



Centre for Science and Environment





The Centre for Science and Environment is a public interest research and advocacy organisation, which promotes environmentally-sound and equitable development strategies. The Centre's work over the past 21 years has led it to believe and argue, both nationally and internationally, that participation, equity and community-based natural resource management systems alone will lead the nations of the world towards a durable peace and development.

As a public interest organisation, the Centre supports and organises information flow in a way that the better organised sections of the world get to hear the problems and perspectives of the less organised. Environmental issues are seen in an anthropocentric perspective that seeks to bring

about changes in the behaviour of human societies through appropriate governance systems, human-nature interactions, and the use of science and technology.

Though the public awareness programmes of the Centre have been its key strength and focus of work, it has endeavoured to move into associated areas of work like policy research and advocacy in the past years. Learning from the people and from the innovations of the committed has helped the Centre to spread the message regarding the environment without its normal association with doom and gloom. Rather, the effort of the Centre is to constantly search for people-based solutions and create a climate of hope.

The Centre has always been, and will continue to be, editorially independent of interest groups, governments, political parties, international agencies and funding sources. CSE never accepts funding to push a donor's viewpoint. All its outputs are available for public dissemination.



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"I have never been worried about the Earth. I'm worried about human beings. I was trying to understand what India is all about, what India's people are all about. And that is how I stumbled upon the Earth. I realised that they have a deep relationship with the Earth, and that is why Earth became important to me."



ANIL AGARWAL • 1947~2002

On January 2, 2002, Anil Agarwal passed away after a long and painful battle against cancer. He left all of us at CSE orphaned, but left us with little time to mourn him. And he left behind the huge responsibility of walking in his footsteps to fulfil the mandate he had chalked out for CSE. But he also left us the means to carry out the tasks he had set for us — a rich legacy of his thoughts, ideals, passion, commitment, strength and anger. As we look back on what he was, and what he meant to all of us here, we also look forward in hope and confidence that we will fight the battles that he had fought, and we have the determination to win these battles.

Early influences

"For me, understanding the subject of environment has been a long journey into an understanding of my own culture. I wanted to search for and understand my India. It was a very internal drive which became a life-long passion."

Anil Agarwal graduated as a mechanical engineer from the Indian Institute of Technology, Kanpur, in 1970. *He grew up within the ambience of that great idea of the modern world: the idea of science and technology.* Towards the end of his formal education, he began to wonder how he was going to put to use all what he had learnt at this prestigious institute in order to solve the problems of his country. Realising how little he knew of India or of its problems, he decided that he first needed to explore and learn what the country was all about. He read many books in an effort to understand India and its problems, those by Mahatma Gandhi and Gunnar Myrdal, among others.

The uppermost question in his mind was, *"how can India best use science and technology to meet the needs of its people?"* He found the answer in Gandhiji's writings. He learnt that the nature of science and technology needed by developing countries is not the same as prevalent in the West. Gandhiji's science policies, which advocated socially appropriate and traditional technologies, were key to solving many of the problems of urban India.

Anil's encounter with the Chipko movement as a budding journalist once again brought home the relevance of Gandhiji's

philosophy. He saw in the movement the spirit of non-violent protest, the spirit of caring and sharing, and the spirit of self-reliance, among many other things espoused by Gandhi. He acknowledged his debt when he delivered the 1987 Gandhi Peace Foundation lecture: *"In many ways, Gandhiji has been my guru in helping me to understand my country and my people."*

At this point, Anil also read Gunnar Myrdal, who had just published his voluminous work, *the Asian Drama*. Anil met Myrdal at the Stockholm Conference on the Human Environment in 1972, when he was just beginning his journalistic career. Myrdal said to Anil: *"Books are like time bombs. If the ideas contained in them are of value, they will explode one day. And if they don't, they will be consigned to the dustbin of history."* These words stayed with Anil throughout his life and moved him to produce the State of India's Environment series, books that profoundly influenced Indian developmental policies. *Business India* listed *The State of India's Environment: The Second Citizens' Report* (1984-85) as one of the 15 most influential books of the post-Independence period in India.

Later, when Anil became impatient for results, he used the same idea to develop his knowledge-based advocacy. His successful campaigns on clean air for Delhi, and empowering people to manage their water resources, were borne out of his ingenious idea of shortening the fuse of literary time bombs, so that they would explode sooner and lead to action.

Myrdal also said to him, *"You have the biggest strength in your country — it is a democracy. If you think there is something that you want to change, you have the power to change it. Democracy allows you to do that"*. Anil took this advice very seriously and used the power of democracy to drive his campaigns. He allowed no one to come in his way, however powerful. To achieve his aims, he reached out to all sections of the society — the media, concerned citizens, students, civil society institutions, industry, government officials and politicians. He often described CSE as, *"a product of India's democracy built with 20 years of persistence"*.

Another major influence in Anil's life was Barbara Ward, whose passionate speech at the Stockholm Conference led him to walk on the environment path. Her beliefs and works,

Gandhiji was an ordinary man, but exemplified three qualities — anger, perseverance and humility. I have tried to live by Gandhiji's principles, but these are very tough things to live by and I have a long way to go



including the path-breaking book, *Only One Earth*, influenced him profoundly.

Anil's mother moulded him into a single-minded and persevering individual who worked hard to achieve his goals. If in later life he was universally known for his courage, honesty and commitment to public interest, the foundations were laid in his childhood. And everyone, friend or foe alike, respected him for his character. He was delighted when he was told by an official in the Ministry of Environment and Forests, "*Anil, my people are a little wary of you, because you have a tendency to call a spade a spade*". Anil often recalled his mother's words to him as a child, "*If you want to do something, never to do it behind my back*." He lived out these words in his later life, and in his work. He said of himself, "*I don't hide anything, whether something is bothering me, troubling me, or if I like something you are doing, I would be full of praise for it*." This trait in him won him many friends, who respected and loved him for it.

If North Block disappears

overnight from the face

of this earth, it will mean

absolutely nothing for

these poor people. The

North Block is where the

Ministry of Finance is

located, which is very

busy measuring how

much increase there has

been in the Gross

National Product or not.

But if the local forest

disappears, if the local

wells disappear, if the

local springs disappear,

the people get into very

deep trouble

The beginning of the journey

"We come out of Presidency College or St Stephen's or IIT Kanpur and think we know everything there is to know. Whereas we know nothing."

When he graduated from IIT-Kanpur, Anil's primary interest was to use his skills and knowledge in science and technology to do something for his country. He felt that journalism offered him a means of travelling across India, meeting people and understanding India in its myriad social, cultural, economic and environmental diversities. Rather than pursuing engineering, Anil joined *Hindustan Times* as a science correspondent.

Early on in his journalistic career, Virendra Kumar, an expert botanist who had been working in the region of the Valley of Flowers, told Anil about a fascinating protest in Reni, a remote Himalayan village. The village women had protected the trees against logging by hugging them, sending the government and logging interests the message that the forest could only be logged over their dead bodies. Although these events had occurred almost a year before, no one had heard or written about this unique form of protest in the English media. Anil's editor, B G Verghese immediately encouraged him to cover the story. Reporting the now famous *Chipko Movement*. This was a great awakening for Anil and changed him deeply.

The government of Uttar Pradesh had decided to auction the forests near Chamoli in the Himalaya to private timber contractors. The people of that region were dependent on the forests for most of their needs. Women, especially, were closely linked to the forest resources for water, fodder, fuelwood and other needs. Angered by this government move, they

decided to prevent the contractors from cutting the trees, even at the risk of their lives, and hugged the trees in face of the lumberjacks. Anil realised that these women hugged the trees not because they loved them, but because the trees were their very lives. Their survival depended on their environment. Contrary to popular perception, the poor had even more reason to be concerned about the environment than the rich.

This understanding of the relationship between the poor and their environment soon turned Anil into a lifelong environmentalist. Many of his pioneering ideas on the relationship between environment and development, environment and poverty and the need to empower communities took root here. Moved by his experience with the *Chipkomovement*, Anil dedicated his life to promoting the importance of the *Gross Nature Product* in alleviating poverty, instead of the *Gross National Product* that governments do so much to enhance. This encounter also led to his long association with Chandi Prasad Bhatt, the leader of the *Chipko Andolan*.

Reaching out to the citizens of India: The Centre for Science and Environment

"Science and environment are possibly the two greatest ideas of the 20th century. One has brought immense power to create unprecedented wealth. The other has made human beings realise that wealth creation, or development, as it is often called, can also be self-destructive. Therefore, the urgent need to reconcile environment with development."

In the late seventies Anil spent three years in England working on an environmental information project at the International Institute for Environment and Development. He returned to India with the idea of setting up an institution that would work on topical issues of sustainable development, looking at the linkages between science, technology, and environment. The institution he visualised would create public consciousness on the need for sustainable development, and influence public policies.

Anil was very clear, from the very beginning, that it was the educated class that needed to be educated about sustainable development. He would become very angry when he heard anyone saying that the poor needed to be educated on conserving the environment. His *Chipko* experience had taught him that the poor will protect their environment simply because they are dependent on it for their very survival. He also believed that the initiative for good environmental management must come from the ordinary citizen. He therefore wrote to be read and understood by the average literate and educated person, to create public consciousness about environment and sustainable development.

The State of India's Environment reports

"Sustainable development will never be possible unless we know more about the true nature of relationships between changing nature and changing society. The most interesting thing about these reports is the information they provide on these linkages."

One of the first tasks that the Centre for Science and Environment undertook was publishing the first and second citizens' reports on the State of India's Environment (SOE). This was the first time a citizen's report was produced on the state of a country's environment. These reports were not about the declining numbers of tigers or about forestry programmes, but about how environmental change impacted on the lives of the people. The SOE reports painted an accurate picture of the extent of environmental degradation and how this mirrored the human misery of India.

The SOE reports highlighted the importance of the environment to a poor country because of the extreme dependence that the country's poor have on their local natural resources. In other words, if a country focuses only on its Gross National Product and in the process destroys its Gross Nature Product, it will only lead to more poverty, loss of livelihoods and greater unemployment. Therefore, protecting the environment is not a luxury meant only for rich countries like America, but rather a necessity for poor countries like India. This went directly against the prevailing political opinion that stated that economic development alone is the solution to environmental problems. Mrs Gandhi is

still remembered for her oft-quoted statement, *"Poverty is the biggest polluter"*.

The SOE reports got extensive media coverage, both at home and internationally. They were reviewed by *The Economist*, *The New Scientist*, the *Asahi Shimbun*, *Le Monde*, and *The Guardian*, among many others. They inspired many similar reports, both in India and abroad, and influenced political action within several developing countries. Fred Pearce, reviewing these two books in *New Scientist* said, *"Reading reports from green groups describing real or imagined environmental perils can be a grind. But for passion combined with forensic rigour nothing touches the work of the Delhi-based Centre for Science and Environment, inspired by its founder and director Anil Agarwal"*.

During the making of these two reports, Anil closely interacted with numerous voluntary groups working at the grassroots in the country. In fact, the SOE reports were deliberately termed 'citizens' reports', which implied collaboration with a wide spectrum of individuals, voluntary organisations, grassroots activists and others. These groups had diverse interests within India and abroad also helped sell these reports and spread the message. In the process of collaborating on the SOE reports, they soon realised that conflicts in the developmental processes are in fact conflicts for control over natural resources. The SOE reports were thus able to embed environmental concern within the larger development and social justice dimensions. This, over time, encouraged many movements against deforestation, destructive mining, and construction of large dams, among other civil society initiatives.

The Chipko movement
summoned our attention
and energies and showed
us how the poor relate to
the issue of environment.
In many ways, the
Chipko movement gave a
voice to many of us
belonging to the first
generation of Indian
environmentalists



Chamoli, 1985

It is the so-called educated people who need environmental education more than anyone else. The more educated you are today in the Third World, the more alienated you are

The success of the SOE reports also changed the nature of CSE's work. They resulted in the creation of a network of people interested and committed to change. As CSE's interaction with various groups grew, so did our consciousness of the impact of environmental destruction on the lives of the poor and the inter-relationships between environment, economy and society. Slowly, CSE's activities and focus became centred on the environment, while retaining the scientific dimension of environment as a central issue.

In 1986, the arguments contained in these two State of India's Environment reports attracted the attention of Prime Minister Rajiv Gandhi. He asked Anil to address his Council of Ministers, and later all the 27 Parliamentary Consultative Committees — an unprecedented gesture on the part of an Indian Prime Minister — because he felt that his ministerial colleagues did not understand the importance of integrating environment with developmental concerns. At the end of these lectures, Rajiv Gandhi told Anil, *"My government is spending thousands of crores of rupees every year on flood and drought relief. I believe if the money went in good environment and natural resource management it would help us deal with future floods and droughts better. Can you explain this to the members of parliament?"*

Anil sent this request on a journey across the country, gathering information on the relationship between floods and droughts. He eventually gave the lecture to the Parliamentarians but continued work on understanding the nature of environmental problems in India, the nature of relationships between changing nature and changing society.

The environment — beyond pretty trees and tigers

"For the poor people in this country who live with the environment on a daily basis, the environment is something that we have to use and yet use in a very sustainable manner. And, therefore, the concept of 'utilitarian conservationism' and not the 'protectionist conservationism' becomes very important"

In the early eighties, Anil travelled extensively to different parts of the country, to look at how people live in and manage their diverse environments. As early as the mid-80s, he was already crafting a conceptual framework to bring about growth, equity and sustainability, based on his learning from his travels and his interaction with people across the country. These very concepts are today celebrated as 'sustainable development'. He constantly pointed out that paradigms of development, which create production systems that destroy

natural resources are the root cause of poverty and environmental destruction. The Indian government had newly created a Ministry of Environment and Forests. Anil was concerned that its manifesto was not based on a holistic understanding of the relationship between environment and development. The environmental consciousness that he helped create added a third dimension, 'sustainability' to the biggest issues of the day — growth and equity. He posed this question in every forum he addressed, *"how can our country get more from our natural resource base and at the same time conserve the natural resources?"*

The Gross Nature Product

"Poverty, for a majority of the rural poor of the world, is defined by the shortage of biomass resources to meet basic needs like food, fuel, fodder, manure etc; in other words, the Gross Nature Product"

In his travels across India, Anil examined grassroots experiences in villages, from Pondicherry to Ladakh, Gujarat to Nagaland. These experiences confirmed to him that the rural poor depend largely on biomass for their survival. Whether it is food, fuel (cowdung, timber or crop residues), building materials (timber, thatch), medicinal herbs, or fertilisers like leaf litter, the environment provides the poor with all their survival needs. When the environment degrades, and the Gross Nature Product shrinks, economic and social poverty rears its head. Anil believed the biggest challenge that faces India's policymakers is not only to conserve the natural resources, but also to revive degraded lands. Anil concluded that the problem of rural poverty in large parts of the developing world is not one of economic poverty but of *ecological poverty* — the poverty of natural resources needed to build up the rural economy.

Learning from tradition

"Traditional lifestyles in India were based on its extraordinary diversity of ecological systems and were inspired by sustainable use of the natural resource base"

During this period, Anil also discovered the extraordinary ecological diversity in the country. He was amazed to see how the people of India had developed diverse systems to manage their diverse environments — from the arid deserts of Rajasthan to the wet Northeast to the cold Himalayan regions — that produced the unique culture of each region. He was astonished to discover how centuries ago, people had developed economic systems and lifestyles that make best use of their natural resources.

The people of Rajasthan had developed a nomadic lifestyle and animal care-based

Awarded Padma Shri, 1986



occupations to suit their fragile land; the people of Mizoram had developed shifting cultivation because they had to live on the slopes; and those living in the floodplains of central India developed agrarian economies. These traditional systems, whether in land use, water use, agriculture or health care, became entwined with the cultural systems and were passed down the generations as cultural and traditional knowledge.

He developed a deep sense of respect for the traditional knowledge of the people which, he found was ingenious and innovative in making the best of the natural ecosystem in the gentlest and the most sustainable ways. He constantly advocated not only respect for this knowledge but also commercial rewards for the use made of it in the modern world.

Ecosystem-specific development

"High productivity on a sustainable basis is possible only by observing the laws of nature, not by contravening them. In other words, we have to develop ecosystem-specific development plans"

As Anil learnt more about how traditional systems had managed natural resources by building on the unique strengths of each ecosystem, he began to understand that need for ecosystem-specific development paradigms. Anil realised that a centralised and uniform planning methodology for plateaus, hill ranges, riverine deltas and other ecosystems of India that ignored their diversity and uniqueness, would not work. He pushed for ecosystem-specific development, a development paradigm that is uniquely tailored to each ecosystem to increase India's biomass.

The third citizens' report on the State of India's Environment, *Floods, Floodplains and Environmental Myths*, published in 1991 focussed on the vast Indo-Gangetic Plains ecosystem. SOE-3 studied the ecology of the world's most flood-prone plains, and raised questions about the specific nature of sustainable development needed for India's most economically and environmentally degraded regions. Anil questioned the scientific basis of the prevailing assumptions of the linkages between deforestation and floods. He instead proposed that ecological changes in the floodplains, and not environment degradation upstream, were the key cause of the growing flood menace.

Village ecosystem planning

"Indian villages are highly integrated agrisylvopastoral systems and what India desperately needs today is the holistic enrichment of each of its village ecosystems."



Dehradun, 1997

Interacting closely with the villagers of Sukhomajri, Ralegan Siddhi, Knonom, Seed and other villages, Anil learnt that people view their natural resource base as an integrated system and, from this learning introduced the concept of the 'village ecosystem'. Anil found that the Indian village is actually a complex and integrated ecosystem consisting of croplands, grazing lands and forest lands, surface and groundwater, the energy system and the livestock system. All these components interact with each other to maintain the delicately balanced village ecosystem. Therefore, the first step in planning for sustainable development has to start from the village and has to be for each village.

Implementing village-level planning requires a lot of discipline — discipline to ensure that animals do not graze in protected commons; that catchments are not polluted and properly maintained; that the resources and products are equitably shared and distributed. Anil understood therefore that the management of natural resources in villages is not possible without the willing and active involvement of the villagers, and therefore any ecological management system for the villagers must be participatory.

Anil put down these concepts in 1989 in a publication titled, *Towards Green Villages: A macro-strategy for participatory and environmentally-sound rural development*. Based on Anil's travels and his learning from people's initiatives, the book was an effort to conceive a macro-strategy for environmentally-sound rural development. It was a landmark publication that, for the first time, presented an operational framework for sustainable development. The book was translated into many regional languages and used by grassroots groups across the country and has helped Indian decision-makers to understand the importance of involving people in natural resource management.

The most sophisticated
decision-making will
begin only when village
people will start sitting
under banyan trees as a
group to discuss their
problems and find
common solutions.
Only such decentralised
decision-making can
match the enormous
ecological and
cultural diversity of
Indian villages



Vietnam, 1996

Women and environment

"Rural women are most affected by environmental destruction in India and therefore, women are most willing to participate in environmental regeneration efforts."

Anil was one of the first to document the adverse impact of environmental destruction on the lives of poor, rural women in developing countries. His paper on environment and women, published as a chapter of the second citizens' report on the State of India's Environment, (SOE-2) received media attention worldwide, especially in feminist, NGO and academic circles. During his travels, he found that in the vast majority of rural households, the women usually ventured out to collect fuel, water or fodder. Therefore, environmental degradation causes a disproportionate share of the burden to fall on the shoulders of village women who have to walk longer distances to collect daily essentials. This is hard on the village women who are expected to also perform a variety of other activities including cooking, caring for the livestock and working in the fields. Anil therefore found the women to be more interested in nurturing the environment. While Gandhiji had said, *"Think of the last man"*, when asked who we should keep in mind when we plan, Anil argued, *"the last man is invariably a woman, and therefore, think of the last person"*.

Urban environmental problems

"Urban development in the developing world is a total copy of the Western technological paradigm. But the Western technological model is an inherently toxic model because of its extraordinary material and energy-intensity."

Anil became aware of the urgent and critical state of the urban environment when he started work on air pollution issues in Delhi in 1994. Less than a decade before, he had advised the country's leaders, in a lecture to the members of the Parliament that rural environmental problems were among the most pressing problems of India. But by 1995, he was alarmed at the speed with which pollution grows; the air pollution in Delhi had made it among the most polluted cities in the world. Directing the Campaign on Clean Air provided Anil the opportunity to study these issues in detail. He found that the globalisation process resulted in the rapid spread of Western pattern of development a highly toxic pattern that is energy-intensive, capital-intensive, resource intensive and extremely polluting. Anil often cited the fact that the East Asian countries and the Southeast Asian countries have achieved a near economic miracle in which some of them doubled their

GDP in just about 10-15 years. At the same time, a World Bank study found that even as Thailand doubled its GDP, its pollution load, which is a total amount of toxins that it produced and released into the environment from industries, had multiplied ten times.

The success of the Clean Air campaign in Delhi gave Anil the confidence that the problem of urban pollution can be met by harnessing science and technology wisely. This campaign was a model to show that public pressure can bring about policy change.

Anil used the experience of the Clean Air Campaign to fashion strategies to counter urban environmental problems. Firstly, civil society organisations must improve their skills and competence in science and technology to break through the conspiracy of silence hatched by vested interests like the industry, the government and the scientific establishments. Secondly, they must push not only for technologies to leapfrog to advanced non-polluting systems, but also for small scale decentralised, and traditional technologies that are attuned the local culture. But most of all, civil society institutions must constantly fight for improved governance to ensure accountability and transparency in dealing with environmental problems.

Science, technology and environment

"If as Gandhiji said, India lives in its villages, something will have to be done about promoting development right in the villages. This poses the greatest challenge to India's scientifically and technically trained people – the proud legacy of Nehru's India."

Anil was an environmentalist who never strayed from his science and technology moorings. The first thing he wanted to find out after his graduation as a mechanical engineer was how to harness his skills and knowledge of science and technology to improve the quality of life for the poor people of India. As a journalist working with the International Institute for Environment and Development, Anil shared the first A H Boerma Award, presented by the Food and Agricultural Organisation to journalists for focussing world attention on problems of hunger and poverty. Anil's first task when he established CSE in 1980 was to begin a feature service on the use of science and technology for development. Within the first two years it produced nearly 200 reports on science and society-related issues, which were then published in more than 100 major newspapers, magazines and voluntary organisations.

Anil was different from many environmentalists of his day because he believed that nature lends itself to deep scientific analysis, and therefore the impact of human

Every Indian wants to
live like an American.
But few realise that the
Western economic
dream is a highly toxic
dream. America has
650 million cars and
we have 30 million and
we are choking
ourselves to death

intervention in any form, be it agriculture, industry, or the impact of population growth on the environment, must be scientifically analysed. This 'Science for Ecological Security', he believed, was extremely important for the poor countries to constantly monitor the impact of technological changes on the environment and then to take quick, remedial, regulatory and technological measures to address the problem. Anil argued that the answer to the 21st century's myriad environmental problems lay in traditional, small and decentralised technologies.

In the global environmental arena

"The 1980s saw several global environmental issues come to the fore. But the answers found to these issues in the form of international treaties have not provided equitable entitlements to the environment or globally valid judicial systems that can bring even the most powerful nations to book"

During the eighties Anil believed that the environmental problems confronting the people of India were critical and urgent and therefore, he focussed his attention and efforts on national environmental issues. His entry into global environmental issues was a chance coincidence.

The climate change campaign

One night, Anil heard a news item on *Doordarshan* that claimed India was the fifth largest emitter of carbon dioxide and was a major contributor to global warming. The news item was based on a UN-supported study by the World Resources Institute (WRI) in Washington DC.

Anil was taken aback to hear this; after all, he had been instrumental in creating a social legitimacy for environmental concern by arguing environmental degradation affects the poor the most. But here was a theory that the poor of the world were responsible for one of the world's major environmental problems. He was also outraged at India's green ministers who endorsed this theory by proposing that the people in India must stop eating rice and keeping cows.

Anil studied the Washington report carefully. What he found was that the report was politics masquerading as science. Anil believed that science consists of facts, while allocating responsibility is a matter of politics. He suspected that the developed countries were trying to rope in the developing countries to share part of the blame for global warming that the rich countries had created.

Anil took the same mathematical data of emissions, but changed just one assumption that produced dramatically different results. That assumption was that the global sinks,

which absorbed the carbon dioxide and reduced the total emissions, is a global resource and thus all citizens of the world have equal rights to these resources. The Washington study, on the other hand, had arrogated the maximum resources to the worst polluter.

This study, *Global Warming in an Unequal World*, kicked off CSE's campaign for Equal Rights to the Atmosphere. This book generated considerable global debate and had significant impact on the G-77 position in the negotiations leading up to the Framework Convention on Climate Change. Although initially Anil's concept of equitable sharing of atmospheric resources met with a lot of resistance, the idea has gained ground even in the West. Today, the concept of equity has been accepted and embedded as a benchmark for all actions in the climate change convention.

Anil continued to take very active interest in this issue and called for strategies that would address issues of ecology, economy, social justice and equity. He strongly advocated that the world must move from a fossil fuel-based economy to one based on renewable energy and that this can be done if the market systems make renewable energies competitive with fossil fuels. As this requires all countries to cooperate, Anil believed the framework must be made just, fair and equitable.

Global environmental governance

The Rio meeting and the WRI study catalyzed Anil's entry into international environmental issues. He laid down CSE's mandate in this area — to articulate Southern priorities, and argue on behalf of the poor and the disempowered in the global arena.

Just before Rio Anil wrote a book, *Towards a Green World*, which argued that while global environmental governance was

People who have already
created a stock of carbon
dioxide that is causing
global warming are not
being held accountable.
We are asked to change
our codes of behaviour
today for something we
might do 40 years later.
In other words, those
who have already
committed murder are
preaching to us that we
should not commit
murder 40 years later

Release function
of *Green Politics*,
2000



I often differ from
my wonderful
environmentalist friends
in the Western world
when they say that
consumption is growing,
population is growing and,
therefore, we are facing
a major environmental
catastrophe. I would
rather say that as a result
of both these factors, we
are facing a major
environmental challenge.
A challenge that can be
met successfully

essential to avoid global disasters, its principles should be based on democracy, justice and equality among all world citizens — the key principles of good governance. This book received worldwide attention by journalists, TV commentators, academics and policy researchers. It greatly influenced the negotiations leading up to the Rio Conference on environment in 1992.

In 1994, Anil was nominated as Environmentalist of the Year by *Les Realities de l'Ecologie*, a leading French environment magazine. Dominique Voynet, then leader of the French Green Party said, "two years after Rio, at a time when the GATT agreement has dealt a severe blow to the planet, it is necessary that the environmentalist of the year should be the messenger with a vision anchored in sustainability and solidarity for the future generations. Who can represent the essential synthesis between environment and development better than Anil Agarwal".

As a participant in many global environmental negotiations, Anil found that Northern interests largely dominated these meetings. He repeatedly argued that the management of global resources must be based on the concept of equal environmental rights for all human beings. His angry reaction to the different mechanisms being developed to deal with global environmental problems, including conventions, aid, trade and debt, was, "these are Northern instruments and not international instruments because they can never be used by poor countries and instead will be misused by rich countries to safeguard their interests".

While Anil was critical of the attitude of the West towards global environmental problems, he was equally critical of the

Southern governments and leaders, who, in his view did not participate in these negotiations with any seriousness or from long-term perspectives. He repeatedly urged the Indian and other Southern political leaders to take proactive positions in all global environmental negotiations, positions that would safeguard the interests of their poor and the marginalised.

He recognised the urgent need to demystify the politics and processes of global environmental negotiations, especially to Southern civil society groups and governments. The State of Global Environmental Negotiations (GEN) reports were started keeping this in mind. Anil wanted to inform the actors in global environmental negotiations, particularly those from the South, about the politics involved in these negotiations. The GEN reports analysed the process and outcomes in negotiations, and articulated Southern priorities and concerns. CSE published two GEN reports, *Green Politics* and *Poles Apart* in 1999 and 2001, which were extremely well received across the world. The GEN reports are used as resource material by NGOs working on these issues and are mandatory reading materials in several US university courses.

