is being consumed. This pilot project will help the state administration to move from a non sustainable groundwater based water distribution system to a community managed traditional water management system.

2.2. URBAN RAINWATER HARVESTING

2.2.1. DESIGN AND IMPLEMENTATION OF RAINWATER HARVESTING PROJECT AT ACE CALDERYS COLONY, KATNI, MADHYA PRADESH

The Ace Calderys colony, near Katni, Madhya Pradesh has an area of 1150 acres. Ace Calderys is a leading manufacturer of a diverse range of refractory products providing one stop solution for refractory products in India. The main sources of water supply to the colony depend on a perennial river running north of the colony and groundwater. Apart from this the colony depends on rain and river water stored in an abandoned query. Every year there is a decline of 2 to 4m in the level of groundwater in the area. The groundwater level in the colony has already reached 20 m below ground level. Due to scarcity of rain in last couple of years, the colony people faced water crisis in the lean period. The water was supplied only on alternate days and that too for a short period.

During the period, CSE was approached to help in planning and designing of rainwater harvesting system for their colony. CSE staff visited the colony to collect field data and chalked out a strategy for rainwater harvesting system. The team also performed tests for infiltration nature of the soil. It was proposed that the colony should harvest the rainwater at thirteen sites. A combination of storage and recharge structures has been proposed in the colony. Bunglows, clubs, schools, temples, library, canteen and hospitals were chosen to harvest the rainwater endowment. Two different types of recharge structures have been proposed namely: recharge well and percolation well. To take care of recharge at a larger scale, construction of pond was also advised. The summary of the structures and sites of rain water harvesting is as follows:

Sl. No.	Name of building	RWH potential (lakh litres)	Type and number of proposed structures
1	Senior Vice president's bungalow	43.00	■ Desilting chamber-1 no. ■ Underground storage tank- 1 no. ■ Conversion of existing open well into recharge well -1 no. ■ Recharge wells - 2 no.
2	ACE club	36.98	■ Over head storage tanks - 4 no. ■ Recharge wells - 2 no. ■ Recharge wells with desilting chamber - 1 no.
3	Inspection bungalow	10.61	■ Storage tank (Ferro-cement tank) - 1 no. ■ Loft tank - 1 no. ■ Diversion of excess water to mine - 1 no.
4	Shopping complex	31.53	■ Recharge well with filtering tank - 1 no. ■ Recharge well - 1 no. ■ Recharge well with desilting chamber - 1 no.
5	Library	10.00	■ Percolation well - 1 no.
7	Primary school	33.05	■ Percolation well - 2 no.
6	DAV School	11.07	■ Storage tank (Ferro-cement tank) - 1 no. ■ Underground storage tank - 1 no ■ Percolation well - 2 no. ■ Recharge well - 1 no.
8	Temple & Ramlila shed	12.67	■ Storage tank (Ferro-cement tank) - 1 no. ■ Recharge well with filtering tank - 4 no.
9	ACE Hospital	19.72	■ Storage tank (Ferro-cement tank) - 1 no. ■ Percolation well - 1 no. ■ Diversion of excess water to pond- 1 no.
10	Canteen	17.51	■ Diversion of rainwater to pond- - 1 no.
11 12 13	North zone colony Central zone colony South zone colony	----- ----- -----	■ Recharge well with desilting chamber - 1 no. ■ Storage of rainwater in pond - 1 no. ■ Percolation well - 5 no. ■ Storage of rainwater in pond] - 1 no. ■ Percolation well - 4 no. ■ Storage of rainwater in pond - 1 no.
		Total	**48 structures**

2.2.2. DESIGN AND IMPLEMENTATION OF RAINWATER HARVESTING PROJECT AT RAIN SHELTER IN MADHUBANI, NORTH BIHAR

Madhubani is a chronically flood-prone district. The area is under floodwaters for several months of the year. All sources of drinking water are submerged in floodwaters and therefore non-potable. Therefore, it was decided to undertake rainwater harvesting in a floodshelter, constructed on an elevated area. The design is to harvest rainwater from the roof of the shelter and stored in storage tanks to provide drinking and cooking water for poor families, which come to the shelter. The total cost estimated was Rs. 70000 and the project was implemented.

2.2.3 CAPACITY BUILDING ON RAINWATER HARVESTING

With the objective of capacity building among the officials working in water sector for effective execution of rainwater harvesting projects, CSE organised several training programme on rainwater harvesting during the period.

CSE has been recognised as a centre of excellence (CoE) on sustainable urban water

management by the Ministry of Urban Development, Government of India. Training programmes were also organised for municipal engineers as part of the CoE work.

Experts working on the issue of water with government as well as private sector were invited as resource persons to interact with the participants viz - Mr K J Anandha Kumar, Hydrogeologist, Central Ground Water Board; Dr V C Goyal, Director, Science & Society Division, Department of Science and Technology; Dr Padma Vasudevan from Indian Institute of Technology, and Mr Lalit Sharma, Director, Water Management & Infrastructure, The Sehgal Foundation. Participants were exposed to water related issues such as 'Government policies and strategies on catalyzing rainwater harvesting', water quality issues and case studies on water quality improvement', "instruments and monitoring techniques of rainwater harvesting projects' etc.

Following training programmes were undertaken during the period under the sustainable urban water management programme:

1. July 6-10, 2009: The participants included architects, municipal engineers, government officials, consultants and representatives of NGOs. 26 participants attended.
2. July 13-17, 2009: Participants included architects, planners, builders, engineers, professors, environmentalists and scientists. 15 participants attended the training.
3. September 21-25, 2009: There were 27 participants for this training programme in which the focus was on how municipalities can establish decentralised wastewater treatment plants, (DEWATS) particularly in unsewered areas that would facilitate recycling and reuse of water. It includes hands on training for planning, designing implementation of DEWATS and monitoring interactive seminars, detailed case studies, field trips and class room instructions.
4. November 3-7, 2009: Participants included architects, builders, students, NGOs, practitioners etc. 17 participants attended.
5. November 17-21, 2009: Five days programme focusing on how municipalities can augment their water availability by using public spaces to recharge their groundwater and to bring in required laws to enable individuals to

Training programme on urban rain water harvesting in progress

undertake rainwater harvesting. The participants will get the opportunity to learn from the experiences of officials, technical experts and civil society members who have actually implemented the programme. 14 municipal engineers from different parts of India attended the training programme.

6. December 14-18, 2009: This training focused on how municipalities can establish decentralised wastewater treatment plants, (DEWATS) particularly in unsewered areas that would facilitate recycling and reuse of water. There were 27 participants for the training.
7. January 19-23, 2010: 14 municipal engineers attended the programme, "Towards rain cities- Mainstreaming urban rainwater harvesting in cities".
8. March 30- April 03, 2010: Participants included architects, builders, students, NGOs, practitioners etc. 17 participants attended the training.

2.2.4. RAINWATER HARVESTING AT JAHANPANH FOREST, NEW DELHI

A portion of the Jahanpanah Forest (DDA land) which lies noth-east of the Tughlakabad Institutional Area has been selected as the major catchment for rainwater harvesting. This catchment area can further be divided into four catchment areas, three of them being near the graveyard and the fourth one on the east of the road. Present RWH work has been done for the fourth catchment area.

Total area of N-E portion of Jahanpanah forest is approximately 25 hectares and the rainwater harvesting potential is approximately 60 million litres annually. Prior to the RWH structures being constructed, the runoff from this catchment used to get collected in the existing depression downstream near the transformer station. The excess water accumulated here drained away into the storm water drains. As the water drained downwards from the catchment, it eroded huge amounts of topsoil with it.

Participants during a site visit

2.2.5. NEW RWH STRUCTURES CONSTRUCTIONS

A new recharge well was constructed and de-silting chamber with connecting pipeline from the last check dam downstream. And two new check dams were also done. The water collected at the last check dam is diverted to the recharge well through pipeline so that the water gets recharged to the aquifer.

2.2.6. UPGRADATION OF CHECK DAMS

Widening of a check dam and repair of one of existing check dam were also done. The overflow from the second check dam is being stored in the existing depression. The overflow outlet of this depression into the storm water drain has been closed. The existing borewell is slotted and has been cleaned so that the water stored here will get recharged into the ground through it. Thus the whole water collected from this catchment will be recharged, partly by the new recharge well (alongwith two new check dam constructed) and partly by the existing bore well (alongwith two upgraded check dams feeding it)

2.2.7. WATER AUDIT

CSE carried out a water audit for Ms Ruchi Singhal at her residence at G-92, Saket, New Delhi. The only supply to the house is from the municipal supply. The house also harvests the rooftop rainwater to collect in an underground 94000 litres tank. This water

Key facts about the project:	
Total residential members	6
Total water demand as per BIS standards (135 litres/capita/day)	810 litres/day
Average water consumption over last 9 months (from water bills)	1251 litres/day
Total rooftop and surface area	250 square metres (sq m)
Average annual rainfall in Delhi	611 millimetres (mm)
Total volume of rainwater harvested	94,000 litres

actually supplements the municipal supply for non potable purposes. The house is spread over 250 sq m area with constructed two floors. There are total six family members in the house including two children and a servant. The idea for water auditing in this case was to compare their water use against the standard norms and to find where they can minimise their water consumption.

CSE staff visited the site with prior information on *May 2, 2009* to collect first hand field level data. Another visit was made on May 14, 2009 to cross check the calculations and results and fill the gaps during first visit and. The team carried a detailed questionnaire with them and interviewed all residents to find out their water supply and water usage pattern and habits. As there are no separate flow meters to check water usage flow rate tests were conducted for different taps & showers to be able to estimate water used for various purposes.

Activity	Water use (litres)
Actual water consumption (average of last 9 months water bill)	1251
Total water consumed from the storage tanks	1444.46
Total calculated water consumption for various activities	959.39
Difference between water consumption from storage tanks and water actually used for various purposes	485.07

This water use does not exactly match with the average water consumption calculated from water bills. So, it is important to identify various uses for which water is used for in the building. Some other usages of water such as bathing pets, cooling appliances such as air coolers should also be taken into consideration.

CSE prepared a detailed report and submitted based on the key findings of the audit.

2.2.8. DATABASE ON THREATENED WETLANDS

CSE has built a database on threatened wetlands of India. 55 wetlands have been documented so far. This is an interactive database. The wetlands documented are classified into two categories on the basis of the fact whether court case has been filed or not. There are four sections in each study—the background, chronology of events, people (detailed contacts of researchers, activists, advocates etc) and links (for important research paper, books, court orders). People can submit their own case studies or can add to the existing database.

As a result of this effort, case studies poured in from different parts of the country. We received case studies from Chennai, Bhopal, Nainital, Alwar, Fazilka, Pune, Kanyakumari, Bijnaur etc. The database gained appreciation from Pakistan Fisherfolk Forum [PFF] based in Karachi, Wetland Link International, London and Wetlands & Birds Korea. People from Bangladesh wrote to us on encroached Gulshan-Baridhara lake in their country.

The report on successful restoration of a baoli at Nizamuddin by the joint effort of government and private partners, ASI (Archeological Survey of India) and AKTC (Aga Khan Trust for Culture) has been put up on the environmentportal. The story of encroachment of Ousteri lake in Puducherry and plan of encroachment of Yamuna floodplain had also been featured in the special section of the portal. Reports on Sanjay lake (Delhi), Khurpatal (Naintal) and Kanyakumari lakes have been put up on rainwater harvesting website. These stories

Media coverage

Mumbai's recent shortage of water supply caught media attention and India TV requested CSE to take part in the discussion on water wastage on *India News* in October 2009. The debate was centered on whether there was a way to reduce fresh water usage in non potable purposes.

CSE participated in the programme, Green Delhi, of Sahara TV and shared views on different green initiative to be taken by Delhi government to keep the city green.

An interview with CSE representative was published in *Hindustan Times*, on November 07, 2009 on the wetlands of Delhi, their use and destruction

***Water Today* requested CSE for an article on the conflicts arising between people, urban and rural, rich and poor on water issues and published the story *Fire and ice* in the December 2009 issue of the magazine.**

are dealing with causes of deterioration of the water bodies. Construction in the catchment of Khurpatal has affected the groundwater of the area. On the other hand the water bodies of Kanyakumari and Sanjay lakes are victims of pollution. A flash animation on the history of water supply in Chennai has been put up on rainwater harvesting website.

The story on the plan of encroachment of Yamuna floodplain has gained appreciation from all quarters.

2.2.9. INFORMATION DISSEMINATION THROUGH *DOWN TO EARTH*

Several articles were published in *Down To Earth* on issues related to conservation of water resources. Aravalli lakes (*Aravallis undermined*: June 15, 2009), Udaipur lakes (*Lake conservation plan flawed*-June 15, 2009) and Delhi water bodies (*One lake vanishes*-September 15, 2009) are some of them. Stories on Aravalli lakes and Udaipur lakes focus on the fractured governance. The net result is the lakes are dry and the citizens face the heat. The story of Delhi water bodies deals with the government's attitude in proving that the water bodies in Mayapuri and Jehangirpuri area are of no use and hence can be encroached. As a result of the article, *One lake vanishes*, the advocate fighting the case of Delhi water bodies approached CSE for research material on Mayapuri lake to defend in the High Court.

A report was also published on the unique example of rainwater harvesting in a colony in Bengaluru in Karnataka (*Water wise*-July 15, 2009 issue). As the residents of the colony depend only on groundwater, they started rainwater harvesting and thus recharging the groundwater. The Residents Welfare Association of the colony created its own tariff system for using water. The tariff system is designed in such a way that the residents are charged for even wasting the water. This story was reprinted in *Expressbuss*.

2.2.10. REPORTAGE ON CSE WEBSITE

A few reports were also published on the CSE website. Report on fishermen of Chilika lake of Orissa, who marched towards Chief minister's office in December to protest against the "black Chilika bill" which gives rights of fishing to non traditional fishermen was put on the website. 15000 odd fishermen was not given any hint how the bill had lost its validity and now the government is ready with a new draft on *Chilika Fisheries Regulation Act*. In the article, *Tata uses nano technology for water purifier,* CSE reported on the technology and effectiveness of this filter.

