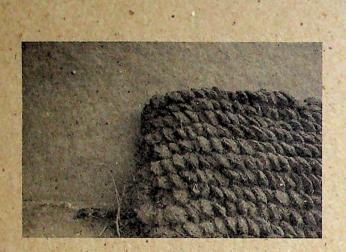


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CENTRE FOR SCIENCE AND ENVIRONMENT

NEW DELHI



Ihe Centre for Science and Environment is a public interest research and advocacy organisation which promotes environmentally-sound and equitous development strategies. The Centre's work over the past 15 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.

MANDAI

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.

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Though the public aware* ness programmes of the Centre are its key strength and current focus of work, it is endeavouring to move into associated areas of work like policy research and advocacy. Learning from the people and from the innovations of the committed has helped the Centre to spread the message regarding 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.



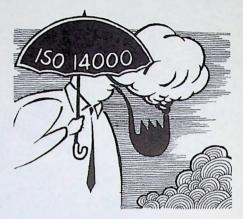
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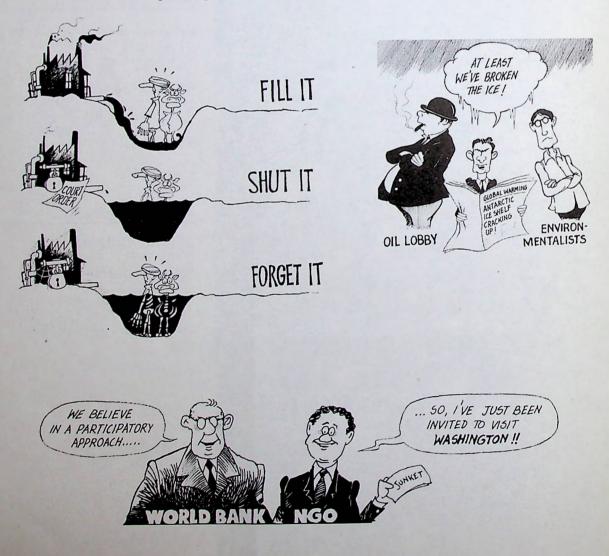
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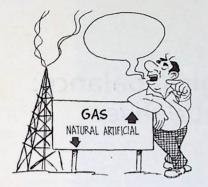
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SC orders closure of 5 polluting units in Rajasthan









^{...} and they say "sorry" !

Keeping alive

G D AGARWAL, CHAIRPERSON

1995-96, the year under report, proved to be almost the year of revelation for many of us. The few months since the end of 1995-96 have only shown that all is not over and we have to weather many more shocks. Shocks, if we still retain some sensitivity to feel them. With each day revealing more and more scandals and the near-complete lack of integrity among even the nation's most trusted and respected personalities - not one or two or a few, but by dozens and scores - what hope could be there from surface-dressings by 'transparency', and 'accountability? And what hope can there be from the 'common-sense' and 'maturity' of the mass of our citizens who do not hesitate to re-elect, and with thumping majorities, persons whom large sections of people, media, police and even courts openly call prima facie charged with serious misconducts? While one was punished for clearing the setting up the Union Carbide plant in the midst of the capital city of Bhopal, or, for that matter, of the pesticide factories in Delhi or Goa, a Member of Parliament and former minister for environment was not tolerated by the political party that is in control of the "nation's" destiny for even a month after criticising the government's hurried clearance of a project. If that is the sort of cost to be paid for frankness, how can we expect transparency?

At my age and stage, it is easy, probably even natural, to be cynical. To me, environment protection efforts by some sincere NGOs (like CSE) can do little more than keep the flame flickering till the storm lasts. And keeping alive implies keeping the hope that the storm will pass out. The case of our dear Anil, who for some of us is the very embodiment of our environmental consciousness, only confirms this. May Almighty God grant victory to him and CSE in their struggles.

PERSPECTIVES

Challenge of ecological balance: Making government deliver

ANIL AGARWAL, DIRECTOR

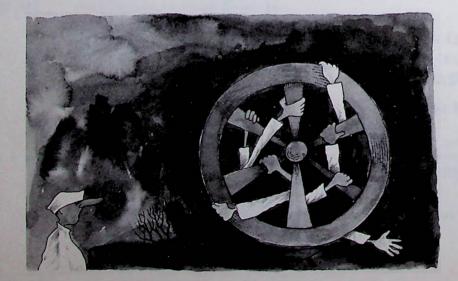
India's electoral polls which concluded in May 1996, constituted the world's biggest demonstration of a nation's commitment to democracy. From the high hills of Arunachal Pradesh to the seashores of Kerala, every five years people have participated in a massive exercise to assert their national priorities and political choices. But in the May exercise, where did the concern for the environment — the very resource base which determines both our daily survival and our future economic growth — stand?