The challenge of ecological globalisation

Anil believed that the economic globalisation process leading to growing wealth, production and consumption would lead to a corresponding ecological globalisation as the environmental problems created by one country will increasingly cross over national borders and affect the people, economies and ecologies of other countries. However, even as he constantly argued for democracy and justice in global environmental governance, Anil looked at this process of ecological globalisation with optimism and hope.

He believed that the 21st century would usher in a range of more efficient small-scale technologies and pluralistic governance systems in which a large number of people would be involved. He was also confident that the growth of civil society movements in many parts of the world, would give rise to effective leaders who are able to harness the globalisation process for growth and prosperity.

Anil was therefore optimistic that the environmental and technological challenges of the 21st century can be met. Southern civil society institutions can guide their citizens to make better choices to achieve a healthy and sustainable world by improving their technical competencies, ushering in participatory forms of governance and creating a serious and committed leadership that can make use of the opportunities provided by economic and ecological globalisation.

Sudan, 1986



Down To Earth

"This country is held up by its people and not its leaders. Is it not time that you got to know more about what people like you and me are doing?"

This is how Anil first spread word about *Down To Earth*, the fortnightly newsmagazine on science and environment that he launched in 1992. Anil had been nurturing the idea of starting such a magazine for many years. He was convinced that there was a critical information gap, and *Down To Earth*, modelled on the *New Scientist* and brought out from the developing world, would be a powerful tool to influence policymakers and to create awareness in civil society.

Anil had been deeply impressed by the ability of the people, especially the poor, to generate sustainable wealth through the regeneration of their environment. He was also aware that there were several people-based efforts across India that the media ignored, innovative responses by the people to the slow degradation of their survival base. As he learnt more about the relevance of these efforts for sustainable development, he became convinced of the need to create wide awareness about these grassroots initiatives so that they could influence macro-policy development. At the same time, he believed that the technological changes occurring worldwide would impact the environment of India. He was concerned about the need for public awareness and debate on these technological options to generate pressure on the government to make the correct choices.

Thus was born *Down To Earth*, a unique newsmagazine on science and environment that would cover human aspirations, endeavours and struggles, global technologies, the politics behind national and international policies and developments.

Anil received invaluable support from friends and supporters across the world. Even before the first copy of the magazine was printed, Anil had sold over 5000 subscriptions and raised the seed money required to start the magazine. At the first anniversary of the magazine, letters of appreciation poured in. Anil was greatly thrilled when Gro Harlem Brundtland said of *Down To Earth*, "*Reading Down To Earth is cost-effective.... The issues have been clearly defined and pinpointed. The style, not unlike that of The Economist, will ensure a stable, influential readership around the world.*"

Under Anil's leadership, *Down To Earth* became an influential magazine that informs, challenges, inspires and provokes people to act for the environment. Most of all, it has become a symbol of change. Its articles have

resulted in court actions, NGO campaigns, and policy and lifestyle changes. Anil used the magazine to get decision-makers from diverse groups to pay attention to environmental problems, community-initiated solutions, the politics behind policies and governance in environmental decision-making.

Down To Earth reaches every nook and corner of India. Its diverse readers include concerned citizens, NGOs, lawyers, teachers, students, industry leaders, government officials, researchers and others – the kind of people capable of leading change in India in the future. Readers volunteer their time and efforts to conduct surveys and studies and to help spread the word about *Down To Earth*. The public's heart-warming response to the magazine keep us motivated to maintain the high standards Anil had set under his stewardship.

Knowledge-based advocacy

"All of us want to see the results of our actions. CSE's strengths have been in producing publications. So, what could CSE do to change the society?"

By the mid-1990s, Anil had honed and refined CSE's communication skills and the organisation had come to set standards in environmental communications. Anil had by this time produced three State of India's Environment reports, started a newsmagazine, published numerous small publications, produced several video films and exhibitions, started specialised publications for children that created awareness about environmental problems. However, Anil was no longer content to create awareness and wait for people to push the government to take action.

In 1994, Anil was diagnosed for a rare form of cancer of the Central Nervous System (CNS lymphoma), for which he took treatment at the National Institutes of Health in the US. Rather than let his grim prognosis get him down, he typically set about examining the causes of cancer. He found that changing environmental conditions, lifestyle and consumption patterns are the cause of a majority of the new breed of deadly diseases like cancer. He threw himself into the task of creating awareness about these issues and to bring policy change. The onset of cancer only spurred him to climb greater heights in order to achieve results.

From his hospital bed in the US, Anil directed his colleagues in Delhi to continue work on two publications, one on Delhi's vehicular pollution and the other on community-based traditional systems of water management in India. He decided to make full use of the social capital that CSE had built over the years within the civil society, the political world, and the media.



Mizoram, 1988

I am 53 and this disease
has given me a sense of
mortality, which most
people my age don't
have. This drives me
to work harder,
with greater zeal
and enthusiasm

Right to Clean Air campaign

When *Slow murder*, the book on vehicular pollution was ready, Anil approached Dr K R Narayanan, then the vice-President of India, to release the book at his official residence. Anil knew the prestigious address would attract heads of auto companies and many government ministers to the release function. The book immediately attracted the attention of the media, pollution control officials and, importantly, the Supreme Court. The campaign made full use of the media support, and by focusing on the health impacts of pollution, garnered public support.

The extensive media coverage resulted in a *suo moto* notice given to the government of Delhi by the Supreme Court judge, Justice Kuldeep Singh. Anil was pleased with the judiciary taking an active role in learning more about the role that the city's numerous outdated vehicles and dirty fuel played in endangering the city's public health. He hit out strongly against the government for colluding with the auto industry and other vested interests for their support of polluting technologies.

In 1998, following widespread public concern generated as a result of the CSE campaign, the Supreme Court ordered the government of India to establish a powerful authority to manage pollution problems in New Delhi. Anil was nominated a member of this authority and wielded considerable influence in pollution control matters through this committee.

CSE's Clean Air campaign has grown considerably from its initial days of creating awareness about the impacts of vehicular air pollution. It used the power of both media, and the judiciary, to counter vested interests and slowly bring in measures to ensure clean air quality in Delhi. The campaign has since then been instrumental in improving Delhi's fuel and air quality. Today, CSE conducts studies to develop safety and emission norms for Compressed Natural Gas (CNG) and to develop emission factors for scooters and other two-wheelers in an effort to move towards zero emissions. The Clean Air campaign has become a trendsetter for similar campaigns across the world and has won

world praise for bringing about the world's largest CNG city bus fleet. CSE's challenge today is to take this success to the rest of India's polluted cities.

Make water everybody's business

In early 1997, Anil completed *Dying Wisdom*, an influential book on the traditional wisdom of rural India in conserving rainwater.

Anil's interest in traditional water harvesting systems had been kindled years back, in Rajasthan. While travelling through the Churu district in the Thar Desert, he saw several structures that looked like Buddhist stupas placed over a flying saucer. The villagers told him that this structure, called the *kundi*, provided them with rainwater collected in the catchment. The dome ensured no water was lost through evaporation.

Anil was amazed at the ingenuity and simplicity of this structure devised by the local people centuries ago to collect and store precious water available in the arid Thar. The engineer in him made a quick calculation — if the region receives only 100 millimetres of rainfall and if one is able to collect this in one hectare of land, one can collect as much as 1 million litres of water. He marvelled at the traditional wisdom and technology that could create these amazing structures and initiated an in-depth study of the traditional systems that existed to manage water resources. After seven years *Dying Wisdom* was published. The central message contained in the book was that the management of water resources should be wrested from the government and instead placed in the hands of local communities.

Anil launched the campaign simultaneously in different cities of India, once again making use of the social capital and goodwill of powerful leaders CSE had built up over the years, to ensure that the message of the book was propagated by such leaders in their regions.

The success of Anil's campaign campaign surpassed his greatest expectations. Water harvesting is today the new mantra for the people, politicians, NGOs, donors and even bureaucrats. Anil often said, "*There is no village in India that cannot meet its basic drinking and cooking water needs through rainwater harvesting*". But rainwater harvesting demands a new approach to governance — participatory rather than top-down. Therefore, Anil initiated a campaign within the campaign called *jal swaraj* (a term he coined for people's management of water resources).

This campaign has changed the mindsets of bureaucrats and politicians, and provoked several state governments and the central government to sponsor community rainwater harvesting efforts. However, we still have a long way to go to realise Anil's dream of true *jal swaraj*.

What does water

harvesting mean in

human terms?

It means making water

everybody's business.

It means re-establishing

the relationship between

people and their

environment. It means

catching water

where it falls



Release of
Dying Wisdom, 1997

The Green Rating Project

The Green Rating Project is yet another of Anil's innovative initiatives to evoke a response from industry, a sector with whom environmentalists usually establish an adversarial relationship. While on a visit to the US, Anil had come across information on a programme that rated companies on their social and environmental performance. He was struck by the idea that such a process could be used to motivate and pressure industry to improve its environmental performance, and started the Green Rating Project (GRP).

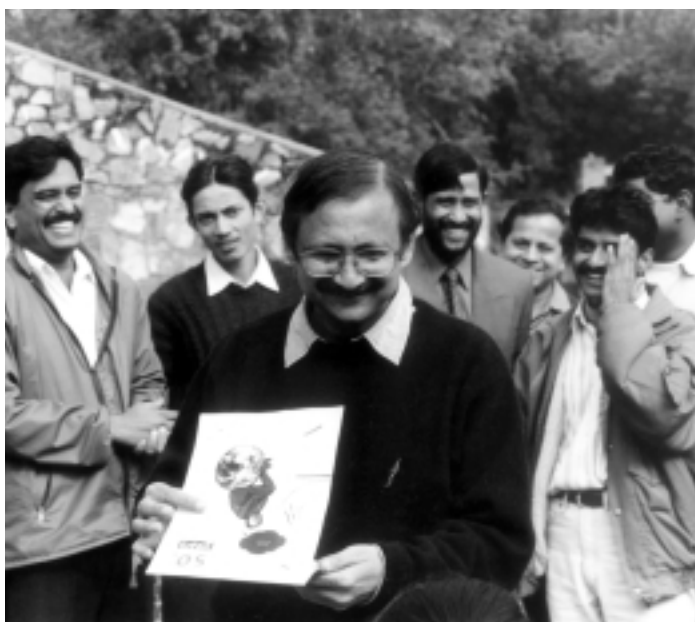
GRP had to overcome several problems. Obtaining environmental data of companies was a huge challenge, as Indian government agencies do not maintain environment data; what little information available is either unreliable or inaccessible. Detailed environmental information on each industrial sector would have to be painstakingly collected, requiring a huge amount of financial and human resources. Anil, in his typical fashion, found an imaginative solution – tap into the committed readership of *Down To Earth*. He advertised in the magazine for volunteers and reaped a rich haul of over 400 applications – many from highly educated professionals. These 'Green Inspectors', as he called them, willingly collected detailed data on each company — at no cost to the organisation.

The Green Rating Project's first assignment was to rate the environmental performance of the paper and pulp sector. The companies, initially unwilling, later became voluntary participants when told the ratings would be widely publicised, and that transparency made good business sense. Anil realised industry would stop at nothing to discredit such an effort. He put together a Project Advisory Committee that consisted of eminent leaders from civil society, industry and government. A technical steering committee that included leading technical experts was created.

GRP is today recognised as a model programme that promotes voluntary improvements in the environmental performance of industry by using market mechanisms and corporate reputation as its chief incentive.

Educating future leaders

In the early nineties, Anil wanted school children to be exposed to environmental education that was holistic in approach. In the 1980s, due to increased public awareness and interest in environmental issues, environment had become a compulsory subject in schools, and in addition, there were a number of voluntary organisations involved in providing environment education. But these efforts projected a conservation or nature-oriented perspective on environment. Having been a strong advocate of an anthropocentric



50th birthday celebrations, 1997

perspective of environment, Anil was keen to initiate a programme of environment education that would inculcate a holistic understanding of the environment including its social and cultural dimensions.

Anil initiated CSE's environment education programme as a unique programme that teaches children about the linkages and continuities between nature and society; how environment is not solely about conserving trees and animals; and, its importance as the survival base for the poor. The programme also educates children about traditional values and practices that ensure the frugal and sustainable use of natural resources.

Recognition and awards

Anil was made chairperson of the world's largest network of environmental NGOs based in Nairobi, Kenya, from 1983 to 1987. He was also awarded the Fifth Vikram Sarabhai Memorial Award by the Indian Council of Social Science Research, New Delhi in 1984, and the Padma Shri by the Government of India in 1986. In 1987, the United Nations Environment Programme (UNEP) elected Anil to its Global 500 Honour Roll for his work in the national and international arena. The Hawaii-based Watumull Foundation awarded him the Honour Summus Award.

These were just the beginning of a long list of awards that he won for his dedication, courage and commitment to the cause of environment. In later years, he was awarded the Padma Bhushan by the Government of India, the Norman Borlaug Award by the Coromandel Fertilisers Ltd and the Global Environment Leadership Award by the Global Environment Facility, Washington DC.



From the Director

This is the most difficult task I have undertaken in CSE — to write about my colleague Anil Agarwal without my colleague Anil Agarwal. Anil and I have worked together, travelled and written together for the past 20 years. The difficulty is living life alone. Without Anil's sheer fire and commitment.

Life began and ended with work for Anil. When you think back it is truly amazing how much he managed to do in the past seven years as he battled cancer. I remember when we first found out that he had a rare and possibly fatal lymphoma, which had spread to his brain, his spine and his eyes, his only response was, "is there a possible treatment". He took the horrendous chemotherapy so calmly that being with him you would think it was a simple stomach pain.

But our focus even then was on work. This was the period that our organisation, was in a mess. We had expanded, started a fortnightly magazine, but with hardly any management systems. Being writers and environmentalists we had no clue what it took to run an institution. All the months we spent in the US and then later in France where Anil went for a bone marrow transplantation, we worked furiously to set up internal systems. And we made many mistakes as Anil's impatience drove colleagues up the wall. But he soon learnt that to build a solid foundation he needed to give his strength and generosity and most of all, his time. He did. And I know he died with the knowledge that he had created an institution, which would carry his work forward. Poorer without him. But not destitute.

For him, the most hated legacy was what Gandhiji left behind. "Orphans," he would say. "Their inability to stay involved with the challenges and to show the way ahead has made Gandhiji irrelevant." For Anil to live on in our hearts and minds CSE will have to continue to drive the environmental message, as loudly and as stridently as he would have done.

His message was also always evolving. Knowledge was his biggest passion and he never assumed that he had learnt all there was to know. This, to me, is his most endearing message. Till the end he listened to people, travelled and read, as if he was a cub reporter. It is because of this, his intellectual legacy is enormously rich. In the 1980s the fledgling environmental movement got its basis as he established the need for poor countries to be concerned about the environment. This was the time when it was generally accepted that environment was to do with "pretty trees and

tigers" and that "smoke was the sign of progress". Poverty in fact was seen as the greatest polluter, in the words of late Indira Gandhi. Anil debunked this and how effectively.

Environment for the poor was not a luxury but a matter of survival, he wrote. He conceptualised the alternative economic paradigm of the poor, arguing that the rural poor lived within what he called, "the biomass based subsistence economy". That is, they lived on the environment as all their basic survival needs, from food to firewood, was collected and used. He mocked our economists who measured welfare in terms of the *Gross National Product* and demanded instead that poverty should be measured in terms of *Gross Natural Product* and indicators like the number of hours it takes women to collect water or firewood, should be used to calculate the improvements in our economy. Today, all this is common knowledge. But for someone who has journeyed with him, I know how difficult each step was.

Every period of his life was a new chapter of discovery. Our book, *Global Warming in an Unequal World* forced us to fight the most powerful research institutions of the industrialised world. The campaign on air pollution made us take on the powerful automobile industry. But Anil never ever let us, even for one moment, feel that we were less powerful.

This is because his faith in democracy was total. As long as we were absolutely sure about our facts we could challenge the world. "If we have good knowledge and we have social capital — friends and experts willing to cooperate with us — we can work Indian democracy," was what he said again and again to us. For Anil, democracy was a way of life. It is because of this belief that Anil was able to find the balance in the challenge: markets were important as much as participatory democracy at the village level.

"Forensic rigour combined with passion" was how a leading journalist from UK described CSE'S work. This was Anil's key quality and what he has left behind for us to emulate. His last many years went in building up two campaigns — to push for community involvement in water management and to clean up Delhi's air.

I will miss his guidance. His presence. But I know he will remain with us to keep us on our toes. To keep the fire burning.

— Sunita Narain

Every period of his
life was a new chapter
of discovery. Anil never
let us, even for one
moment, feel that we
were less powerful.

Perspectives

M S SWAMINATHAN

Chairperson, Executive Board

I cannot reconcile myself to the fact that I am writing this in the place of Anil Agarwal, Founder-Chairman of the Centre for Science and Environment. The last time I was with Anil was when we visited the village of Lava ka Baas in the Alwar district of Rajasthan on 19 July 2001. I noticed at that time that Anil was not at all well. He had just returned from Madurai after visiting the tank rehabilitation programme designed to foster the harvest of rainwater at the places where it falls. The premature death of Anil is an incalculable loss to both nature and our nation. The serious drought of 2002 has reminded us of the wisdom of community conservation of rainwater promoted by CSE under the inspiring leadership of Anil. All that we can do is to continue the work he had started with such vision and vigour.

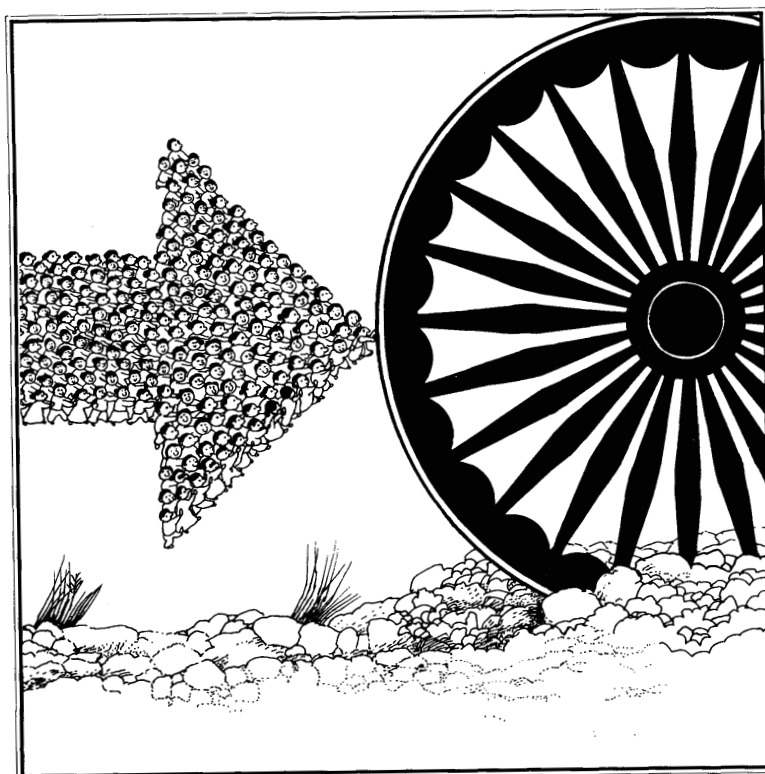
This report is evidence of both the contemporary relevance and professional excellence of the various programmes undertaken by the dedicated staff of CSE under the leadership of Sunita Narain. CSE's unique strength lies in working at two levels - grassroot and policy. Drawing inspiration from grassroot realities, CSE has been able to influence public policy in a manner practically unrivalled in our country. The work done to control air pollution in Delhi through the crusade for clean energy sources like the introduction of compressed natural gas (CNG) for public transport is probably the most important step taken so far in helping the citizens of Delhi to achieve the right to clean air.

CSE through its various publications and public awareness campaigns has been able to keep environmental issues at the top of the political, public and legal agenda. Gobar Times has been effective in igniting young minds in the area of promoting harmony with nature. The Green Rating Project has been extraordinarily effective in making industry conscious of its environmental responsibility. This project has helped industry to realise that hereafter good ecology alone can lead to good business on a sustainable basis. Above all, CSE has made significant contributions to global environmental governance and played a key role at the Conference of Parties (CoP) of the Global Climate Convention held at New Delhi. Networking with other South Asian

NGOs engaged in the conservation and enhancement of natural resources has been another important contribution.

Since all the work done during the year is contained in this report, I do not wish to recapitulate them again in this preface. My aim is mainly to help us remind ourselves of how much we owe to the untiring and professionally rigorous work done by Anil Agarwal in the brief span of life given to him. CSE is committed not only to continue his legacy but expand it considerably so that everyone of the over billion children, women and men inhabiting our country becomes environmentally literate and responsible.

I wish to place on record the appreciation of the members of the Executive Board to the dedicated work of the staff of CSE led by Sunita Narain. I also wish to express our gratitude to all the donors but for whose confidence in the importance of our work and generous financial support the work described in this report would not have been possible.





A framework for change

Key achievements in institutional development

In the last decade, CSE made major programmatic shifts — first, by moving into a deadline-oriented journalistic culture, and then, by moving into policy research and advocacy. At the beginning of this decade, CSE is again expanding into new areas of education, training and pollution monitoring.

This growth in programme areas underlines the urgent need to consolidate support structures that can sustain and enable growth. In 2000-2002, several improvements to this support framework were made and this is a continuing and a dynamic effort.

Programme Management Systems

Annual planning and monitoring

Continuing the system of annual planning for a structured organisational programme plan, annual plans of all units of CSE were prepared and presented to peers both within and outside CSE. The names of panelists of the peer reviews conducted in 2000-2002 are given below.

The annual planning process is reviewed for drawbacks and anomalies every year and improved upon. This year for instance, a system of providing feedback to each staff member has been introduced. The idea is to provide an opportunity to each staff member to learn from the process of annual planning and work on the weaknesses and consolidate the strong points. The feedback information is provided to staff members in a manner that is conducive for the person to be able to accept suggestions for improvements and feel satisfied with the work accomplished.

Monitoring of performances against planned activities

The programme monitoring system too is dynamic and is constantly improved upon. In this period, we introduced a system of evaluation for new staff just after three months of joining. This is to single out non-performers early and save the time and effort invested in training such persons.

External review panel: 2000 – 2002

Unit	Resource persons
Programme Management and Development	Mr Vikram Lal, Vikram Sarabhai Foundation; Mr B D Dikshit, Former Chairman, Union Bank of India; Mr Rohit Arora, Director, AR Credit Info Services; Mr Arun Duggal, HCL Technologies Ltd
People's Management on Water Programme	Dr N C Saxena, Former Secretary, Planning Commission; Prof Chaturvedi, IIT, Delhi; Ms Madhu Bhatnagar, The Sri Ram School, New Delhi; Ms M S Vani, Development Centre for Alternative Policies, New Delhi
Environment Resource Unit	Dr R A Mashelkar, Director General, CSIR, New Delhi; Mr K P Nyati, Head, Environment Division, CII, New Delhi; Mr Bhupendra Badgaiya, National Project Coordinator, SDNP, New Delhi; Mr Arun Seth, BT Worldwide Ltd, New Delhi; Ms Neena Jacob, British Council Library, New Delhi
Global Environmental Governance	Mr Sukumar Muraliedharan, Frontline, New Delhi; Mr B S Chimney, International Legal Studies Division, JNU, New Delhi; Mr Vijay Sharma, Former joint Secretary, Ministry of Environment and Forests; Mr Mohan Gopal, National Law School, Bangalore; Dr Suman Sahai, Gene Campaign, New Delhi; Prof D K Banerjee, Dean, School of Environmental Science, JNU, New Delhi
Down To Earth	Mr B G Verghese, Centre for Policy Research, New Delhi; Mr Ramesh Mukalla, Embassy of Sweden, New Delhi; Mr Bharat Bhushan, Senior journalist, New Delhi; Dr Arun Kumar Attri, School of Environmental Science, JNU; Ms Bharati Chaturvedi, Chintan Environmental Action Network, New Delhi; Mr Om Thanvi, Jansatta, New Delhi; Mr Raghav Saha, Department of Science & Technology, New Delhi; Mr Rajiv Bhartari, Forest Research Institute, Dehradun
Right To Clean Air Campaign	Mr Prem Shanker Jha, Columnist; Dr S K Chhabra, Vallabhai Patel Chest Institute, New Delhi; Mr Rajendra Gupta, Former Transport Minister, Delhi; Dr J N Pande, Department of Medicine, AIIMS, New Delhi; Dr R A Mashelkar, Director-CSIR, New Delhi; Mr B Sengupta, Central Pollution Control Board, New Delhi; Dr B P Pundir, Professor, IIT, Kanpur; Prof H B Mathur, Regional Engineering College, Delhi; Dr Rita Pandey, National Institute for Finance Policy, New Delhi; Veeresh Malik, Environmental columnist, Bangalore
Green Rating Project	Mr T N Ninan, Business Standard Ltd, New Delhi; Prof H B Mathur, Regional Engineering College, Delhi; Mr Bibek Debroy, Rajiv Gandhi Foundation, New Delhi; Mr V N Das, Ranbaxy Laboratories, New Delhi; Mr Alope Mookherjee, ABB, Calcutta
Health & Environment	Dr G P Talwar; Dr (Mrs) A K Susheela; Dr N Kochupillai; Dr R C Dhiman

We also introduced changes to give senior staff a greater stake in the organisation to meet their priority targets. Beginning this year, a system of quarterly evaluation of specific targets has been initiated. A corresponding incentive system called the Quarterly Performance Reward (QPR) as an additional incentive over and above their salaries has also been introduced.

The rationale for this system is two-fold – (1) to take into consideration the multifarious responsibilities of coordinators who often have to expend time on unplanned activities, and (2) to motivate coordinators who have key responsibilities to ensure that major deadlines of the team are met.

The system is designed to ensure that priority work gets executed and activities are quantified by a system of points that give weightage to priority activities. To help coordinators achieve their targets, we have also introduced a system of providing assistants.

Yet another improvement is the introduction of team targets to counter the tendency of individual staff members concentrating more on their own performances to the detriment of the team's performance as a whole.

Performance-based evaluation

In this period, we worked on this system to ensure that performance incentives are linked to indicators that give a clear idea of what kind of incentive will be awarded for what kind of performance. Annual performance incentives are linked to the salary grades of each person. The quarterly performance reward (QPR) system is so structured to ensure that targets are met as follows:

- Performance below 75% of plan – NIL
- Performance between 75-90% of plan – 80% of incentive
- Performance over 90% of plan – 100% of incentive

Teams working on books/ major papers will be rewarded additionally on completion of publications in time and to the satisfaction of a review committee.

Career path

In order to direct staff growth towards multiple skills of research, communication and activism, a career path has been drawn up to ensure that staff will develop these skills as they grow within the organisation.

As part of this effort, CSE undertook an overhaul of the salary structure to ensure that every staff member and every person who will join CSE will fit into a grade and a scale. What is unique about the system is that the new system is coupled with a system of performance rewards that provide substantial incentives for good performances.

The rationale that underlines the structure is that fresh, new and relatively inexperienced staff will be paid at less than market rates to ensure that people who come

to us have a sincere interest in environment. At middle levels (2-5 years of experience), salaries will be competitive with the market for the skills involved. At the top management levels, salaries will be 30-40 per cent higher than the market rates. This is to ensure that staff who have been trained in CSE have an incentive to stay.

Middle level staff will have their separate annual plan with clear objectives and deliverables. Senior level responsibilities will include ensuring timely output of team members, recruitment, training of staff, information management, fund-raising and overall administration of the programme.

Training for human resource growth

During the year, CSE also finalised its policy to provide specialised training to staff to facilitate professional growth. The training policy consists of a variety of programmes – in-house lectures by staff and outside experts; in-house professional training in areas of information technology, journalistic skills, etc by outside experts, participation in seminars and workshops and sponsorship for specialised long-term professional/training courses. These could be in the field of computer software for networks, databases and websites, secretarial skills and language proficiency skills.

Management Support Systems

Administration

CSE took several steps to convert its building into a green office space. Some of the tasks completed are: construction of a water harvesting system to collect all the rainwater that falls within the premises; implementation of a paper recycling system to avoid paper wastage; creation of a special space for volunteers to work comfortably; and, use of bio-environmental control mechanisms for control of mosquitoes.