3. Building Climate Resilient Societies

3.1. ANTI-TOXIN CAMPAIGN

3.1.1. STUDY ON PHTHALATES IN TOYS

CSE's Pollution Monitoring Laboratory conducted a study on toys and found high levels of phthalates (pronounced tha-lates), a chemical used to soften plastic, in all samples of toys it tested. Over 45 per cent of the samples exceeded the internationally accepted safe limit for phthalates. Shockingly, there are no regulations to control or monitor the use of these toxins in India.

The CSE lab tested 24 toy samples – all randomly bought from markets and toyshops in Delhi — for the presence of phthalates. Fifteen were soft toys and nine hard toys. The samples were found to have been manufactured in four countries: India, China, Taiwan and Thailand. The tests showed:

All samples contained one or more phthalates — DEHP, DINP, DBP (di-n-butyl phthalate) and BBP (benzyl butyl phthalate), all harmful.

- 46 per cent of the samples had hthalates exceeding the EU limit of 0.1 per cent by mass of plasticized material.
- Of the sampled toys that children generally put in their mouths (such as teethers), 29 per cent exceeded the phthalate limit.
- Of the 24 samples picked randomly, 14 were found to be from China and 2 from Taiwan – 57 per cent of the China-made toys and 100 per cent of the Taiwan-made toys crossed the safe limit.
- Indian manufacturers accounted for 7 samples: 14 per cent of these were above the phthalate limit.
- The study also proved that claims of 'non-toxic' which some toy labels carry are completely false and fraudulent. For example, a soft toy manufactured by Funskool India Limited, that claimed to be safe for children aged 3-18 months, had phthalate content 162 times above the safe limit!

3.1.1.1. Regulatory system in India: The EU has been the first to regulate the use of these chemicals in toys. It has restricted the use of some phthalates in all childcare articles and toys to 0.1 per cent concentration by mass of the plasticized material. Toys containing these chemicals in higher quantities cannot be sold in EU countries. In 2008, the US Congress enacted the Consumer Product Safety Improvement Act, prescribing restrictions broadly similar to those in the EU on toys and childcare articles sold in US markets. Neither India nor China has any regulations to control or monitor the use of phthalates in toys. According to China's Toy Industry Association, the country follows international standards dealing with safety aspects of toys related to mechanical and physical properties. Phthalates are not covered under these standards.

In India, the Bureau of Indian Standards (BIS) has issued three sets of standards covering safety aspects of toys, but none covers phthalates – and even these standards are voluntary in nature. Strangely, while Indian toymakers are not required to adhere to any mandatory safety standards, the country had banned the import of toys not meeting the standards. Since January 2009, under pressure from a vigilant judiciary, Indian authorities tried to regulate the safety aspects of imported toys. First, they banned the import of toys from China. Then they issued a notification asking all Chinese imports to conform to Indian standards, and then broadened this notification to cover imports from all countries. But the government is on a sticky ground here. While making it mandatory for imports to conform to standards, it does not ask of its own industry to meet the same. This is clearly a non-tariff barrier to trade.

This ban lapses on January 23, 2010. After the deadline, the government would have two options — either regulate all toys, or leave the entire market unregulated.

3.1.2. STUDY ON LEAD IN PAINTS

CSE's study on the popular brands of paints available in India has revealed that most of them contain high quantities of lead, a toxin especially dangerous for children. The Pollution Monitoring Laboratory tested these brands for their lead content over 2008 and 2009. It found that 72 per cent of the samples had lead much higher than the voluntary limit specified by the Bureau of Indian Standards.

In 2008, CSE had procured 25 samples of popular enamel paints randomly and analysed them for lead content. The brands tested were Apcolite (Asian Paints), Nerolac (Kansai Nerolac Paints, Luxol (Berger Paints India), Superlac (Shalimar Paints) and Dulux (ICI India).

Lead was found in 23 of the 25 samples tested. Seventy two per cent of the samples — 18 samples — contained lead much higher than the 1,000 ppm limit specified by the BIS.

Lead is often referred to as the 'silent epidemic', and it is easy to get exposed to it. One can pick it up by touching paint on walls and other surfaces, inhaling exhaust fumes from a vehicle, or while walking on leaded paint chips. The human body cannot process and excrete lead and sustained and large exposure can cause serious damage. Lead can damage the developing central nervous systems and brains of a child, leading to poor performance and short attention spans. Adults exposed to lead poisoning may find it difficult to concentrate or remember things, and feel pain in muscles and joints.

The United States Agency for Toxic Substance and Disease Registry has declared lead level in blood exceeding 10 microgramme per decilitre as unsafe — studies indicate that over 60 per cent of children in India may have more than this level in their blood. And paints are a key source. Though governments across the world have set mandatory standards for the level of lead in paints — the most common source of exposure to lead — the regulatory norms in India remain lax. In India, paints can be made, sold and used without any regulatory controls. The BIS specifications for the paints sector are voluntary, setting the limit at 1,000 ppm. The US, Canada and Singapore have limited the lead content in their paints to 600 ppm.

3.1.3. BHOPAL STUDY

The Union Carbide India Ltd (UCIL) factory at Bhopal, abandoned after the world's worst industrial disaster that took place on December 3, 1984, is still heavily contaminated with a range of persistent pollutants. CSE tested twelve water and eight soil samples from in and around the UCIL factory for the presence of 5 chlorinated benzene compounds, 4 organochlorine and 2 carbamate pesticides and 5 heavy metals – toxic chemicals that were produced or used as ingredients of the products or wastes generated by USEPA methodology based on GC-ECD, GC-MS, HPLC (Post-Column fluorescence Detector) and AAS.

The soil and waste samples from the factory were highly contaminated with pesticides, the level reaching up to about 10000ppm for carbaryl in one sample and varying amounts of isomers of HCH, chlorinated benzenes and aldicarb. Heavy metals such as chromium were detected up to a level of about 1000ppm and mercury up to a concentration of 8000ppm. The average concentration of pesticides in all groundwater samples was 0.006ppm which is 12 times the standard. It can be concluded from the study that even after 25 years the residents of the area around UCIL factory are still exposed to chemical-laced groundwater, soil and factory wastes and perhaps will continue to be exposed until the site remains contaminated. Groundwater in areas even three km away from the factory contains almost 40 times more pesticides than Indian standards.

CSE released the findings of the study in Bhopal on December 01, 2009. The abstract of the study was published in the Italian newsletter, Societa Chimica Italiana-Newsletter No. 38, 15th January 2010 - pp 3-4

3.1.4. CAPACITY BUILDING PROGRAMMES

The Pollution Monitoring Laboratory organised the following two training programmes sponsored by CPCB of 3 day duration for State and Central Agencies involved in Hydrology Project Phase II of the government of India.

- Water quality monitoring: 9-10 March 2010. There were 13 participants for this training
- Analytical procedure & trace metal – pesticide analysis: 22 - 24 March, 2010. There were 25 participants

Training Programme was coordinated with Dr. D. D. Basu (CPCB) which included budget preparation (boarding lodging, stationary) , finalization of faculty, schedule for the training programmes- lectures and demonstration at CSE & CPCB lab, reimbursements for conveyance and honararium of faculty, feedback of the participants. Course materiel related to training programme mentioned below was prepared and distributed to the participants on Gas Chromatography / AAS-Instrumentation, Principle, and Application was prepared and distributed to the participants. Questionnaire was prepared on Gas chromatography/AAS (trouble shooting and Instrumentation) distributed to the participants and answers were provided.

Methodology: The Pollution Monitoring Laboratory staff followed the multiple pesticide residue and heavy metal analysis in water demonstration at the CSE lab (extraction clean up and analysis was shown to the participants). Lectures were delivered by senior scientists of the lab on topics such as - water resources, status & development challenges, selection of research methodology with case study of bottled water, sample collection, storage and preservation etc. Participants were enthusiastic about the training and most of them felt that the duration of the training should have been increased.

3.1.5. STUDY ON ANTIBIOTICS IN HONEY

Research plan for the antibiotic study in honey eggs and milk was prepared including

Participants of the training programme with CSE director Sunita Narain

- sampling, methodology antibiotics to be tested, regulations, MRLS in honey. 8 antibiotics of 6 different classes were short listed and 12 honey samples available in Delhi market were finalised. Lab was upgraded for the testing of antibiotics by HPLC. The spare parts for HPLC unit - Sample Loop of 1ml. Solid phase extraction cartridges (and a new unit of solid phase extraction vacuum manifold, was procured for sample preparation and clean up of samples).

The study is currently ongoing.

3.1.6. THIRD PARTY AUDITING OF LABORATORIES UNDER KARNATAKA POLLUTION CONTROL BOARD

A third party auditing of 40 laboratories to assess the laboratories of Karnataka in terms of capability, proficiency and reliability of results was signed between CSE and KPCB.

Questionaire for Audit was prepared in a CD by the Lab -to obtain a pre audit information about scope of the laboratory, organization and personnel (size and experience and education of the personnel staff resume), standard operating procedures, laboratory quality assurance manual, health and safety plan, 45 spiked samples (chloride, sulfate, lead and chromium &pesticides) were prepared by the lab and were distributed to 44 various empanelled laboratories of Karnataka.

A visit to Bangalore was made on March 22, 2010 for distribution of the CD of questionnaire and water samples for pesticides and inorganic and heavy metal analysis.

Analysis of samples distributed to Karnataka laboratories spiked with pesticides, heavy metals and Chloride and sulfate. Audit of labs by a two member team – one external and one CSE member with reference to infrastructure, equipments, staff and management systems, for which the lab is certified; performance of the laboratory with respect to its capacity in producing reliable results supported by objective evidence, documentation and its control.

3.1.7. BIS UPGRADATION OF ISO 9001:2000 TO ISO 9001: 2008

Upgradation of the Pollution Monitoring Laboratory - Quality system manual, procedure manual, work instruction manual and quality format manual from ISO 9001:2000 to ISO 9001: 2008. Design and development clause not present earlier has been included

Literature survey has been completed for the research paper on 'Quality of recycled water. Preparation of the paper is in progress.

3.1.8. COMMUNITY REQUEST

In continuation of CSE's aim to provide scientific services at affordable prices to community that cannot obtain scientific evidence against polluters, communities and proactively identify groups fighting pollution & help them out by either DTE coverage or lab tests or both. Lab had undertaken analysis of 26 water samples collected from different parts of Delhi by the rainwater harvesting units were analysed for physic-chemical parameters. 12 water samples collected from the water bodies around "Vedanta" by local NGO were analysed for 13 physico-chemical parameters.

Air Quality Monitoring of Sunder Nagar and Chhatarpur farm house: 6 hour sampling for four parameters SPM, RSPM, SOx and NOx at both the sites were done and the samples collected from both sites were anaysed and the results were compared.RSPM and SPM within permissible levels. SPX and NOX were detected above permissible levels.

3.1.9. AIR MONITORING AT TUGHLAKABAD FOR SOX, NOX, RSPM, SPM

PML is doing Continuous Air Quality Monitoring s 24-hourly monitoring of air quality at a of Criteria Pollutants SPM, RSPM, NO2, and SO2 at - a sensitive area in Tughlakabad. Daily data of ambient concentration of criteria pollutants such as

SPM, RSPM, NO_2, and SO_2 is being regularly obtained and analysed. Planning to Up grade Air monitoring for Ozone, PM 2.5, PAH (benzo a pyrene). Quotation called from dealers for equipments. Decision to be taken by the advisory committee

3.2. CLIMATE CHANGE CAMPAIGN

3.2.1. PARTICIPATION IN UNFCCC MEETINGS

CSE participated at the UNFCCC talks on climate change held in Bonn (April 2009), Bonn (June 2009), Bangkok (October 2009), and in Barcelona (November 2009). CSE also participated at the CoP -15 held in December 2009 in Copenhagen. CSE kept track of the ongoing negotiations and all the intersessions and at Copenhagen. This involved keeping track of the two Ad-Hoc working groups, namely the work group on long-term cooperative action and the working group on Kyoto Protocol. Information was gathered through attending the various contact groups and plenaries held at each session.

Following are the key activities involved in all the above meetings.

3.2.2. NEGOTIATIONS UPDATE

Keeping track of ongoing negotiations was perhaps the most important task. During the last one-year, negotiations have been intense and hectic and covering the areas of mitigation, adaptation, finance and technology transfer. CSE kept track of the ongoing negotiations and all the intersessions and at Copenhagen. This involved keeping track of the two Ad-Hoc working groups, namely the work group on long-term cooperative action and the working group on Kyoto Protocol. Information was gathered through attending the various contact groups and plenaries held at each session. As it is physically impossible to cover all areas, information was also gathered from other people within the APRODEV group who attended various sessions.

3.2.3 INTERACTION WITH MEDIA

This was strategically one of the most important work. It is very important to keep the media posted on the latest developments and to explain to them, in simple terms, the implications of these developments. Climate change language tends to be very technical and therefore the journalists find it difficult to translate it into simple terms so that the reader can understand. It is here that we play a critical role in unpacking the technical jargon for them. Since CSE was also registered as a media delegate, CSE representative was in constant touch with a large group of journalists. These included mostly all the journalists from India, a large number from South Asia and also most journalists from key global publications including BBC, Reuters, Guardian, AFP and others. CSE tried to keep them updated on latest happenings and what they mean. Also, very importantly, CSE stressed on the principles of equity and historical responsibility while explaining the developments. It clearly reflected in their reportage. CSE was quoted and interviewed by large number of publications from across the globe and CSE staffer was also participated in several programmes and radios shows all through the year.