That the environment is badly threatened in India cannot be a matter of doubt. During the 1980s, the country's environmental community emphasised the threat to the rural environment — from deforestation to land degradation — and demanded ameliorative action. Urban environmental problems were then thought to be relatively less important but with economic growth over the years, which accelerated under former Prime Minister P V Narasimha Rao's new policy of economic liberalisation, they too have become stark. Even India's metropolises, which attract large financial investments compared to the rest of the urban sector, are reeling under an extraordinary scale of pollution and resource mismanagement. The environmental problems of smaller towns and cities are not even part of the discourse within the environmental community.

There can also be no doubt that India, a country with enormous poverty and unemployment, cannot do without economic development. But in this tension between environment and development, essentially a tension between bread and jobs in the short-term and hunger and poisons in the long-term, will India simply refuse to forsake the long-term and go ahead with short-term development without any care for maintaining the ecological balance? This is what I call the challenge of the balance.

In some ways, after 50 years of post-Independence economic development, the longterm is already here. Resource degradation and pollution in many parts of India have already reached crisis proportions and, in comparative terms, exhibit levels that are amongst the worst in the world.

To assess how the country's political parties are trying to face this challenge of organising development while maintaining the ecological





balance, a team of researchers from the Centre for Science and Environment travelled across the country during late 1995 and early 1996 to document how the four major political parties of India - Congress-I, Bharatiya Janata Party (BJP). Janata Dal (JD) and the Communist Party of India-Marxist (CPM) - were responding to the environment concern. The first part of this assessment was an analysis of the manifestoes of these parties. The second part was an analysis of the actual actions of each of these parties when they formed governments. In the case of those parties like the BJP and CPM which have not formed or participated in national governments, the researchers visited the states where they rule to assess their actions as politicians in power.

In this massive exercise which took months, numerous senior politicians including Union ministers and chief ministers were interviewed along with lower levels of the political cadres of different political parties and local environmental activists and analysts. The study was published in our fortnightly magazine *Down to Earth* just as people were going to the polls.

The study clearly shows that environmental issues began to find a place in the manifestoes of almost all the important political parties since the 1980s, with different parties taking slightly different positions. Janata Dal has generally embraced a more radical position which emphasises the importance of maintaining a healthy natural resource base for the survival and growth of the poor. The Congress-I, on the other hand, has had a somewhat more conservationist emphasis in its manifestoes. CPM, the party of the poor, has shown the least interest in environment. BJP, on the other hand, has indulged in green rhetoric on several occasions.

But beyond the different shades of the rhetoric, our study shows that there is not much to be happy about. The political action of almost all parties has been generally counter to the requirements of the environmental balance. There is a big gulf between political rhetoric and real action and it runs counter to the

I hope the new government will take us into the 21st century in a way that we can meet its extraordinary challenges. But it is definite that India cannot meet the challenges of the 21st century with 19th century institutions and legal frameworks ---maybe 15th century institutions have something to teach us. The civil society has to play a vital role in nudging the government towards this challenge

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commitments made in the manifesto of almost every party. Once in power, politicians of all shape, form and colour emphasise the importance of development and tend to dismiss environmental concern. They forget that it is environment that has so far been neglected and no balance between environment and development can be achieved unless environment gets emphasised in all economic developmental activities. But to my mind, the key question that environmentally-conscious citizens have to ask themselves is: what actions must the civil society take to address this problem?

It is obvious that environmental issues are not yet electoral issues on which people vote and thus determine the electoral fortunes of political parties. The rural poor are most affected by the degradation of the resource base but they are, unfortunately, not a politically organised force. Even the communist and socialist parties tend to underplay the interests of this group. As air and water pollution become more and more severe and toxic waste production grows and multiplies, they will impinge on the health of the urban middle class, which is indeed a group that is very organised and vocal, but will assert its priorities only if there is sufficient awareness of the health impacts of pollution. This will call for, first, a lot of medical research and then for that information to be made widely available. But, as of the moment, this awareness does not exist and as a result most politicians do not believe that either their rural or their urban constituencies care about the environment. Therefore, they are rarely prepared to go beyond the confines of shallow rhetoric.