Systems

The systems unit undertook a major upgradation and acquisition to keep up with the growth in the organisation. The unit also regularly organises training sessions for all CSE staff on the use of Word, Excel, use of Internet, MS Access, etc.

Outreach

Regular newsletters like the *Catch Water*, *Gobar Times*, and other small publications were also published. Major publications included *Making Water Everybody's Business* and *Poles Apart*.

In order to facilitate access of CSE products to prospective buyers, CSE opened a bookshop at its India Habitat office, which is centrally located in the heart of the city. It has received a good response from the public. CSE also offers publications and other products online through the CSE Store on the website.





Pushing for solutions

OBJECTIVE

- Policy Research and Advocacy

GROUPS

- Air Pollution
- Natural Resource Management (Water harvesting, biodiversity, and poverty and environment)
- Health and Environment
- Industry and Environment
- Global Environment Governance

CAMPAIGNS

- Right to Clean Air
- Make Water Everybody's Business
- Equal Rights to the Atmosphere

MAJOR PROJECT

- Rating the Environmental Performance of Indian Industry

In the period 2000–2002, CSE focused on air pollution, community-based water management, and global governance campaigns. The Right to Clean Air Campaign has been highly visible, and has led to an appreciable improvement in the quality of Delhi's air. Another highlight of the year was the success in getting a positive response from auto manufacturers to provide an emissions warranty. The Supreme Court supported CSE despite enormous pressure from vested interests. The Court handed down several rulings to improve the quality of petrol, diesel and benzene.

The Water Harvesting Campaign team has been successful in changing the focus of harvesting water — from discussion to implementation. Our call to make harvesting water a people's movement has been endorsed by civil society. Farmers from all over the country took the initiative and turned water harvesting into a mass movement. The government and municipal bodies have enthusiastically supported the initiative. The effort has also drawn international attention.

Over the past two years, the Global Governance Campaign has convinced several more groups to adopt the idea of equitable rights to the atmosphere.

During the process of campaigning and advocacy, CSE has learnt that the work needs enormous physical, intellectual and emotional stamina. Launching a campaign needs complete involvement. CSE also learnt to respond tirelessly to the backlash from numerous vested interests.

CSE's campaigns are knowledge-driven and require detailed study of the issues. Over the years, we have developed internal capacity by enhancing our commitment and competence.

RIGHT TO CLEAN AIR CAMPAIGN

After nearly six years of campaigning, the Right to Clean Air campaign received a tremendous boost by a 2002 Supreme Court order. This landmark judgement for improving air quality in Delhi and in other cities of India, will, if implemented well, make a huge difference to air pollution in several cities in India. The court order took into account many of the demands that CSE has been making over the past six years as part of its campaign on air pollution. The main plank of the campaign has been the introduction of compressed natural gas (CNG) for public transport.

The Right to Clean Air campaign adopts a three-pronged strategy to achieve its aims: (1) to research and produce credible scientific information; (2) to influence the courts through the Environment Pollution Control Authority (EPCA); and, (3) to use mass media in order to create awareness in society and counter disinformation on CNG technology to reinforce CSE's campaign.

Accordingly, CSE launched a media blitz by publishing reports, articles, press releases, giving television interviews, commissioning scientific and technological studies, conducting policy research and through advocacy. CSE followed the Supreme Court case closely throughout the year and provided the apex court's judges and lawyers with information through the EPCA.

CSE reports including *A technical study of CNG technology*; *Smokescreen of lies: Myths and facts about CNG*; and a report on *Fuel Adulteration* not only cast issues in true

perspective to the people but also became reference material during the judicial scrutiny and later formulations of public policy. The Supreme Court has essentially agreed with CSE's campaign that the issue of air pollution has grave consequences for public health and that action to bring about clean fuels must be taken across the country.

Another significant CSE achievement was the announcement by the Society for Indian Automobile Manufacturers (SIAM) to provide emission warranties for all vehicles, in phases, in all cities where Euro II norms have to be implemented. This is perhaps the first time anywhere in the world that a demand from civil society has been accepted by industry without any government intervention.

RESEARCH AND ADVOCACY

Air Quality Index for Delhi

There is a need to inform and educate the public about the state of air quality in cities and the health implications of poor air quality. Experience around the world has shown that raw data on the levels of pollutants makes little sense to people. The information must be conveyed to the public in a meaningful way by developing a simple index that indicates air quality as "good", "moderate" or "poor".

To develop such an index for Delhi, CSE organised a workshop from June 6-8, 2000, in which several well-known international experts on air quality monitoring and inventorisation from the US, Sweden and India participated.

The available Delhi's air quality data for





Anumita Roy Chowdhury makes a presentation at the Air Quality Index workshop

the period 1987-97 was analysed. Experts also reviewed the air quality indices of other countries, including the UK, Australia, US, France and Mexico. In Delhi, unlike in cities in other countries, on many days the presence of a number of gases are simultaneously higher than prescribed health levels. The index helps capture dangerous levels of various emissions and gasses on such days.

Participants also discussed methodologies to develop an extensive inventory of sources of air pollution. This will help predict and estimate source-wise contribution and trends in source-wise emissions, together with associated health affects. The weakest link in current air quality planning is that it is still not possible to arrive at reliable source-wise pollution load estimates in the city.

After extensive deliberations, a suitable Air Quality Index for Delhi was developed.

The Emission Load Model

CSE's Emission Load Model is a computer-simulated model that estimates vehicle emission levels. The objective of this study is to estimate the trend in vehicular pollution load in the National Capital Territory (NCT) of Delhi. The study seeks to project the levels of key air pollutants from the year 2000 to 2015 by taking the following factors into consideration:

- the number of vehicles;
- the extent of utilisation of these vehicles;
- their emissions profile; and
- the amount of deterioration they experience.

The model will help assess the impact of different policy interventions on Delhi's air pollution load from different vehicles. The study aims to provide air pollution control officials and activists with a reliable decision-making tool.

Expert review of CNG technology in Delhi

As per a Supreme Court order, all public transport vehicles in Delhi? were to convert to CNG technology with effect from April 1, 2001. However, all parties concerned with public transport, including the Indraprastha Gas Supply Undertaking, private bus operators and the Delhi Transport Corporation, were totally unprepared for this change.

In the resultant chaos and confusion, vested interests favouring diesel attempted to derail the court order to convert the public transport system to CNG.

To counter the disinformation campaign, to prove the soundness of CNG technology and to evaluate safety standards for CNG technology, CSE in April 2001 commissioned three overseas experts on CNG technology to undertake a technical study and to make recommendations to ensure a safe and smooth conversion. The team comprised the following members:

Christopher S Weaver, President, Engine, Fuel and Emissions Engineering Inc, California, who has worked on CNG technology for public transport systems in Chile, Mexico, Thailand and the US.

Lennart Erlandsson, Manager, Business Area, Air Quality at Motor Test Centre AB in Haninge, Sweden, has worked on CNG projects in Chile, Thailand and Iran and has extensively studied issues related to conversion of old diesel engines.

Frank Dursbeck, independent international consultant in the field of traffic and environment has worked in Chile and several Central American countries on CNG urban transportation projects.

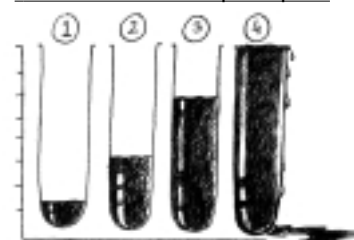
The experts visited a number of agencies working on CNG conversions and new CNG buses they suggested several modifications in technology and regulations that if implemented, will eliminate safety fears and make CNG implementation more efficient. The experts presented the results of their study to the Delhi government, including the Chief Minister, the Ministry of Environment and Forests (MoEF) and the Environment Pollution Control Authority (EPCA). CSE also wrote to the Ministry of Road Transport and Highways (MORTH) and put forward several recommendations on safety and distribution norms.

Fuel adulteration study

Several proposals were introduced for the introduction of clean fuels other than CNG, including ultra low sulphur diesel. To test the extent of adulteration in fuels, the Supreme Court directed the EPCA to undertake a random testing of petrol from petrol pumps, oil depots and oiltank trucks across the city to measure the quantum of adulteration.

CSE was asked to monitor this testing and also carried out an independent assessment of the fuel adulteration problem in the National Capital Territory of Delhi and the National Capital Region. Venturing into this field for the first time, CSE found that fuel quality standards and fuel testing procedures were so lax that it was easy to adulterate diesel or petrol legally. As part of this study, CSE sent several dummy samples of adulterated fuel for testing. The results confirmed that the testing methods currently followed were unable to detect presence of adulterants in petrol or diesel.

Test results of seized samples of petrol



The following elements (in proportion) were found in the sample:

1. Petrol
2. Adulterants
3. Greed
4. Bad governance



The CSE laboratory compared petrol samples from several retail outlets and depots. The normal failure rate reported by the oil companies in the past was 1-2 per cent. Despite the odds, this operation came up with a much higher failure rate of 30 per cent of all petrol samples and the total sample failure rate was a staggering 26 per cent. The confirmatory tests showed astonishingly high variations in some key aromatic compounds such as hexane, pentane and xylene in the petrol samples from retail outlets and depots, which would have gone undetected under standard Bureau of Indian Standards (BIS) test methods, because aromatics are not tested because they are not regulated in India.

COURT STRATEGY

As the April 1, 2001 deadline to convert all public passenger transport to CNG approached, the battle inside the Supreme Court intensified as did CSE's campaign activities. During this period all concerned parties thronged the court to air their grievances — bus manufacturers, school representatives, private bus operators, contract carriage bus operators, auto drivers' unions, and tourist bus operators. They either pleaded for more time or questioned CNG technology, declaring it 'untried'. Vested interests tried everything to discredit CNG and to seek permission to continue with Euro II diesel already available in the market. The Central Ministry of Petroleum and Natural Gas (MPNG) emerged as the key spoiler, arguing that there was not enough gas to sustain the CNG initiative. This encouraged other players to push for allowing Euro II diesel and unleaded petrol to be used by buses in Delhi.

The Right to Clean Air Campaign team extensively researched to counter each of the misleading claims and explode the official connivance to derail the CNG initiative.

CSE's presence in the EPCA provides the leverage to influence the court's decisions by providing the technical inputs to prioritise measures. CSE learnt from its experiences that vehicular pollution issues have to draw

heavily upon technical and scientific investigation. Therefore, CSE plays a key role in providing technical information to the court through the EPCA.

Technical support to EPCA and the court

CSE undertook detailed studies for submission to the EPCA on:

- clean fuels and technology;
- fuel adulteration, including the CSE report on adulteration submitted to the EPCA as per the Supreme Court order;
- the extent of pollution in different cities and the impact of auto policies.

CSE prepared several papers on CNG on:

- defining safety standards for CNG buses;
- pricing of CNG;
- problem of gas infrastructure; and
- the growing trend of CNG used worldwide. CSE also studied problems relating to gas availability, distribution and allocation across the city.

PUBLIC AWARENESS ACTIVITIES

Among CSE's major campaign strategies is to build awareness and provoke response using science-based knowledge. CSE produced informational material, organised public events and networked with experts, doctors and technologists to improve technical understanding, fight misinformation and push for change. CSE's media and networking strategies have helped shape informed public opinion. An almost daily vigil helps track business and political resistance to its campaign objectives.

Among the main campaign thrusts over the past few years was to compel the government to implement an alternate fuel policy and mandate the use of clean fuels. By using alternate fuels such as CNG, the country can leapfrog to Euro IV emission levels that would make a significant impact on air quality. CSE organised a series of media and public events to keep people informed about the importance of converting to CNG.

Path-breaking court order

The Supreme Court ruling from the three-judge bench headed by Justice BN Kirpal in April 2002 was momentous and innovative, and CSE welcomed it whole-heartedly. The ruling puts the CNG controversy to rest and focuses entirely on implementation of the CNG order that leaves no room for further confusion. The Court ordered:

1. All public transport vehicles to run on CNG
 2. 800 diesel buses to be phased out every month from May 2002
 3. Imposed a fine of Rs 1,000 per day on bus operators delaying conversion to CNG.
 4. Court chides Union Government, slaps penalty of Rs 20,000 for repeatedly seeking revision of court order
 5. Union Government free to supply LPG or any other clean non-adulterable fuel in addition to CNG for the transport sector
 6. Transport sector to be given priority for supply of CNG in the event of deficit production.
 7. Union and state governments debarred from appealing against the court order
-



आपने सुना
सी.एन.जी. से कैंसर होता है झूठ

अफवाह है। किसने फैलाई? उन्होंने जो सी.एन.जी. से पन्धरा रहे हैं। बहुत हैं ऐसे जो जानते हैं सी.एन.जी. की चोरी आसान नहीं। डीजल और पेट्रोल चुगना और मिलावट कर बेचना आसान है। सी.एन.जी. खतरा है इस काला बाजारी की। आम लोगों को नहीं।

कई ऑटोरिक्षा वालों ने सुनी है यह अफवाह। पर जो जानते हैं प्राकृतिक गैस से प्रदूषण कम होता है।

जरा देखिए विज्ञान क्या कहता है:
अगर डीजल से 100 लोग कैंसर के शिकार होते हैं,
तो पेट्रोल से 44 और सी.एन.जी. से केवल 8

विज्ञान और पर्यावरण केन्द्र, चण्डीगढ़ में काम करता है। हम जानते हैं, मानते हैं कि सी.एन.जी. दिल्ली की हवा में प्रदूषण कम करने का एक अहम तरीका है। सस्ता। सुन्दर। टिकाऊ। पर बिना सरकारी नीति में बदलाव लाए, बिना ऑटोरिक्षा चलाए वालों को माली मदद दिए यह मुश्किल है।

अफवाह को कान न दें

सी.एन.जी. निश्चित ही पेट्रोल और डीजल से बेहतर है। गैस से चलने वाले इंजन पेट्रोल से किसी तरह कम नहीं हैं। और कैंसर जैसी बीमारियों को कम करने में कहीं ज्यादा कारगर हैं।

CSE विज्ञान और पर्यावरण केन्द्र
41, कृष्णदत्त एस्टेट/सुखन पुराना, नई दिल्ली - 110062
फोन: 91-11-6081110, 6081114, 6083394
फैक्स: 91-11-6085879
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Campaign in the language press

In January 2001, vested interests spread a rumour among auto-rickshaw and taxi drivers that leading medical experts from the All India Institute of Medical Sciences and the Apollo Hospital have declared that CNG causes cancer. CSE conducted a rapid survey to confirm whether the rumour was being spread, surveying about 207 autorickshaw drivers across the city in Hamdard Nagar, Batra Hospital, Civil Lines, Mall Road, New Delhi Railway Station, ITO, ISBT, Delhi University, GTB Nagar and Connaught Place. CSE also surveyed a smaller group of 30 taxi drivers to confirm whether they had heard the rumour. Every one of those surveyed had heard the

rumour about CNG causing cancer, while none had ever heard about the carcinogenic potential of diesel fumes.

CSE immediately countered this whisper campaign that was spread to stall the successful move to convert public transport to CNG. CSE took out advertisements in several regional language newspapers, including the *Sandhya Times* and *Punjab Kesri*, which are widely read by autorickshaw and taxi drivers. CSE also distributed printed pamphlets across Delhi, educating the public about the carcinogenic affects of diesel and the beneficial aspects of CNG. In response to this campaign, CSE received a number of telephone enquiries from autorickshaw drivers and others interested in converting to CNG engines.

Smokescreen of lies — A factsheet

There was a concerted bid by vested interests benefiting from diesel to spread disinformation and lies about CNG in the national media. To counter this effectively and to build public confidence on health and safety aspects of CNG, CSE published a compilation that listed — and then countered with well-presented facts — all the myths that were being propagated to discredit CNG.

The booklet, *Smokescreen of lies*, was widely disseminated to judges, officials of the Ministry of Petroleum and Natural Gas, Ministry of Environment, Ministry of Surface Transport, Delhi Transport Corporation, the state government of Delhi, academics, private transport operators, members of EPCA, media, the World Bank and among several NGOs.



Doing the right thing: Feedback

"Your recent articles on CNG have been a real eye-opener and I have decided to operate my food processing industry on CNG. Our idea of operating diesel cars has also changed to CNG," **Kanhaiya Lal Goyal**.

"Through your guidance we have started mobilising youngsters against air pollution. We have formed a group of 20 mature-minded youngsters — named the Group the, Green Earth Group," **Manjunath Sulloli**.

"We have taken CSE's advice in letter and spirit and wish to contribute our might and we are proud to join hands with your esteemed organisation," **G Subramanian**.

"I am indebted to you for inspiring me to take air pollution studies in Kurnool town," **Dr C V Rajeswari**.

"Only technically qualified people or scientists or the courts can answer correctly whether CNG is the answer to the problem of pollution. But for ordinary Delhites, it is a big relief as pollution has definitely come down," **Mahesh Kapasi**.

"Delhi's air is a lot cleaner than before," **M S Swaminathan**

Reactions to Anil Agarwal's article, "Pollution is snuffing us out" published in *The Hindu*, January 23, 2000:

"Your article is very impressive and informative. Central and State pollution boards analyse only the amount of suspended particulate matters and contents of the SPM are not given much importance as you said in the article," **Jaya Shekhar**.

"This crime of omissions and commissions on the part of the government is nothing short of murder or homicide," **Dr N Venugopal**.

"Please provide us with authoritative materials on the damage caused by rayon factory so that we can move the high court for directions to close down Mavoor rayon factory of Calicut which is causing a lot of harm to nature and humanity," **Tony Kannanthanam**.

"Your article is very well researched and it does paint a bleak future for our future generation," **Minoo E Avari**.

"As an individual I want to do something in Kota in the field of environment education, awareness, polythene use and waste management in the city," **M M Sharma**.





Setting the facts right — the media blitz

To counter the extensive misinformation campaign launched by the diesel lobby and other vested interests, CSE organised a series of public information activities to inform people about the truth behind Delhi's air pollution.

March 31, 2000: CSE lauds as the Chief Justice bench in the Supreme Court rejects the Delhi Transport Corporation's (DTC's) plea for extension of the deadline beyond March 31, 2000. The ruling further squashed all demands to buy Euro II diesel buses to replace older buses.

April 12, 2000: CSE condemns SIAM's road map that did not spell out any proactive measure to reduce emissions in the interest of public health.

July 18, 2000: CSE castigates Delhi Chief Minister Sheila Dikshit, who made a statement that she would move the Supreme Court to get Euro II diesel accepted as clean fuel.

August 9, 2000: CSE demands that the use of Methyl Tertiary Butyl Ether (MTBE) be banned in India as an additive to petrol and strongly protested to the Ministry of Environment and Forests (MoEF) about the proposal to add MTBE as an oxygenate to petrol to reduce carbon monoxide emissions.

August 10, 2000: CSE criticises Delhi Transport Corporation (DTC), bent upon diverting public attention from CNG by initiating a pilot project on diesel buses instead of focussing on the implementation of the Supreme Court order of converting to CNG.

December 5, 2000: CSE condemns the automobile industry for not taking responsibility for the emissions performance of the vehicles on road for the duration of their useful life.

December 14, 2000: CSE reproaches the government's lack of interest in implementing the Supreme Court order to introduce CNG buses by March 31, 2001.

January 12, 2001: CSE organises a press conference against a whisper campaign that 'CNG causes cancer' that was being spread in the capital.

February 23, 2001: When the automobile industry offered emissions warranties, CSE organised a press conference to highlight that for the first time in the history of air quality monitoring, a major step forward has been catalysed by a public campaign.

March 1, 2001: CSE expresses displeasure at the Union Budget that imposed taxes on a clean fuels like CNG and thereby discouraging its use.

July 25, 2001: CSE organises a press conference to

highlight reasons why problems of CNG distribution and to expose the culpability of the Ministry of Petroleum and Natural Gases.

August 9, 2001: CSE writes a press release on the moves by the Union Petroleum Minister, Ram Naik, to sabotage the Supreme Court's orders on CNG by refusing to augment the CNG supply to petrol pumps.

August 11, 2001: CSE releases a brief showing that Indraprastha Gas Limited has failed to meet the target of establishing the 80 CNG stations mandated by the Supreme Court, resulting in long auto queues in the Capital.

August 20, 2001: CSE highlights the misguided policies of the Finance Ministry that encourages the use of polluting vehicles by levying higher taxes on environmentally cleaner products.

August 22, 2001: CSE criticises the Ministry of Road Transport and Highways for its proposed amendments to the existing emissions norms for CNG and LPG vehicles.

August 28, 2001: A CSE press release denounces BJP national Vice President Madan Lal Khurana for spreading disinformation on CNG and politicising the issue against the public interest.

October 11, 2001: A CSE press release points out the lack of safety compliance standards and legally enforceable rules that govern the safety of CNG vehicles plying in Delhi.

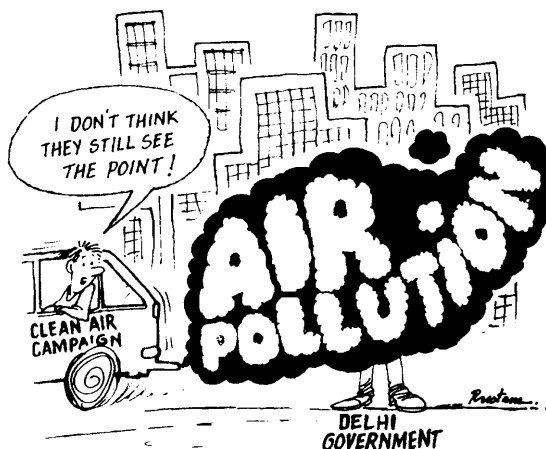
October 12, 2001: CSE press release on the moves by the Delhi government to discourage private operators from converting to CNG.

November 15, 2001: A CSE press release uncovers the moves by Ram Naik, Union Minister for Petroleum and Natural Gas to deny gas to private CNG vehicles owners and threaten price hikes.

January 8, 2002: CSE rejects the Mashelkar Committee on auto fuel policy calling it visionless.

March 1, 2002: A CSE press release denounces the Union Budget as visionless in using fiscal incentives to control pollution.

March 12, 2002: A CSE press release declares fuel adulteration goes undetected because of weak detection methods and standards.



PEOPLE'S WATER MANAGEMENT CAMPAIGN

CSE's People's Water Management Campaign has endeavored to change the paradigm of water management in the country — to wrest control over water resources from the government and place it in the hands of the people. This campaign has been very successful. As a result of efforts to create informed public opinion on the need for people-based water management, public interest has grown rapidly, and today the idea of decentralised water harvesting is widely accepted both nationally and internationally. Many state governments, municipal authorities and civil society groups have begun work on this new approach of using and conserving water.

CSE has followed a two-fold strategy to promote community-based water harvesting and make it a national movement: (1) to mobilise the urban populations through publications, lectures, exhibitions, technical advice and training workshops, and (2) to mobilise rural populations through a network of rural communities called *jal biradaris*. CSE's campaign 'Making Water Everybody's Business' is receiving good response and has succeeded in catalysing different groups of stakeholders — from individuals and water administrators to politicians, builders and NGOs. The campaign has promoted interest at the government level and several state governments have introduced schemes for implementing water harvesting at the rural level with the active participation of village communities, including *pani roko abhiyan*, *ek panch, ek talaab*, *neeru meeru*, *jal samvardan sammelan*, and *jal sanchayan abhiyan*, among others.

PUBLIC AWARENESS ACTIVITIES

Water harvesting for a drought-free future

On May 24, 2000, CSE organised a public meeting on 'Water Harvesting for a Drought-Free Future' in New Delhi. Anil Agarwal spoke on rainwater harvesting's contributions to drought-proofing. Others who addressed the meeting included: Sunita Narain, CSE director; R N Athavale, emeritus scientist, National Geophysical Research Institute; and Rajendra Singh, secretary, Tarun Bharat Sangh (TBS). The overwhelming response to the public meeting indicated the growing interest and consciousness among the people towards water harvesting.

Drought? Try capturing the rain: A how-to guide for parliamentarians and legislators

In June 2000, CSE published a briefing paper for Members of Parliament and state legislators titled, *Drought? Try capturing the rain*,

authored by Anil Agarwal. The briefing paper educates leaders about various aspects of rainwater harvesting in order to motivate legislators to popularise rainwater harvesting projects in their respective constituencies.

The paper was published in English and Hindi and more than 2,000 copies were distributed to 700 Members of Parliament, NGOs, and policymakers. Several reprints of the paper were ordered due to the overwhelming response.

An Oriya-language version of the briefing paper, produced with the help of the NGO Sahabhagi Vikas Abhiyan, was also printed. Efforts are currently underway to print the paper in Gujarati and Tamil.

Addressing Governors and Union Ministers

During the State Governor's meet on July 12-13, 2000, the former President of India, K R Narayanan, invited CSE's director, the late Anil Agarwal, to present a lecture on environmental issues at the Rashtrapati Bhavan. The Prime Minister, various state Governors and Union Ministers attended the event at which Anil Agarwal presented a paper titled *Protecting the quality of life and eradicating rural poverty*. Anil Agarwal pointed out that while rural land management and energy quality has improved over the last decade, urban quality of life, environmental health, wildlife protection and river water quality have steadily deteriorated. Pointing to the current drought situation in several states, Anil Agarwal emphasised underscored the potential of rainwater harvesting in drought proofing the country and in poverty eradication measures. He also underscored the need to promote science for ecological and social security.



Anil Agarwal addressing state Governors and Union Ministers



Water Asia 2000: CSE's stall on water harvesting

Exhibition in Water Asia

CSE participated in the Water Asia 2000 exhibition held at Delhi's Pragati Maidan from September 18-20, 2000. Among the numerous exhibits displaying wastewater treatment technologies from Japan, the US, Italy and other countries, CSE spread the message of community management of water with simple down-to-earth technologies.

Visitors were shown films on water harvesting. Eminent dignitaries who visited the stall included the Ambassador of the Delegation of the European Commission, the Counsellor of the Development of the Swedish International Development Agency (SIDA) and representatives of the Canadian International Development Agency (CIDA).

Monitoring government efforts

In September 2000, two CSE researchers spent a month each in Gujarat and Andhra Pradesh, whose governments had undertaken crash programmes to build and revitalise water harvesting systems during the drought months from May to July. The researchers' reports on the effectiveness of these schemes were based on site visits to villages and interviews with senior officials, politicians, NGOs and village community leaders.

The survey revealed that the Gujarat government has shown considerable progress towards community-based water management. The Gujarat government has constructed more than 10,000 check dams within a short span of four months by involving local communities. However, the work of the government of Andhra Pradesh required more intensive community participation in order to be effective and sustainable. An analytical feature about these initiatives was published in *Down To Earth* in October 2000.

World Water Forum

CSE participated in the 2nd World Water Forum held in The Hague in March 2000. A group of practitioners organised a workshop on community-based water harvesting. The Forum was inaugurated by the Chief Minister of Madhya Pradesh. CSE put up a stall at the exhibition and also screened three films on the watershed mission programme in Madhya Pradesh, on the revival of the Arvari river and a film on the river Yamuna.

CSE also participated in the Youth World Water Forum, formed as a part of the WWF 2, in Hogeschool Zeeland, Vlissingen, The Netherlands.

A half-day workshop on community-based water harvesting was organised for students, which was followed by a panel discussion.

Website on water harvesting

A website on water harvesting was launched on March 23, 2001 by Debi Prasad Mishra, Health Minister, Orissa government and S P Gadhwai, Member of Parliament from Bhuj, Gujarat. The website, www.rainwaterharvesting.org, serves as a repository of information about the National Water Harvesters Network (NWHN), and is a comprehensive reference for water harvesting-related materials.

Online resources range from a list of facilitators across India willing to help others begin water harvesting projects to a catalogue of articles and water harvesting-related news. Among the several helpful features is a statistics section that compiles data that CSE has culled from numerous sources.

Rainwater International 2001

CSE members made a keynote presentation on community-based water management at the Rainwater International 2001 at Mannheim, Germany, from September 10-14, 2001. CSE, together with a group of leading Indian water harvesting practitioners and experts, participated in all the sessions of the conference and made presentations to raise awareness about Indian experiences in water harvesting for rural regeneration. CSE also organised a small exhibition of digital panels detailing Southern perspectives on water harvesting.