3.2.4 LOBBYING WITH NEGOTIATORS

CSE was in close touch with the key members of the Indian negotiating team and interacted with them almost on an hourly basis. They were instrumental in informing me about the current flow of negotiations and also shared with them other intelligence and information which was gathered from various other sources. In addition I was also in touch with key negotiators from China and almost all the south Asian countries including Pakistan, Bangladesh and Sri Lanka. This really helped us in gathering information on the negotiations going on behind closed doors, specially the bilaterals, and also helped to feed into the information that the negotiators were keen to gather.

3.2.5 REPORTING ON NEGOTIATIONS

This was a major tangible output from participating in the meetings. CSE updated live reports from the negotiations during the days it was represented there. After the end of negotiations articles were published in Down To Earth. After the Bangkok meeting we did a cover story on how developed countries were trying to kill the Kyoto protocol. This article got huge coverage. After the Copenhagen talks we did another cover story in *Down To Earth* detailing out how the climate talks collapsed.

3.2.6 NETWORKING WITH CIVIL SOCIETY

This was important part of daily activities and helped one in keeping updated on the various fronts.

3.2.7. DISSEMINATION THROUGH THE ENVIRONMENT PORTAL

CSE started a new sub-portal on climate change in August 2009. This portal was launched by Shri Jairam Ramesh, minister of environment and forests. It is an attempt to provide background and up-to-date information on the climate issues comprehensively. The sub portal has been successfully providing a package of latest news, reports, analysis, articles, statistics, events, etc with focus on developments in climate issues in India and other south Asian countries. It also features books, films, web links and blogs and is one of the most widely visited section on the India environment portal. The site includes a mapping visualization tool (webGIS) that displays key climate variables and climate-related data.

It has been the first to provide some of the most significant documents for public access through the web. For example the document on India's national solar mission was digitized and provided in the public domain through the climate sub-portal for wider access and outreach. This document ranked amongst the top-most document searched for and downloaded on the sub-portal. It is interesting to see that people have started using the portal write down their views, comments and feedbacks on Indian government's action plan related to climate change.

3.2.7.1. Dissemination of research papers and reports on climate change: Keeping in view of the Copenhagen climate conference, a special effort was made to track the latest reports and research papers concerning India and the South Asian region. The portal was amongst the few to access and highlight key papers and documents released during this major event. A selection of reports/studies on Climate Change and South Asia has been put-up in the public domain.

3.2.7.2. Database of climate scientists: During the climate summit in Copenhagen, CSE took the opportunity to communicate with climate scientists and experts, access the latest research in this field and highlighted their research through the portal.

3.2.7.3. Technical and scientific papers: A detailed research on tropical cyclones and climate change was published, titled –'What went wrong' in the Science and Technology section in September 2009.

3.2.7.4. Database of studies published on climate change with a focus on south Asian region: CSE has identified the latest reports and studies published by leading national and international climate experts and institutions.

3.2.8. SOUTH ASIAN MEDIA BRIEFING WORKSHOP ON CLIMATE CHANGE, AUGUST 27-28, 2009

New Delhi: CSE announced a briefing workshop for south Asian journalists on climate change in August 2009, given the fact that the 15th Conference of Parties on climate change was 2009. CSE received over 30 applications from Pakistani journalists, and over 20 each from Bangladeshi and Nepali media. Applications poured in from all Indian states. Eventually, about 100

CSE director Sunita Narain addressing journalists at the South Asian media briefing workshop on climate change

outstation journalists, including about 25 from six other South Asian countries (Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka), and 25 Delhi-based media people were short listed to attend the meet.

Over 120 journalists comprising editors, senior journalists and veteran correspondents from print, radio and television media participated. Among the key speakers and presenters were Jairam Ramesh, the minister of state (independent charge) for environment and forests, Shyam Saran, the Indian prime minister's special envoy on climate change who spoke on the north-south divide; Farrukh Iqbal Khan, director, UN (II), Ministry of foreign affairs, government of Pakistan; Sunita Narain, director, CSE, who presented an overview of the issues and moderated most of the discussions; Shailesh Nayak, secretary, Ministry of Earth Sciences, who chaired the session on science and impacts of climate change; and J M Mauskar, additional secretary, Ministry of environment and forests. *Climate change, Politics and Facts*, a primer on climate change was published and distributed.

The impacts of the workshop were immediate. Articles and stories by workshop participants during and after the event pointed towards a significant shift in the way media was covering climate change: reportage by workshop participants became more nuanced and informed. Participants have continued to follow and write on climate issues even months after the workshop. The TIME magazine's coverage of the event and the issues it highlighted is a case in point. The workshop also served to re-establish our linkages in the media of the South Asian region. We renewed old friendships and made new friends as well and these have remained as valuable resources on CSE's media databases.

Participants of the briefing workshop

3.2.9. CREATING AWARENESS THROUGH MEDIA PARTICIPATION

CSE director was invited to be on the panel for a discussion on Saving Planet Earth, a part of the Future Summit held in Singapore organised by CNN International Television Show. The panel included Olafur Grimsson, President, Republic of Iceland and Bjorn Lomborg, Author of The Skeptical Environmentalist. This show received good response from a number of viewers.

CSE director was also interviewed on climate change by the BBC World Service Radio on climate change and its global impact prior to the release of the final IPCC report and by the German magazine Der Uberblack. Another premier German daily, 'Suddeutsche zeitung, published CSE's article on climate change. Indian publications such as Malayala Manorama Year book and Tehelka have also published reports on climate change from CSE. Gulf news carried Sunita Narain's views, as a member of the Prime Minister's council on India's plans to do to mitigate and adapt to climate change.

3.2.10. CSE MEDIA FELLOWSHIPS FOR THE SOUTH ASIAN REGION ON CLIMATE CHANGE: INDICATIONS, IMPACTS AND INNOVATIONS FOR SURVIVAL

The first media fellowship for south Asian journalists was on the issue of climate change as almost all the nations in South Asia are severely impacted by changes induced by global warming and the fellowship programme offered an opportunity to journalists to document what was actually happening.

Nine journalists from India, Pakistan, Nepal, Bhutan, Sri Lanka and Bangladesh were selected for fellowship grants amounting to Rs 50,000 each. These journalists spanned the print and radio media; applications had been received from television journalists, but none made the grade. Output of the fellowships appeared as articles and radio broadcasts in the respective media houses of the fellows.

Journalists contributed to a body of work on climate change and served to create wide awareness of climate change related issues. CSE will continue to keep them informed on development through CSE's website. Salahuddin Bablu, one of the Fellows from Bangladesh, received the Bangladesh government's award for the best reports on climate-induced disasters published in national press in 2009. Under the fellowship Salahuddin did a series of stories called the 'Tears of the Sunderbans' in the Daily Inquilaab.

3.2.11. DISTANCE EDUCATION COURSE ON CLIMATE CHANGE

CSE prepared and launched the first e-course on climate change for participants from India and south Asia in October 2009. The course comprises an e-course together with a contact programme, including a field visit and aims to address the science and politics of climate change, from the point-of-view of a developing countries, particularly in the south Asian region. The course is available at http://ballisticlearn.net/cse

In the first phase, the course has been prepared with a focus on India. Course materials addressing other south Asian countries will be added to the course in the next 2 years.

In this preparatory stage, participants are expected to explore key readings concerning Southern perspectives on the science, politics, and policies concerning climate change. They will access key reports, case studies drawn from across the region to understand the impact, mitigation and adaptation strategies on climate change in the region.

The e-learning platform, developed using Moodle, has been designed to be an interactive, living repository of information on climate issues. As the course progresses, the instructors will add case studies, additional, contextual readings, links to external web content, in addition to video clips and podcasts for participants to access. In addition, participants are encouraged to post their own case studies, queries and share experiences online amongst the group through forums.

The e-course went online and participants started registering, downloading documents and interacting online from October 12, 2009.

Following this online preparatory stage, participants met in Kolkata to attend a two-day contact programme. Here they interacted with leading researchers, policy makers and area experts who briefed participants on the linkages of climate change to city air quality management, challenges of urban water management & groundwater issues, disaster preparedness,

disaster-led urban migration, river pollution, urban mobility, etc. Participants also were taken to the threatened Kolkata wetlands to better understand their role in urban water and waste management.

Following the exposure in Kolkata, participants visited the Sunderbans on a three-day (two-nights) field excursion. The purpose of this visit was to allow participants to experience first-hand the immediate impacts of climate change-related events in an ecologically rich yet economically and socially fragile area. Participants were briefed on sea level rise in the Sunderbans delta, and the environmental and social costs of extreme weather events. They visited some island areas devastated by the recent cyclone Aila, villages located precariously close to the reserved forest to understand the ongoing human-animal conflicts, interacted with panchayat leaders to understand post- Aila issues, including the alarming increase in soil salinity, migration, food scarcity, and health, sanitation and drinking water scarcity.

The course was run on a pilot basis for 23 participants. The aim of this pilot was for CSE to understand the weaknesses, strengths and learning needs of participants in order to fine-tune the course and e-learning delivery. Specifically, it helped us to gear up institutionally, administratively, technologically, and pedagogically to deliver targeted learning modules to an audience dispersed across the world.

Feedback from participants in this pilot was important to fine-tune the delivery of learning materials in a more staggered manner that takes into account their absorption capacities and time commitments. Moreover, responding to the feedback from participants, many new modules and lectures were added to the e-course to plug important gaps and lacunae in the issues and topics covered. Also, to ensure more sustained engagement with the course, many mandatory assignments and quizzes were incorporated, which participants had to complete in order to move from one module to the next. In addition, an incentive, in the form of a 'certificate of participation', was added, which is awarded only when participants achieve a 70 per cent aggregate score in all assignments and quizzes. The e-course has also been made more interactive, with online forums, Facebook communities and information being shared in various social networks. Link to the course: http://elearn.cseindia.org/

3.2.12. SCHOOL STUDENTS' PROJECT IN THE SUNDERBANS

The project sought to involve young students from sea-facing islands in the Indian part of Sundarbans in the Bay of Bengal delta to report and/or reflect on their lives, a place known as one of the most vulnerable spots due to climate change and sea level rise.

We selected two representative schools in the region. One is Milon Secondary School in Ghoramara island, from the western part of the delta, highly inhabited, and devoid of any mangrove. The island is known to be shrinking at a very fast rate. The other school is Rangabelia High School, in Gosaba block in the eastern part of the Indian delta, where wildlife and humans live in close proximity. We excluded Sagar island, highly populated and the biggest island in the delta in the first phase as the population in the island identify themselves more with mainland aspiration. But Ghoramara is a small island, devoid of any motorised transport, and small, around 4.2 Sq Km in size.

The other schools is Rangabelia High School as it is known to be the best and one of the most successful schools in the delta. The patron of the school, also the ex-Headmaster, Tushar Kanjilal is a celebrated expert and voice of Sundarbans. The unique feature of the school is that students come from various islands of the delta region, with a large number of students living in Rangabelia in school's boarding and in rented houses. It gave us the opportunity to represent experiences from various parts of the delta.

Initial period was difficult, as it was difficult to explain the benefit for the students or the schools from this project. But over numerous interactions with the Headmasters, we managed to get them interested in a subaltern journalistic project. The second difficulty was to select students, as it was to be an absolutely voluntary

participation on students' part. There was also a barrier as teachers often think a student with better score as the most suitable for all jobs. But this project was different.

Working closely with Headmasters, and enthusiastic teachers, we managed to select around 20 students from each school and they started working. We had basic workshops with the students to explain them nuances of journalism, approach to an issue or emotion, writing style, and methodology for story selection. It took a lot of effort to deschool them, as the project needed a style that was completely different from the style they use to write answer scripts.

The project suffered immensely in the initial phase by cyclone Aila, just when the students were ready to start producing. There was no question about asking them to write their experiences as the whole population, specially in the eastern part was highly dislocated and disoriented.

We got back to the area two months after the disaster. And, most of the pieces produced were around their experiences about Aila. Initially, they only worked on text. Then we realised that some of the students had different talent and inclinations. One student has produced interesting drawings on Aila. We also introduced cheap digital cameras to them. Some of the students on both schools started taking photos.

Right now, we have a body of 25-30 usable text pieces, few drawings and a few photos. One of the highlight of this project is that a student got to know about the first instance of cattle smuggling to Bangladesh from this part of India, and managed to shoot 'confiscated' cattle in the local police station. The text pieces we have are about Aila, post Aila, local economics, simple stories about families, observations about changing ecology, tiger 'menace', and so on. The pieces are being translated now, and will be up on a website called www.meansealevel.org shortly.

3.2.13. AUDIO-VISUAL ACTIVITIES ON CLIMATE CHANGE

The film, *Mean Sea Level*, on the impact of climate change on the people of the Sunderban delta, was launched in the Ghoramara island by Gopal Krishna Gandhi, the governor of West Bengal and Kanti Ganguly, Bengal's minister for Sunderban affairs was also present. The event was widely covered by local and national media and served to create public awareness of the impact of climate change, specifically for the island and catalysed people's efforts to save the island. The film calls attention to climate change issues of sea-level rise and land erosion by focussing on the plight of people living in the islands of Sunderbans. The film has been released in several venues and meetings in Kolkata and in Denmark.

3.2.14. REPORTAGE THROUGH *DOWN TO EARTH*

Climate change

Noah's ark redux, this article shares the recent findings that climate is changing faster than estimated. Island countries and coastal regions could go under the sea earlier than predicted. Scientists from around the world who met in Copenhagen, Denmark from March 10 to 12, suggested sea level increase due to global warming could be more than the earlier projections. Forests may not be effective carbon sinks that can save the planet from the negative impacts of temperature rise as they would not be able to absorb any more CO_2.

Breach of protocol, The 12 day climate meet was supposed to draft the negotiating text for preparing an action plan on climate change. But a sharp divide between rich, industrialised countries and developing nations prevented an agreement. UNFCCC executive director told rich nations to fulfil Kyoto promises if developing countries are expected to do more.