Or, as the campaign against the Narmada dam in Gujarat reveals, where a small constituency does show that it cares for its habitat, politicians force through development projects by pitting the development interests of a large constituency against the environmental interests of a minority. At least at the national level, the dam-affected tribals of Gujarat could have generated considerable political pressure on the Central and state governments if the country's entire tribal political leadership would have protested against the dam. But these leaders who are torn between environment and development have not been able to clarify in their own minds and assert to the rest of the society where the balance lies between the two.

It is almost certain that none of the above will change with the forthcoming election. But under the combined impact of population growth, urbanisation and enhanced economic activity, the environment will continue to deteriorate at an accelerated pace. This poses a serious challenge to those citizens and groups in the civil society who care for the environment. In fact, it poses their biggest and most critical challenge, more than all their fights against specific development projects. It is vital that they get together and find a strategy to green the electoral process or develop a strategy that can effectively force any government that comes to power - at the Centre or in the states - to undertake good environmental governance. Within the environmental community in India, the credibility of almost all political parties to implement green measures is rock bottom. But neither cynicism nor piecemeal efforts will help to green the political system. If a coherent strategy can be developed to green the electoral process or to enforce good environmental governance and combined action undertaken, then at least the next elections may turn out to be more fruitful from a green perspective than this one and the Indian political system would enter the next millennium with a better mandate.

What will constitute better environmental governance? Among the obvious issues are:

ACCOUNTABILITY OF GOVERNMENT INSTITUTIONS:

The major challenges here are: what does the civil society do to make these institutions more accountable? And, what governmental procedures and actions does the civil society insist upon that would internally make state institutions more accountable? In other words, for some time, groups in civil society probably need to focus not just on the substantive issues like air and water pollution but also on institutional issues like what are the reasons for the pollution control boards to be so ineffective?

TRANSPARENCY:

Transparency and accountability tend to go together. Bureaucracies would hate to do this but why can't each one of them be forced to produce a self-assessment report in terms of the status of the problem they are trying to manage, what are their goals, what did they achieve or not achieve during the year and what were the obstacles in their work? I don't know of any bureaucracy across the world that does such a thing but it would probably be a great innovation for state bureaucratic systems to produce an annual public document of this kind.

They definitely must be asked to produce a report on the state of the natural resource they are trying to manage — air, water, forests, etc, whatever, so that groups in the civil society can assess for themselves whether the country is making progress or not. Many environment ministries across the world produce an annual environment status report in which latest data is provided by the government on the state of the environment to the public. Many governments, unlike ours, make environmental impact assessments of major projects available to the public.

PUBLIC PARTICIPATION:

How much decision-making should be left to bureaucracies? Bureaucrats have their own personal agendas and to a great extent subserve political agendas. If a balance between environment and development has to be achieved, then people's participation has to be brought about. But what procedures are necessary to ensure that this happens more and more in decision-making systems of the government? In fact, the biggest change in environmental governance has come about because the courts have become more open to public participation in questioning projects, policies and procedures. This has been the most redeeming feature of the 1990s. But what is needed to ensure increasing public participation in decision-making within the executive system?

DECENTRALISATION AND INSTITUTIONAL DEVELOPMENT:

This is an issue that environmental NGOs have repeatedly raised. But very little has happened in this area. It is true that panchayati raj institutions are slowly being created and strengthened in rural areas. But the constitutional amendment to revive and strengthen city governments has just not gone anywhere. India today faces an institutional crisis. Over the last 20 years we have totally moved away from our roots and traditions and centralised natural resource management under state bureaucracies, which are totally incapable of managing, for example, the 500,000 tanks that exist across the country in a cost-effective manner and they are not even interested in doing so. It is obvious that if there is nobody to look after these resources or have disinterested caretakers, these will deteriorate. And yet India was once a country with a million institutions. Every eri (tank) in Tamil Nadu had a people's institution to look after them. That is why even today in Ramanathapuram district, they stretch across the landscape in Indian space satellite pictures. But who is there other than centralised bureaucracies to look after each of our tanks, each of our rivers, each of our forests, each of our national parks, each of our village ecosystems, and each of our urban atmospheres? It is the resolution of this institutional crisis that will most help us to bring about the balance between environment and development.