Nature Mela at Dilli Haat

CSE opened a stall at the *Nature Mela* (fair) at Dilli Haat from February 1-14, 2002. The *mela* was organised by Dastkar, a New Delhi-based NGO. The exhibition consisted of exhibits on rural and urban water harvesting systems. A model of the *kundi*, a traditional water harvesting system widely used in Rajasthan, was displayed along with a poster series on rural and urban rainwater harvesting.

RESEARCH AND ADVOCACY

Krishi Sammelan

CSE organised a two-day conference, '*Meri gaon ki kahani, meri zubani*' (the story of my village in my words), where water harvesters from four states — Madhya Pradesh, Gujarat, Tamil Nadu and Rajasthan — gathered to share their experiences about water harvesting.

Participants debated the merits of whether communities should work with the government or proceed on their own. Responding to Anil Agarwal's call to nurture a water harvester from each of India's half-a-million villages, participants pledged support and formed an informal group called *Jal Biradiri* (water community), headed by Rajendra Singh of the non-governmental organisation Tarun Bharat Sangh (TBS).



Jal biradari meeting

On Water's Trail: *Paani Yatras*

The *paani yatras*, initiated by CSE to raise awareness about the community-based water management, have proved to be a great training tool for the practitioners. The *yatris* felt these *yatras* afforded them opportunities of interaction through diverse levels and enhanced their understanding on water related issues. The *yatris* realised that the only effective solution to drought proofing is community based water management. Representatives from Bangladesh, Italy, and Sweden also attended.

The First *Paani Yatra* — May 2000

In May 2001, the peak of drought, CSE organised a *paani yatra* to the Panchmahal and Saurashtra regions of Gujarat. The *yatra* highlighted the community initiatives taken in harvesting water in three districts of Gujarat — Dahod, Rajkot, and Amreli. The *yatra* was organised for journalists and a large number of them from the national dailies joined the *yatra*. Consequently the effort of the people of Gujarat was widely reported.



The Second *Paani Yatra* — February 2001

CSE organised the second *paani yatra* from February 24-28, 2001 to Alwar and Bundi districts of Rajasthan. This was to showcase the work of communities in effective water harvesting under the guidance of Tarun Bharat Sangh (TBS) and Bharatiya Agro Industries Foundation (BAIF). The participants were from diverse backgrounds and included scientists doctors, architects, journalists social scientists and government administrators with a common interest in water issues.

The Third *Paani Yatra* — July 2001

CSE's third *paani yatra* from July 8-14, 2001 saw *yatris* visit rural areas in Maharashtra. The *yatra* commenced from the village Darewadi in Ahmednagar district and moved on to Shilviri village

in Akola tehsil and culminated at Hivare Bazaar. Water pilgrims visited Ralegan Siddhi village to witness the water harvesting work accomplished by the people under the leadership of Annasaheb Hazare. A number of organisations from all over the country sent their representatives to participate in the *yatra*.

The Fourth *Paani Yatra* — October 2001

For the fourth *paani yatra* from October 6-8, 2001, *yatris* visited Rajasthan to witness the efforts of villagers to drought proof their communities. *Yatris* learnt water harvesting is key to any worthwhile development effort and progress.

The Fifth *Paani Yatra* — January-February 2002

Yatris attending CSE's fifth *paani yatra* from January 27-February 3, 2002 witnessed the role of community-based rainwater harvesting in controlling rural poverty in Gujarat. The *Yatra* witnessed international participation. Twenty-one people from Bangladesh, Italy, Sweden and India participated in the water pilgrimage. *Yatris* witnessed the efforts of N M Sadguru Foundation and Utthan in Dahod and Jadeja in Rajkot. *Yatris* observed local initiative of the villagers who, by digging wells in the riverbed immediately below the check dams, had access to drinking water even during the peak summer months.





new delhi



Madhya Pradesh chief minister Digvijay Singh released the book in March 2001, CSE director Sunita Narain, BJP MP from Bhuj, S P Gadhvi, Orissa health minister Debiprasad Mishra, CSE coordinator Indira Khurana and CSE chairperson Anil Agarwal look on.



indore

Digvijay Singh releasing CSE's new water book in Indore

jaipur



Anil Agarwal released the book at Neemi in Jaipur in May 2001



colombo

Prabhat Singh, Governor Jharkhand, releasing the book in Ranchi in June 2001

udaipur

Balwant Singh Mehta, freedom fighter and social activist released the book in Udaipur, Rajasthan in July 2001, Anil Agarwal, O P Saini, commissioner Jagat Mehta at the release function in Udaipur



PROGRAMME
HIGHLIGHTS



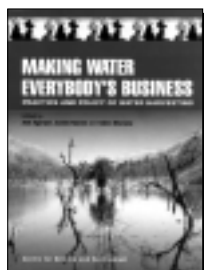
ranchi

Sarath Amunugama, Minister for Irrigation and Water Resources, Sri Lanka released the water book in Colombo in June 2001



Making Water Everybody's Business

CSE's publication, *Making Water Everybody's Business*, is a comprehensive book on water harvesting for water planners and others interested in water harvesting. The book provides information on the policy, practice and social mobilisation strategies needed to start a movement on water harvesting. The efforts of different governments, non-governmental organisations, and community groups in rural and urban rainwater harvesting have also been detailed. Also highlighted are the severe droughts of 1999-2000 and the successful rainwater harvesting initiatives of the Gujarat, Andhra Pradesh and Madhya Pradesh governments.



Rashtriya Jal Sammelan (National Water Conference)

CSE organised a three-day national conference at the Neemi village near Jaipur in collaboration with Tarun Bharat Sangh (TBS) from

April 21-23, 2001, where more than 5000 villagers who were referred to as *jal yoddhas* (water warriors), from 23 states, including Andhra Pradesh, Jharkhand, Bihar, Madhya Pradesh, Gujarat, Tamil Nadu and Rajasthan, among others, participated.

The conference initiated a national strategy to encourage the *jal biradari* to create a national participatory water movement with CSE as its Central Secretariat. Delegates from civil society and *jal biradari members* prepared a blueprint for a water revolution. The *jal biradari*, together with members from all the states pledged to provide impetus to grassroots water harvesting initiatives.

Later, meetings to mobilise rural populations were also held in Gujarat, Himachal Pradesh, Madhya Pradesh and Rajasthan.

The Lava Ka Baas campaign

CSE played a key role in saving the water harvesting structure at Lava ka Bas in Rajasthan's Alwar district.

The district administration had declared illegal the *johad* (earthen check dam) built by the community over the river Ruparel close to the village. The earthen dam was slated to be demolished when CSE made hectic efforts to convince the Rajasthan Chief Minister to withdraw the demolition order.

Concerned about the attempt to demolish the rain recharge structure, CSE brought together leading hydrologists and irrigation experts to demonstrate to government officials that the dam was a safe structure and would not deprive downstream villages of water. A committee of eminent persons was also instituted to dispute the reasons cited by the government for demolishing the structure.

Committee members included M S Swaminathan, eminent agricultural scientist; N C Saxena, Secretary to the government of India; M C Chaturvedi, water expert; G Mohan Gopal, Director, National Law School University; Om Thanvi, Chief Editor, *Jansatta*; Anil Agarwal, CSE Chairperson; and Sunita Narain, CSE Director.

On July 19, 2001, the committee visited Lava Ka Baas. Members interacted with villagers, TBS workers and district officials, including the district magistrate, Tanmay Kumar.

These micro-level meetings were followed by talks with Ashok Gehlot, the Rajasthan Chief Minister. In the final leg of their visit, committee members presented their findings and opinions at a press conference organised by CSE with the help of the Institute of Development Studies in Jaipur. The findings and views of the delegation were compiled in a 12-page report, *Jal Swaraj (Water Independence)*.

Book Releases

CSE, in collaboration with friends and partners, released *Making Water Everybody's Business* in cities across the country and in South Asia. The book elicited wide media response, helped generate awareness and ensured a wider membership of the water harvesters' network.

Date & Place	NGO	Released by
March 23, 2001, New Delhi	CSE	Digvijay Singh, Chief Minister, Madhya Pradesh
May 15, 2001, Kathmandu, Nepal	Nepal Water Conservation Foundation	Navin Prakash Jung Shah, Vice Chancellor, Tribhuvan University, Nepal
May 22, 2001, Neemi, Rajasthan	Tarun Bharat Sangh	Anil Agarwal, Chairperson, CSE, New Delhi
May 25, 2001, Raipur, Chattisgarh	Mayaram Surjan Foundation, Raipur Rotary Club	Ramchandra Singh Deo, Finance Minister, Chattisgarh
June 5, 2001, Indore, Madhya Pradesh	Nai Duniya	Digvijay Singh, Chief Minister, Madhya Pradesh
June 12, 2001, Ranchi, Jharkhand	Prabhat Khaber	Prabhat Singh, Governor, Jharkhand
June 12, 2001, Colombo, Sri Lanka	Intermediate Technology Group, South Asia	Sarath Amunugama, Minister for Irrigation and Water Resources
July 10, 2001, Udaipur, Rajasthan	Jheel Sanrakshan Samiti Bhartiya Lok Kala Mandal	Balwant Mehta, freedom fighter and social activist
July 16, 2001, Thiruvananthapuram, Kerala	Indian Water Society, Calicut	T M Jacob, Irrigation Minister, Kerala
July 17, 2001, Madurai, Tamil Nadu	Dhan Foundation, District Tank Farmers Federation	Anil Agarwal, Chairperson, CSE, New Delhi
July 21, 2001, Chennai, Tamil Nadu	Rotary Inner Wheel Club	R Ganapathi, Rotary Governor
July 31, 2001, Pune, Maharashtra	Indian water works association	M S Swaminathan, noted agricultural scientist
August 24, 2001, Chandigarh	Yuvsatta	Lt. Gen (Retd.) Jacob, Governor Punjab and Chandigarh

CAPACITY BUILDING

CSE workshops

CSE organised its first workshop on water harvesting for architects, builders, and engineers on June 12, 2000. The "*Urban Water Harvesting Manual*" published by CSE was also released at the workshop.

Several builders and architects together with numerous organisations, including Delhi Development Authority, Central Public Works Department, National Buildings Construction Corporation Ltd, and Engineers India Ltd, also attended. Speakers invited to share their experiences included R Jeyakumar, Managing Director, Rajparis Civil Constructions Ltd, Chennai; and S Vishwanath, engineer-planner, Bangalore; both of whom are involved with designing and constructing buildings.

CSE Director, the late Anil Agarwal pointed out that it is not sufficient to deal with water issues in isolation and that other problems such as atmospheric pollution that have an impact on water also have to be taken into consideration.

A briefing workshop was held on May 1, 2001 for Delhi's architects and engineers. Apart from practicing architects in Delhi, representatives from the Delhi Development Authority (DDA), NOIDA Authority, Haryana State Industrial Development Corporation (HSIDC), Central Public Works Department, RITES, Housing and Urban Development Corporation (HUDCO), National Security Guard (NSG), National Building Construction Corporation Limited (NBCC), Building Materials, and Technology Promotion Council attended the workshop.

Another workshop in NOIDA on June 15, 2001 was organised jointly by CSE and the NOIDA Authority in which government officials, engineers, architects, and several resident welfare association (RWA) members participated. CSE engineers underscored the importance of rainwater harvesting and the principles and techniques involved with inputs on design and costing.

As an effort to reach the resident community, CSE organised another workshop for several RWAs in Delhi on June 17, 2001. Representatives of the apex association of DDA colonies and 20 RWAs attended the meeting. Resource persons from CSE discussed the principles, techniques, design of rainwater harvesting systems and costing.

A workshop for the government officials and members of the Panchayati Raj Institutions was organised on September 11, 2001, at the CSE office in Tughlakhabad. A diversified group of participants attended the workshop which included the sarpanches, members of municipal councils, block development officers as well as engineers of the Public Health Engineering Department and Haryana Urban Development Authority.

On February 6, 2001, CSE organised a technical workshop on urban water harvesting for engineers, architects and builders. The workshop was also attended by several water harvesting engineers and practitioners from Europe, who shared their experiences on rainwater harvesting and purification, grey water recycling and eco sanitation. Participants included Willem P Boelhover, Aqua Sure, Netherlands; Christian Wilhelm, GEP Umwelttechnik GmbH, Germany; Hans Hartung, FAKT, Germany; and Klaus W Koenig, Germany.



Sharing the expertise

Besides these, CSE staff participated as resource persons in several workshops organised by other institutions:

CSE engineers participated in the workshops organised by the Rajiv Gandhi Drinking Water Mission. CSE engineers also participated in workshops in Indore on April 27, 2001; at Gwalior on April 29; and at Rewa on May 3, 2001.

A similar workshop was organised by the Vasant Vihar Welfare Association on May 5, 2001 in New Delhi. Representatives from CSE and Central Ground Water Board (CGWB) were invited as resource persons.

CSE was requested to make a presentation on rainwater harvesting at the workshop organised by the Western Air Command of the Indian Air Force on June 1, 2001.

On World Environment Day, June 5, 2001, CSE engineers gave a presentation on rainwater harvesting to slum dwellers at Katha Khazana, Delhi.

The Surya Foundation, a rural development think-tank, invited CSE to make a presentation on water harvesting on June 16, 2001. CSE personnel discussed water harvesting legislation, the current drought scenario in various states and explained numerous water conservation methods in rural and urban contexts.

A Water Harvesting Manual

A *Water Harvesting Manual* that catalogues the water harvesting requirements was published. The manual includes methods suitable mainly for single building-establishments, residences, institutions, and industries. It explains various methods and techniques of water harvesting. Case studies of water harvesting systems designed by CSE in Delhi are also included.





NETWORKING



Catch Water: A bi-monthly newsletter

To keep those interested in water issues informed on latest developments, CSE publishes *Catch Water*, a bi-monthly newsletter. In addition to English, the newsletter is also available in Gujarati, Tamil and Hindi. The newsletter promotes the exchange of experiences at the grassroots level and provides ordinary citizens a platform to raise concerns and search for region-specific solutions.

Water Links: The network database

CSE published the second edition of *Water Links* in January 2001 after the overwhelming response to *Water Links-1*, a comprehensive directory of water harvesters in India and abroad. *Water Links-2*, a fully revised and updated edition, includes a database of persons and institutions involved in water harvesting management. Details of relevant professionals, donor agencies, grassroots-organisations, scientists, engineers, builders, and irrigation economists are included. The new directory is divided into two sections — India and International — and lists the contact details, areas of expertise and scale of work of more than 800 persons.

Expanding horizons: The Chennai unit

The Tamil Nadu unit of the National Water Harvester's Network (NWHN) was established in April 1999 with Dr A Vaidyanathan as its chairperson. To keep pace with the work and to assist Dr Vaidyanathan, CSE has employed a full time expert. NWHN has been constantly

searching for ways to popularise rainwater harvesting as a simple and effective solution to alleviate Chennai's chronic water scarcity. The following workshops and seminars were organised to create awareness among various civic groups:

- A civic meet was organised on rainwater harvesting at the Madras Institute of Development Studies, Chennai on August 4, 2001, which A Vaidyanathan, chaired. This meet was to facilitate an interactive network among various civic groups involved in rainwater harvesting.
- A release function for *Siruthuli* (Tamil-language version of *Catch Water*) was organised at the Madras Institute of Development Studies on November 20, 2001. Shantha Sheela Nair, Secretary of the Municipal Administration and Water Supply Department, Tamil Nadu government, released the bimonthly newsletter;
- A one-day training workshop was organised for the plumbers, on December 9, 2001, at Corporation School in Chennai;
- The German team headed by Hans Hartung, visited Chennai from February 2- 4, 2002, to document rainwater harvesting structures in houses, apartments, industries and in public places in the city.
- The Steering Committee meeting was held in Madras Institute of Development Studies on February 12, 2002. Committee members who attended the meeting included A Vaidyanathan, R Jeyakumar, Shekar Raghavan, R Ramani and S Ramakrishnan. Guests who attended the meeting included DV Subramanian and Feroz Ahmed, reporter with *The Hindu*.

Doing the right thing: Feedback

Response to the Paani Yatras

"The *Yatra* taught me that while it is important to engage critically through research, one must not forget to appreciate the work being done by individuals and organisations in their own ways," **Radhika Gupta, Program Officer, Winrock International India.**

"A lifetime experience to see how commitment of individuals can achieve wonders," **Vijay Bhangar, HRD consultant, Ion Exchange India Ltd.**

"The greatest learning being that water is not a scarce resource but is grossly mismanaged," **Shakeb Nabi, field officer, CARE India.**

"Without people's participation and involvement no change is possible in their lives," **S Vishwanath, B E Civil, Urban and Regional Planner.**

"Make water everybody's business' should become a mass movement," **Dr Chandrakala Malpani, gynaecologist.**

"We have understood water harvesting practices in these areas and can now spread this knowledge in our area," **MSN Raju, Natural Resource Manager, BREDS, Orissa.**

"It has helped me understand the role played by social mobilisation. The people themselves can work wonders even if the government does not help," **Daksha Hathi, journalist, Deccan Herald**

"The *yatra* gave me a wider outlook into the issues relating to water harvesting that go beyond technicalities, such as its operation and sustenance with a social perspective," **Dr. Shrinivas Badiger, scientist, International Water Management Institute, Sri Lanka.**

"Without community participation, it is not possible to protect water resources and trees," **Dr. Vimal Bhanot, Professor of Electrical Engineering, Thapar Institute of Engineering and Technology, Patiala, Punjab.**

"People's participation and support for organisation's like TBS and GVNML are essential factors that make technology work at the village level," **Dr Narendra Shah, Engineer, Indian Institute of Technology, Mumbai, Maharashtra.**

"This *yatra* has helped me a lot in understanding the importance of water management and its influence on the socio-economic and cultural values of the society. Now I am fully convinced that drought is a myth," **Gunjan Pratap Singh, Activist, Taru - Mitra, Patna, Bihar.**

"It is a traditional wisdom and future technology that needs support from both the public and government alike," **Ashok K Dwivedi, National Institute of Hydrology, Roorkee, Uttar Pradesh.**

GLOBAL ENVIRONMENTAL GOVERNANCE

Since the early 1990s, when the growing internationalisation of environmental issues resulted in an effort to establish a framework for a system of global environmental management, CSE has been playing an active role in articulating the concerns of the South in several international meetings. CSE has been consistently campaigning that this new framework of global environmental governance be driven by equity, democracy and social justice.

To strengthen the hands of the Southern negotiators and civil society, CSE's Global Environmental Governance Unit (GEG) produces the *State of Global Environmental Negotiations* reports. CSE's first and the second reports produced in the last two years, *Green Politics* and *Poles Apart*, have provided analysis and policies for governments and civil society to engage in global debates. As part of its work on global environmental governance, CSE has been campaigning for equity in climate change issues.

Today, CSE is considered a reference point in articulating Southern priorities on global environmental issues. In the run up to the World Summit on Sustainable Development (WSSD), CSE was elected to lead the NGOs of the South Asian region in forming a position for WSSD during the sub-regional meeting in Phnom Penh, Cambodia, in November 2001. CSE was also elected to represent South Asia at Prep Com II

in New York City, where it was nominated on the International Steering Group to coordinate global NGO action on WSSD.

THE GLOBAL ENVIRONMENTAL NEGOTIATIONS REPORTS

Release of *Green Politics*

Much of the year 2000-2001 was spent organising meetings in several cities across the world to release *Green Politics*, the first report on Global Environmental Negotiations (GEN-I). The meetings provided a forum for Southern nations to communicate ideas contained in the book to Northern audiences and to create an understanding of the perspectives and needs of the poor and the marginalised in a globalised world.

Poles Apart — the second Global Environmental Negotiations report (GEN -II)

Poles Apart, the GEN-II report, was published in August 2001. The report continues the agenda of the earlier report and also includes analyses of five new negotiations. *Poles Apart* also provides updates on the negotiations that were featured in the earlier report. These include:

- The Vienna Convention for the protection of the ozone layer and the Montreal Protocol on substances that deplete the ozone layer;
- The Basel Convention on the control of



Release meetings of the book, *Green Politics*

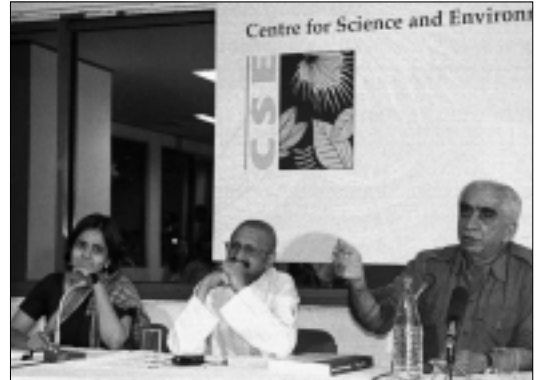
Date	City	Country	Partners who helped to organise the release meeting
April 13, 2000	Massachusetts	USA	MIT-Sangam, PAKSMIT, SAVE, AID-Boston, Mexico City Project, CEES (BU), Institute of Technology and Social Justice Cooperative
April 14, 2000	Princeton University	USA	Deepak Mulghan, Woodrow Wilson School of Public and International Affairs
April 17, 2000	Yale University	USA	Arun Agrawal and Aarti Gupta, Department of South Asian Studies
April 17, 2000	Amherst University	USA	Yogesh Chandrani, the Five College Program in Peace and World Security Studies, Hampshire College
April 17, 2000	Stanford University	USA	Dr Armin Rocencranz, Stanford Law School, Stanford University
April 18 and 20, 2000	University of California	USA	Jeff Romm and Kevin Rudiger, California, UCLA Los Angeles
April 19, 2000	Washington DC	USA	The Heinrich Boll Foundation, Washington, DC
April 20, 2000	American University	USA	Paul Wapner, Professor, and Geoff Dabelko from the Woodrow Wilson Centre
April 24, 2000	Emory University	USA	Ujjayant Chakravarty, Environmental Studies Department
April 25, 2000	New York City	USA	CSE at the meeting of the Commission on Sustainable Development-8 at the UN building in New York City
June 15, 2000	Brussels	Belgium	The Heinrich Boll Foundation
July 3, 2000	Amsterdam	The Netherlands	Inzet and The Transnational Institute
July 5, 2000	Dhaka	Bangladesh	IUCN-Bangladesh
August 17, 2000	London	UK	Institute of Environment and Development
September 15, 2000	Kathmandu	Nepal	IUCN-Nepal
September 22, 2000	Mumbai	India	The Bombay Natural History Society
October 13, 2000	New Delhi	India	CSE
February 5, 2001	Johannesburg	South Africa	South African Interim NGO Caucus, Earth Summit 2002



Changing mindsets

The release meetings of the book, *Green Politics*, were presided over by eminent people in the field of environment, development and global politics, including European Union parliamentarian Anders Wijkman, Nobel Prize winner Mario Molina, US negotiator Richard Benedick, and noted environmental writer Hillary French. In New Delhi, the President of India, K R Narayanan called *Green Politics* a "vital book" at the book release ceremony.

In the United States, *Green Politics* has been incorporated as a course book at Boston University, and is included as recommended reading for all environment and development students at the American University. Copies of the report were sent to eminent world leaders including Bill Clinton, Nelson Mandela, and the German Chancellor — all of whom responded favourably. Civil society groups around the world, particularly those in the US, have also reacted positively to the book's message, which calls for democracy in global environmental negotiations.



transboundary movements of hazardous wastes and their disposal;

- The Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade; and,
- Århus: Convention on access to information, public participation in decision-making, and access to justice in environmental matters, and Commission on Sustainable Development (CSD).

Green Politics and *Poles Apart* together are invaluable resource materials for building capacities to understand global environmental issues.

CSE at CoP-6 at The Hague



Equity Watch: The Southern newsletter

CSE participated in the Conference of Parties (CoP-6) meeting in The Hague from November 18-24, 2000, where it published a newsletter, *Equity Watch*. Five editions of the newsletter were produced and distributed during the conference. The newsletter was extremely popular and attracted many young volunteers who offered their help.

CSE also created a separate website for the conference, www.equitywatch.org. The *New Scientist* magazine gave the website

considerable pre-CoP publicity, calling it "a site to watch out for during the negotiations". Adil Najam, professor at the Department of International Relations and Centre for Energy and Environmental Studies, Boston University, wrote to say he had made the site "essential reading" for his students during the CoP.

Side event on equity

CSE also organised a side event in which the Finnish Minister for Environment, Satu Hassi, and the spokesperson for the German Greens, Reinhard Loske, participated. Following this event, the French President Jacques Chirac, in his speech at the CoP-6 said that the ultimate objective of the negotiations should be "the convergence of per capita emissions".

After several years of advocating equity in climate change negotiations, CSE was glad to note that there were several groups who now believed per capita emission entitlements must be made the basis for climate change negotiations.

The Danish and the Swedish ministers also came out strongly in support of the idea. While US-based NGOs generally support the US position internationally, several US-based NGOs strongly supported the idea. Paul Bauer of *EcoEquity* wrote that the goal of his organisation now was to help people come out in support of per capita equity position.

Forging Southern unity in preparation for WSSD

With the World Summit on Sustainable Development (WSSD) scheduled for September 2002 in Johannesburg, South Africa, GEG activities centred on building capacities in South Asia to participate more effectively in the Summit.

Information dissemination activities

In order to keep South Asia network participants informed, and to allow for discussions and exchange of opinions, CSE set up two e-mail discussion groups, one for India and another for



CSE staff at CoP-6 meeting in the Hague

South Asia. These discussion groups stimulated much debate and discussion on Southern priorities at the WSSD.

Two briefing papers on climate change issues were also prepared and disseminated. A briefing paper on a proposal put forward by CoP-6 Chairperson Jan Pronk just before CoP-6-bis in Bonn, was produced and disseminated at the CoP-6-bis. Another briefing paper focused attention on climate change impacts and problems in the state of Orissa.

CSE produced a reader-friendly and concise set of factsheets on the various environmental negotiations. These factsheets, translated into several regional languages including Hindi, Oriya, Malayalam, Bengali and Nepali, were used as resource materials for capacity-building workshops organised by CSE as part of the preparatory process for WSSD. The factsheets were also widely disseminated to negotiators, NGOs, academics and other groups in India, South Asia and the rest of the developing world.

CSE established a special section on global environmental governance in the CSE website, which was used extensively to keep collaborators regularly informed by summarised WSSD-related documents. The website was also used to provide political analyses of the process to network members.

Networking with South Asian NGOs

CSE organised a two-day meeting of South Asian NGOs in New Delhi from November 22-23, 2001 that marked the beginning of the WSSD preparatory process. About 25 groups agreed to work together to raise awareness on global environmental governance issues and to get more involved in the negotiations process. Local groups agreed to organise meetings to raise awareness about these issues.

Similarly, CSE collaborated with the Indian Network on Ethics and Climate Change (INECC) and the Orissa Development Action Forum (ODAF) to organise a meeting in Visakhapatnam, Andhra Pradesh, from March 22-23, 2001 to create awareness about the WSSD process. Here, CSE factsheets were translated into Oriya and widely disseminated.

CSE was also invited to advise NGOs in other parts of the developing world on the Rio+10 preparatory process. At a meeting held in Johannesburg, South Africa, CSE was invited to flag-off African NGO activities towards Rio+10 by defining the parameters of Southern civil societies over the next few months. CSE members also attended a meeting organized by the Heinrich Boll Foundation on the preparatory process at Bangkok, Thailand.

Global reportage

The Global Environmental Governance unit continued to research and report on international environmental issues. The following reports were published in *Down To Earth* magazine:

Climatic loophole: Reported that 'sinks' can now be potentially identified as the most dangerous loophole for the environmental integrity of the Kyoto Protocol.

Equity first: The article suggested the only way to a lasting international climate treaty is to accept equal rights for all human beings to release greenhouse gases.

Whose Carbon hypocrisy? Reported that several Northern groups are now urging their governments to influence international financial institutions to stop funding for fossil fuel projects in the South as a means of climate change mitigation.