The challenge of the chulha, this editorial discusses about the cookstove. Science has discovered that black carbon-soot-is a key contributor to climate change, these particles warm air, when they settle on glaciers, the latter melt. So now, soot from chulhas poor households use-burning

wood, twigs and cowdung-stands indicted for climate change. A bill has been introduced in the US Congress requiring the country's environment protection agency to regulate black carbon and direct aid to black carbon reduction projects abroad, including introducing chulhas in some 20 million homes.

Mercury rises early, the cover story is about the unusual heat waves in Orissa and West Bengal killing more than 100 people in April 2009. Similarly dust storms blew across Assam and water shortage scrambles in Malwa region. The story seeks to find answers for several questions on the changing weather patterns.

More floods, no winter, the climate in Indian cities like Mumbai are warming up fast and this could be a recipe for more natural disasters, according to the India Meteorological Department (IMD). The regional IMD office at Mumbai analysed 100 years of weather data from 1901 onwards and found a rise of 1.62 degree celcius in the average maximum temperature. IMD, in its report submitted to the chief minister of Maharashtra argued that human activity induced environmental degradation was responsible for global warming.

Another CO_2alition of the willing?, this editorial is about the Germany's plan to build coal power stations as it will be phasing out nuclear power. A new technology, carbon capture and storage (CCS) will take the offending carbon dioxide and bury it deep into the ground. The editorial further explains the advantages and disadvantages of CCS, the future technology.

Climate talks inch ahead: This analytical report on the second round of climate change talks in Bonn that concluded on June 12, 2009 says that twelve days of heated talks among representatives of 182 countries yielded very little, as developed countries were not ready to do anything. Thus the lack of commitment could dampen Copenhagen climate summit to be held in December 2009.

Aila prompts exodus: Since the destructive cyclone aila struck on May 25, 2009 in Sunderbans, people were left with no choice but to migrate to cities like Kolkata, Delhi, Bangaluru and Andaman islands. The migration has increased threefold after the cyclone and the poor migrants mostly working as daily wage labourers and rickshaw pullers.

The weather mart: The meteorological department is not the only one predicting weather in India. Forecasts are now sold by businesses to businesses. Private forecasters cater to the specialised needs of media, power distributors, crop insurers and oil rigs.

Flakes for inspiration: This is a first hand report on the climatic change of the Himalayas by Mr M R Bhutiyani, who is the head of the department of Geology at College of Military Engineering, Pune.

India's new solar system: In one of the biggest pushes for solar power in the world, the Prime Minister's council on climate change gave the green signal to the Indian National Solar Mission in August. A part of the National Action Plan on climate change, the mission will need funds to the tune of Rs 91,684 crore to cover the costs of regulatory policies, incentives, research and development. A Solar Energy Authority of India will be created to implement the mission autonomously.

Who is afraid of 2°C?: The declaration by the world's 20 biggest and most powerful countries at the Major Economies Forum in L'Aquila, Italy recognised the scientific view that the increase in global average temperature above pre-industrial levels should not exceed 2°C. The statement was widely criticised in India as a sign we had given in to pressure to take commitments, to cap our emissions.

A home-grown drought: Monsoon has failed most of India this year, causing drought in even well-irrigated and rainfed areas. Among the hard hit are well irrigated Haryana and western Uttar Pradesh.

India has climate targets by 2030: Twenty years from now, India's per capita greenhouse gas emissions will be below 2005 global average of 4.22 tonnes CO2-equivalent. The estimate is the result of five studies carried out by various research bodies which was released by the Union ministry of environment and forests on September 02, 2009.

Single drops of water make the mighty economy: This editorial analyses the causes of delayed monsoon in India. The question worrying India's monsoon scientists is why the Indian summer rain was not increasing with increased temperature – as predicted in all climate change models.

India now has a climate programme: Government has launched a programme to create indigenous knowledge base on climate change and environment. The Indian Network of Climate Change (INCCA) would build a research base on global warming and its impact on communities and economy.

Race to kill Kyoto protocol: The United Nations Framework Conference on Climate change held in Bangkok on October 9, 2009 was almost sure that the Kyoto Protocol was going to die. Delegates from developing countries worried over the issue though it did not bother those who were from the developed nations.

4. Sustainable Industrialisation and Regulator Programme

4.1. INDUSTRY AND ENVIRONMENT

The major achievement under the programme was the completion and release of the Regulator's report, *Turnaround: Reform agenda for India's environmental regulators*. Other major activities include, week long training programmes on environmental impact assessment and the research on state of environment regulations in the country.

4.1.1. RATING PROGRAMME

4.1.1.1. Sustainability Index Programme: The team was working on the cross-sectoral rating programme during the year. Under this programme, 200 top Indian companies were selected to be rated on their energy and water efficiency performance along with pollution intensity. As the first part of the exercise, detailed reports were prepared on the issues related to energy, water and pollution for 16 industrial sectors including distillery, fertiliser, steel, tanneries, thermal power plant, pulp and paper, automobile, chlor-alkali, cement and hospitality sector. The reports also document the global best technology and practices.

The Technical Advisory Panel (TAP) meeting was held in July 2009 to discuss the progress of the project. TAP members include:

- Dr. NJ Rao, Director, Jaypee Institute of Engineering and Technology
- Mr. D Pawan Kumar, Group Head & Director, National Productivity Council
- Dr. Shyam R Asolekar, IIT, Mumbai
- Dr. Rangan Banerjee, IIT, Mumbai

A detailed questionnaire was prepared in consultation with the TAP and was sent out to the identified companies. Secondary information was also collected for these companies in the form of annual reports, sustainability reports, newspaper clippings, etc. State Pollution Control Boards (SPCBs) were contacts for obtaining environmental statements for the selected companies. A number of them sent information – Delhi, Goa, Punjab, Himachal Pradesh, Maharashtra, Kerala, Daman and Diu, Chhattisgarh, etc.

The programme has *62* companies on board and a number of companies have visited/contacted CSE for personal interaction and resolving queries related to filling up the questionnaire or about the project. This is an indicator for the growing interest of the industry in environmental initiatives and the credibility of the project. About 20 companies are in the wait list where the team has confidence of obtaining the data soon. Team members visited industrial units of the participating companies like ICI Paints (Chandigarh), Supper Tanneries (Kanpur), Oberoi Hotel (Delhi), Jaypee Vasant (Delhi), etc.

4.1.1.2 Sectoral reports: Sectoral reports on the energy use and GHG emissions were prepared for 6 sectors. These selected sectors are fertilisers, thermal power plants, non ferrous (aluminium), pulp and paper, cement and iron and steel. These reports outline emission predictions to the year 2030 along with mitigation options and their cost. In this regard, meetings were held with industry representatives and industry associations from pulp and paper, cement and fertilisers sectors.

4.1.2. REGULATOR'S PROGRAMME

The Industry and Environment Unit organised a round table with the top officials of State Pollution Control Boards (SPCBs) to discuss the findings of study on regulatory capacity undertaken by CSE and the

development of National Environment Regulators Training Institute. This meeting was held at the IHC office of the Centre on August 17, 2009 and was attended by representatives of 17 boards.

A report on the state of environment regulatory institutions in India, titled, *Turnaround: Reform agenda for India's environmental regulators*, was published. The report discusses the findings of the survey undertaken by CSE of the various SPCBs. It brings to fore the constraints and challenges faced by SPCBs. The report recognises these constraints and outlines the training needs of SPCBs in view of the present environmental scenario in the country.

CSE and Central Pollution Control Board (CPCB) jointly conducted the survey of the Union Carbide factory in Bhopal in the month of October. Joint soil samples were collected and tested separately by the CSE lab and the CPCB lab. The results of the CSE lab were published in Down to Earth dated December 15, 2009. CSE and CPCB are working together to hold training programmes for State Pollution Control Boards, Ministry of Water Resources and Central and State Ground Water Boards on water pollution monitoring and trace pollutant analysis.

CSE and Karnataka State Pollution Control Board (KSPCB) are working together to audit KSPCB laboratories and board recognised laboratories in the state. This will be carried out by CSE lab.

4.1.3. CAPACITY BUILDING PROGRAMMES

4.1.3.1. Training programmes on 'Understanding EIA: From screening to decision making': Environmental Impact Assessment (EIA) is an important tool to inform decision-makers, regulators and stakeholders about the possible environmental, social and economic costs of a proposed project. To be effective, it requires the active involvement of all stakeholders. However, since EIA reports are technical in nature, community-based organisations and small NGOs find it difficult to review and interpret them. At the same time, there is a genuine need to develop the capacity of state-level regulators to evaluate the EIA process, and to make it more transparent. Recognising the increasing need, CSE developed a hands-on-five-day training programme, 'Understanding EIA: From screening to decision making' aimed at giving practical exposure to participants on environmental impact assessment.

During the period, the Industry and Environment Unit organised three training programmes on EIA. A training programme on 'EIA mining projects' was organised from April 14-18, 2009. Another training

Participants of the EIA training programme

programme was organised in the Centre on 'EIA: From Screening to decision making' from June 22-26, 2009. A training programme on environmental clearance process was organised from September 1-5, 2009 at the Centre. The 5 days training programme included lectures, classroom exercises and in-depth analysis of Environment Impact Assessment (EIA) reports. *More than 100 participants attended the training programmes from civil society, industry, consultants and academics.*

The training provided a forum for detailed debate and discussion on a range of issues regarding EIA beginning from history and background of EIA, environmental clearance process in India, importance of scoping, fundamentals of data collection, impact assessment, mitigation and environment management plan, significance of biodiversity and development projects and its assessment methodology, introduction to industrial air pollution monitoring and modelling etc. The participants were also given classroom exercises on how to file and compile applications based on their projects.

The team also organised *four* training programmes in different states. Two training programmes in Meghalaya were organised with Samrakshan, an NGO based in Garo Hills, focused on clearance and mining. One was held in Tura in Garo Hills from July 31 – August 1, 2009. The other training programme was held at Shillong from August 3-4, 2009. One was also organised in Ahmedabad in association with Paryavaran Mitra, a Gujarat based NGO, on environmental clearance process from August 10-12, 2009.

4.1.3.2. EIA for Bengladesh government - Environmental Institutional Strengthening Project (BEISP): CSE prepared three sector specific EIA Guidelines – prior to the development of sector specific EIA guideline, there were no industry specific EIA guideline in Bangladesh, which would guide regulators as well EIA consultants in improving the EIA quality. Realizing the importance and to ensure a quality EIA system in place; in 2009, BEISP requested CSE to prepare the EIA Guideline for the three-development project. The industrial sectors offered by BEISP were *Coal mining, Pharmaceutical and Textile sector*. These priority sectors were selected by BEISP considering its importance in Bangladesh. For example, more than 50 % of the Bangladesh's economy depends on the textile but at the same time it ranks highest in water pollution. Likewise, coal is a new development sector for the Bangladesh, and DOE officials' lacks technical capacity to handle this sector. Considering the current requirement, and keeping the scope of work in mind, CSE prepared the sector specific EIA guideline with the followings objectives:

- Assist regulatory agencies in taking sound decision in environmental clearance.
- Assist regulatory agencies and EIA practitioners to understand the main areas of concern and use that understanding to enhance the quality of the EIA study and its reporting;
- Inform the regulatory agency and EIA practitioners about the best environmental and social management practices
- Assist the regulatory agency to better assess the EIA report and arrive at a sound judgment

Seeing the importance of the guideline and positive feed back from various stakeholders, BEISP again offered CSE to *formulate EIA guideline for the cement sector* and also to *reframe the existing EIA rule of Bangladesh*. Both the assignments are in process.

To ensure effective implementation and wider reach of sector specific EIA guideline, BEISP is interested to demonstrate training on EIA guideline for different stakeholders. And BEISP want CSE to impart training on coal mining, cement, and textile, also on Cement and EIA rule once they are ready. This time BEISP is interested to train not only the ministry official but also to consultants who prepare the EIA report, industry, associations and educational institutions.

4.1.4. COMMUNITY SUPPORT INITIATIVE

Several grass root organisations from across India requested the Industry and environment team for technical evaluation of EIA reports. The team helped the communities and evaluated eleven reports. Some of these are as follows:

- Kalaraksha, an NGO based in Gujarat approached CSE for information on pollution from thermal power plants. They wanted CSE to assess the impact of two thermal power plants of 4000 MW on the ecologically fragile area of Kutch, Gujarat. The same was carried out for them.
- Ekta Parishad, an NGO based in Chhattisgarh approached CSE to assess the environmental impact of two upcoming sponge iron plants in Raigarh city of the state. These were Singhal Energy and Raigarh Ispat, both within 20-25 kms from the city. The NGO provided the EIA reports and a technical analysis was carried out. Sugandh Juneja attended the public hearings for both the sponge iron units. The hearing for the setting up of a new unit was held at Village Taraimal and that of expansion of a previously established unit was held at Village Delari. The footage of the video recording as well as the technical analysis of the reports was uploaded on *Down to Earth* website.
- Mr. Raghubir Pradhan from Ekta Parishad requested CSE to carry out technical analysis of the EIA report of Large Industrial area in Lara, Raigarh district. This was used by the NGO to raise relevant questions in public hearing, which eventually got disrupted.
- Ms. Rifat Mumtaz from National Centre for Advocacy Studies (NCAS), an NGO based in Maharashtra approached CSE to assess the environmental impact of three upcoming projects in Orissa and Maharashtra. These were POSCO (port and steel plant) and LAVASA (lake city). The NGO provided the EIA reports and a technical analysis was carried out.
- EIA analysis was carried out of Jindal Steel coal mine in Raigarh district. This was on the request of Ekta Parishad.
- The team carried out technical analysis of the EIA reports of Sarda Coal Washery and Salasara Steel and Power in Raigarh district on behalf of Ragubhir Pradhan of Ekta Parishad. An analysis of EIAs of VISA integrated steel plant and Korba West Power Ltd. was also done for them.