None of the above will happen without ideas and constant pressure to learn and change. I hope the new government will take us into the 21st century in a way that we can meet its extraordinary challenges. But it is definite that India cannot meet the challenges of the 21st century with 19th century institutions and legal frameworks — maybe 15th century institutions have something to teach us. The civil society has to play a vital role in nudging the government towards this challenge.

It is said that the British invented bureaucracy. Indians have definitely perfected it and persevered with it endlessly. Lets hope we change that soon. The political action of almost all parties has been generally counter to the requirements of the environmental balance. There is a big gulf between political rhetoric and real action and it runs counter to the commitments made in the manifesto of almost every party



OVERVIEW

A campaign called change

The environmental crisis is immense and growing. Hence, it became imperative for the Centre to find new ways of bringing about change. Experience has reinforced its convictions that detailed research is the key to change The challenges facing an institution compel it to constantly innovate and change. Over the years, with every new challenge, the Centre for Science and Environment (CSE) has also been evolving. Every time we think, we have established a programme and found a way to be more effective. It is time to move on. The environmental crisis is immense and growing. Therefore, it becomes imperative to find new ways of bringing about change.

A few years ago, we felt the need to effectively communicate our ideas on environment. We wanted to continue our research on environmental issues, but we also wanted a medium through which our research could reach out to people across the country and the world. We, therefore, worked with the Society for Environmental Communications, to launch a fortnightly newsmagazine, Down To Earth. Into its fifth year of publication, since March 1996, the magazine is now on the newsstands across the country, thereby, reaching beyond the community of the environmentally conscious. In addition, a weekly feature service, sent to newspapers across the country, has also been established. This feature service has been widely accepted and with all mainstream newspapers giving coverage to our research, CSE has found an effective way to spread environmental awareness.

In 1995, we set ourselves the aim of strengthening our research and advocacy capabilities. We found that writing and researching for a periodical helped us to organise our research into a timeframe. Research, by its very nature, is a timeless activity. Our past experience - in fact, a key reason why we moved towards writing for a regular periodical - was that research had no deadline. The best of schedules could be modified as there was always something more that needed to be done, and most reports remained as manuscripts and drafts. Therefore, we wanted to organise work which was driven by individuals and by necessity, and was organised in a way that the product was determined and the output assured.

With this achieved, the challenge was to move towards more detailed research and to get involved in campaigns. We, therefore, decided to work towards policy research, on the one hand, and specific campaigns, on the other. This would build a team of specialist writers and analysts who would be rigorous in their understanding of the subject. Also, this would enable researchers to undertake specific campaigns to push for change and their research would find an outreach through publications of the Centre. Communication and research would become a tool for change. Over the years, CSE has been actively involved in both research and advocacy. But its work, though effective, has been ad hoc. Therefore, instead of writers focussing only on environmental news stories, we planned to strengthen and increase the number of teams which would undertake national and international campaigns, policy studies and indepth investigations.

In 1995, the Centre's work on research and campaigns has grown. We have established a new unit called the Environmental Research and Advocacy Cell to organise research and campaigns. The Cell for Global Environmental Governance continues to research and advocate changes on international issues. The element which is fundamental to each campaign - and indeed its most powerful underpinning - is the need for change in the governance of natural resources. People have to be involved, in terms of their control in the management of our environment, and not by mere participation. The battle before us is long and tough. At a recent press conference in Delhi, in which the Centre presented its stand on the management of protected areas for local communities and lambasted the current strategy for wildlife management, journalists agreed with CSE's contention but added that changing the bureaucracy would take a longer time. The Centre believes, though the timeframe is long and the struggle difficult, change is imperative.

CSE now has researchers and campaigners working on global governance issues like climate change, biodiversity, ozone depletion and the Montreal Protocol, and trade and environment issues. On the national front, its researchers work on forests, protected area management and now, the question of water and policies on it.

When the Ministry of Environment and Forests announced its policy to give 2.5 million hectares of so-called degraded forest land to the industry for afforestation, it did not surprise us. For the last 10 years, every minister and official keen on the work of planting trees has had visions of transforming vast barren lands by "corporatising the control of forests". It is the best, quick-fix solution being aggressively pushed by the paper and pulp industry and so far, it had been turned down because of widespread criticism. This time, however, the proposal had gone very far and an industryfavourable decision was expected.