Hold up: Analysed the suspended climate negotiations — the stage seems set for another climate meeting to serve the economic interests of the US better than address the threat of global warming.

Indecent proposal: Detailed how the new compromise proposal recently released by Jan Pronk, chairperson of the climate change talks, offers too many sops to the US.

Pact politics: Analyses the making or breaking of the Kyoto pact, as the European Union strives to enforce the Kyoto Protocol without the US. The South could play a crucial role to push for a fair treaty.

Rescued or doomed?: Reports on the Cop-6 meeting on climate change convention resumed at Bonn, Germany, from July 16-27. Nations adopted a diluted agreement on implementing the Kyoto Protocol that gives too many concessions to polluting countries.

Deal or no deal and victory of multilateralism: Reported the net result of the Bonn agreement is that the Kyoto Protocol is now even more of a paper victory, and that it favoured industrialised countries.





INDUSTRY AND ENVIRONMENT

The Green Rating Project (GRP) is a pioneering effort that motivates industries to take voluntary measures towards good environment management. It does this by undertaking a sectoral rating of environmental performance of large industrial undertakings and then disseminating the results widely.

Public opinion is a powerful tool to influence industry to better its environmental practices. GRP is an attempt to present a market-oriented framework by which the environmental impact of industrialisation can be measured and monitored. As a reputation incentive programme, it rates the environmental performance of companies within specific sectors.

As part of the incentive programme, the Green Leaves Award is given by CSE in recognition of the rating achieved by industries on the basis of their environmental performance in various sectors.

GRP's first project in 1999 was to rate the pulp and paper sector, which elicited enthusiastic response from the industry. Subsequently, the project rated the automobile sector, and is now rating the chlor-alkali sector.

In 2001, CSE released the ratings for the automobile sector, which received wide acclaim and response from the auto industry. The automobile-rating project closely scrutinised the manufacturing process, technology, incentive mechanisms for manufacturers, and the government's regulatory role. A detailed assessment of fuel efficiencies and emission controls was also made for all products and segments.

Dr Manmohan Singh, former Finance Minister of India, released the automobile ratings at a public function in New Delhi on October 29, 2001. This was followed by a workshop on March 5, 2002 for the auto industry to provide information on conversion to environment-friendly practices.

The chlor-alkali sector rating is currently underway. GRP has also embarked on rating

the environmental management policies of large companies, focusing on their environment management systems and corporate stewardship. Companies will be compared across sectors.

Sectoral ratings of environmental performance

Rating the chlor-alkali sector

The sector was chosen because the products of this industry — chlorine and caustic soda — are used as raw materials by almost all chemical industries. Rating of this industry will therefore provide a good basis to judge the environmental impact of the chemical sector as a whole. An 'issues paper' was produced and a technical advisory panel constituted. The panel consists of A K Rao, former director corporate affairs, Ranbaxy Laboratory Ltd; Dr N J Rao, professor, IIT Roorke and Dr K V Raghavan, director, Indian Institute of Chemical Technology, Hyderabad.

The environmental rating of the chlor-alkali sector will be completed by July 2002. Currently the project is in its final stage. The final ratings based on information collected from companies are currently being evaluated and compiled.

Rating the automobile sector

Work on the rating of automobile sector began with the preparation of an issues paper. A Technical Advisory Panel (TAP) was constituted, which consisted of Dr H B Mathur, retired professor, Mechanical Engineering Department, IIT, Delhi; Dr B P Pundir, professor, IIT, Kanpur; and Professor M M Mehta, Managing Director, Maharishi Technology Corporation Ltd. The rating criteria and weightages for the rating process were finalised by the unit with the help of the Technical Advisory Panel members.

Twenty-nine automobile companies were selected for the study. Voluntary participation from the auto sector was good; almost all the companies except three participated voluntarily. Primary survey visits were undertaken to check on the industries' environmental facilities. This was followed by a feedback phase where the auto companies verified the information collected.

India's first environmental and most comprehensive rating of the automobile sector was released by Dr Manmohan Singh, former Finance Minister, at a public function in New Delhi. Dr R A Mashelkar, Director-General, Council Scientific and Industrial Research (CSIR), New Delhi, chaired the function. The release function was well attended by automobile manufacturers, dealers, associations, funding agencies and the specialised automobile media, representing a wide spectrum of the automobile sector.

Brij Lal Munjal, Chairperson of Hero Honda Motors Ltd; A P Gandhi, President,



Green rating project — release function

Automobile rating scorecard

Three companies were rated best overall – Daewoo, Hyundai and General Motors

Auto products

Matiz (Daewoo Motors), Maruti 800 (Euro II), Santro (Hyundai Motors), Hero Honda Splendour and CD-100

Cars

Most fuel-efficient diesel car — Mitsubishi Lancer
Best diesel passenger car — Mercedes Benz E220
Best multi-utility vehicle — Toyota Qualis (Euro II)
Worst overall — Ambassador (Hindustan Motors) and Armada (Mahindra and Mahindra)

Two Wheelers

Best — Chetak (Bajaj Auto) and Splendour (Hero Honda)
Worst — Safari (Kinetic Engineering) and Bullet (Royal Enfield)

Mass Transport Vehicles

Best bus — Viking CNG (Ashok Leyland)
Worst bus — Diesel-fuelled Comet 1611 (Ashok Leyland)

Hyundai Motors India Ltd; and Aditya Vij, Managing Director, General Motors India, were among the many industry representatives present for the release function.

Corporate environment performance rating

The corporate environment performance rating project aims to evaluate the environmental policies of major companies that have incorporated such environmental-friendly practices.

Top companies of the country are being rated, based on their environmental policy and management systems. The rating is not sectoral and instead examines corporate environmental stewardship, allowing for comparison across various sectors. Around 150 top Indian companies are included in the project, of which 148 companies are voluntarily participating. Of these, 133 companies represent the private sector and the remaining 15 are public sector companies. Rating and analysis for 130 companies has already been completed.

Networking with industry

South Asian industry – global reporting

CSE was one of the co-organisers of the Global Reporting Initiative (GRI) South Asia Briefing meet in New Delhi on September 25, 2000. The objective of the briefing was to elicit feedback from South Asian industry and civil society on developing a common framework for reporting on environmental and social

initiatives. While civil society perceived the need for reporting on environmental and social initiatives, industry representatives were more sceptical and needed to be persuaded. A dinner was hosted by CSE for the GRI conference participants on the concluding day.

Training workshop for the paper and pulp sector

A workshop to determine progress made after the pulp and paper green rating project was organised on September 26, 2000 at CSE. The objective of the workshop was to obtain feedback of the usefulness of the rating process from those who participated in the paper sector rating. Most companies were represented at the workshop. Representatives from paper associations and the Technical Advisory Panel members also attended the workshop.

The workshop revealed that many companies have become conscious of the value of natural resources and are adopting environment-friendly processes and raw material procurement mechanisms. Several companies are also implementing recycling technologies. There were lively discussions about the measures that could be taken up to improve the rating process and methodology.

Follow-up workshop for automobile sector

CSE organised a workshop on March 15, 2002 at the India Habitat Centre in New Delhi to compile policy recommendations for promoting environment-friendly growth in the automobile industry and to obtain feedback on the rating methodology used.

Representatives from the automobile industry, government officials, financial institutions, non-governmental organisations, the pollution control board and other institutions attended the workshop.

The Best Environment Manager's Award

The Best Environment Manager's Award (EMA) has been instituted under the Corporate Environment Performance project to give recognition to initiatives undertaken by Environment Managers of companies. CSE started this award, the first of its kind in the country, in order to recognise the efforts of the environment manager. A company's environment manager is largely responsible for making the company adopt and practice environmental friendly norms. As the economy and environment go hand in hand, it is up to the environment manager to implement viable environmental initiatives in the company.

The award process is simple. A questionnaire is sent to nominees. Based on the responses, the nominees are rated with the help of an expert panel. Around 88 nominations have already been received. The unit is at present compiling information and short-listing nominees eligible for the award.





ENVIRONMENTAL HEALTH

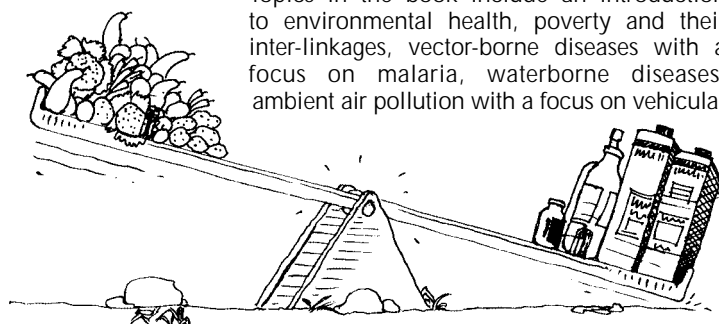
The Environmental Health programme of CSE was established to compel the government to take the issue of public health seriously. The programme aims to achieve this by documenting and creating public awareness of the impact of environmental change on public health. Through this programme, CSE reaches out to the medical community and policymakers and consults with them about air-based health issues, including carcinogenic benzene and diesel particles. The programme also interacts with experts about water-based health issues, including industrial toxins, germs and pesticide residues in food. CSE will regularly produce the *State of India's Environmental Health*, a bi-monthly newsletter, conduct public meetings and undertake research and advocacy.

As part of this effort, the Centre established a Pollution Monitoring Laboratory in 2001 to bolster the efforts of pollution activists across the country by providing them scientific research and data on pollution. One of the first projects of the laboratory was a scientific survey of endosulfan residues in food, soil, water and its impact on community health in Kerala's Padre village. The Lab's first task was triggered by a letter CSE received from groups working in Kerala's Kasargod district that detailed the high incidences of numerous deadly and debilitating diseases. The prime suspect was the continuous spraying of endosulfan since 1976 in Padre village in the district.

CSE disseminated the results of the study widely and was able to leverage immediate impact. The national media picked up the issue and the spraying of endosulfan has now been partially banned in Kerala.

State of India's Environmental Health

The unit is at present working on the book, *State of India's Environmental Health*, which will be published sometime in 2002. The book includes two main sections – 'Traditional Burden of Diseases', or those diseases and ailments that have persisted in communities historically, and 'Modern Burden of Diseases', or diseases that have arisen due to changes in lifestyle and environment that cause pollution and toxic contamination. Topics in the book include an introduction to environmental health, poverty and their inter-linkages, vector-borne diseases with a focus on malaria, waterborne diseases, ambient air pollution with a focus on vehicular



air pollution, heavy metal pollution, children's health and emerging challenges in addressing environmental health issues.

Building knowledge networks

The unit's *Health and Environment Newsletter* is a networking tool that brings together doctors, medical scientists health professional and environmentalists. The newsletter examines issues that affect environmental health and articulates the links between health and environment. The newsletter also reviews recent studies, details various resources for information and includes health-related news briefs. A consumer section, *Product Watch*, details the debilitating health affects of some products. The *Book Reviews* and *Reader's Forum* sections enhance interaction with readers. The *Campaigns* page highlights efforts made by various NGOs on health and environment topics. Three editions of the newsletter have been printed and distributed to more than 2,500 health professionals.

Roundtable conference on the health impacts of air pollution

A Roundtable Conference was organised by CSE to present the perspectives of Dr Daniel Green Baum, president of the Boston, US-based Health Effects Institute (HEI). Dr Daniel Green Baum, spoke primarily on the health affects of air pollution, mainly diesel. Issues of health and environment in India were also discussed. Participants included media, staff from various NGOs and members of Pollution Control Boards, among others.

Reportage on health and environment issues

The team researched and published reports on a number of health issues.

Environment and cancer

CSE studied the linkages between pollution and cancer and published several reports. The article, *Silenced to death*, illustrated the prohibitive cost of cancer treatment and pointed out the little medical help available to the poor. The report blamed the media and the government for their silence on the issue. A related report, *Environmental injustice*, examined in detail the relationship between cancer, poverty and a polluted environment. This report was published in leading newspapers including *Financial Express* and *Hindustan Times* and also in the journal, *Health for Millions*. Similarly, another article, *Faceless figures*, analysed the inadequacy of cancer research in India and underscored the difficulties in formulating preventive strategies because of the outdated and unreliable official data on cancer.

The article, *Genes: Dreams and reality*, detailed the findings of a new Swedish study

that determined cancer is not genetically triggered but is caused by environmental factors. The *Business Standard* newspaper later carried this story. Similarly, *Molecules of death* highlighted the adverse impacts of highly carcinogenic dioxins that are released when substances such as plastics are burned. The article underscores the need for scientific studies that convey the magnitude and gravity of the problem to government and citizens.

Children and health

CSE has raised concerns about air pollution by highlighting the impact of air pollution on the health of children. The article, *Caution — children under threat* reviewed the findings of a report published by World Resources Institute, which pointed out that children in developing countries are increasingly at risk from air pollution. Another report, *Gasping millions*, documented the rapid worldwide spread of asthma and linked its occurrence to various environmental factors. The report, *Virus attack*, showed how the lack of good epidemiological studies in the country is crippling measures to combat deadly and unknown fevers.

POLLUTION MONITORING LAB

CSE's Pollution Monitoring Laboratory became fully functional and started testing for pesticide residues, and air and water quality monitoring programme in mid-2001.

Analysis of fuel adulteration

CSE's Pollution Monitoring Laboratory, equipped with state-of-the-art analytical instruments, analysed petrol and diesel samples from some terminals (depots) and connected retail outlets of Indian Oil Corporation Limited, Bharat Petroleum Corporation and Hindustan Petroleum Corporation, for analysis of individual hydrocarbons by Gas Chromatography (Trace GC) with flame ionization detector (FID) using HP-1 capillary column.

This accurate finger-printing of the composition of the samples collected from the depots (reference samples) and those from the connected retail outlets glaringly brought out widespread adulteration of the fuel that is widely marketed.

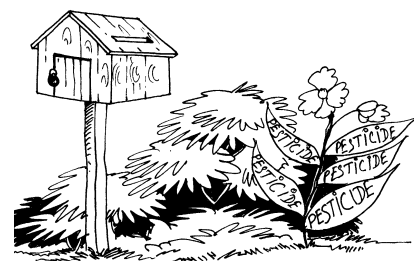
Widespread variations in the concentrations of fuel components such as hexane, pentene, octane, xylene, etc., was detected between the samples taken from the depots and those from the retail outlets. For instance, in one petrol sample taken from a retail outlet, pentene concentration was almost 7 times as high as in the depot sample. Total xylene was 13 times as high in the retail outlet sample as that in the connected depot. This may be due to adulteration with a solvent.

Air quality monitoring at Tughlakabad

To strengthen its Clean Air campaign, CSE undertakes air quality monitoring at Tughlakabad, a site that is classified as a 'sensitive area' because of the proximity of a leading hospital and several educational institutions. As the Central Pollution Control Board is not monitoring this area, CSE is undertaking air quality monitoring for suspended particulate matter (SPM), respirable particulate matter (RSPM), oxides of nitrogen (NO_x) and sulphur dioxide (SO_2) on a continuous 24-hour basis. The results show that the ambient particulate matter levels are consistently high most of the time, and exceed the limits prescribed for such locations.

Air and water quality monitoring in Meerut

At the request of the Janhit Foundation, an NGO leading a campaign for clean air and water in Meerut town, the CSE laboratory conducted surveys to monitor air and water quality in different parts of the city. Air quality monitoring was undertaken at sites near three major traffic intersections of the city, and in a sensitive area adjacent to the Meerut Medical College hospital. The test results showed that the ambient concentrations of SPM, NO_x , RSPM were several times higher than the prescribed permissible limits.

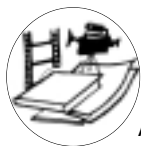


CSE undertook the following tests in 2001-2002, some of which are still underway:

- Pesticides residues in vegetables and fruits from Delhi and nearby areas
- Pesticides residues in commercially available infant formula
- Pesticides residues in branded mineral water
- Pesticides residues in Delhi's water supply
- Pesticides testing in the irrigation water in Delhi and nearby areas



CSE's Pollution Monitoring Laboratory



Green messenger

Continuing its efforts to push for good governance in environmental management, reports on key issues were prepared and published. Reports ranged from articles on water and air quality, water management to policy reports on livestock management, management of bioresources, decentralisation, economy and environment, among others.

As part of its efforts to advocate for more emphasis on science and technology in environmental policy making, CSE teamed up with *Down To Earth* to institute an award for the most innovative work in the field of environmental science. The first award was given to Dr V P Sharma, former head of Malaria Research Centre, for his work on bioenvironmental management of malaria. He was chosen by a jury of eminent scientists including Dr R A Mashelkar, Director-General, Council of Scientific and Industrial Research.

Work on producing the *State of India's Environment* report continued. CSE produced a film on the linkages between poor environmental management and corruption. The film was telecast by the British Broadcasting Corporation (BBC) across the world.

STATE OF INDIA'S ENVIRONMENT REPORTS (SOE)

During this period, the team worked on the Citizens' Sixth Report on the *State of India's Environment*. The report includes 12 chapters:

Land: The chapter captures the story of Ralegan Siddhi, a village in Maharashtra. It documents how land regeneration led to overall development of a village. The chapter was authored by Anil Agarwal.

Water: This chapter talks about groundwater pollution and its overexploitation. The work on the chapter has been completed and reviewed by experts P S Datta and Tishya Chatterjee. It includes a special feature on the controversy surrounding the Supreme Court judgement on the Sardar Sarovar Dam.

Forests: The focus in this chapter is on the concept of community forest management. The chapter includes case studies of Chotanagpur, Jadhargaon, and Panchmahal areas. Reviewed by Madhu Sarin, a special feature of this chapter is the comparison of the 1997, 1998 and 1999 *Forests Survey of India* reports and the analysis of the trends of the three years.

Atmosphere: The atmosphere chapter is divided into two parts: impact of climate change on India, and India's response. The chapter has been sent for review. This chapter includes a special feature on air pollution in various cities of India.

Habitat: The habitat chapter highlights the urban drinking water crisis. The thrust of the chapter is on urban mismanagement and the variation of water availability in different cities in the country. Two special features are included in this chapter — pollution of the Dal Lake in Srinagar, and urban floods.

Health: This chapter covers the impact of pesticides on human health. K Kannan, Devika Nag, T S Kathpal, N P Agnihotri and S G Kabra have reviewed the chapter.

People: Artisans, a threatened community in India, are the focus of this chapter. It underscores the plight of poor artisans who have been robbed of their age-old professions due to the lack of natural resources, such as ivory, grass, etc. A special feature reviews the impact of the creation of three new states of Chhatisgarh, Jharkhand, and Uttaranchal on artisans.

Energy: The chapter evaluates the potential of renewable energy, mainly solar energy, in India. It includes case studies from Rajasthan and South India. The chapter has a special feature on ethanol as an alternate fuel.

Waste: The focus in this chapter is on solid waste management. It includes case studies of NGOs such as Vatavaran in Delhi and Exnora in Chennai. Bharati Chaturvedi, Almitra Patel and K J Nath have reviewed the chapter. It has a special feature on the 1999 notified plastic recycling rules.

Disaster: This chapter covers Industrial accidents and disaster preparedness. It involves a special feature on the Gujarat earthquake.

Living resources: This chapter documents documents how the habitat destruction leads to extinction of birds. It includes two special features, one on the Chiru-Shahtoosh controversy and, the other on zoo mismanagement.

Agents of change: The thrust of the chapter is on the greening of Indian industry. It includes a special feature on the intervention of the Supreme Court in directing environmental management of Indian industries.



SCIENCE AND ENVIRONMENT REPORTAGE

Information for change

CSE's role of disseminating news and views in the fields of environment and science, which emanates from the twin challenges posed by an increasingly degrading ecology and a spate of struggles and successes to overcome odds, has made the organisation a point of reference for the media and researchers alike. This has also resulted in some in-depth reports on a broad range of issues in the fortnightly *Down To Earth* (DTE), published by the Society for Environmental Communications.

By no means an easy task, the CSE reports have endeavoured to bring to DTE readers the complex maze of information in science and environment in a layperson's language. Reflecting CSE's extensive research, DTE reports helped uncover the underlying politics and sociological as well as economic impacts of a host of subjects, including the automobile industry (*An auto dream*), air pollution, water or biodiversity. Even the ubiquitous flush toilet (*Flushed*) which highlighted the need to manage water that is so mindlessly flushed away, brought a flood of responses from readers. This only proved to us the latent knowledge among readers that could be jogged by some pin-pointed information.

Likewise, reports on cancer, whether on new research, or how the poor struggle to treat it or how the authorities keep vital information out of reach (*faceless figures*) gave fresh insight into this much dreaded disease.

Water and air pollution however, remained the major flashpoints in the ecological radar, which was reflected in the flood of articles generated by CSE. The campaign to promote water harvesting saw DTE reporters trudging across the country to report on the impact of drought, as well as success stories of community efforts to conserve water. Successive visits to villages allowed CSE to document how drought-proofing was possible by simply harvesting water where it fell.

CSE's campaign for clean air kept churning out a number of reports and articles ranging from studies in a number of countries on the adverse impacts of air pollution to the strident fight against rising vehicular pollution. The reports on the politics surrounding the switch to cleaner CNG fuel in Delhi evoked a lot of reader response and kept the CSE campaign.

A breath of air

Against the backdrop of a raging controversy over cleaner fuels, CSE kept DTE readers informed of the politics that directly impacted upon the fast-deteriorating air quality and

people's health. Touching upon some vital aspects of vehicular pollution, DTE came out with a series of status reports on the implementation of the Supreme Court order to convert public transportation in Delhi from diesel to CNG. Notable among them were *Shut your shop*, which discussed the implementation of the apex court order, and *The CNG imperative*, which demonstrated how the conversion of public transport vehicles to CNG would dramatically bring down the pollution load.

Likewise, CSE reported on the policies of other countries across the globe that tackled air pollution. While *Exhausting practices* critiqued the inspection and maintenance regime that requires users to take steps to keep their cars clean and non-polluting, *Singapore: breathing easy* examined in detail the Singapore government's policies that helped transform the city-state from among the most polluted Asian cities to one whose pollution levels are now below the World Health Organisation (WHO) norms.

Marching forward in its campaign against the diesel lobby, CSE uncovered the powerful vested interests conspiring to sabotage the implementation of the July 1998 Supreme Court orders on CNG in *The CNG sabotage* and *saboteurs*. Both reports detailed how the Union and State governments had done nothing concrete apart from discrediting CNG, trading instead vested interests with the health and lives of millions.

The CNG battle continues, both inside and outside the courtrooms, even as air quality takes a slide downwards in most cities across the country. But what is heartening is that Delhi, whose public transport buses have now been pushed to convert to CNG, has seen a remarkable recovery in its ambient air quality.

Water journey

The management of natural resources has been one of the most crucial areas of research for CSE. And none is more important than water. 'Every drop counts' has been the motto of some well-documented reports. Starting with community efforts in water management, notably *A belief in tradition*, which documented the efforts of the gram panchayats of Bhaonta-Kolyala, the twin villages in Rajasthan's Alwar district, recipients of the 2000 Joseph C John

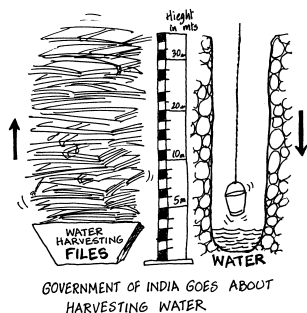




award, DTE reported on a number of innovative community efforts for environmental regeneration. If *Tryst with rain* studied water harvesting programmes implemented in Gujarat and Maharashtra, warning how badly conceived and implemented government programmes can derail the successes of community work, *Reviving wisdom*, an analysis by the late Anil Agarwal, the founder-director of CSE, argued how mismanagement of water led to water scarcity.

The highlight was, however, the revisits by CSE reporters during the second and third consecutive years of drought to villages which had drought-proofed themselves by building small check dams and other water harvesting structures. *Drought of relief*, an analysis of why drought proofing remains a distant dream, argued that government drought relief schemes fail because of bad planning and corruption. On the other hand, *A water journey* reported the drought-proofing efforts of village communities that brought about ecological regeneration in the states of Andhra Pradesh, Gujarat, Madhya Pradesh and Rajasthan. *Freeze* sent the reporters chasing the monsoon, who came back with heartening stories of those villages that had managed to control water scarcity with their stored water.

Simultaneously, Lava ka bas, a nondescript village in Alwar district of Rajasthan hit the headlines when the state government was hell-bent upon dismantling an earthen check dam built by the villagers. CSE took up the cudgels and managed to convince the government how these small efforts conserved water conservation in the entire region.



Health wealth

The linkages between environment and health have been keenly followed by CSE and a number of in-depth reports have emerged. *Genes, dreams and reality* explored how environment and lifestyle cause cancer. Based on a study by the Karolinska Institute in Stockholm, Sweden, the report debunked the theory that cancer was hereditary. *Agony of the waiting* examined the double whammy faced by the poor who were afflicted by cancer. *How carcinogenic is your car* measured the cancer potency levels of cars, concluding that diesel is the most dangerous.

Umbilical discord showed how pesticide residues in food can lead to birth defects in babies. After CSE broke the news on the crippling effects of endosulfan, a commonly used pesticide in the cashew plantations of Kerala (*Children of endosulfan*), a series of reports on this issue kept the debate alive. *Molecules of death* looked at the danger to health from the deadly dioxins and how murky politics is trying to downplay its health threat. *Clear as air* painted a grim picture of the hidden health costs due to the increasing air pollution in our cities.

Virus attack tried to unravel the mystery of fevers of unknown origin, documenting how the medical fraternity gropes in the dark as lethal fevers spread across the country.

Rural landscape

Environment management is today essentially a power game controlled by elite policy makers. But the real issues are in villages, where people are beginning to stake claim to their rights, particularly over natural resources. If *Bridging the gap* outlined the decentralisation efforts of the state government of



Kerala, *Forest war* reported on Naxalites-control. Spread over 15 per cent of the forest area, the Naxalites run a parallel government in the forest, thereby highlighting the need to change

forest laws. While *Old as hills* analysed the age-old strategy of shifting agriculture in the Northeast hills, *Tottering on tragedies* looked at the chaos in Orissa, a state that routinely encounters disasters.

Orphans of the river examined the plight of the riverine fisherfolk as degradation of the inland open water resources take a toll on the fish diversity and communities. Similarly, *Logjam* discusses the plight of the poor forest dwellers of the Northeast, who are deprived of their traditional livelihoods by the large-scale felling of trees. It shows how misinterpretation of the Supreme court order has led to bureaucratisation of forests to further the interests of timber traders. *Subsidised killing* highlights the tragic aspect of thoughtless government policies that are slowly squeezing India's livestock population out of its existence.

Green crusaders

A host of heartening tales of grit and challenge at the grassroots level have also been documented by CSE reporters in the course of their travels across the country. *Prosperity and beyond* detailed the transition of Ralegan Siddhi, a nondescript and ecologically ravaged village to a model one which today exports vegetables. This shift was largely through the efforts of renowned social activist Anna Hazare, who stressed that villages become self-sufficient when villagers become stakeholders in its development. Similarly, *Power the people* extols Nepal's efforts to decentralise power generation, through which a social revolution has been ushered into the Himalayan kingdom.

Water was a major fulcrum in several stories. *Catching water where it falls*

documented a gathering movement to recharge groundwater from rainwater in Dewas, Madhya Pradesh, while *Water revolution* examined the *pani roko abhiyan* (stop water campaign) in Madhya Pradesh, in which 51,000 drought-affected villages adopted water conservation measures. *Changing lives* reported on the community participation measures by farmers of Cooch Behar and Jalpaiguri districts of West Bengal, a region that today grows five crops. The water table has risen in the region, which was once ravaged by devastating floods. *Cleanup time* reported on the efforts of Rajasthan's Udaipur-based Jheel Sanrakshan Samiti to clean up the city's lakes.