4.1.5. MISCELLANEOUS WORK

4.1.5.1. Study on sponge iron: A study on sponge iron industry is also being prepared with specific reference to key states of Chhattisgarh, Jharkhand, Orissa and West Bengal. CSE staffer visited West Bengal to collect information on sponge iron industries in the state from pollution control boards, sponge iron associations and industries. Meetings were also done with the local community to get their perception on the sponge iron industry in Bankura and Burdwan districts of the state. A visit was also undertaken to sponge iron clusters in Bellary region in Karnataka and interacted with the local stakeholders and the SPCB.

4.1.5.2. Meetings: CSE staffer was invited by the Central Pollution Control Board (CPCB) to participate in the development of Comprehensive Environmental Protection Index (CEPI). He attended two meetings – October 24 and December 24, 2009, in which CEPI was finalised and critically polluted areas in the country were identified and notified.

Another CSE staffer attended a brainstorming session on air pollution control from coal based thermal power plants. The session on September 23, 2009 was organised by Indian Association of Air Pollution Control (IAAPC).

5. Communication on environmental sustainability

5.1. SCIENCE AND ENVIRONMENT REPORTAGE

5.1.1. DISSEMINATION THROUGH *DOWN TO EARTH*

CSE published several reports on issues relating to science, environment, health and sustainable development. Matters concerning liability, whether in the field of nuclear power generation or genetically modified food crops were reported and analysed. A special issue on the Copenhagen climate change talks was published which exposed the brutal politics of climate change negotiations.

The 25th anniversary of the Bhopal Gas tragedy was marked with a cover story. The CSE lab had analyzed soil and water samples from the discarded Union Carbide factory premises and area around it. This exposed a deadly cocktail of toxins including heavy metals and pesticides which contaminate the factory premises and areas around it. The union minister of state for environment and forest, Jairam Ramesh, was made to withdraw his earlier statement that the Bhopal site was benign, and had to admit in the parliament that it was still very unsafe.

CSE laboratory's two analytical studies were reported in *Down To Earth*. The first one was about lead in paints. The lab results vindicated a long term suspicion that Indian paint contained high quantity of lead. The reportage along with the lab report created a powerful story which stirred debates in both print and electronic media on safety of Indian paints. Visible changes have been seen after the story, with major paint manufacturers claiming to have phased out lead from their decorative paints segment.

The second report called *Hand to Mouth*, which exposed how Children in India are exposed to a toxic plasticizing agent called phthalates. Since the report, the government has instituted a committee to look into harmful chemicals in toys including phthalates.

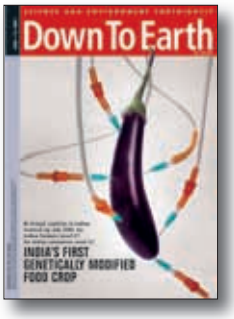
The report, *Get Your Own Vaccine*, exposed how the government had closed down public sector vaccine producing units to favor private sector procurement leading to a vaccine shortage in the country. The left parties used this report to corner the government in the parliament. People privy to the proceedings of the parliamentary standing committee on health also reported back saying that the report figured in the depositions made before it. The vaccine PSU have been re-opened recently.

A report entitled *Corridor of Uncertainty*, which highlighted the water woes of people living on the India Nepal border in a village called Bikhnathori in West Champaran in Bihar. The report was raised in the Bihar State Assembly. Since then the people of this village have been given drinking water through tankers. They have also been promised permanent water supply.

A report on sugar mills producing electricity using waste bagasse, has been widely circulated in the sugar industry, with numerous queries and presentation request coming from the industry associations.

5.1.2. MAJOR STORIES PUBLISHED IN *DOWN TO EARTH*

Test tube brinjal analyses the production of genetically modified brinjal. India is on the verge of clearing its first genetically modified food crop, Bt brinjal. This could be the world's first GM food crop. India ranks second to China in the global production of brinjal with a share of 26 per cent. Crops like



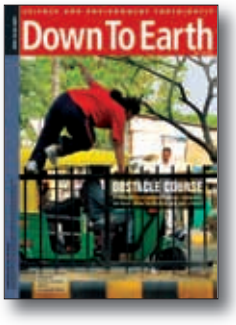
GM corn and GM soy are cleared only for animal feed in the US. But in their processed forms, they are used for human consumption.

The report, *On two legs and a prayer* discusses how walkable are our cities. Walking does not figure in the Urban plan and pedestrians are always at risks. If walkability is neglected, the demand for public transport will be reduced.

The article, *Mercury rises early'* was about the unusual weather seen in summer across the country in the year 2009. Heat waves and drought killed many people in the month of April in the states of Orissa, West Bengal, Madhya Pradesh and Assam. Water stress was very high and the groundwater over exploited in most of the region. *Right of way*, the cover story on the controversial port at Dhamra, where olive ridley turtles undertake their annual nesting trip. Conservation groups blamed the upcoming port for missing of their nesting last year. The beaches at the port at Dhamra are one of the world's largest nesting sites for the turtles. However, when the turtles reappeared this year for nesting, the private company building the port vindicated their stand that the port does not pose any threat to the turtles.

The cover story @110 km/hr tells us about how millions became homeless by the cyclone Aila in the month of May in Sundarbans. About 300 people were killed by Aila which struck the Sagar isles in the Sunderbans at a maximum of 110 km/hrs. The warning came a day earlier, but the administration did not alert villagers about it. It was categorised as a severe cyclonic storm and the meteorologists are trying to figure out why a cyclone with relatively lower wind speed caused so much destruction. *Crank it up,* reports that the sugar mills in India have doubled up as power generators, and in India sugar mills are contributing 2,000 mw to the grid. In India cogeneration is mostly restricted to sugar mills since the country's policy and subsidies are focussed on bagasse-based cogeneration. But the profits are falling down and the question now is whether states can find a way to sustain cogeneration.

Radio active mirage reminds us that India's desperate pursuit of nuclear energy will be expensive and risky. Ever since the Indo-US nuclear deal signed in October 2008 lifted 34-year-old global sanctions that denied India access to the international atomic energy market, including uranium, Delhi has been on a shopping spree, buying nuclear fuel and reactors. India wants to expand its nuclear power by 15 times (from 4,120 MW to 63,000 MW) by 2032, according to the Planning Commission's 2006 integrated energy policy report. *Water on the moon* critically analyses that though the presence of water on the surface of the moon is confirmed by India's Chandrayaan I and NASA's Cassini and Deep Impact spacecraft, the plans for a habitable moon are too early to think about. *Race to kill Kyoto protocol* reports that the United Nations Framework Conference on Climate change held in Bangkok on October 9, 2009 was almost sure that Kyoto Protocol, the internationally binding agreement on emission reductions was going to die. Delegates from developing countries worried over the issue though it did not bother those who were from the developed nations.



Rubber stamp authority, the cover story on Environmental Impact Assessment (EIA) says that the state environment regulatory bodies formed under the 2006 EIA notification have floundered. They have little financial autonomy and don't have guidelines to function. The result is decentralisation of confusion and corruption. *Subterranean Leak* is about CSE' Pollution Monitoring Laboratory's study on the water and soil samples from in and around the Union Carbide India Ltd' factory for the presence of toxic chemicals. The results of the testing of one stored waste sample, six soil samples and one surface water sample in the factory and one soil sample from the

waste disposal site (solar evaporation pond) clearly show that the land within the UCIL factory and the waste disposal site is highly contaminated with pesticides, organic compounds and heavy metals.

Run from cover is about how the nature of business of increasing health insurance companies in India have changed the treatment mechanism. Insurance in the health sector was introduced because the public healthcare system did not have sufficient funds and hence, was unable to meet the healthcare needs of the country. Lack of doctors and medicines have always been common problems in public healthcare facilities. *Lethal games* is the report on the laboratory analysis done by CSES that shows the presence of phthalates, a highly toxic chemical, in toys sold in the Indian market. It is unfortunate that the Indian government does not regulate or monitor the use of these inimical chemicals, putting children at risk. *eDriven* talks about the electric and hybrid vehicles that are gaining a foothold because they are cheap and clean. The report analyses about the life and future of such vehicles. *Low pulse* is about the spiralling prices of pulses that have shown India's dependence on imports. The article tries to find answers for some of the consequences and solutions of the crisis. *Bank at your door step* tells us that technology is helping public sector banks and finds customers in rural India as part of India's efforts to include villages in the organized financial system and to ensure they are not cheated of their wages. *Biomass market in a flux* tells us that the biomass power generation started with so much of support from the government is not enjoying its status anymore as more and more power plants have come up.

5.1.3. SOUTH ASIA COVERAGE

A dedicated column has been given for the South Asian news in the magazine. Reports on water sharing and hydel power, energy, agriculture and health have been featured in the magazine.

5.1.4. WEB FEATURES

Over the last year, *Down To Earth* has added more interactive content to its website. Photo features, web exclusive news and analysis and audio based content have been constantly added to the site. Audio interviews of prominent scientists, activists, innovators and authors helped to decipher complex issues are on the web. Some of these names include Tristram Stuart, author of waste: uncovering a global food scandal; Arvind Kejriwal, RTI activist; Pushpa Bhargava one of India's foremost molecular biologist; Professor Mike Hulme, director of the internationally renowned Tyndall Centre for Climate Change Research and lead author of IPCC panel on Climate Change; etc. These audio interviews and features have garnered good response from readers. Web specials and photo features on subjects like (e)-waste, naxalism, beach erosion, water, traditional food recipes etc have also solicited good reader response.

5.1.5. AUDIO-VISUALS

The short films put up on *Down To Earth* website have elicited very good response. Over two dozen short films with subject ranging from climate change, public hearings, road traffic, toys, paint have been uploaded on to the site. Footage of workshops and seminars relating to environment and climate change have also been added to the site.

6. Knowledge portal

6.1. ENVIRONMENT RESOURCES UNIT

6.1.1. DOCUMENTATION AND DISSEMINATION

The Climate sub-portal launched by CSE in August 2009 has been successful in providing a package of latest news, reports, analysis, articles, statistics, events, etc with focus on developments on climate issues in India and other South Asian countries. The following activities were undertaken to ensure that the portal remains up-to-date and provided the latest information on the topic.

6.1.1.1. Updation of information on climate change: Keeping in view the Copenhagen climate conference, a special effort was put-in to track the latest reports and research papers concerning India and the South Asian region. The portal was amongst the few to access and highlight key papers and documents released during the event. A selection of reports/studies on Climate Change and South Asia has been put-up in the public domain.

The climate team highlighted key reports and studies as the "lead stories" on the sub-portal. Following is a selection of the important reports highlighted by the climate portal as lead stories:

- Black Soot destroying Tibetan glaciers, hampering Asia's fresh water supplies
- Analysis of the Danish Proposal
- Future of the planet beyond 2012
- Live from Copenhagen: CSE reports on CoP15 climate meet
- Is India's stand truly independent?
- Role of Indian agriculture in mitigating GHG emissions – node/292708
- India's approach to climate negotiations
- Mega-stress for mega-cities: a climate vulnerability ranking of major coastal cities in Asia
- Apple growers facing the heat
- National mission for sustaining the Himalayan eco-system
- National mission on strategic knowledge for climate change

6.1.1.2 Communication with climate scientists: The team utilized this opportunity to communicate with climate scientists and experts, access the latest research in this field and highlighted their research through the portal.

6.1.2. BLOGS ON CLIMATE POLITICS

Regular blogs presenting views on the politics of climate change posted on the climate portal were received well and responded to by the people. A selection of key blogs posted on the portal

- Move over boys and girls, the men are here: the future of climate negotiations and why India wants the Accord
- My Copenhagen diary: How polluters won and we all lost
- A political agreement at Copenhagen will be a joke on the world
- The politics of calling GHGs as pollutants
- BUFING syndrome for Obama
- Copenhagen: excluding people and voices for an unfair deal
- The US-Chinese joint statement: No change given
- Possible elements of the Copenhagen Agreement?
- India's changing position on climate change: why and for whom?
- Kolkata governor's lessons to Al Gore: Sufficiency, not just efficiency
- Making 'sense' of the new Japanese target
- Black carbon: are the poor easy answers

6.1.2.1. Portal has started optimising Web 2.0/social networking for information outreach: The India environment portal has started using social networking sites for wider information dissemination. It has been proactively using "Twitter" and it has encouraging to find the "Portal content" is being re-tweeted by its followers. Very recently it has started using "face book" too for wider interaction and outreach.

6.1.2.2. Portal being used for reporting regional environmental issues and commenting on government's policies: People have started using the India environment portal to report on their regional environmental problems. They have also been using this to comment and share their concerns on government's reports and policies.

6.1.3. TRAINING AND OTHER ACTIVITIES

The news clippings team continued with its existing three successful monthly products- India Green File, South Asia Green File and the Corporate Environment Inc. The team ensured timely production of these three green files every month.

6.1.3.1. Capacity building through short courses on information management & documentation: These courses have been very popular and much-in-demand. Hence the team continued with short term training programmes on information management and documentation.

The team has organised two successful short courses on information management during the year. This was attended by institutions from various parts of India and also from Nepal. Six organisations from Nepal that participated in this programme were members of the Resource Centre Network in Nepal.

It is important to have regional partners for the "India environment portal" primarily conceptualized as "the people's portal. It is expected that these programmes will also help us identify regional nodes / partners/ portal nodes and source regional-level information and environmental initiatives for the environment portal.

6.1.3.1 Response from participants: The participants felt that this course provided a new insight into managing information resources and should be attended by all those people dealing with some or the other form of information and the Internet. According to them, the course was need based and the approach taken up by the faculty was flexible. They found the course to be practical and said that the learnings can be applied in an organization with ease. Specific initiatives taken up by the participants after attending this training:

- The portal manager from Centre for Social Market restructured Climate-challengeindia.org, the portal developed by CSM, after attending this programme.
- Liaqat Masih, Project officer at Caritas, Islamabad has started using wordpress.com after getting inspired by the CSE Information management workshop

6.1.4. AUDIO-VISUAL ACTIVITIES

As CSE moves towards maximizing the potential of its awareness creation activities

Participants of the training on information management and documentation

through the web by using multimedia tools like online radio and television, the AV unit also prepared to meet the demand for new and better equipment to suffice this demand. The unit afforded its expertise in the procurement of a state of the art digital video camera, three digital still cameras and three digital stereo voice recorders.