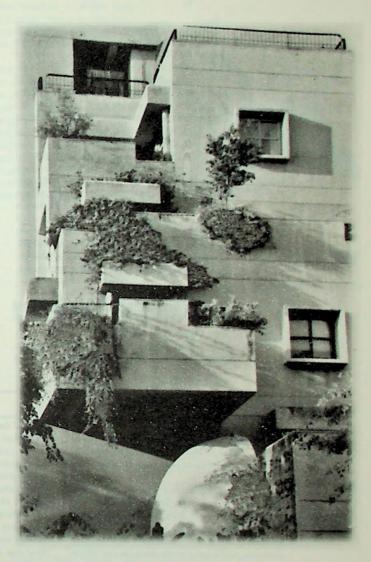
The issue of handing over land to the industry has gripped our attention many times in the

past. We have worked to lobby against it at the government level, published articles about it and even gone to court. But this time, the most exciting, and to our minds, the most important contribution CSE made was the effort it had put in to do research work on the issue. We knew that the industry was crying hoarse about the shortage of raw material, but we also knew through our investigations how, on the one hand, the industry had sabotaged the efforts of farmers to grow trees because it was not prepared to pay the price, and on the other hand, the industry faced with the crisis - had found innovative ways of involving farmers in planting its raw material. CSE researchers travelled to remote areas across the country to discover the trials and tribulations of the Indian paper industry in its bid to grow trees. There was no doubt that industry was finding new approaches to involve local communities to grow its timber. But it was also clear that this was a difficult route. A far easier and cheaper solution would be to get huge amounts of land at a fabulous subsidy and then to use public funds to grow trees in captivity. In the subsequent campaign on this issue, the effort was vital to stall the move.

The campaign reinforced our convictions that detailed research was the key to change. We also undertook indepth studies to understand the problem of vehicular air pollution in our cities. The study has been an cyc-opener, even for environmental veterans like us. The problem is horrific and no amount of 'checking-the-backside-of-our-cars' approach of the government is going to improve the situation. The most frightening fact is that there is very little information available on the health impact of all the poisons we are inhaling. This is perhaps the reason why nobody takes the issue seriously. We hope to sustain our work in this area in the coming year.

We also undertook an interesting study on agencies involved with industrial investment in India and the private share market. We were keen to understand the current practices of these agencies with respect to environment, and the measures they could possibly take. To help us make inroads into these financial institutions, Raja Chelliah, senior adviser to the finance minister, wrote introductory letters to chairpersons of all state industrial investment companies. This access was tremendously helpful and interviews revealed that while investment firms provided more money to private companies than the share market, these state-run companies hardly invest on the basis of the environmental performance of the companies. The Centre is considering ways of bringing change, including a green rating system, which would put industries under public scrutiny.

In the year ahead, we plan to extend our work on research and advocacy further. We would also like to strengthen our outreach by moving into films and television. We hope this strategy will help us make a difference to the environmental crisis which involves us all.



Global environmental governance

Equity in a world of opinion

Hectic activities in terms of seminars, workshops, meetings and conventions marked the year for the Cell for Global Environmental Governance of CSE. These activities included policy research on the emerging dimension of global environmental governance and organising research and campaigns to push the case of equity and fairness in international environmental treaties by making links with Northern and Southern NGOs and other groups in civil society.

The Cell tries to maintain up-to-date information on global environmental issues by monitoring ongoing debates, negotiations and activities; informs Indian, Southern and Northern NGOs by disseminating reports and position papers; undertakes advocacy by strategically feeding back responses from our constituency to the relevant international institutions; and develops database of individuals and institutions related to issues of global environmental governance.

CLIMATE CHANGE

Fight for a cool world

At the first Conference of the Parties to the Framework Convention on Climate Change, held in Berlin in March 1995, participants recognised that the present commitments to reduce greenhouse gas emissions to 1990 levels by 2000 AD, are inadequate to meet the threat of climate change, and sought to negotiate a further legal agreement with the goal of setting "quantified limitation and reduction objectives" for developed countries.

A striking feature at the political level was the general resistance by the US, Canada, Australia, and the oil exporting countries, to discuss the issue of targets and time-tables as advocated by developing countries and supported by the European Union. On the other hand, there was a concerted attempt by the industralised countries to place the issue of developing countries' commitments and future emission levels at the centre of the public agenda. Environmentalist groups like the Greenpeace International and the Climate Action Network, of which the CSE is an active member, were not satisfied with the outcome as they strongly advocated a 20 per cent cut in greenhouse gas emissions by 2005 AD a proposal made by the Association of Small Island States (AOSIS) at the February 1995 meeting in New York. Besides the issue of adequacy of commitments, negotiators at the Berlin

CLIMATE MODELLING

In an effort to assess the scientific endeavour relating to global climate change in South Asian region, CSE organised a South Asian regional workshop on science and climate change in November 1995.