Forest management is another major issue for community participation as *Fighting it out* reported on how tribal women in Halyasahi, Orissa, are fighting government officials and private parties for their rights to trade minor forest produce. *Arresting axe'tion* details the grass-roots initiatives of villagers living close to Rajasthan's Kailadevi sanctuary that started a *kulahari band* (axe ban) movement to restore the once-verdant sanctuary forests. *Women power* examines the pioneering efforts of Dengajhari women, who started a revolutionary forest protection movement that included continuous patrolling against illegal tree-felling in their village. *Nepal's poor carry it off* reported the success of Nepal's leasehold forestry project, which created an exclusive resource base for the poorest in the country.

Efforts in the cities was also highlighted. *A Ray of Hope* outlined the story of a group of young students who formed an NGO that since 1996 has been working successfully to collect and dispose garbage from the Dal lake in Srinagar, Jammu and Kashmir. *A few good men* documented the shared efforts of Prabhat K Upreti, a college lecturer, with six other citizens to start a campaign against the use of polybags in Pithoragarh, Uttar Pradesh.

Country reports

CSE extensively reported on a number of countries, particularly focusing on how they dealt with environmental problems and about lessons could be learnt from them. *Cherry blossoms* of Japan details the lessons to be learnt from Japan's management of its environment. Similarly, *high altitude dilemma* discusses Bhutan's prospects for sustainable development and environmental management. *West by far east* analyses the cost of economic growth in China and how a pattern of economic growth without adequate consideration of the potential environmental consequences has grave environmental implications to the country.

Globe trotting

Global environmental negotiations are serious business for CSE as it does not just watch world

politics taking shape — advocacy is placed on the anvil as it participates in the various forums across the world, often battling with the best of wits. The negotiations of the sixth Conference of Parties (CoP-6) at The Hague saw the CSE team reporting on the intricate details of negotiations. *Hold up* was an exhaustive documentation of the conference, where the head of the US delegation ended up with a pie in his face. *Deep impact, shallow response* analysed the vulnerability of India to climate change, recording how it could trigger a series of ecological and economic disasters in the next three to four decades. The report also focused on the immediate need of the Indian government to invest in studying the impacts of climate change on the country and to undertake necessary measures.

Trade truce on the other hand, reported on the six-day long meet in Doha, Qatar, which produced some compromises after the fiasco at Seattle, USA, when World Bank and IMF talks were derailed by a belligerent civil society. The EU made some agricultural concessions over agricultural subsidies and the US relaxed some import curbs at Doha.

Notwithstanding the hawk-eyed vigil maintained by CSE's Global Environment Governance team, the fact remains that the developed nations are set to apply more pressure and the developing countries have a lot to worry about.

Green Scientist Award: Advocacy to bring change

CSE, in collaboration with *Down To Earth*, has instituted an award to recognise and honour exemplary work in the area of environmental science. This is an effort to spur scientific research in ecological security, a topic that is

Bandit and the backhanders



CSE produced *Bandit and the backhanders*, a film on corruption in environmental management. The film discusses how corruption corrodes values and degrades the environment. It also looks at case studies of corruption in Bihar, Tamil Nadu, Karnataka and New Delhi.

The film was shot in India in Saharsa in Bihar, Mysore and Mangalore, Karnataka, New Delhi and Rajaji National Park, Uttar

anchal. The film features important personalities, including Anil Agarwal, N C Saxena, secretary, Planning Commission, Anna Hazare, social activist and several government officials.

The film was edited in Delhi and London and the English version of the film was telecast 18 times by the BBC World in October 2000. The international version will be shown in several other countries in the respective regional languages through Television Trust for the Environment. In Delhi, the film was shown by KRITI, an NGO that promotes communication development.



Dr V P Sharma speaking at the Green Scientist Award function

crucial for the development and well-being of the people but which is totally neglected by government policies.

The first Green Scientist Award was awarded to Dr V P Sharma, former head of the Malaria Research Centre, Delhi, for his innovative efforts to control mosquitoes through bio-environmental methods. The award carries a citation and a cash prize of Rs 1 lakh. Former Union Finance Minister and member of Parliament, Manmohan Singh, presented the award.

As malaria affects the most vulnerable — especially the children of poor families in developing countries — Dr Sharma's work assumes extraordinary significance. Any solution that can help solve the problem is of crucial importance. His work ranges from malaria control, entomology, genetics, vector biology and control of vector-borne diseases.

The selection process for the Green Scientist Award was detailed and rigorous. Nominations were selected on the basis of the person's work in environmental areas and the standing and profile of the senior scientist who had nominated the person. Out of 58 nominations, eight were shortlisted and DTE staff travelled widely to verify the impact of the work of the nominees. Final ratings were conducted on the basis of specified criteria selected by the jury, such as sustainability, tangibility, institutionalisation and impact.

The jury consisted of the following eminent scientists: Dr V Ramalingaswami, National professor at AIIMS; Dr Arun Kumar Attri, associate professor at the School of Environmental Sciences, JNU; Dr R A Mashelkar, Director-General of CSIR; T N Khoshoo, former secretary, Department of Environment; Dr S K Sinha, national professor at ICAR, Delhi; and Anil Agarwal, director, CSE.

The Down To Earth-Joseph C. John Award

Continuing the survey of innovative community efforts to regenerate their environment, CSE in collaboration with DTE organised the Joseph C John-Down To Earth Award for outstanding community efforts in environmental regeneration. The first award was given to the *gram sabhas* of Bhaonta and Kolyala, two villages in Alwar district of Rajasthan which have done exemplary work in reviving the river Arvari.

This year, 40 nominations have been shortlisted. DTE reporters and stringers are already out in the field to examine and report about the work of the nominees. Their detailed reports will be placed before a jury consisting of eminent persons, including scientists, academicians, administrators and NGOs.

Doing the right thing: Feedback

"Please send me more details about the Green Scientist Award, to aid in our consideration of whether we might institute a similar award here," **John Cropper, Trinidad and Tobago.**

"Your journal is just superb. I like to read each article and enjoy myself doing so," **T Norbu, Asian Institute of Technology.**

"I find the coverage on information technology excellent. It provides a reality check and highlights both the positive and negative aspects. This should be helpful to those committed to bringing the benefit of IT to rural areas, learn the right lesson and apply them appropriately," **N Vittal, Central Vigilance Commission.**

"I have been reading *Down To Earth* for the past two years. It takes a lot of courage to publish an article like *Death inside the factory gates* (*Down To Earth*, September 30)," **Clive Lawyer, Australia.**

"*Down To Earth* is the one of the few magazines which presents the true picture of the environmental conditions in the world. I have always recommended the magazine to my students.

Even my child finds your supplement, *Gobar Times*, very interesting," **Sunil Kirloskar, Airole.**

"Your article on livestock *Subsidised killing* (*Down To Earth*, June 15, 2000) made a great contribution to the cause of livestock management, which has been neglected all along," **N S Ramaswamy, Bangalore.**

"I enjoy reading *Down To Earth* and rate it as one of the best publications in the field of environment," **Anil Agnihotri, Ahmedabad.**

"*Down To Earth* is doing an excellent job of disseminating information. I think *Down To Earth* and *Gobar Times* must be made compulsory for our politicians and bureaucrats of our country," **S Sanyal, Lonavala.**

"*Down To Earth* is doing a wonderful job by raising awareness about the environment as well as fighting the government and big corporations. Your article on corruption in the construction of embankments in Bihar was so good that it can easily qualify to be a collector's item," **Surendra Parihar, Raipur.**



FOR A MORE PARTICIPATORY
DEMOCRACY, WE HAVE JUST PASSED
THE RIGHT TO INFORMATION BILL.

IT WORKS LIKE THIS,

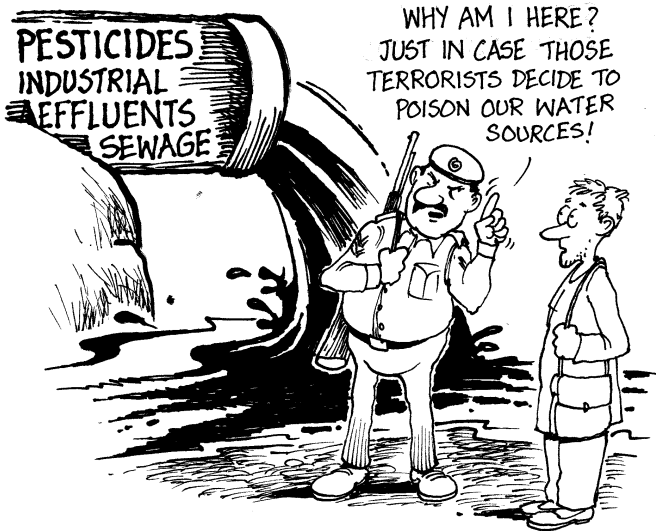
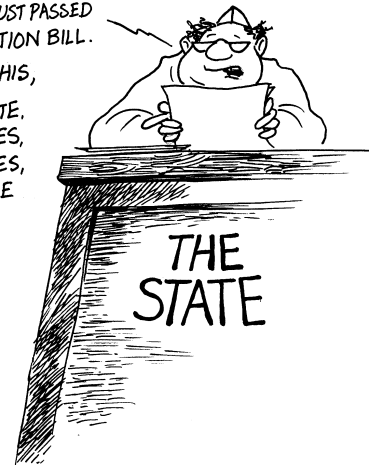
YOU PARTICIPATE.

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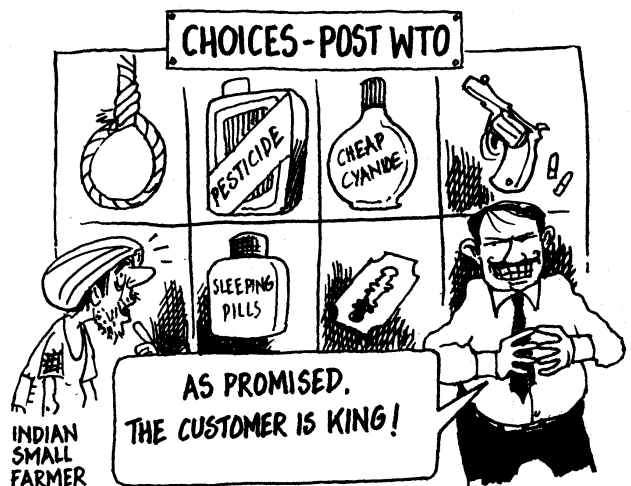
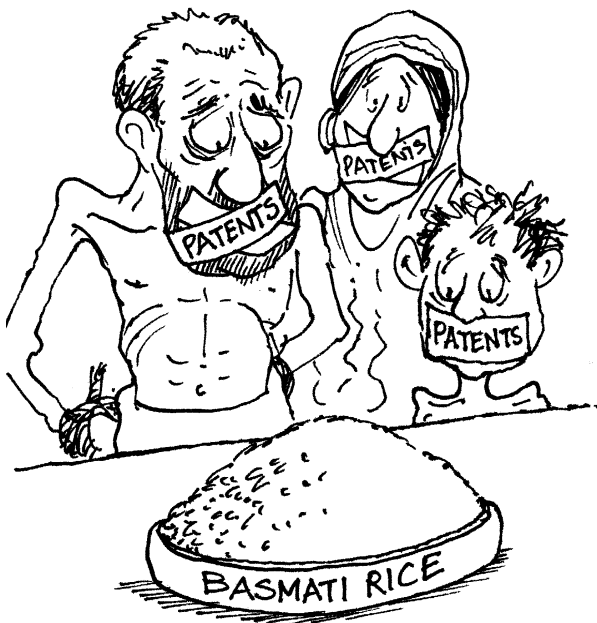
SHE PARTICIPATES,

THEY PARTICIPATE

... WE DECIDE.



WHY AM I HERE?
JUST IN CASE THOSE
TERRORISTS DECIDE TO
POISON OUR WATER
SOURCES!





Building capacities in society

ENVIRONMENTAL EDUCATION AND TRAINING

The team continued to produce *Gobar Times* (GT), and organised training workshops and eco-tours for teachers and students. The unit started *g:NET*, a network for educators. The newsletter helps educators understand the different but interactive dimensions of the environment and to incorporate this understanding in their daily curriculum. The unit also launched another educational activity, Eco-Queez, in the CSE website. The monthly online quiz awards surprise gifts to winners at the end of the month. Associating with six other NGO's the unit has also developed a 30- hour annual programme for schools.

Child-power for making change

Cycle rally for clean air

On the occasion of the 2000 Earth Day, the unit organised a cycle rally for children to highlight the problem of Delhi's poor air quality and the government's inaction. Twenty-two children from different schools cycled from the Safdarjang Tomb to the Prime Minister's house and presented the Children's Manifesto on Clean Air. They drew Prime Minister Atal Bihari Vajpayee's attention to the serious issue of deteriorating air quality in towns and cities of India.

The Children's Manifesto was based on contributions, including text and drawings sent by children across India as a part of many Earth Day events planned by numerous organisations from across the country. The manifesto included an appeal from children for a more secure and sustainable future. The manifesto was also published as a public interest advertisement in *The Times of India* on Earth Day and also in a special issue of *Gobar Times*.



Children presenting the manifesto for clean air to Prime Minister, Atal Bihari Vajpayee

Why are people poor? An essay contest

In the *Gobar Times* issue dated August 15, 2000, the unit organised an essay contest for children on 'Why do you think are people poor?' The contest was an attempt to make children understand the linkages between poverty and environment.

There was enthusiastic response to the contest. Hundreds of essays, poems and drawings from children across the country were received. Ten children earned themselves a five-day *Gobar Times* educational ecotour to Rajasthan's Alwar district to understand the issue of ecological poverty.

Children accompanied by a guardian attended an introductory session on the evening of December 20, 2000. The next day they visited the water harvesting site in Mehrauli, Delhi.

Children were then taken to Alwar, Rajasthan, to observe the work of Tarun Bharat Sangh (TBS), a prominent non-governmental organisation. They stayed at the sangh's ashram and visited several *johads* (water harvesting structures). Children interacted with the local people and understood for themselves how good environmental management makes an impact on the local economy. Children also attended the *Arvari Sansad* (River Parliament) formed by the villagers to administer the sharing of river water among several villages. Children also witnessed the villagers' fight against the mining lobby.

Back in Delhi, the children attended a workshop at which they made a presentation about their experience in the form of a play.

The *Gobar Times* website

The unit launched the *Gobar Times* website on September 2000. The environment education website is regularly updated and includes let's do it-projects, news, career options and also hosts the monthly Eco-Queez.

Our Ecological Footprint – a manual for teachers

A manual for teachers, *Our Ecological Footprint — Understanding Your City as an Ecosystem*, was released on the occasion of Earth Day 2000. The manual is based on the Ecological Footprint Project and was prepared for schools in Delhi.

The manual includes five sections. The introduction describes the concept of the city as an ecosystem, and the perpetrator of a 'footprint', while the remaining sections detail issues predominant in urban life, including pollution of river water, water harvesting, waste management, and the functions of urban forests.

The Ecological Footprint project

The Environmental Education Unit continues the Ecological Footprint Project where students from several Delhi schools are taken on different tours to widen their perspective towards their city's environment and to sensitise them to the symbiotic relationship between a city and its habitants. For instance, a boat ride on the Yamuna river helped understand the neglect and degradation of the river. Similarly, eco-tours to several *baolis* (wells) in Mehrauli, Delhi, helped children understand traditional water harvesting systems. The project also addresses sanitation issues. A visit to the Sulabh Toilet museum showed how toilets fit into the urban ecosystem. Similarly, a visit to the Bhalaswar landfill helped children understand Delhi's waste management systems, while children taken on an excursion to Delhi's ridge area understood how the forested ridge served as lungs for Delhi.

Enabling workshops for students and teachers

The unit conducts workshops for teachers and students to build skills and promote understanding on the linkages between environment and development.

- *March-April 2000*: A meeting of a group of student journalists from five schools of Delhi was organised. The students were assisted in writing and designing a special edition of GT based on their eco-tour experiences. The May 31 GT issue was written and designed by the students themselves.
- *June 2000*: At the invitation of the International Institute of Industrial Environmental Economics, EEU conducted a workshop for school students from all over the world during the Global Youth Environment Convention held at Lund, Sweden.
- *July 2000*: Twenty-one teachers from 13 schools in Delhi attended a two-day teachers training workshop on environment education at the CSE office in the India Habitat Centre. The teachers were later taken on an eco-tour.
- *September 2000*: The EEU unit held the first out-station media workshop and teachers workshop at Kalimpong, West Bengal, in coordination with Ashoka Trust for Research in Ecology and the Environment (ATREE) — an NGO working on environment education in the town. Students were given basic training in journalistic skills. Twenty-five teachers were introduced to the concept of eco-tour when they were taken on a 'waste tour' of the town. They were taught to write pithy reports, illustrate, draw cartoons, and design *Gobar Times* the special edition of Kalimpong.
- *April 2001*: To commemorate Earth Day, the unit conducted a two-day workshop on environment education. Twenty-seven educators from 18 schools and NGOs across the country attended the workshop. The

Ecotours: The ecotour programmes were conducted round the year

Period	Eco-tour	Place
July 2000	Water Walk	Harvesting sites at Mehrauli
July 2000	Raising a Stink	Plastic recycling plants
August 2000	Raising a Stink	Sulabh international
August 2000	Water harvesting	Mehrauli
October 2000	Raising a Stink	Bhalaswa landfill site
October 2000	Yamuna Yuk-Ride	Yamuna River
November 2000	Water Walk	Harvesting sites at Mehrauli
December 2000	Raising a Stink	Bhalaswa landfill site
December 2000	Water Walk	Harvesting sites at Mehrauli
February 2001	Yamuna Yuk-Ride	Yamuna River
February 2001	Yamuna Yuk-Ride	Yamuna River
February 2001	Water Walk	Harvesting sites at Mehrauli
July 2001	Water Walk	Harvesting sites at Mehrauli
September 2001	Yamuna Yuk-Ride	Yamuna River
September 2001	Water Walk	Harvesting sites at Mehrauli
October 2001	Yamuna Yuk-Ride	Yamuna River
October 2001	Water Walk	Harvesting sites at Mehrauli
December 2001	Water Walk	Harvesting sites at Mehrauli

focus of the workshop was on "Sustainable Cities" and "Replicating the Ecological Footprint Project in your City or Town".

- *October 2001*: A water harvesting workshop was held at Asola Wildlife Sanctuary, for Delhi school teachers in collaboration with Mileage Events and Exhibitions. Teachers were assigned various projects to conduct in school.
- *January 2002*: CSE provided training and material to The Banyan Tree, a Varanasi-based NGO, to conduct workshops on water harvesting for more than 800 students. The workshops were dedicated to Anil Agarwal.
- *February 2002*: A media workshop for children was organised jointly by INTACH (Jaipur) and CSE. Students focused on heritage and environmental problems within the walled city, and produced the special edition, *Not in the pink of health*.



EEU workshop at Jaipur



Events

- **April 2001**—A CSE stall at Matre De school's social development fair displayed CSE products and the EEU unit organised various activities, including games.
- **December 2001**—EEU's stall during St. Stephen's College 'Wildlife Week' focused on issues of global environmental governance, and water and air pollution. A presentation was made to students and teachers.
- **January 2002**—EEU set up a stall at the 'Kids for Tigers' fair held in Army Public School, Dhaula Kuan, Delhi, it was attended by more than 13,000 people. The stall displayed and sold various CSE publications and distributed *Gobar Times*.
- **February 2002**—EEU participated in the science exhibition in Naval Public School, Chanakyapuri, Delhi. Presentations were made on urban rooftop rainwater harvesting.
- **February, 2002**—EEU's stall during the eco-club meet organised by the government's Department of Environment had a participation of over 3000 children.



Gobar Times, a bi-monthly beginners supplement to *Down To Earth*, stimulates the minds of young audiences through news and views on environment and development that are communicated through comic strips, cartoons, quizzes, essay competitions, and other interactive pages. Special editions of GT are produced by groups of student journalists.

Special editions of *Gobar Times*

Student reporters and designers at a workshop held in Kalimpong, Darjeeling district, West Bengal, produced a special edition of *Gobar Times*. Students prepared an issue on solid waste and environment of their town, *Playing Ping Pong with Kalimpong's Environment*, that was released at a special function in the town hall. Students from five Delhi schools produced another GT special edition, *Grow, Growing, Groaning*, that covered the effects of urban consumption.

Another GT special edition on Jaipur (not

in the pink of health) was produced by a group of young reporters and photographers. A workshop was conducted in collaboration with INTACH in Jaipur for 5 schools. Students were trained to report, write, illustrate and produce an issue of *Gobar Times*. The Jaipur special edition of GT was distributed to 10,000 people in Jaipur during the *Virasaat Utsav* festival, organised by INTACH.

g:NET: A newsletter for educators

Four issues of the 16-page g:NET newsletter were published and distributed to members. The g:NET newsletter includes three sections: (a) *News and Views*, which forms an interactive platform for g:NET members; (b) *Educator Pages*, meant for educators that focus on one topical environment issue; and (c) *Student Pages*, which are reproducible worksheets filled with information and activities for the class and home.

Story contest

A story-writing contest was organised by the *Gobar Times* in July 2001. Of the more than 80 entries received, three were awarded cash prizes, while seven were awarded books as consolation prizes. All participants also received certificates.

Fish Fights and Rights, essay writing contest, was organised by the *Gobar Times* in January 2001, and focused on wildlife conservation. Over 30 entries were received in the form of essays advocating conservation, wildlife protection and championing local fisherfolk.

Common interest: Work with other NGOs

CSE conducted workshops on environment in partnership with several NGOs, including Pravah, Srishti, Butterflies, Youth Reach, and Development Alternatives. The network called Beyond Zebra was set up to create an understanding and linkages of the environment with development and education.

Doing the right thing: Feedback

"I would like my city Lucknow to also have its 'Ecological Footprint' as all the major environmental problems are in full bloom here too. I would like to know the possibilities of doing such a project for Lucknow," **Rashmi Gangwar, Lucknow.**

"I think *Gobar Times* is excellent. Reading *Gobar Times* is fun and easy," **Adil, Aligarh, Uttar Pradesh.**

"I wanted to tell you that I love reading *Gobar Times*. I also want you to tell what would happen to mankind and the Earth if there was no gobar," **Tanmay Bhatt, DPS, NOIDA.**

"The seminar on Earth Day has created a tremendous change in my life. I go to various schools in Bangalore and teach school kids about rainwater harvesting, and your posters have been very helpful in showing traditional harvesting systems," **Anuraga Jain, Bangalore.**

"The Ecological Footprint Programme sounds really interesting. Do you have any plans to conduct such a programme in Chennai? The people of Chennai will definitely benefit from it," **Tanya, Chennai.**

"The workshop has certainly left a lasting impressions as well as concern for water in our minds and we would like to know more about water harvesting techniques for our centre," **Priti Sawant, Educational Assistant, BNHS.**

"I have recently started a computer learning centre for kids named as 'Fourth Rs' in which I display *Gobar Times* on the notice board for awareness among kids towards the environment," **Kanhaiya Lal Goyal, Agra.**

"Please conduct a workshop on environment and conservation for our girls to expose them to science and environment," **M J Singh, Principal, Mayo College Girls School.**

ENVIRONMENTAL TRAINING

CSE initiated a programme to train people from all walks of life to understand environmental issues. The first component of the training programme consisted of the Internship Programme.

CSE's Internship Programme

CSE's Internship Programme was launched on June 26, 2000 to build capacities in society to promote environmental understanding and to build environmental communication skills. The programme seeks to enlarge CSE's constituency and serves as a recruiting base for CSE.

The programme was extensively advertised through *Down To Earth*, mailers, posters, and in CSE's website. The programme includes a mix of lectures and on-the-job assignments. The fee for a three-month course for Delhi students is Rs 7,500 and Rs 5,000 for outstation students. CSE provides free accommodation to outstation interns on a first-come first-served basis.

Each intern is attached to a specific programme unit and the choice of assignment is decided on the basis of the applicant's preference and CSE's needs.

First Internship Programme: June 26-September 25, 2000

Of the approximately 50 applications received, 14 were finally short-listed and 11 enrolled for CSE's first internship programme. In the first batch, most applicants were attached to the policy research and advocacy units. Interns were taken on a field trip to Dehra Dun to witness the work of Rural Litigation and



Participants of the second Internship Programme

Environment Kendra. Feedback was obtained from all interns at the close of the session. An interactive session was also organised where interns spoke of their experiences and problems. It was a learning experience for all, including programme coordinators.

Second Internship Programme: September 26- December 25, 2000

CSE's second Internship Programme began on September 26 in which 11 interns were selected from approximately 50 applications received. The programme also attracted candidates from far-flung areas of the Northeast and Kerala. Interns presented their experiences during the three-month period at the end of the programme.

Participants of the Internship Programmes

Name of intern	Details of assignment	Name of intern	Details of assignment
Natural Resources Management		Global Environmental Governance	
Anjali Maheshwari	Dossier on the wild edible plants of India	Mausami Desai	Dossier for the chapter on Indian Whaling Commission
Rachna Verma	An update on communities involved in biodiversity conservation	Chandni Khanduja	Dossier for the chapter on Asian Development Bank
Sanjeev Ranjan	Paper on the traditional systems in Ralegan Siddhi and Sukhomajri	Amitabh Khadori	Dossier for the chapter on Convention on Biodiversity
W Rajesh Singh	Dossier on water harvesting systems in the Himalaya and urban systems in India	Down To Earth	
K Khelchandra Singh	Dossier and article on naturally-produced cotton	R N Aarthi	Stories for the grassroots section of DTE
Priyanka Chandola	Work on conservation of traditional rice of India	Raashi Rao	Article on Tarun Bharat Sangh
Chetna Ramachandra	Grassroots story on the panchayat's initiative in Raipur, Madhya Pradesh	Chandni Khanduja	Reportage for DTE
Green Rating Project		A B Borthakur	Chief ministers survey, 2000
Ajay Kumar Gautam	A preliminary briefing paper for the dyes and dye pigment sectors	Rajib Kr Dash	Inputs for the story on landfills in Delhi
Praveen Prakash	A preliminary briefing paper for the chlor-alkali sectors	Database Unit	
Rajeev Varma	Paper on pollution control and prevention technologies in the chlor-alkali sector	Parul	Contribution to update <i>Water Links</i>
		Environment Education unit	
		Nidhi Ladha	Work on <i>Gobar Times</i> and ecotours
		Udaya Kandlakunta	Dossier on zoos and their role
		Right to Clean Air campaign	
		Moulika Chandra	Dossier on fiscal instruments to control air pollution worldwide



Green treasure trove

ENVIRONMENT RESOURCE UNIT

The Environment Resource Unit is among CSE's most important component. The unit is entrusted with the crucial task of sorting, indexing and organising information filtering from all directions. This information is then made available to the various research and information units.

Books, journals and documents section

The task of acquiring and documenting environmental information continues. The database currently includes 46,007 books, 21,732 documents and 1,46,406 articles and news clippings. The audio-visual database consists of 532 video films, 63,000 slides from India and abroad and 12,950 other slides. DTE archives now consist of 216 issues which are available online. CSE staff is regularly updated with information acquired by CSE. This database is also available on the website.

Indexing of books, documents, and journals continues; books are being indexed with abstracts. The indexing of *Down to Earth* is up to date and ongoing. This is a great boon for CSE staff. Bibliographies are also prepared for select DTE issues. Reference service is provided to in-house and outside users. Books have been reorganised to be more systematic. The classification display chart on the stacks and title marks on the books have made the retrieval of books much easier and user-friendly. Similarly, a classification display chart along with the list of journals facilitates the retrieval of journals.

Newspapers and newsmagazines

Green Files: The *Green Files* continue to be published regularly. The *Global Green File* has been discontinued due to lack of demand and the high cost production, while the *Corporate Environment Inc* is being brought out regularly. CSE also offers user-friendly digitised databases on select items to subscribers.

There are 161 subscribers for *India Green File*; 35 subscribers for *South Asia Green*; and 22 subscribers for *Corporate Environment Inc*.

Daily News Bulletin: The unit has been compiling the *Daily News Bulletin* regularly and publishing it on the Local Area Network (LAN) noticeboard. This is also uploaded on the website regularly. Last year we added value to the facility by making the database searchable using keywords. This facility is being offered on the CSE website.