6.1.4.1 Film packages on environment &development: In order to aid enhancement of revenue generation from the distribution of films, the unit procured 10 new films and prepared a package for the marketing unit. The package contains films on a variety of burning environment issues like climate change and sustainable development.

6.1.4.2. Language versioning of films: The unit also initiated the Hindi language versioning of two of CSE's most popular English language films namely 'Clean Your Act' and 'Faecal Attraction'. The thought behind the activity was to make available two training films to individuals and communities in their language so that they could also undertake activities related to cleaner water and decentralized sanitation. The scripts of the two films have been translated and the dubbing is in progress. With the completion of these two films a new package of CSE's Hindi films will be put up for distribution.

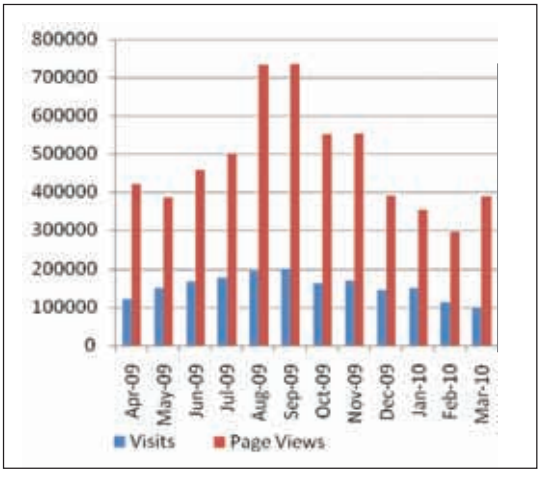
6.1.4.3. Films outreach & promotion: The unit made special effort to promote CSE's films internationally through participation in film festivals across the world. The new film 'Mean Sea level' was sent to as many as five environment festivals that took place during the period in Chennai, Greece, Italy, Canada and Brazil. Another film 'Faecal Attraction' was also well received at other film festivals. The film will be sent to all other relevant film festivals as and when the dates are announced. Mean Sea Level – Has been sent in the following Film Festivals.

- EcoVision - International Festival of Environment & Cinema - Palermo, Italy – June 2009
- Festival Pêcheurs Du Monde - Lorient, France – March 2010
- Planet in Focus - International Environmental Film and Video Festival - Toronto, Canada – October 2009
- One Billion Eyes - Indian documentary film festival Chennai 2009 - India
- Monsoon Festival – New Delhi – August 2009
- 6th Amazonas Film Festival, Manaus, Brazil - November, 2009
- Patois: The 7th Annual New Orleans International Human Rights Film Festival – March 2010
- 11th International Panorama of Independent Film-Makers of Trade Unions Centre of Thessaloniki – Greece – December 2009
- Besides these activities, the unit provided full support to the India environment portal by providing audio visual support on a daily basis.

6.1.5. USAGE STATISTICS

The portal is being widely used and is seen by more than 6000 visitors everyday and has started registering an average of approx. 10 million hits per month.

Impact: India environment portal was internationally recognised and received an invitation by Institute for Development Studies, Brighton, Sussex University from November 4-6 2009 for a presentation at its meeting of the I-K mediary members. This was attended by NGOs from Switzerland, Kenya, South Africa, Belize, Egy[pt, Tanzania, Kenya, Philippines, France, Malawi, Bangladesh, Cambodia and UK.



7. Education and Media Training

7.1. ENVIRONMENT EDUCATION

7.1.1. PRODUCTION OF *GOBAR TIMES*

The environment education unit continues to produce *Gobar Times*.12 issues of *Gobar Times* were brought out during the period April 2009 to March 2010. Issues were published with the following major stories:

- April 2009 - Animal City
- May 2009 - How clean is my kitchen?
- June 2009 - Environment today
- July 2009 - Red alert: lose your eyes
- August 2009 - Solar Power-Ed
- September 2009 - What's in it for me?
- October 2009 - I want to know, can I?
- November 2009 - The Climate change story
- December 2009 - So, what's up in Copenhagen?
- January 2010 - What's your nature?
- February 2010 - About business of biodiversity
- March 2010 - Moon rush, tracking the lunar lucre

7.1.2. GREEN SCHOOL PROGRAMME

The Gobar Times Green Schools Programme was launched in 2006, responding to the Supreme Court directive making Environment a compulsory subject at the school level.

The main components of the GSP are:

- **The Green Schools Manual:** a guide book that explains step-by-step, how to audit natural resources like water, air, energy, waste, and land, within the premises of a school
- **A two-day training workshop:** targets the Eco Club coordinators who implement the programme on the ground, familiarizing them with the steps and methodology laid out in the manual.

The end product is a report card prepared by

Students receiving award from chief minister Sheila Dikshit

its own students assessing the school's performance as a manager of natural resources and the Award ceremony.

CSE organises the Gobar Times Green Schools Programme Awards Ceremony as an annual event, where top 20 performers from across the country are rewarded for their enterprise and innovative skills. The objective is to acknowledge the effort made, and also to encourage more institution to come forward and take part in this movement. The day is celebrated as a festival, when school children from every part of India are invited, not only to witness the award giving ceremony but to take part in painting competitions, perform in street plays, watch films and mingle with each other.

7.1.2.1 The National Environment Educator's meet: A day before the annual awards event, NGC Directors from all states are invited to Delhi to participate in a meeting to take stock of the current status of the various initiatives undertaken by the state level units. The NCERT is also a part of this discussion.

At present, 7500 schools, representing 24 states and Union Territories are a part of the GTGSP network.

7.1.2.2. Partners of GTGSP: Ministry of Environment and Forests has been a key partner in CSE's *Gobar Times* Green Schools Programme. The National Green Corp units – working under the aegis of the MoEF – through the Environment Directorates of the state governments, have played a lead role in spreading the GTGSP network across the country. The fundamental concept and methodology of the programme have reached even the district level schools now.

At present, seven to eight NGC units are working with CSE, actively. The manual has been translated into Hindi, Punjabi, Telugu, Kannada and Urdu, in collaboration with State NGC units. CSE has also produced resource materials and provided training to teachers and master trainers in collaboration with these units.

NGC units in four states – Andhra Pradesh, Sikkim, Delhi and Punjab have successfully organised state-level Green Schools Programme Awards in 2009 -10.

The response to the fourth phase of the GTGSP has been very encouraging. All schools under the National Green Corps in Andhra Pradesh, Tamil Nadu, Punjab, Sikkim, Karnataka, Goa, Uttaranchal, J&K, Andaman & Nicobar islands and Delhi; all institutions affiliated to the Navodaya Vidyalaya Samiti and the Kendriya Vidyalaya Sangathana; the Delhi Public Schools Society, and several other public and private education societies, are now a part of the Gobar Times Green Schools network. At an international level Green Schools Programme has been customised for UAE government. UNICEF Ethiopia is in the process of getting the programme customised for Ethiopia.

7.1.2.3. Strategy for expansion of Green School Programme: The state education board schools constitute the majority of schools in India. To reach thousands of these schools we entered partnerships with state nodal offices of National Green Corps (Ministry of Environment and Forests school eco-club programme) and NGO's. To make it possible for these schools to participate in the Green Schools Programme we had to translate the Green Schools Programme manual in the regional language in cooperation with the National Green Corps (NGC) State nodal offices.

It was also important that when more schools join the green schools network, more schools are recognised for their effort. The state level green schools awards scheme was worked out with the NGC state nodal offices. Top schools were first awarded at the state level and then these top schools were nominated by the state agency (NGC or NGO) to compete with schools from non-partner states across India for the national awards organised by us at Delhi.

7.1.2.4. Translation of Green Schools Programme manual in regional languages: As a part of the strategy the Green Schools Programme (GSP) manual was translated into three regional languages i.e. Telugu, Gurmukhi and Urdu. The GSP manual is now

available in English, Hindi, Kannada, Telugu, Gurmukhi and Urdu.

7.1.3. TEACHERS TRAINING PROGRAMMES

The two-day training programmes for teachers, educators, development workers and people interested in environment education are conducted through different modules of the Green Schools Programme (GSP) manual, and trained on how they can implement the programme in their schools with the help of students.

The training includes interactive sessions environmental issues such as water conservation, rain water harvesting, sanitation, water recycle/reuse, air pollution, commuting practices, oxygen balance, ventilation, green area, biodiversity, pesticide use, afforestation, energy conservation, cleaner and renewable sources of energy, waste segregation, waste reuse/recycle, waste disposal, global warming and through films.

7.1.3.1. Details of training programmes conducted during the period: Ten training programmes conducted for 522 participants of which 372 participants were master trainers who would have in turn trained at least 20 teachers each.

Training programmes	
Details	**No of participants**
Port Blair training programme, April 9-10, 2009	62
Open training programme, April 23-24, 2009, Delhi	20
Open training programme, July 23-24 2009, Delhi	30
Port Blair training programme, September 9-10, 2009, Port Blair	70
Four DIET training programmes, October 6-7, 2009, Delhi	240
One DIET training programme, October 21, 2009, Delhi	50
Port Blair training programme, November 24, 2009	50

Green schools teacher training programmes in Port Blair were conducted in collaboration with ADRA (Adventist Development Relief Agency - NGO) and Forest Department of Andaman & Nicobar Islands.

Open training programmes are conducted for participants from across India at CSE's Tughlakabad office.

Training programmes for District Institute of Education and Training (DIET) in Daryaganj, Delhi were conducted.

7.1.4. GOBAR TIMES GREEN SCHOOL AWARD

7.1.4.1. State Award Scheme: The geographical and sectoral spread of the schools we engaged in the Green Schools Programme was better this year. We actually partnered with NGC state nodal agencies and NGO's to conduct state level national Green Schools Awards. The partnership enables us to reach a great number of state education board schools and recognise the efforts made by these schools located in remote corners of India by making the state agencies give them awards and also nominate them for the National Awards conducted by us in Delhi.

State	No of schools engaged	No. of schools awarded
Punjab	500	13
Andhra Pradesh	500	20
Sikkim	150	5
Delhi	1000	10
Andaman & Nicobar Islands	50	3

The partner state agencies followed the entire process of launching the awards, assessing the reports and identifying the awards winning schools with our help. The state awards process not only increased the number of schools engaged in the programme but it made room for more schools to be recognised for their work.

The Green Schools Programme went to additional schools:
Total number of schools engaged at state

level is 2,200 of which 51 schools received Green Schools Awards at the state level.

7.1.4.2. National Awards: Over 2,500 schools from across the country participated in the Gobar Times Green Schools awards scheme this year. The awards were given out on February 20, 2010 at the Stein Auditorium, India Habitat Centre in two categories. Top 10 new schools that submitted their green school reports for the first time and Top 10 change makers, schools that managed to change their environmental practices to a considerable extent. The rural/ urban ratio amongst the awards winning schools remained 2:3 in favour of the rural schools.

New Schools: The top three

- DAV Public School (Thermal Colony), Panipat (Haryana)
- Jawahar Navodaya Vidyalaya, Prakasam (Andhra Pradesh)
- Sat Paul Mittal School, Ludhiana (Punjab)

New Schools: The other winners

- Government Girl's High School, Dakha, Ludhiana (Punjab)
- Ambuja Vidya Niketan, Ambujanagar (Gujarat)
- Jawahar Navodaya Vidyalaya, Adilabad (Andhra Pradesh)
- Bishop Cotton Boy's School, St Mark's Road, Bangalore (Karnataka)
- The Ashok Leyland School, Hossur (Tamil Nadu)
- Birla High School (Girl's), Moira Street, Kolkata (West Bengal)
- Government Secondary School, Reshi (Sikkim)

Changemakers: The top three

- Anubhuti School, Jalgaon (Maharashtra)
- Woodland Overseas School, Hoshiarpur (Punjab)
- St George's School, Alaknanda (Delhi)

Changemakers: The other winners

- BCM Arya Model School, Shashtri Nagar, Ludhiana (Punjab)
- Ramjas School, Pusa Road (Delhi)
- Salwan Public School (Morning), Old Rajinder Nagar (Delhi)
- Salwan Public School, Gurgaon (Haryana)
- Evergreen Public School, Vasundhara Enclave (Delhi)
- Pinnacle School, Panchsheel Enclave (Delhi)
- JUSCO School, South Park, Jamshedpur (Jharkhand)

Students at the award giving ceremony of the Gobar Times Green School Festival

7.1.5. ENVIRONMENT EDUCATORS' MEETING

National Green Corps state nodal office partners, Partners NGOs', Prospective NGC state nodal office and NGO partners were called for the Environment Educators Meet conducted on February 19, 2010. The purpose was to make our present partners and prospective partners meet to discuss current environment education issues of India and also witness the gala national awards ceremony on February 20, 2010. The meet helped us gauge the interest of the prospective states in the Green Schools Programme. Hopefully next year we shall partner with three new states to increase the scope and reach of the Green Schools Programme.

Our International partners from the United Arab Emirates also attended the Educators' Meet.

7.1.6. INTERNATIONAL PROJECTS

The Green Schools Programme manual was customised for the Environment awareness sector, environment agency, and government of United Arab Emirates. A teachers training programme for teachers from 27 pilot schools was conducted in Abu Dhabi. The grand finale of work done by these pilot schools was held in May, 2010.

First round of discussions and presentations to customise the Green Schools Manual for the Ethiopian government has been completed in Addis Ababa, Ethiopia. A six member delegation representing Ethiopian government and UNICEF Ethiopia visited India in January, 2010 to see implementation of Green Schools Programme in India. The Ethiopian government's decision on when to start customising the green schools programme manual for Ethiopian schools is awaited.