The workshop served as a forum where scientists, government officials, journalists and NGO representatives discussed issues as varied as international climate programmes, climate modelling, agriculture and food security, sealevel rise, problems of methodologies and inventories. The workshop helped the participants to gain knowledge of the scope for capacity-building and managing the interface between research and public policy in the context of climate change.

According to a CSE working paper on the science of global warming and climate change, the impact of future climate change may be felt more severely in developing countries of South Asia, whose economies are largely dependent on agriculture, and are already under pressure due to population increase and associated demands for energy, fresh water and food.

Presentations and discussions centred

around the necessity of gathering reliable meteorological data (rainfall and temperature variations over time and space), preparation of inventories or databases of greenhouse gases (GHG) from various sources and their effect on temperature, and running regional climate models that have been designed keeping in mind the climate requirements of the region so that they can realistically predict climate change and its associated effects, such as sealevel rise. It was felt that in the field of climate modelling and GHG inventories, the region bad a long way to go.

Scientists agreed that climate modelling in the South Asian region is bandicapped by the lack of computing power to make longterm projections. Experts attending the workshop agreed that research in climate change at the national or regional level should be initiated within the framework of a coordinated South Asian climate programme. Lack of communication between climate researchers working in the South Asian region and those in the West, is a major lacuna that needs to be corrected.

QUERIES ON CLIMATE CHANGE

Concerned over the problem of climate change, Members of Parliament took up the issue in Parliament. The MPs (Umareddy Venkateshwarlu, Lal Jan Basha and Sanat Kumar Mandal) raised questions on the findings of N H Ravindranath of the Indian Institute of Science, Bangalore, presented at the CSE workshop. Forests are generally considered significant emitters of carbon, but they also absorb a lot of carbon dioxide. Experts were of the opinion that the emissions were in excess of the uptake, but a study by Ravindranath and his colleagues revealed that in India, the emissions are almost equal to the uptake.

Surendra Lal Pathak, MP, asked the then Minister of Environment and Forests, Rajesb Pilot, to state if the government has conducted any study regarding climatic change in the South Asian region and whether it has formulated an action plan to meet any contingency resulting from climatic change. The MPs also sought an explanation on the Indo-German research on climate modelling and on the concept of environmental rent put forward by India, whereby industrialised countries will have to pay developing countries for excess emissions. This was strongly advocated by CSE.

In the wake of the CSE-organised workshop, the Environment Ministry requested it to provide pertinent information available on the subject.

Climate Summit were faced with the task of deciding criteria for Joint Implementation. Major developing countries such as India and China made a volte-face by agreeing to participate voluntarily in a pilot phase of Joint Implementation for "activities to be implemented jointly". While the project would help to lower global greenhouse gas emissions, the investing country would not be able to claim any credit for reduced emissions during the pilot phase.

CSE, which has been pushing for equity on the world stage, participated as an NGO observer at the Berlin Summit and expressed its concern to the Indian government and the people at opening the door to the principle of Joint Implementation. The Centre is of the view that a potential bargaining tool for India to challenge the inequitable sharing of global common natural resources, like the atmosphere and the occans, is slipping out of its hand.

In Berlin, Ravi Sharma of CSE advocated the need to place the issue of equity at the centre of climate negotiations. CSE lobbied Indian officials and advocated an aggressive support for AOSIS proposal arguing that global climate change would not just affect island nations, but India and China as well because they have extensive coastal areas and islands where several millions live.

Finally, India's then Environment Minister, Kamal Nath, announced the country's support for AOSIS proposal, closing the ranks between developing countries, except a few oil producing nations.

CSE, along with the Indian Social Institute (ISI), facilitated a training programme on global warming in February 1996, with the aim to impart knowledge on the subject of global warming and climate change and also to bring different social sectors into the climate change debate. The programme was attended by NGO representatives from Jammu and Kashmir, Punjab, Gujarat, and Orissa. At the workshop, CSE presented a 40-page working paper on the science of climate change.