Dossiers: In addition to the normal work of scanning, keywording, and classifying environmental information in newspapers and producing the *Green Files* and the *Daily Bulletin Board*, the section also produced the following dossiers:

- Developmental projects and their impact on environment (India-1998);
- Bhutan and environment;
- Urban floods in India from April 1999 to July 2000 for Ahmedabad, Bangalore, Kolkata, Chennai, Delhi, Hyderabad, and Mumbai;
- Dioxin;
- Diesel — general information, efforts to stop use of diesel across the world and health effects of diesel use in vehicles, diesel technology, and particulate traps; and,
- Sandalwood smuggling and Veerappan.

Clippings management services: Last year the task of identifying a clippings management system acquired a new urgency. As the number of clippings was increasing manifold, storing of clippings became difficult. After looking at several maintenance systems, the Omnidox system, based on scanning the clippings and then managing the information, was identified as usable. This will help make information available to the staff at their desk.

Databases: Databases on government of India's notifications on environment and related developmental issues and of Parliament questions was built.

Audio-visual section

The work of cataloguing audio-visual (AV) resources, accession, keywording and classification continues. Information about existing and missing resources is being fed into computerised databases. The main database of AV resources has been modified to facilitate circulation (issue/return) of AV resources. Last year, the section undertook the task of scanning cartoons and illustrations and also indexed and keyworded the resources.

The section also signed a contract with Reuters for accessing and using their photographs in CSE publications. CSE now has rights to access their photographs (print quality) online and use them in our publications.

The audio-visual unit has been trying to update the database of best photographers and maintain it subject-wise. Pictures were procured from the Russian Embassy, UNDP, *The Asian Age*, Singapore Embassy, French Embassy, Chinese Embassy, Switzerland High Commission, Bhutan High Commission,



A visitor browsing in the CSE Library

World Bank and Greenpeace, among others.

The audio-visual resources of the Centre are used for film and slide shows, presentations and for CSE's publications. Besides this, the AV unit also provided photographs on issues related to environment and sustainable development to Indian and foreign newspapers, magazines and websites.

Website

A new look: The CSE home page was completely redesigned and revamped for a fresher appeal. Drop-down menus were created for easy navigation. A theme for the website, a leaf from the Centre's logo, connects the entire site and is unique to CSE.

All the campaigns and programme units are described briefly on the homepage. Events and new books can also be advertised on the home page. The new look enables vacancies, conference announcements, and papers to be put online for immediate response.

A new Web presence: A new site devoted to water harvesting was conceived, designed and created. The URL, www.rainwaterharvesting.org, was registered as a domain name. It has been envisaged as a site that will promote water harvesting efforts, publicise and disseminate information on water harvesting methods, be an information source of traditional methods, and showcase modern water harvesters from all over. This site is also a medium for the National Water Harvesting Network to expand its reach and enlarge its activities. The new web site was launched on March 23, 2001 on the occasion of the release of the water-harvesting book in New Delhi.

Instant dissemination: The CSE website provides updated information on all the programme units of the Centre. The latest

issues of *Gobar Times*, *Down To Earth*, press releases, and newsletters are posted regularly. The site also provides information on the campaign activities of CSE.

Library search system: The CSE library Web search file was updated and information about 40,000 books and 1,15,000 articles was uploaded on the search facility of the library on the website.

Database section

Indo-Gangetic Links: The section published a directory of individuals/organisations involved in sustainable development in the Indo-Gangetic plains. The directory has been divided into three sections — Bihar, Uttar Pradesh, and West Bengal, and includes the names of organisations and persons working on issues related to land, water, atmosphere, living resources, health, forests and agents of change in Bihar. At the end of each section a bibliography is appended to provide wider perspective.

WaterLinks-II: After the success of *WaterLinks-I*, a directory of water harvesters in India and overseas, a revised edition, *WaterLinks-II* was published in March 2001. In the month of July the section sent 4,500 questionnaires to all individuals involved in water harvesting to collect information for the edition.

Expert databases: In an effort to provide databases through the CSE website, the section compiled a database of environmental scientists, experts working on issues related to water, river pollution and environmental writers. It continued to provide information about the Centre to nearly 10,000 CSE friends and key contacts.



Doing the right thing: Feedback

"We are working actively on air quality management of cities of Nepal. We would like to know more," *Martin Chautari, Kathmandu, Nepal.*

"Could you assist me in getting a bibliography of the status of the coral reefs in India. I am looking for contact persons, institutes focussed on researching on the reefs, information centres compiling and documenting the status of the reef zones in India, the possible threats, etc," *C P Jayalakshmi, ICIMOD, Nepal.*

"I recently purchased some property in Costa Rica and would like to know where I can purchase neem seeds or seedlings in Costa Rica? I would like to do research work on malaria and Neem would be an excellent tree to plant. Any information on the neem seeds, seedlings, larger property, grants would most certainly be appreciated?" *Ramon N Pescevic, USA.*

"Can you give me any information regarding the Court order banning the diesel auto rickshaws which carry about 8-9 people in New Delhi? I am from Nagpur and they have started operating here," *Awantika Chitnavis, Nagpur.*

"I am a ninth grade student at Redmond Junior High School. I am involved in a community research project on how ground-water pollution is affecting India's development as a people and an economy. Please send me any information you have regarding these issues as soon as possible," *Lauren Huesmann, USA.*

WEBSITE

"I found the site very interesting. It is a treasure of information for aspiring environmental journalists," *Amit Tewari.*

"I was impressed by your website and would like if you post your press releases and upcoming events on our website," *Elizabeth Windchy, Berkeley.*

"Excellent website on environment. I shall be the regular visitor to website," *V M Shanbhag, Netel Chromatographs, Mumbai.*

"I visited your site. I would also like to contribute to the environment protection of this world. Could you give me suggestions?"



Lending a helping hand

Volunteers have been integral to CSE activities since the beginning. With increasing interest in environmental issues, a wide cross-section of civil society has contributed time and expertise in sharing CSE's vision.

Volunteers provide a committed workforce for CSE's environmental awareness activities. Many former CSE volunteers have taken up environment-related careers, while others have been offered full-time opportunities with CSE. Of all volunteers, about 20 percent were recruited directly into CSE during the year 2000-2001, while 16 per cent joined CSE as full time staff in 2001-2002.

CSE exposes volunteers to a wide spectrum of environment and development issues. Volunteers hone their skills in documentation and in various management functions. Others participate in Website design, reportage and copy editing. Some volunteers also participate in various education outreach activities, network and organise meetings, conferences and eco-tours. Those technically qualified volunteer with the CSE laboratory. In 2000-2001, volunteers contributed to an equivalent of 18 per cent of total staff time, or a total of 5094 human days. In 2001-2002, this number increased to an equivalent of 24 per cent of total staff time, or 7155 human days.

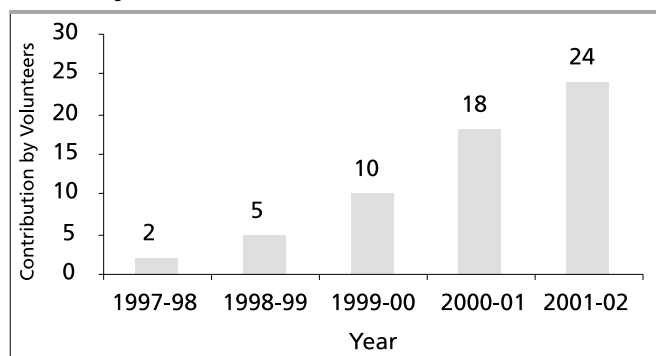
Volunteers are drawn from India and from other parts of the world. Over the years, volunteers from the following institutions and organizations have helped propagate CSE's efforts: Tata Institute of Social Sciences, Mumbai; Institute of Social Welfare and Business Management, Calcutta; Anna University, Chennai; National Academy of Legal Studies and Research, Hyderabad; Harvard University, USA; Cambridge University, England; Durham University, England; Wageningen Agricultural University, The Netherlands; University of Edinburgh, Scotland; London School of Economics, England; Imperial College, England; Potsdam Institute

of Climate Change, Germany; Monash University Australia; Warsaw University, Poland; University of Professional Education in Vlissingen, The Netherlands; and Stanford University, USA.

Spearheading the enlisting drive for volunteers from India and abroad is the special Volunteers Section on the CSE website through which applicants can register online. This section has allowed CSE to tap the talents and enthusiasm of a wide spectrum of people.

Volunteers receive a token honorarium and enjoy a number of facilities including discounts, invitations and certificates. Volunteers are key to building CSE's network of friends. During the year 2001-2002 alone, CSE received registrations from 75 volunteers from different states in India.

Growth of volunteer contribution as percentage of total humandays in CSE



Right to Clean Air Campaign

Conducted surveys on compressed natural gas (CNG), researched alternative fuels, distributed pamphlets on CNG and prepared reports.

Nadia Abraham, Abshiek, Iqbal Ahmad, Sita Anand, Bedoshruti, Deep Chandra, Abhishikta Roy Chaudhary, Meenakshi Das, Uma Dey, Renju George, Pratik Ghosh, Ruchi Mahajan, Gauri Mathur, Kanhaiya Jha, Alok Kumar, Sunetra Lala, Satish Lohani, Shivani Malhotra, Illora Pal, Kumar Rout Manas, Deepa Sharma, Faisal Siddiqui, Pranav Chandan Sinha, P Edward Spiller, M Suresh, I K Vijay

Natural Resource Management

Volunteers researched and prepared reports on biodiversity issues. Water campaign volunteers organised Paani Yatras and helped prepare the water-harvesting manual.

Shahnukha A, Gautam Acharya, Puja

Agarwal, Namita Batra, Madhura Chakraborty, Laxmi Chand, Priyanka Chandola, Sunil Chaudhary, Taarini Chopra, Binayak Das, Debasmita, Daniel Fitzpatric, Dharmarajan K, Abshiek Khandelwal, Shweta Khanna, Vinod Kumar, Majhi Kulpita, Irene Maria, Abhy Mathew, Anushka Meenakshi, Navin Mishra, Prasmi Pativathan, Priya, Suma Ray, Partha Sarthy R, Sanoj Singh, Jaspreet Sondhi, Varun Swamy, Anil Verghese, Neha Verma, Geetika Wadhera, Sunita Wakloo, Farida Wrajari

Green Rating Project

Helped in rating the automobile and the chlor-alkali sectors, analysed data and prepared survey questionnaires.

Swati Agarwal, Indu Bala, Divya Bharadwaj, Shilpa Bhattanagar, Bali Bhoopinder Singh, Ajay Kumar Gautam, Jitendra Gupta, Amit James, Tarun Kumar, Prakash Maheshwari Jyoti, Arvind Pande,

Priyanka, Sameer Qadir, Laxman Ram, Shefali, Rakesh Singh, C Soumya, Malini Varier, Mohini Verma

Global Environment Governance

Helped prepare the annual report on Global Environment Negotiations (GEN II), and researched relevant data.

Laxmi Bhargava, Zoe Chafe, Roy Chaudhary Vaswati, Pollycarp Cliff, Deepak Kumar Dutt, Neha Jain, Kabir Mallik, Reeti Mathur, Zoe Maxwell, Anchal Pandya, Bhawana Prasad, Atanu Raha, Deepti Shastri, Leena Shreshta, Priya Singh, Dietner Sjon Hans, Tanushree Sood, Tristram Stuart, Thiami, Shovana Upadhyay

Science and Environment Reportage

Reported, edited and conducted surveys used in *Down To Earth*.

Ruhail Amin, Prasanna Kumar Behera, Sushil Bhandari, Bhairab Ahir Borthakur, Tarun Chaudha, Shensish Das, Sonia George, Jayachandran, Rachita Jha, Vishnu Konoorayar, Titus Mathew, Madhu S Nair, Pooja Nanda, Shranaya Prasad, Rashi Rao, Mitu Saha, Richa Shukla, Kushal Pal Singh, Jyothi V, Babita Verma, Prabanjan Verma, Vinola Vincent

State of India's Environment Report

Prepared dossiers, collected data for research projects and for the annual report.

Divya Agrawal, Sudeshna Banerjee, Sanjib Chakravarti, Utpal Ghosh, Kanishka Kumar, Rajani M, Sweta Narayan, Deepshikha Nathani, Antonia Paliwal, Divya Seth, Bart van der Mark

Environment Resource Unit

Documented the vast resources of the CSE library, including images and newspaper clippings.

Chandan Sen Gupta, Nazrul Hadi, Vidal Juvenal, Madhu K P, Rekha Kumar, Suresh M, P Madhavan, Sisel Peter, Meenakshi Rautela, Mayur Reddy, Shakeelur Rehman, Pradyot Sarkar, Ravinder Singh, Japna Tulsi, Vinitha V. Sudha Vijayan

Environment Education

Created environment awareness among school children and teachers by participating in Earth Day celebrations and organizing student rallies.

Trisha Chakraborty, Shijo George, Sumit Mehrotra, Rahul Sachdeva, Vivek Sharma, Divyesh Sharma, Vishaka Shroff

Programme Management and Recruitment

Helped launch CSE's internship programme, downloaded resumes and prepared databases.

Reni George, Preeti Harkauli, Prashant K, Krishnan, Linu Kumar, Samrat Mukherjee, Manisha Shah

Board and Funding

Created a database of CSE contacts and compiled information for CSE's annual report.

Sunesh B, Abhas Bharadwaj, S C Bhaumik, Preeti Harkauli, Manu P John, Upinder Kumar Zutshi



Volunteers help in campaigning

Sales and Administration

Dispatched mailers to readers of various CSE publications, helped the administrative unit with audits.

Biswadeep Bhattacharya, Heeraj Kumar, Omanna Kuttan, Col Luthra, Bajinder Singh, Prem Singh, James V

Systems and Website

Provided new content and design ideas for the revamped DTE website.

Ram Bharti Sai, Tapan Bhuyan, James Downing, Rashmi Gupta, Manish Gusain, Ashish Dipu John, Manoj Kumar, Rajiv Ranjan, Kapil Sharma, Silu, Sitansu, Smitha

Health and Environment

Updated databases, collected information for the newsletter and the Health and Environment book.

Renni Imbessi, Gosia Kopica, Nisha Maria Peris, Jennifer O'Riley, Vichitra Salotra, Poonam Shah

River Pollution

Researched and collected data for a book on river pollution.

Sutapa Das, Samreen Farooqui, Marian Hommes, Kadambari Mainkar, Satya Raj, Preeti Verma, Vandana Verma

Pollution Monitoring Lab

Analysed data and conducted tests for various pollutants at CSE's Pollution Monitoring Laboratory.

Rakesh Kumar, Jitendra Nagar, Satya Prakash, Rachna Verma

Chairperson's Office

Helped collect information and carried out research for the project on the Delhi Master Plan.

Priyanka Chandola, Ria Dev, Sunetra Lala, Anshuman Madan, Alok Manchanda, Rohit Negi, Prof Panchpakesan.



Recognition of voluntary efforts



Quote, unquote

Right to Clean Air Campaign

"The government officials were citing biased and selective documents from the USA to argue that even that country was finding it difficult to move to CNG," Anumita Roy Choudhary, coordinator of CSE's Air Pollution Control Unit, on the Delhi government's move to sabotage the Supreme Court orders to switch over all diesel buses to CNG buses in the city.

The Hindu, New Delhi, July 7, 2000

"It was sad that at a time when the United States was getting out of using the MTBE, the Indian government is planning to allow its use by petroleum companies in India," Anil Agarwal, CSE director, on allowing Methyl Tertiary Butyl Ether (MTBE) as an oxygenate in petrol.

The Hindustan Times, New Delhi, August 8, 2000

"The industry is shifting the focus from the assembly lines to the tailpipes, making the consumer pay for manufacturing defects," says Anumita Roy Chowdhury, coordinator of CSE's Air Pollution Control Unit, condemning the automobile industry for emission performance of vehicles.

The Financial Express, New Delhi, December 10, 2000

"It almost amounts to an insult of the court, there is no concern for air quality," said Anil Agarwal, director, Centre for Science and Environment, on imposing tax on CNG.

The Times of India, Mumbai, March 2, 2001

"New Delhi is the most polluted city in the world in terms of suspended particulate matter and other toxins (in the air)," said Chandrachur Ghose, a research associate at the Centre for Science and Environment, New Delhi, on New Delhi's air pollution.

The Financial Times, New Delhi, March 30, 2001

"CNG is the cleanest fuel that removes pollution dramatically and quickly, and its use is possible with both old and new vehicles," says Anil Agarwal, director of Centre for Science and Environment (CSE).

India Today, New Delhi, April 16, 2001

"Clearly, Mr. Ram Naik is desperate to cover his Ministry's tracks and is still hoping to get Euro II diesel classified as clean fuel, and then do nothing extra than what is already available in the market," Dr Anil Agarwal said.

The Hindu, New Delhi, August 10, 2001

"We have to some extent, achieved what we set out to do. Delhi's air is cleaner. People can feel the difference despite adding over 200,000 vehicles in the last year in Delhi," said CSE director, Sunita Narain.

The Hindu, New Delhi, September 29, 2001

"The government here is probably the most incompetent in the world on environmental issues," said Anil Agarwal, an environmentalist who serves on an authority set up to advise the Supreme Court.

International Herald Tribune, October 1, 2001

"Why are we shying away from adopting the best technology in the world when the problem we are facing requires emergency solutions," says Sunita Narain, director, CSE.

The Indian Express, New Delhi, January 2, 2002

People's Water Management Campaign

By linking water harvesting structures and involving the community, CSE's recently launched network (NWHN) has taken the lead in ensuring a culture of equitable and sustainable water distribution.

Jalavaani, Vol 3, No. 3, January-March 2000

"It's time people trained their guns at water harvesting. We don't have as much of a problem of water scarcity than of water management," said Indira Khurana of Centre for Science and Environment, on depleting water resources.

The Hindustan Times, New Delhi, April 17, 2000

"A recent survey by the Centre for Science and Environment has shown that villages that have undertaken rain harvesting are experiencing no water scarcity although they are in the same drought belt."

Business World, May 8, 2000

"Having built hundreds of mega dam schemes primarily for irrigation in the last 53 years, the government should now listen to Gandhians like Anil Agarwal, director of Centre for Science and Environment".

The Statesman, New Delhi, May 22, 2000

"Water harvesting is not about building simple traditional structures to collect rain water. It involves social mobilisation," says CSE director, Anil Agarwal, regarding government's enthusiasm for traditional water harvesting structures.

Economic Times, May 28, 2000

"Delhi should bank on rainwater to quench its thirst as the two other sources of water for city, the river Yamuna and ground water are badly depleted," Anil Agarwal said, with regard to Delhi's water crisis.

The Asian Age, New Delhi, March 24, 2001

"It does not matter how much rain you get, if you don't capture it, you can still be short of water. Community rainwater harvesting is as much important today as it was ever," according to Mr. Anil Agarwal, chairperson of Centre for Science and Environment.

The Financial Express, New Delhi, April 29, 2001
Anil Agarwal, chairperson for the Centre for Science and Environment (CSE), in India, claims that "if rain was captured on the area of the Union Territory of Delhi, there would be enough clean water to meet drinking and cooking needs of every individual in India."

Water & Waste water International, June 2001

"In Copenhagen, one of the developed nations in the world, the consumption was 190 litres per capita per day in 1990. And they are trying to reduce it since then. Whereas here, the target till 2000 was 360 litres per capita per day, says Sunita Narain, Director of Centre for Science and Environment (CSE) at the Third Environment Summit organised by the Confederation of Indian Industry (CII), Delhi.

The Pioneer, New Delhi, October 1, 2001

There is no village in India, argue experts, that cannot meet its basic drinking and cooking water needs through rainwater harvesting. Environmentalist Anil Agarwal in a paper titled *Drought? Try Capturing the Rain* points out that just 100 mm of rainfall falling on a one hectare plot can yield up to one million litres of water.

World Rivers Review, February 2002

River Pollution Unit

"The filth of Yamuna speaks volumes about Delhi as a dirty city," said Mr. Anil Agarwal, CSE.

The Asian Age, New Delhi, June 6, 2001

Environment Education Unit

"Environmental issues are not for either the 'loony green fringe' or the concerned rich. It is everybody's concern, for we all live in and with it," wrote Rustam Vania, coordinator of the Environment Education Unit at the Centre for Science and Environment.

The Indian Express, July 19, 2001

"Gobar (cow dung) is considered a waste product, but there is another side to it – there is wealth in waste," said Rustam Vania, CSE.

The Hindustan Times, Jaipur, February 7, 2002

"The problems in today's society arise as the resourceless segment of the society bears the consequences of the acts of resource-rich segment," said Rustam Vania, CSE.

The Hindustan Times, Jaipur, February 7, 2002

Global Environmental Governance Unit

"Environmental negotiations become 'business transactions' when the interest of the business world overtakes a country's agenda," said CSE's Anju Sharma.

Environmental Change & Project Report,
Issue 6, Summer 2000

Releasing a report of the Delhi-based NGO, Centre for Science and Environment on "Global Negotiations on Environment", the External Affairs Minister, Jaswant Singh said environmental issues should not remain the preserve of the elite.

The Hindu, New Delhi, October 15, 2000

Presenting a thesis on 'A Focus on Entity' Sunita Narain, co-director of India's Centre for Science and Environment, told participants at this event which focussed on equity, that the Kyoto Protocol is inherently flawed.

The Earth Negotiations Bulletin (ENB) on the side,
The Netherlands, November 24, 2000

"What they are saying effectively is — take a little bit of money from us, buy our more efficient technology, but we will take the credit for greenhouse gas reduction", said Sunita Narain of the Centre for Science and Environment, on Indo-US energy pact.

The Asian Age, New Delhi, March 24, 2001

"India faces the danger of becoming the sacrificial lamb if the world offers to placate the Americans and make the Protocol more acceptable to them," said CSE officials.

The Hindu, New Delhi, April 4, 2001

"Considering India's green paper initiated the Kyoto protocol, it is shameful that we have gone this far to please the US," said Sunita Narain, director, Centre for Science and Environment.

The Indian Express, New Delhi, March 13, 2002

Industry and Environment

On the rating of automobile companies, "Not even a single company got a four-leaf rating which indicates a score of 45-60, let alone a five-leaf rating for a score of 60-75," Sunita Narain, Director, Centre for Science and Environment.

Business Standard, New Delhi, October 30, 2001

"GRP will help us to promote greener policies. We will continue to work with government and NGOs like CSE to improve our environmental performance," said Aditya Vij, managing director, General Motors India.

Auto Monitor, November 16, 2001

CSE / DTE FEATURES SERVICE

Cars cause cancer. Scientists can measure the cancer potency levels of the cars we ride. *Down To Earth* presents the findings of the three studies on the subject.

The News Time, New Delhi, May 13, 2000

According to reports in the journal *Down To Earth*, the IPCC-Inter Governmental Panel on Climate Change estimates up to 6 degrees rise in land temperatures by 2100.

The Deccan Herald, New Delhi, January 16, 2001



Events

Right to Clean Air



April 2000: Anumita Roy Chowdhury made a presentation on vehicular pollution at the teachers training programme organised by CSE on the occasion of Earth Day.

October 2000: Anumita Roy Chowdhury made a presentation on environmental challenges to fuel quality at a seminar organised by FICCI.

January 2001: Anumita Roy Chowdhury made the presentation on the action plan for vehicular pollution control at the Indian Institute of Petroleum in Dehradun.

March 2001: Anumita Roy Chowdhury made a presentation on Developing Europe-Asia Cooperation Mechanisms in Environmental Technology and Management Systems organised by Asia Ecobest Roundtable in Lisbon.

May 2001: Anumita Roy Chowdhury made a presentation on *fuel quality* in the seminar organised by the Asian Development Bank.

May 2001: Anumita Roy Chowdhury made a presentation on *Environment and Cancer* at Apollo hospital.

May 2001: Anumita Roychowdhury made a presentation *Air pollution crisis in Delhi* in the seminar organised by the Women Welfare Organisation, Delhi University.

June 2001: Anumita Roychowdhury made a presentation on the *Air pollution scenario in Delhi* in the Lal Bahadur Shastri National Academy of Administration in Mussourie.

People's Water Management



April 2000: Indira Khurana made a presentation on rain water harvesting at the annual convention of the Indian Institute of Architects, Noida.

June 2000: Indira Khurana gave a Presentation on rain water harvesting at the Earth Day Function of UNEP and Australian High Commission.

June 2000: Eklavya Prasad made a presentation at the national conference organised by the Rajasthan State Ground Water Board.

September 2000: Indira Khurana gave a presentation at a workshop Green India, organised by Ministry of Urban Affairs, New Delhi.

February 2001: R K Srinivasan delivered a lecture on urban rainwater harvesting systems at the School of Planning and Architecture.

March 2001: R K Srinivasan spoke on rain water harvesting in cities at a workshop on water management held at Nagaur Fort, Jodhpur.

March, 2001: Indira Khurana and R K Srinivasan spoke on traditions in rainwater harvesting at the Indian Institute of Technology, Delhi.

April 2001: Suresh Babu and R K Srinivasan spoke on water harvesting in urban areas at Pani Roko Abhiyan events held in Indore, Gwalior and Rewa.

June 2001: RK Srinivasan & Suresh Babu spoke on rooftop water harvesting at a function organised by the Indian Airforce, Subroto Park in Delhi.

June 2001: Suresh Babu delivered lectures on rain water harvesting for the Resident Welfare Association, Vasant Vihar and at a workshop organised by Katha for slum teachers.

July 2001: Suresh Babu spoke on rainwater harvesting at a workshop on drinking water problems in hill tops, organised by the Government of Tripura, Agartala.

September 2001: Indira Khurana gave the keynote address at Rainwater International, 2001 at Mannheim, Germany.

September 2001: RK Srinivasan and Suresh Babu spoke to the students of GB Pant Polytechnic and the Sprigdales School in Delhi.

September 2001: Suresh Babu spoke at National level training workshop organised by Education Counsellants under the District Primary Education Programme, Jaipur on water harvesting in urban areas.

October 2001: Suresh Babu spoke at a workshop organised by IIT, Roorkee for engineers from South Asia on urban water harvesting.

November 2001 Suresh Babu spoke to students of Sanskriti School, New Delhi on water harvesting.

November 2001: Indira Khurana and Suresh Babu spoke on community-based rainwater harvesting in India at a national level workshop organised by Tamil Nadu Water Supply and Drainage Board, Chennai.

November, 2001: Eklavya Prasad and Suresh Babu spoke on water harvesting at CSE for the students of Hans Raj College, Delhi University.

December, 2001: Indira Khurana spoke at a Rotary club meeting in New Delhi.

December, 2001: Suresh Babu spoke at the Regional Institute of Technology, Kottayam, on urban water harvesting.

December, 2001: Suresh Babu spoke on rainwater harvesting at GVNMM College, Sonipat.

February, 2002: R K Srinivasan spoke at Kamala Nehru College in New Delhi.

Industry and Environment



April 2000: Archak Pattanaik attended the workshop on liquid and solidwaste management in chemical industries organised by the Department of Chemical Engineering, IIT-Delhi, Indian Institute of Chemical Engineering (Northern Regional Centre), and Indian Chemical Manufacturer's Association.

September 2000: Chandra Bhushan attended the workshop on Ethical Investment and Corporate Disclosure, organised by the Global Partnership Working Group at Hanover, Germany.

June 2001: Chandra Bhushan participated in the meeting on Reporting and Performance, Companies & Stakeholders, A common Agenda, organised by Sustainability Ltd in London, United Kingdom.

December 2001: Chandra Bhushan attended the meeting of Measurement Working Group organised by Global Reporting Initiative *in Paris* as the co-chair of the panel.

February 2002: Chandra Bhushan gave a presentation on CSE's Green Rating Programme at a workshop on Appreciation Programme for Management Representatives/Environmental Managers organised by EQMS Ltd in New Delhi.

March 2002: Monali Zeya made a presentation on the *Experience of Green Rating of Indian Industries* at a workshop organised by Compliance Advisory and International Finance Corporation in Manila, Philippines.

Environment Education



April, 2001: The Environment Education unit was invited to deliver lectures to Delhi University lecturers as a part of their training programme organised by Council of Professional Educational Development.