7.1.7. IMPACT OF GTGSP

GSP's primary challenge has been to provide the students an opportunity to learn about environment not by memorizing yet another text book, but by 'doing'. So during the past years, all those who participated in this programme, came out of the classrooms to do various things—count, weigh, measure, explore, investigate, and analyse.

Through this process GSP attempts to drive home the message that the connotation of the word 'environment' is not limited to trees, birds and tigers. It includes all the key components that make up a human being's life and livelihood.

Even though Environment is not yet being taught as a separate subject in most schools across the country, the programme has blended in smoothly with the current curriculum. Teachers, irrespective of the boards they are affiliated to, have adapted the activities suggested in the book as per the prescribed syllabi quite effortlessly.

7.1.8. KEY LESSONS LEARNT FROM THE GREEN SCHOOL PROGRAMME

The track record of the GSP shows that most of its participants have opted to repeat the audit process year after year. Clearly, the objective has been not just to win a contest, but to gauge if they have been able to improve their score cards and become better managers of environment. This is a very significant trend. It proves that schools, as a community, can play a tremendously important role in bringing about sweeping changes in the lifestyle and psyche of the people.

In the global arena, environment is now on the center-stage. It is playing a crucial role in shaping economies, influencing policies, and deciding the fate of heads of states. Internally, it is a priority issue in the agenda of every sector—from industry to agriculture. So it is time that we got the most important segment of the population, the students, on board in this discourse. It is now imperative to build up skills, and deepen their knowledge base in these issues. Programmes like the GSP provide them the platform to express their views, as well as an opportunity to experiment on the ground.

7.2. MEDIA RESOURCE CENTRE

During the year, the Media Resource Centre, continued working on media fellowships, organizing briefing workshops and networking with the media community. The unit is working towards scaling up its activities and programmes in the coming years. While undertaking its regular activities it has at the same time tried to innovate and introduce newer initiatives towards networking with the media.

7.2.1. MEDIA FELLOWSHIPS

CSE conducted and initiated a number of fellowships for media people. One of the key steps forward was the initiation of a fellowship programme for journalists from the seven South Asian nations (till 2008, CSE fellowships were exclusively for journalists based in India). Over the entire year, from the three fellowships that it conducted, CSE gained for its network a new group of about 30 dedicated journalists as Media Fellows and environmental writers, a number of whom are from our neighbouring countries.

7.2.1.1. First CSE Media Fellowships for South Asian Media: The First CSE Media Fellowships for South Asian Journalists was launched in late 2008 with the aim of ending in January-February 2009, but due to extensions requested by and granted to the selected Fellows, the programme finally closed in April 2009.

The Fellowship's theme was Climate Change: Indications, Impacts and Innovations for Survival. Climate change was the obvious subject for the first fellowships of the series – with almost all the nations in South Asia being severely impacted by changes induced by global warming. The Fellowships offered an excellent opportunity to document what was actually happening.

Nine journalists from India, Pakistan, Nepal, Bhutan, Sri Lanka and Bangladesh were selected for fellowship grants amounting to Rs 50,000 each. These journalists spanned the print and radio media; applications had been received from television journalists, but none made the grade. Among the newspapers and broadcasters represented were *The New Nation* and the *Daily Inquilaab* of Bangladesh; the Bhutan Broadcasting Service Corporation; Rainbow FM of Nepal; *The Nation* and *Daily News* of Sri Lanka; Dawn and IPS from Pakistan; and *Hindustan* and *Mainstream* from India.

Output of the Fellowships appeared as articles and radio broadcasts in the respective media houses of the Fellows.

Mr Salahuddin Bablu, one of the Fellows from Bangladesh, received the Bangladesh

Name	Name of the media	Place
Rafiqul Islam Azad	Chief Reporter, The New Nation	Dhaka, Bangladesh
Salahuddin Bablu	Senior Environmental Reporter, Daily Inquilab	Dhaka, Bangladesh
Sonam Tshering	Reporter, Bhutan Broadcasting Service CorporationThimpu	Bhutan
Samjhana Paudel	Reporter, Rainbow FM 91.8	Kathmandu, Nepal
Zofeen T Ebrahim	Freelancer, Inter Press Service, Dawn	Karachi, Pakistan
Rathindra Kuruwita	Deputy Features Editor, The Nation	Malwana, Sri Lanka
Wasantha Kumar Ramanayake	Reporter, Daily News	Polgahawela, Sri Lanka
Sudhir Mishra	Principal Correspondent, Hindustan	Lucknow, Uttar Pradesh, India
Bharat Dogra	Freelancer, Mainstream Weekly	New Delhi, India

government's award for the best reports on climate-induced disasters published in national press in 2009. Under the Fellowship, Salahuddin had done a series of stories called the 'Tears of the Sunderbans' in the *Daily Inquilaab*. Almost all the Fellows have continued to write and report extensively on climate issues even after the conclusion of the programme.

7.2.1.2. Second CSE Media Fellowships for South Asian Media: The second fellowships of the South Asian series was launched in December 2009-January 2010, with the focus this time on coastal issues. South Asia has one of the most bustling coasts with densely populated habitations on its 12,000 km long coastline. Numerous urban centres dot the South Asian seaside, buzzing with anthropogenic activities like industrial, commercial, and tourist. At the same time, these coasts are ecological treasure-troves with the mangroves in Bangladesh, corals in Sri Lanka, turtles in Pakistan and the abundant and endangered marine life of the Maldives.

And these coasts are under tremendous pressure – from population, pollution, wastes, industrial activities and tourism. So are the communities dependent on coasts – the fisher folk. They are increasingly being pushed to the brink with their livelihood and habitat destroyed by unchecked urbanisation, commercial fishing and tourism. To add to the woes, climate change induced natural disasters like cyclones, tsunamis and sea level rise only aggravate the crisis displacing populations and wiping out ecosystems.

The Second CSE Media Fellowships for the South Asian region, therefore, exhorted journalists from Pakistan, Maldives, Bangladesh and Sri Lanka to travel to coastal areas, understand the concerns, and report on them. After a Jury Meeting held in Delhi, 13 journalists – from among 52 applicants — were granted the Fellowships. They include five journalists from Bangladesh (from media groups such as Diganta TV, *The New Nation* and *The Financial Express*), four from Pakistan (from Geo TV, *The News International*, *Dawn* etc), three from Sri Lanka (representing *The Sunday Times*, *The Nation* and ETV), and one from Maldives (from the National Broadcasting Corporation).

These journalists are expected to complete their work by June 2010. Each will receive a grant of Rs 50,000.

7.2.1.3. CSE Media Fellowships on Coastal Concerns: Almost at the same time as the second South Asian fellowship programme, CSE launched the ninth fellowship programme for Indian journalists on the same subject – coastal issues. Twelve Indian media people were selected and awarded the grants. The media groups represented included leading dailies such as The Hindustan Times, The Statesman, Amar Ujala, Mathrubhumi and The New Indian Express; magazines like Outlook; television stations like CNN-IBN; and radio broadcasters such as BBC and AIR.

These Fellowships will draw to a close in March 2010, and their output will then be collated and uploaded on the CSE website. The grant amount is Rs 40,000 per Fellow.

7.2.1.4. CSE Media Fellowships on JNNURM and Small Cities: In February 2010, the CSE announced its 10th media fellowships for Indian journalists, encouraging them to apply and report on the situation in India's cities – mainly its smaller cities and towns – in the perspective of the plans and strategies made for their development under the JNNURM (Jawaharlal Nehru National Urban Renewal Mission). Applications for these fellowships have been coming in, and CSE is planning for the next step in the programme: organising the Jury meeting.

7.2.2. MEDIA WORKSHOPS

Over the year, CSE conducted four key media briefing workshops – three of them on climate change.

7.2.2.1. South Asian media workshop on climate change: With the 15th Conference of Parties on climate change scheduled for December 2009, and CSE's new emphasis on the entire south Asian region, it was felt that some of CSE's activities and plans for the

Name	Subject	Name of media & Place
G Pattabi Raman	The impact of sea erosion on the South-east coast and portrayal of human life	Photojournalist, New Indian Express, Pondicherry
Geetashree	Deforestation in Sunderbans	Feature Editor, Outlook Saptahik, New Delhi
Hema Rawat	Impact of climate change and human activities on corals	Senior Reporter, The Statesman, New Delhi
Juhi Chaudhary	Lives and livelihoods of fishing communities in Gujarat	Correspondent, CNN-IBN, New Delhi
Nirmala G	Lives and livelihoods of fish workers and impact of government policies.	Special Correspondent, Malayalam Vaarika, Palakkad, Kerala
Rajanish Joshi	Industrial pollution, development vis-à-vis wildlife and livelihood of fisherfolk in Konkan	Sub Editor, Sakaal, Solapur, Maharashtra
Reema Narendran	Development pressure on the coastal welands of Vembanad	Senior Reporter, New Indian Express, Thiruvananthapuram, Kerala
Sandeep Sahu	Displacement at Satabhaya village due to climate change and threatened livelihood of Chilika fisherfolk	Stringer, BBC Hindi, Bhubaneshwar, Orissa
Shailesh Malode	Pollution and urbanization in Mumbai, agriculture in Konkan region, effect of tourism on Konkan region, climate change, people's protest	Programme Executive and Head, All India Radio, Satara, Maharashtra
Shalini Singh	Market driven pressures in Goa, coastal management and regulation and sustainable tourism	Senior Correspondent, Hindustan Times, New Delhi
Viju V. V.	Conflicts between tourism and fishworkers community in Kerala	Sub Editor, Mathrubhumi, Kannur, Kerala
Vivek Kumar Tiwari	Pollution caused by Pipavav port in Gujarat and its impact in local population	Staff Reporter, Amar Ujala Kanpur, Uttar Pradesh

year needed to focus on these aspects. In April-May, therefore, we began working towards organizing a south Asian media briefing workshop on climate change. The climate change media fellows, six of whom were from the other countries of the South Asian region, were also invited to the workshop.

Response to the workshop announcement had been very encouraging. We received over 30 applications from Pakistani journalists, and over 20 each from Bangladeshi and Nepali media. Applications poured in from all Indian states. The workshop was held on August 27-28. Over 120 journalists (including about 25 from Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka) came together at New Delhi's India Habitat Centre to receive a briefing on climate change: its science, impacts, mitigation strategies, politics and global negotiations. Most of the participants were editors, senior journalists and veteran correspondents from print, radio and television media. CSE reimbursed the travel fares of all outstation journalists and also arranged for their accommodation in Delhi over the duration of the workshop.

The two-day Workshop was aimed at providing first-hand information on and understanding of the subject to journalists, straight from the key women and men in the field – the national negotiators, policy-makers, climate change experts, and civil society representatives.

Key speakers of the South Asian media briefing workshop on climate change

Among the key speakers and presenters were Jairam Ramesh, the minister of state (independent charge) for environment and forests, Shyam Saran, the Indian prime minister's special envoy on climate change who spoke on the north-south divide; Farrukh Iqbal Khan, director, UN (II), Ministry of foreign affairs, government of Pakistan; Sunita Narain, director, CSE, who presented an overview of the issues and moderated most of the discussions; Shailesh Nayak, secretary, Ministry of earth sciences, who chaired the session on science and impacts of climate change; and J M Mauskar, additional secretary, Ministry of environment and forests.

CSE's climate change portal and blog were launched on this occasion. CSE had put together and published a primer on climate change, which was also released and distributed among the participants. The work on this primer had started in July. Post-workshop, this primer was extensively updated with new information and reprinted.

The impacts of the workshop were immediate. Articles and stories by workshop participants during and after the event pointed towards a significant shift in the way media was covering climate change: more balanced reportage appeared. The TIME magazine's coverage of the event and the issues it highlighted is a case in point. The workshop also served to re-establish our linkages in the media of the South Asian region. We renewed old friendships and made new friends as well.

7.2.2.2. Pre-Copenhagen briefing for journalists: Eight journalists were selected for a sponsored visit to attend the Copenhagen summit from December 7-19, 2009. CSE organised a pre-Copenhagen briefing for them and other journalists on December 4, 2009. Selected journalists were briefed on current issues at Copenhagen, the stands taken by various governments and the need for covering the summit. The journalists selected were – Bahar Dutt of CNN-IBN, Ravinder Bawa of Aaj Tak, Siddharth Pandey and Prachi Bhuchar of NDTV, Dinesh Sharma of *Mail Today*, Chetan Chauhan of *Hindustan Times*, Jayanta Basu of *Telegraph* and Sudhir Mishra of *Hindustan*. There was also a general briefing for other journalists to give them an idea about the above issues.

The initiative of supporting journalists for a trip to Copenhagen to cover the summit was a great success. These journalists got the chance of witnessing the talks at close quarters, and the resultant reportage was extensive. CSE experts briefed these journalists every day in Copenhagen, and this helped immensely in developing an informed understanding of the issues.

7.2.2.3. Post-Copenhagen briefing for journalists: CSE organised a post-Copenhagen briefing in December 2009 to update Delhi's journalists about what happened at the summit, the Accord and India's stand on it. The briefing was addressed by CSE director Sunita Narain and associate director Chandra Bhushan. The briefing was attended by

journalists from all the major newspapers and television channels in the city.

7.2.2.4. CSE's press briefings and meetings in Bhopal: In 2009, CSE's Pollution Monitoring Laboratory collected samples of water and soil from the site of the closed Union Carbide plant in Bhopal, and also from the residential localities around the plant. In a first initiative of its kind, the Central Pollution Control Board (CPCB) also collected samples along with CSE's experts from the same spots. CSE tested the samples and found high levels of contamination in them. The results of the study were released in Bhopal at a mega press briefing on December 1, 2010, close to the 25th anniversary of the Bhopal gas disaster. The briefing was a tremendous success. It was attended by about 80 media people, and was covered extensively in every newspaper, magazine, television and radio broadcasts, and online media publications. CSE followed this briefing up with another exclusive briefing by its director Sunita Narain, for journalists and journalism students at the Makhanlal Chaturvedi University of Journalism in Bhopal.