April, 2001: A lecture on water harvesting was given to children and teachers of the Bharti Vidya Bhawan Eco-club as a part of their annual function.

April, 2001: A talk was given to students of the American School, New Delhi.

July, 2001: A group of 13 teachers from Chicago, USA attended a talk on poverty and environment in CSE.

August, 2001: A talk was given to students of then British School as a part of their community education programme.

August, 2001: Presentations on air pollution were organised for the Cambridge Public School, New Delhi and Salwan Public School, New Delhi.

September, 2001: INTACH-Jaipur organised a workshop for principals on heritage conservation and education. The Environment Education unit was invited to deliver lectures.

September, 2001: Members for the EEU was invited as a part of the panel for a discussion on community participation in development, organised by IFCOD, New Delhi.

February, 2002: A lecture on sustainable development was organised in the National Defence Institute as part of its in-service training programmes.

March, 2002: A presentation was given to a team of people from District Institute of Education and Training (DIET) involved in developing a booklet on water harvesting for middle school students of schools under Delhi Government.

Global environmental governance



May 2000: CSE presented a paper on entitlements in climate change called *Equity and Emissions Trading — Ethical and Theological Dimensions* at a meeting hosted by the World Council of

Churches at St. Andrew's College, Saskatoon, Canada.

June 2000: CSE staff participated in a meeting, Highlighting Southern Priorities for Earth Summit 2002, organised by the Heinrich Boell Foundation and the Stockholm Environment Institute, Brussels, Belgium.

June 30 and July 1, 2000: Anju Sharma presented a paper on the role of the European Union in the climate negotiations at the climate negotiations meet organised by the European Environment Bureau (EEB) and France Nature Environment, Arc-et-Senans, France.

September 2001: CSE attended the meeting in Bangladesh on World Summit on Sustainable Development, organised by the Forum of Environmental Journalists (FEJB).

November 2001: The GEG unit participated in an online debate organised by the *Heinrich Boll Foundation*, on the impact of September 11 on WSSD.

November 2001: GEG Unit participated in the meeting for WSSD held in Phnom Penh, Cambodia.



In print

Right to Clean Air Campaign



April 2000

"Greens term carmakers emission norms faulty", *The Hindustan Times*.

"Green NGO flays industry schedule for Euro Norms", *Business Standard*.

"Diesel craze fuels debate", *Business Line*.

"Euro II diesel: Government is lobbying for transporters", *Indian Express*.

"LPG for automobiles awaits government action", *Financial Express*.

"Environmentalists train gun on diesel vehicles", *The Times of India*.

"Polluting diesel goes popular", *Business and Political Observer*.

CNBC news, on CNG moves.

Star News, on the issue of CNG conversion.

Sawal Jabab, NDTV, on CNG.

Business News, on introduction of 0.05 per cent sulphur fuels in Delhi.

CNBC news, on introduction of 0.05 per cent sulphur fuels in Delhi.

May 2000

"Diesel fumes more carcinogenic", *The Hindustan Times*.

"Cars cause cancer", *Newstime*.

"Environmentalists criticise Delhi for avoiding air pollution ruling", *Edie Weekly Summary*.

"Low benzene may be next buzzword", *The Statesman*.

London Radio, on air pollution.

June 2000

"Is CNG the best fuel for public transport?", *The Times of India*.

"Automobile udyog ka dawa aur jan swasth", *Nav Bharat Times*.

"PUC checks made little difference", *The Statesman*.

"Need to develop air quality index system, says expert", *Indian Express*.

July 2000

"Sarkar chati hi nahi ki dilli mein CNG bus chale", *Jansatta*.

"Government trying to sabotage apex court order on CNG", *United News of India*.

"Nexus between diesel lobby, government alleged", *The Hindu*.

"Government, diesel lobby in sabotage deal", *The Hindustan Times*.

"Have a breathe of poison", *The Pioneer*.

August 2000

"Green group debunk Centre's choice of chemical compounds", *Indian Express*.

"Petrol Additive carcinogenic", *The Hindustan Times*.

"MTBE — World says poison but our government thinks it is safe", *The Economic Times*.

"Proven ground water contamination makes MTBE a controversial lubricant", *The Times of India*.

"DTC has come under criticism from Delhi-based NGO",

Asian Age.

Aaj ki baat, Doordarshan, on CNG conversion.

November 2000

"Citizens fight for clean air", *The Hindu*.

"The shift-rift: The capital cross fire", *The Indian Express*.

Dastak, Zee TV, on air pollution.

All India Radio, on air pollution in Delhi.

December 2000

"Responsibility lies with car makers", *The Indian Express*.

"CSE flays I&M regime", *Business Standard*.

"Euro II pollution certificate under cloud", *The Asian Age*.

"Different routes, same destination", *The Financial Express*.

"Hashmi is misleading Supreme Court on CNG", *The Indian Express*.

"Hashmi's remarks against CNG buses misleading", *The Hindustan Times*.

Audio-visual interviews to CNN's, Q&A with Riz Khan, on air pollution.

February 2001

"CSE slams SIAM announcement", *The Indian Express*.

March 2001

"Cancerous grapevine", *The Pioneer*.

"Environmental issues given a go by", *The Times of India*.

"Tax on CNG stuns environmentalists", *The Indian Express*.

"Budget makes greens see red", *The Hindustan Times*.

"Budget is a clean blow to clean environment", *Asian Age*.

"CSE attacks Sinha budget", *The Indian Express*.

"Budget 'visionless' on clean urban environment", *The Times of India*.

"Card-carrying responsibility", *The Indian Express*.

"A small step in the right direction", *The Financial Express*.

"Shortage of CNG bigger problem than conversions", *The Asian Age*.

"CNG deadline: Hard days ahead for Delhi commuters", *Business Line*.

"Curbing pollution or courting more problems?", *Newstime*.

"Delhi reluctant to switch over to CNG", *Asian Age*.

"CSE attacks budget", *The Times of India*.

"Start worrying when auto makers grin", *Financial Express*.

April 2001

"Who is afraid of Pollution", *Times of India*.

"India's capital enforces use of clean fuel to cut pollution", *Statesman*.

"TERI's claim on sulphur fuel certified", *Statesman*.

"Slow Poisoning", *Statesman*.

"Clean fuel standard for city", *The Hindustan Times*.

"Indian Cities Fighting for Clean Air, from PTI report", *Central Chronicle*.

"Wake up to the Dangers of Pollution", *The Sentinel*.

"All for a whiff of clean air", *Deccan Herald*.

"The Gas war hots up", *India Today*.

June 2001

"DTC will ply airconditioned buses", *Asian Age*.

"CNG vs Diesel", *The Hindu*.

July 2001

- "Ethanol the national brew", *Business Standard*.
- "Over 1,000 people dying every year in Delhi", *The Assam Tribune*.
- "Delhi's air is causing cancer, warn experts", *The Times of India*.
- "A missile against pollution", *Tribune*.
- "IGL suggests hike in CNG price", *The Statesman*.

August 2001

- "Allocation is faulty", *The Times of India*.
- "Oil Ministry not allocating natural gas for transport", *Business Line*.
- "IGL failed to set up stations", *The Hindu*.
- "Experts blame ministry over safety", *Asian Age*.
- "No shortage of CNG in Delhi", *Business Line*.
- "State, Centre are raising bogey of scarcity", *The Express News Service*.
- "Saathi's move shortsighted", *The Hindu*.
- "CNG tax played", *The Times of India*.
- "Gas stations to be restored in 2 weeks", *Indian Express*.
- "NGO trashes myths on green fuel", *Asian Age*.
- "CNG vehicles demand set to rise", *Asian Age*.
- "CNG conversion makes a dent into revenue collection", *The Hindu*.
- "CNG is a green fuel", *Asian Age*.
- "Irrational fuel policy responsible for CNG crisis", *The Herald*.

September 2001

- "Which is the best", *Business World*.
- "The Gas balloon", *Business World*.
- "Deadline for CNG conversion may not be met", *Business Line*.
- "Cleaning up the air", *The Statesman*.
- "Private vehicles to run out of gas", *The Times of India*.
- "Private vehicles entitled for CNG supply", *The Times of India*.
- "Parvez Hashmi throws a bucket of paint on SC face", *Indian Express*.
- "CNG hopes go in smoke once again", *The Times of India*.
- "They fail to see eye to eye", *The Times of India*.
- "New Delhi Journal A prayer for belching buses", *The New York Times*.
- "With 18 days to go its back to basics", *The Times of India*.
- "What the SC orders really mean", *The Times of India*.
- "Experts see plot behind CNG issue", *The Times of India*.
- "Experts see plot behind CNG issue", *The Hindu*.

October 2001

- "Banned diesel buses get reprieve", *International Herald Tribune*.
- "Banned Diesel Buses in Delhi", *New York Times*.
- "410,000 truck exhaust waiting to be plugged", *The Times of India*.
- "Small and dangerous", *The Times of India*.
- "Fuel adulteration largely goes unchecked", *The Times of India*.
- "CNG vs ULSD debate goes on", *The Hindustan Times*.
- "Government flashes red card to TELCO", *Times of India*.
- "CNG mishap brings safety issues", *The Hindu*.
- "Government criticized for ignoring security aspects", *The Statesman*.
- "Hashmi slams Telco over CNG bus fare", *Indian Express*.
- "Government criticised for ignoring security aspect", *The Statesman*.
- "CNG mishap brings safety issue to the forefront", *The Hindu*.
- "Bus accident another CNG probe ordered", *Asian Age*.
- "CNG fire due to callousness", *Asian Age*.
- "Mishaps due to inadequate inspection provisions", *The Statesman*.

- "5 days to deadline: CNG crisis unresolved", *Asian Age*.
- "Exotic tips for a happy CNG journey", *Asian Age*.
- "Telco chalks out safety norms for CNG buses", *The Hindu*.

November 2001

- "Telco's CNG bus is in for overhaul", *The Pioneer*.
- "LPG — Drivers vehicles a safety hazard", *The Hindu*.
- "NGO accuses ministry of discouraging use of clean fuel", *The Statesman*.
- "Centre accused of denying CNG for cars", *The Hindu*.

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- "Complacency over CNG issue: causes concern", *The Hindu*.

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- "Govt's environment data five years old", *The Times of India*.
- "Petrol adulteration rampant", *The Hindustan Times*.
- "BIS norms for fuel may be fixed too", *The Hindustan Times*.

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- "The driving policy", *Frontline*.
- "No let up on CNG for city buses: Supreme Court", *The Times of India*.
- "Budget has made CNG expensive, air dirtier", *Indian Express*.
- "Fuel is anything but pure in Delhi: Study", *Indian Express*.
- "Tanker locking device fails to plug pilferage", *Hindustan Times*.
- "Greens fear budget will fuel car rush on Capital's road", *Tribune*.
- "Sulphur decreases as fuel leaves Mathura refinery", *Indian Express*.
- "Pinch of adulteration can earn bagful of profits", *Indian Express*.
- "Adulteration of fuel is rampant, but hard to check", *The Times of India*.
- "Why can't LPG be the alternative fuel? SC asks govts", *Indian Express*.
- "Fine Centre on CNG; says Salve", *The Times of India*.
- "SC reserves order on CNG deadline", *Tribune*.
- "Ignorance is no bliss", *The Hindustan Times*.
- "Hidden adulteration", *The Times of India*.
- "Detection methods fail to check adulteration in petrol fuel quality", *Asian Age*.
- "CSE demands better fuel quality standards", *The Statesman*.
- "Govt lab failed to check fuel adulteration: CSE", *The Pioneer*.
- "CSE for tighter laws to check fuel adulteration", *The Times of India*.
- "Adulteration of fuel rampant in Capital", *The Hindu*.
- "Lid on fuel adulteration blown off", *Business Line*.
- "Dirty oil charges unfair? IOC, NGO slug it out", *The Times of India*.

People's Water Management

April 2000

- "Check out these dams", *Financial Express*.
- "How water brings back life", *Business and Political Observer*.
- "He stored clouds beneath the soil", *The Pioneer*.
- "How a Rajasthan village revived the Arvari river", *The Central Chronicle*.
- "Whose govt. is it anyway", *The Hindu*.
- "Depleting water resources causing worry", *The Hindustan Times*.
- "Spectre of drought", *Tribune*.
- "An Israel within Tamil Nadu", *Kisan World*.
- "A disaster that was waiting to happen", *The Business Standard*.





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"A disaster that was waiting to happen", *The Sentinel*.
 "Catch the rain", *The Indian Express*.
 "Naidu constitutes panel to find ways to conserve water"
Business and Political Observer.
 "Water, water everywhere", *The Telegraph*.
 "Working with out the state" *The Economic Times*.
 "A drought of the mind, not water", *The Times of India*.
 "AP to spend Rs 4000 Cr to conserve rainwater"
The Pioneer.
 "In a different light", *The Deccan Herald*.
 "A government created calamity", *The Deccan Chronicle*.

May 2000

"Naidu launches water conservation mission", *Deccan Herald*.
 "Rajasthan must go back to water harvesting", *The Hindustan Times*.
 "Drought relief can create rural assets", *The Business Standard*.
 "Khooshboodard Fascism", *Jansatta*.
 "A venal dangerous lie" *Outlook*.
 "Oh what a lovely drought" *Business World*.



"Drought Belief", *India Today*.
 "Jal khuprabandhan ka khamiana"
Dainik Jagran.
 "Rooftops can be utilised to improve
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The Hindustan Times.
 "Jaruri hai jan prabandh", *Rajasthan Patrika*.
 "The manmade drought", *Business World*.
 "Crisis management and the

administration",
The Hindustan Times.

"Dry Cycle", *The Statesman*.
 "Bandhan ho to johar", *Navbharat Times*.
 "Another day spells bodes ill for Kutch village", *The Statesman*.
 "Tarun Bharat sangh ne rashtriya jal niti ko uprasangik banaya",
Rashtriya Sahara.

June 2000

"Drought: A natural disaster rooted in official apathy",
Fortnightly Nation and the World.
 "A job well done", *Business and Political Observer*.
 "Rains welcome but not on roof tops", *The Statesman*.
 "The great urban watering hole" *The Indian Express*.

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"Will we harvest this monsoon", *The Asian Age*.
 "Traditional water saving techniques prove their worth",
Financial Express.

August 2000

"Catch the rain", *The Financial Express*.

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"Water every drop counts", *The Deccan Herald*.
 "Harvest solutions", *The Indian Express*.

December 2000

"Harvest rain water", *The Times of India*.
 "A feather in the cap for Sariska village", *The Hindu*.

January 2001

"Harvest rain water from Western Ghats", *Kisan World*.
 "Rare tribute to a river", *The Hindu*.
 "Catching water where it falls", *Humanscape*.
 "Villagers join hand to work wonders", *The Hindu*.

February 2001

"From rain mandir to Jal mandir", *The Hindu*.

March 2001

Hindi report in *Dainik Bhaskar*, *Nai Dunia*, *Nab Bharat Times*
 "Rainwater harvesting makes desert lush green",
Garha Chronicle.
 "Call to opt for rainwater harvesting", *The Hindustan Times*.
 "Community based rain water harvesting sustainable"
Free Press.
 "Kami pani ki nahi logo ki chetna ki hai", *Dainik Bhaskar*.

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"Das sal mei khatam ho jai ga dharti ka meetha paani", *Rashtriya Sahara*.
 "Harvesting benefits of old technique", *The Pioneer*.
 "National water harvesting conference begins at Neemi",
Deccan Herald.
 "Water harvesting a resounding success in Nimbi", *Hindustan Times*.
 "Kissano Ko sahi samay per paani mil jai to pura desh khushal
 ho jai", *Nai Duniya*.
 "Jal biradari ka teen dini rashtriya sammelan prarambh",
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 "Neemi, an oasis in desert", *Deccan Herald*.
 "Water rich village in arid Rajasthan", *Central Chronicle*.
 "Save water for prosperity and posterity", *Financial Express*.
 "A rain water harvesting tip: Befriend thy neighbour",
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 "Out of the bottle", *The Indian Express*.

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Financial highlights – 2000-2002

Table 1: Balance sheet as at March 31, 2002

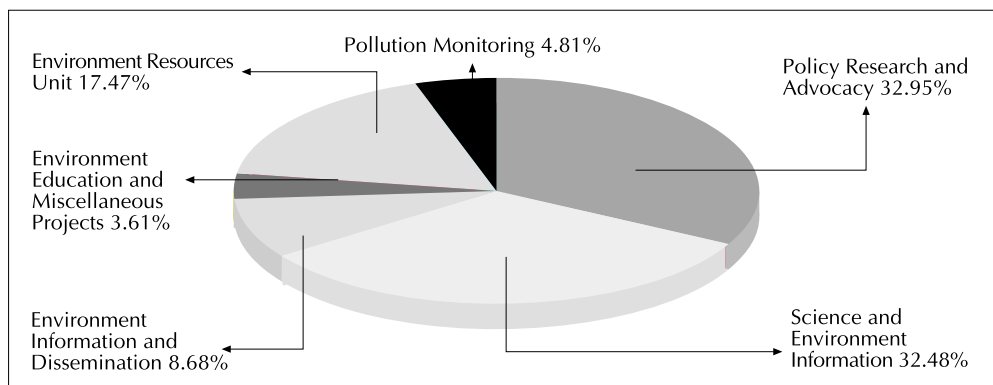
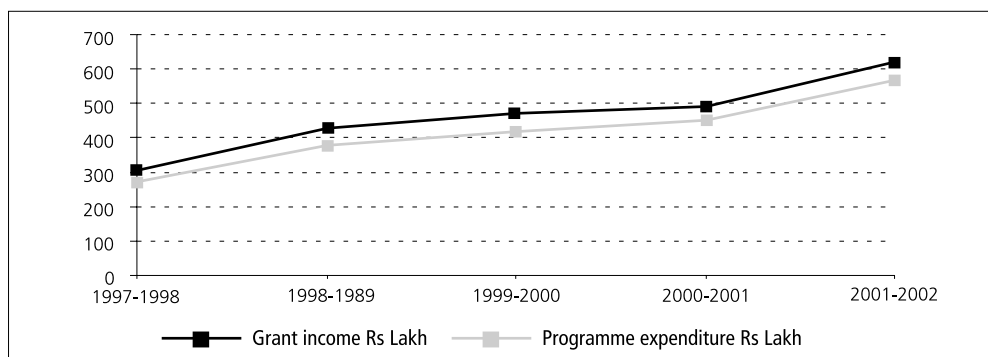
	Rupees (in lakh)	
I. Sources of Funds	31.03.2002	31.03.2001
Capital Fund	598.02	550.72
Corpus Fund	566.43	454.67
Project Fund	223.07	119.41
Reserves	14.08	10.66
Total	1,401.60	1,135.46
II. Application of Funds		
Fixed Assets Net block	293.34	263.75
Investments: Corpus	547.35	435.18
Others	408.51	328.61
Current Assets: Advances /Sundry Debtors	83.70	78.42
Cash and bank balances	71.93	31.96
Less: Current Liabilities and provisions		
Liabilities	3.23	2.46
Total	1,401.60	1,135.46

Table 2: Income and expenditure account for the year ended March 31, 2002

Particulars	Expenditure (Rs in lakhs)	
	31.03.2002	31.03.2001
I. Grants, Sales, Misc. Income		
Project grants	621.65	489.48
Sales	31.86	29.72
Other income	58.35	46.18
Total Receipt	711.86	565.38
II. Expenditure		
Environmental Resource unit	55.68	41.84
Science & Environmental Information	78.89	103.27
Research & Advocacy	105.02	84.27
Environmental Education	11.47	18.73
Green Rating Project	32.95	21.23
Health & Environment (including Laboratory)	25.08	6.12
State of Environment	9.61	16.50
Management Support	109.92	74.86
Program Management & Development	61.30	38.57
Depreciation	45.98	46.34
Total	535.90	451.73
III. Excess of Income over Expenditure	175.96	113.65

Table 3: Break-up of income (other than grant income)

Description	Total 31-3-2002 (Rs lakh)	Total 31-3-2001 (Rs lakh)
Green File subscriptions	1.33	3.76
Sale of publications	26.97	21.26
Sale of audio-visual resources	1.37	0.72
Other miscellaneous services	2.05	1.54
Advertisement income	—	—
Donations	1.16	1.04
Interest income	52.02	38.39
Environmental service	2.58	2.44
Other income	2.73	6.75
Total	90.21	75.90

Graph 1: Programme-wise distribution of expenditure**Graph 2: Grant income and programme expenditure over the last five years****Our donors**

We are grateful to the following donors for supporting the Centre's programmes during 2000–2002:

Corpus/Endowment grants

Sir Ratan Tata Trust, Mumbai
The Ford Foundation, New Delhi

Programme Grants

DanChurch Aid, New Delhi
Deutsche Gesellschaft für Technische Zusammenarbeit, (GTZ) GmbH, Germany
Delegation of the European Commission in India, New Delhi
The Ford Foundation, New Delhi
The John D and Catherine T MacArthur Foundation, Chicago, USA
The Ministry of Environment and Forests, New Delhi
The Rockefeller Foundation, New York, USA
Royal Danish Embassy, New Delhi
United Nations Development Programme, New Delhi
United Nations Children's Fund, New Delhi
Sir Dorabji Tata Trust, Mumbai
Global Water Partnership-The Hague

Institutional Grants

Evangelischer Entwicklungsdienst e.V. E V (EED), Bonn
Swedish International Development Cooperation Agency, New Delhi

Project grants

Department for International Development (DFID), New Delhi
The Ford Foundation, New Delhi
Global Green Grants Fund, Boulder, Colorado, USA
Heinrich Boell Foundation, Lahore, Brussels and Bonn, Germany
Indo-German Social Service Society, New Delhi
ICICI, Mumbai and USAID, New Delhi
Rajiv Gandhi Mission for Watershed Management, Bhopal, Madhya Pradesh
Swedish International Development Cooperation Agency. (SIDA), New Delhi
Canadian International Development Agency (CIDA), New Delhi
Caritas India, New Delhi
Mellemfolkeligt Samvirke, (MS) Denmark

Corpus and endowments received during the year

In 2000-2002, Rs 80 lakh was added to the corpus from CSE's publication income. This was matched by Sir Ratan Tata Trust from whom we received a grant of Rs 75 lakh. We received another Rs 74.08 lakh from the Ford Foundation.



CSE's Executive Board (31.3.2002)

CSE's governing body consists of leading civil society representatives, industry captains, financial experts and academicians.



DR M S SWAMINATHAN – Chairperson

M S Swaminathan is one of India's foremost agricultural scientists and is best known as the scientific leader of the "evergreen revolution movement" in India. His pioneering work in the field of agricultural science and food security has earned him several awards, both national and international, the Padma Shri, the Padma Bhushan, the Padma Vibhushan, the Ramon Magsaysay Award, to name only a few. He has held several distinguished positions, including Director General of the Indian Council of Agricultural Research and of the International Rice Research Institute, and Secretary of the Ministry of Agriculture and Cooperation.



SUNITA NARAIN – Director

Sunita Narain has been with the Centre for Science and Environment for the past 19 years. In her years at the Centre she has worked both to analyse and study the relationship between environment, development and to create public consciousness about the need for sustainable development. She serves on the boards of different organisations and on governmental committees and has spoken at many forums across the world on issues of her concern and expertise.



DR B D DIKSHIT – Treasurer

One of the founder members of CSE, Dr B D Dikshit was formerly the Chairman and Managing Director of Union Bank of India and Deputy Managing Director of State Bank of India. He has served with several other financial institutions both in India and abroad and serves on the Boards of several companies as a nominee of the Government of India.



VIKRAM LAL – Member

Vikram Lal is the former Chairman of the Eicher Group, one of India's major automotive. He is currently associated with the World Wildlife Fund, the Common Cause, the National Council for Applied Economic Research and other groups.



DR KAMLA CHOWDHRY – Member

Dr Kamla Chowdhry, played a key role in establishing and developing the Indian Institute of Management, Ahmedabad, the Institute of Rural Management, Anand, the Society for the Promotion of Wastelands Development and others. She has a deep interest in issues relating to forestry, ecology, environment, women's issues and sustainable development.



B G VERGHESE – Member

B G Verghese is one of the leading journalists in India and has served as the editor of two leading national dailies of India, the Hindustan Times and the Indian Express. He is the recipient of Magsaysay award for journalism in 1975 and was the information Advisor to the Prime Minister, Indira Gandhi, and a Gandhi Peace Foundation Fellow. He has a deep interest in issues of water management and has written several books on the subject.



ELA BHATT – Member

Ela Bhatt is one of India's foremost social workers and is the founder of the Self Employed Womens' Association. She is a recipient of several awards, notable ones being, the Ramon Magasaysay Award, the Padma Shree, the Padma Bhushan and the Right Livelihood Award for 'Changing the Human Environment'. She has served and still serves as a Member of Parliament, the Planning Commission, and others. She has a deep and abiding interest in poverty alleviation and gender issues.



WILLIAM BISSELL – Member

William Bissell has been closely associated with the Centre for Science and Environment for many years. He is the Managing Director of FabIndia, a company that has made a signal contribution in popularising handlooms, nationally and internationally. He is deeply interested in issues of environment and sustainable development. He is the Managing Trustee of the Bhadurajun Artisan Trust, which runs schools in Rajasthan to bring quality education to the artisanal families living in rural areas.



G N GUPTA – Member

Gupta served as the Chairman of the Central Board of Direct Taxes, India's highest tax making body, and also as a Director in the Planning Commission. He currently serves on the Board of several companies and offers consultancy services on issues related to direct taxes. As a member of the Indian Revenue Service, he has held several key positions in the revenue department of the Ministry of Finance.



Dr VIRENDRA KUMAR – Member

Dr Virendra Kumar, former professor of botany at the Zakir Husain College, New Delhi, is an ardent environmentalist and possesses considerable expertise on Himalayan flora and fauna. He has served as advisor to the Planning Commission on hill areas.

Awards

Norman Borlaug Award

Anil Agarwal was presented the *Norman Borlaug Award* by the President of India, K R Narayanan, at a function on January 5, 2001. The award was given for his contribution in creating awareness regarding environmental issues, both nationally and globally. He has graciously shared the honour conferred upon him with his colleagues at CSE and with friends in the environment movement in India and across the world.



SCB Distinguished Service Award

The society for conservation of biology dedicated to creation of systems and capacity to communicate information about scientific knowledge and experience to the policy process announced a posthumous award for Anil Agarwal in recognition of his contribution in advancing the conservation agenda.

Sunita Narain, CSE Director, attended the award function at the University of Kent in Canterbury in July 2002 and received the award on behalf of Anil Agarwal.



First City Person of the Year 2001

Calling him “the messiah of sustainable development”, the New Delhi-based *First City* magazine didn’t have to look far to find its person of the year. The eight-page cover article highlighted Anil Agarwal’s perseverance and determination to promote traditional water harvesting initiatives.

Agarwal believed water is the fundamental resource on which India’s rural economy is built. The article paid homage to Agarwal’s dedication to community self-reliance that took shape in his campaign for people’s management of resources. The article noted Agarwal’s singular trust in *Bharat* to solve India’s problems, and his singular efforts to channel popular anger into constructive direction — toward sustainable development.

Obituary



Dr V Ramalingaswami

With the passing away of Dr V Ramalingaswami, former Chairperson of the Centre on May 28, 2001, CSE has lost a very dear well-wisher. Dr Ramalingaswami, one of the country’s foremost scientists, was the former director of All India Institute of Medical Sciences and the former director-general of the Indian Council of Medical Research. As one of the founder-members of CSE, his involvement with the Centre dates back to its inception. He was a member of the Executive Board of the Centre from 1981 to 1986 and again from 1994 to 2000.

Dr Ramalingaswami steered CSE at a very critical juncture of its history. His association with the Centre lent a tremendous credibility to its programmes. His support to our health and environment programme was particularly significant as CSE was able to access some of the country’s best health experts through his good offices. He invested his role as a chairperson with great commitment and interest.

His passing away is a great blow to us and we will deeply miss his presence and support.



Who's who at CSE (31.3.2002)

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Sunita Narain

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S Sudha
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