Besides bringing the focus on to the issue of contamination in the city, these meetings achieved a very important thing: they helped reestablish and strengthen our contacts with one of the bastions of Hindi media – Bhopal is a key city in the Hindi heartland, and a number of leading mainstream Hindi papers are published from there.

Participants of the one month course, 'Agenda for Survival'

7.3. ANIL AGARWAL GREEN COLLEGE (AAGC)

7.3.1. ONE MONTH TRAINING COURSE

'Agenda for Survival', a month long course for students and young professionals was conceived to fulfill the urgent need to build a cadre of young environmentalists who will in future take the environmental movement and sensibilities forward.

In keeping with this mandate, Agenda for Survival has been designed as an interdisciplinary course to teach the country's youth the theory, policies and practices of environmental management in India. During this intensive course, participants explore the complexities underlying the environment-development paradigms of this country. The course was conducted from June 1- 30, 2009 in New Delhi by AAGC, the education and training unit of CSE.

7.3.1.1. Course participants: In all, about 110 applications were received. The selection process was as follows: Participants had to submit an essay on any one of two topics announced. The final 25 were selected based on their performance in the essay, their curriculum vitae, followed by a telephonic interview.

7.3.1.2. Kamla Chowdhry Fellowships: The Kamla Chowdhry Fellowships was given away to 23 students based on their eligibility and need. However, nobody was selected for full scholarship. Total Fellowship amount given to students this year was Rs 2,66,000 The number of applications was shot up from 60 last year to 110 this year.

The students represented a good mix – both academically and gender. There were 19 girls and seven boys who attended the course. There were three students from the north – eastern states of Assam and Meghalaya. While some students came from Pune, some from Bangalore, Gandhinagar, Chennai, Bokaro. One of the participants has

worked extensively in the Sunderbans delta. And another participant works in the South Garo Hills of Meghalaya. Four Indian students who are studying in different foreign universities also participated in the course. They were academically and professionally from diverse backgrounds too. Some were college going students (both graduate and undergraduate). While some were preparing for M.Phil some others are engaged in preparation for entrance examination to be the future decision makers of this country. The eclectic mix encouraged healthy discussions and fostered peer-led learning.

7.3.1.3. External faculty: The course faculty was drawn from CSE research and programme teams. In addition, eminent academics, activists and policy makers were invited to speak to and closely interact with the course participants. Eminent external faculty included academics such as Suhas Chakma (Director Asian Centre for Human Rights) who spoke about environment conflicts, Richard Mahapatra (Water Aid India) discussed the ecological basis of poverty, Archana Prasad Reader (Centre for Jawaharlal Nehru Studies), talked about environmental history and environmental movements of this country. Prof Purnamita Dasgupta (Head Ford Foundation Chair at Institute of Economic Growth) informed the students on payment for ecological services. Dr. Devinder Sharma (Food rights analyst) on Green revolution, its consequences and what is the way forward. Vimal Bhai (Anti Dam Activist) told the students what to see during the field visit. He also explained the damage being done to the Himalaya by the umpteen dams being built. Sandeep Gandhi (TRIPP) talked about buses not cars is what the country needs. RR Rashmi (Joint - Secretary, MoEF) deliberated on India's stand on climate change.

7.3.1.4. Pedagogy, Field visits: The two - month course comprised of five modules. It started with the overview - Environmental(ism) in India: State of the resource followed by session on ecological Livelihoods, Forests & Wildlife. Then the students were given lecture on sustainable industrialization; Contemporary challenge of urban growth, toxic growth, air pollution & mobility in Indian cities, urban water & waste management; Climate change & global environmental governance.

The course went beyond class-based lectures, and included such things as readings, case study presentations and weekly tutorials. Participants were provided with extensive reading materials, including reports, essays by eminent environmentalists across the globe, together with relevant *Down to Earth* magazine stories. Films and documentaries were followed by in - depth discussions.

As part of the course, participants were taken on a weeklong field visit to the hills of Garwhal Himalaya. They interacted with the academia at the G.B. Pant Institute of Himalayan Environment & Development. Dr. Maikhuri the director of the institute spoke to the students on Garhwal mountain ecology and human-animal conflicts in the Nanda Devi Biosphere Reserve. The students also saw the work done by Himalayan Environmental Studies and Conservation Organization (HESCO) an organization that has been using local knowledge of the environmental sciences and simple technologies to better life of rural India. The participants visited their campus and also saw some of the watershed work initiated by the organization. They were fascinated by the water mills, known as *gharat* in the local parlance, which not only provide electricity to the villagers for their homes but also grind their grains. After this the student participants proceeded to the Nanda Devi Biosphere Reserve. In the core zone they lived in homes of villagers who talked to the participants about the human wildlife conflict. They lived and interacted with the community. Saw the eco restoration work initiated by them. And also reported on it.

Students were also taken to several daylong field trips in Delhi, including a walk through the Mehrauli Archaeological Park to view traditional rainwater harvesting structures. To better understand Delhi's waste management, they were taken to a walk along the banks of the Yamuna River to

understand how the city deals with the enormous amounts of wastewater generated each day. They also walked on the BRT and non BRT tract to understand the pros and cons of the issue.

7.3.1.5. Envision, the magazine assignment: As part of their assignment, students produced, entirely on their own, a 24-page magazine. Titled *Envision,* this magazine includes real-life reporting, analysis and opinion pieces (available online: http://www.cseindia.org/aagc/agenda.asp). The feedback received clearly showed that the students found the magazine assignment rewarding; it taught them not just the journalistic skills of research, reporting and writing, but it allowed them to work as a cohesive group – writing shared stories, editing and even designing the magazine

The overall course feedback gives us reason to make Agenda for Survival an annual event. While some felt the field trip was the course highlight, others found the magazine assignment built their confidence as writers. Most felt that the course allowed them to explore new perspectives and build new skills, gave them clarity on the issues dealt. Some thought it would help them in their academic pursuits. And others felt the certificate course was a golden star in their curriculum vitae. The tutorial presentations and the discussions later were beneficial for internalizing the learning. For most this was their first exposure to rural life. And most felt it changed their perception about rural India – about migration, displacement and other issues.

AAGC has been doing short-term courses for a while now. But as an organization we were keen to do a long course especially catered to the needs of the country's youth. A month long period of this course was carefully chosen taking into consideration the summer vacations. It also was a test of our organizational abilities. And we feel satisfied with the outcome of the course.

7.3.2. DISTANCE EDUCATION COURSE ON CLIMATE CHANGE

7.3.2.1. Background: CSE conducted an orientation programme on the politics, policies, impacts and adaptation & mitigation strategies concerning climate change.

We know that the threat of climate change is real and urgent and we also know that combating this threat requires drastic cuts in greenhouse gas emissions – particularly in the industrialised world. But as greenhouse gases are linked to economic

Partcipants of the distance education course on climate change in Sunderbans

growth, climate change requires the world to share growth between nations and people. To evolve a global agreement to combat climate change, the 15th conference of parties (CoP15) was held in Copenhagen in December 2009. It was important for us in the region to address many questions before the negotiations in Copenhagen begun – from understanding the science of climate change to its impacts on our economy and the state of negotiations.

7.3.2.2. Course modules: The course, a first of it's kind, where participants were taken through an initial E-course, then given an intense briefing, followed by a field visit was an effort to seek to address the phenomenon, science and politics of climate change, from the point-of-view of a developing country such as India. The training was carried out in the following modules.

Stage I: E-learning (October 12, 2009): In this preparatory stage, participants explored key readings concerning Southern perspectives on the science, politics, and policies concerning climate change. They accessed key reports, case studies drawn from across India to understand the impact, mitigation and adaptation strategies on climate change in the country.

The e-course consisted of several modules.

- Module 1: The problem
- Module 2: Climate change: the basics
- Module 3: The scenario today
- Module 4: What scientists say
- Module 4a: Science/politics II
- Module 5: Impacts in India and South Asia
- Module 5a: Whom does it impact more?
- Module 6: The politics of climate change
- Module 6a: Emissions: current status
- Module 6b: Negotiation positions: current status
- Module 6c: Emissions: a little history
- Module 6d: Country positions: the beginning
- Module 6e: Country positions: The first phase
- Module 6f: Emissions: After the Kyoto Protocol
- Module 6g: Country positions: The second phase
- Module 6h: Country positions: Leading up to the present

The e-learning platform, developed using Moodle, has been designed to be an interactive, living repository of information on climate issues. As the course progressed, the instructors added case studies, additional, contextual readings, links to external web content, in addition to video clips and podcasts for participants to access. In addition, participants were encouraged to post their own case studies, queries and share experiences online amongst the group through forums.

The e-course went online and participants started registering, downloading documents and interacting online from October 12, 2009.

Stage II: In Kolkata (October 26 - 27, 2009)
Following this online preparatory stage, participants met in Kolkata to attend a two-day contact programme. Here they interacted with leading researchers, policy makers and area experts who briefed participants on the linkages of climate change to city air quality management, challenges of urban water management & groundwater issues, disaster preparedness, disaster-led urban migration, river pollution, urban mobility, etc. Participants also were taken to the threatened Kolkata wetlands to better understand their role in urban water and waste management.

Stage III: In the Sundarbans (October 28 - 30, 2009)
Following the exposure in Kolkata, participants visited the Sunderbans on a three-day (two-nights) field excursion. The purpose of this visit was to allow participants to experience first-hand the immediate impacts of climate change-related events in an ecologically rich yet economically and socially fragile area. Participants were briefed on sea level rise in the Sunderbans delta, and the environmental and social costs of extreme weather events. They visited some island areas devastated by the recent cyclone Aila, visit villages located precariously close to the reserved forest to

understand the ongoing human-animal conflicts, interact with panchayat leaders to understand post- Aila issues, including the alarming increase in soil salinity, migration, food scarcity, and health, sanitation and drinking water scarcity.

For both stage 2 & 3, CSE organized all accommodation, hospitality, together with the field trip-related logistics for all participants.

Stage II and III: In Kolkata & Sundarbans (October 26- 30, 2009)

The week long contact programme for the e-primer on climate change was held in Kolkata. Twenty-three participants from different parts of India came together for a two days lecture session followed by three days of field visit to the Sundarbans.

7.3.2.3. Feedback from participants: Some of the feedback that we received encourages us to do this programme again. The various field visits – tram ride, visit to East Calcutta Wetlands and then to the Sundarbans was an excellent way to explain climate change issues.

- Ananda said that the participants could see first hand the extent to which the people were getting affected by the cyclones.
- Shilea Benjamin felt that Sundarbans trip was important as the impact could be seen directly.
- Surabhi Sinha remarked that the lectures were good and the journey from the Himalayas to the Sunderbans through the lectures such as these was particularly rewarding.
- Bibhu Sahoo felt that the tram ride was a first hand experience of viable alternatives to address climate change.
- Gopal said that he was much excited to learn more on impact of CC at community and HH level (poor and marginalized families/community) and community based adaptation and mitigation approached.
- Kiran suggested that it would have been better if an activist speaker was included who can link environment with human rights violation.

Most of the participants felt there was time crunch. They would have liked to have feedback session / discussion, each day and also at the end of the course. All of them felt the need for such courses is important, especially the format of E-course with the contact programme was an excellent way to inform the participants about climate change.

8. Institutional Development

8.1 PERSONNEL MANAGEMENT

8.1.1. RECRUITMENT

During the period, April 2009 to March 2010, we have hired 23 new recruits, 21 on regular rolls and 2 on short-term contract. More than 90% of the staff hired are Post Graduates and above. We tried to avoid huge costs of the printing advertisements in the newspapers and have used our Website, newsletter and Devnetjobsindia.org as key sources for advertising. Responses have been good from these sources.

8.1.2. RECRUITMENT OF VOLUNTEERS

As every year, we have given preference to volunteers and interns to join CSE as employees. This year we have absorbed 4 candidates who have served as volunteers or interns with us. Harshita Soni, Bachelor of Technology in Electronics and Telecommunication, Kinjal Pillai, M .Tech in Environmental Planning & Technology (CEPT), Vaibhav Raghunandan, Graduated from Srishti School of Art, Design and Technology, Sneha Kothawade, B. A (Honours) Journalism, and Masters in Public Administration.

8.2. VOLUNTEER SUPPORT PROGRAMME

During the year, 54 volunteers and 35 interns worked in CSE with a total contribution of 3697 human days, equivalent to the contribution of 15 regular staff members. We have candidates from all over India and aboard. We have had 11 students from foreign universities. Below is a list of foreign Universities from which volunteers and interns had come this year.

List of foreign universities from where volunteers have come: 2009-10

Name of university/college	Place
University of Turin, Italy	Italy
University of Heidelberg, Germany	Germany
University of Applied Sciences, Eberswalde	Germany
Mount Holyoke College	USA
Oregon State University	USA
Illinois Institute of Technology	USA
Sciences Po Paris	France
University of Waterloo	Canada

List of Indian universities from where volunteers have come: 2009-10

IIM Indore
National Institute of Technology, Jamshedpur
National Institute of Juridical Science
Institute of Legal Studies, Punjab University
Springdales School, New Delhi
Tata Institute of Social Sciences, Mumbai
Amity Law School, Delhi
Symbiosis Centre for Management Studies, Pune
Delhi University
Centre for Environment Planning and
Technology, Ahmedabad
Guru Gobind Singh Indraprastha University, Delhi
University of Calicut, Kerala
Banaras Hindu University
National Law University, Gujarat
Kurukshetra University

Volunteers' Day on December 5, 2010, was marked by giving CSE T-Shirts along with a letter of appreciation for volunteers.