Divided stand

CSE was invited by the Asian NGOs to represent them at the Global Environment Facility (GEF) Council meeting, held in July 1995. Prior to the Council meeting, CSE had prepared a detailed response to the GEF paper on its plan to implement its mandate on climate change, biodiversity, conservation, international waters and ozone layer. CSE had distributed this paper to the NGOs involved in GEF work, and also presented it at the NGO consultation prior to the Council meeting, where it was nominated as the spokesperson on climate change issues. The Centre made a formal presentation at the GEF Council and was supported by a couple of governments, including the Indian government.

This was followed by a letter to several South Asian NGOs, highlighting the Council's discussions and the position taken by CSE. GEF has been provided \$2 billion for a period of three years to fund projects in the developing countries on the above four issues. Three of the four issues have a legal international agreement (convention) signed by most of the countries and CSE has been working on these agreements.

The Centre stated its position saying that GEF's Operational Strategy paper actually goes against the spirit of the convention, which places the liability of improving global environment squarely on the industrialised countries. Instead, it pushes the developing countries to The Centre is of the view that a potential bargaining tool for India to challenge the inequitable sharing of global common natural resources, like the atmosphere and the oceans, is slipping out of its hand





subsidise the North's responsibility.

The GEF paper mentions that funding will be based on the projects' contribution to the global environment, after subtracting the benefits accrued to the host country's environment. This concept is not consistent with the Convention on Biodiversity (CBD), especially the financial mechanism. Indeed, the CBD states that funding under this mechanism should help developing countries implement measures fulfilling its obligations and to benefit from its provisions.

The issue is further complicated by the introduction of the concepts of global importance, particularly when referring to protected areas. Indeed, the conservation of areas that are not of "global importance" can still generate global benefits, thereby meeting GEF's requirements.

GEF has even brought in projects to increase the sink for greenhouse gases (GHGs) by including carbon sequestration projects in the seven priority programmes, although they are not in the category of mitigation measures, GEF's main activity in climate change. The clause that claims that such projects will not hann the soil is a marginal issue; the real concern is that such projects consistently undervalue our resources.

Above all, GEF Operational Strategy has fixed a ceiling of US \$3.30 per tonne of carbon as the maximum unit abatement cost (incremental cost per unit of GHG sequestered or not emitted) to start the funding. It is arbitrary compared to, for example, the European Commission's recommendation of a carbon tax of US \$5 per barrel of oil equivalent (approximately US \$14.5 per tonne of carbon dioxide).

In search for equity, it should be possible to examine this arbitrary figure by studying the carbon budget of a rural and an urban community. It would also be advisable, as a long-term policy measure, to look for alternative ways of incorporating natural resource accounting into the national accounting system.

The GEF strategy is biased in its approach. It assumes that fossil fuel technology is a stop-gap arrangement and not part of a sustainable energy future for developing countries.

The attempt to phase out fossil fuels has to come from the industrialised countries, but GEF is bent upon starting with developing countries. It refuses to fund advanced Clean Fossil Fuel Technology: the only innovative aspect of GEF's climate change projects is the first-time application of promising technologies and the attempt at commercial application of previously nonviable technologies in the capital-intensive energy sector.

The main area where developing countries would require latest technology is energy efficiency; GEF's weak strategy stresses difficult conditions like application of energy conservation techniques that are uneconomic and projects which can be replicated. This is a distortion of the priorities of developing countries.

FORESTS

Contentious as usual

The issue of who will and how the world's forests will be governed is hotting up again. The Commission on Sustainable Development (CSD) has set up the Ad Hoc Intergovernmental Panel on Forests (IPF) to recommend what should be done by the global community to better manage the world's forests. At the Earth Summit (1992) in Rio, CSE had successfully opposed the proposal for a global forestry convention.

NGO PLAZA

The idea behind the International NGO Forum meet in November 1995, was to provide continued NGO space for increased cooperation, also called the 'NGO Plaza'. The agenda to identify areas where joint action is possible was seconded by CSE as it believes that NGO networks can be very effective, specially if they cooperate and work together towards the broad goals of sustainable development.

The forum will be assisted by an interim/international facilitating group, comprising three to five members each from Africa, Asia, Europe, Latin America, North America and the Caribbean. Ravi Sharma of CSE is one of the representatives for the Asian region. He is also a member of the international facilitating group, which will be entrusted the task of identifying resource needs of the forum.

Areas were identified around which information systems are being developed. It was also recognised that various NGO networks have a lot of experiences, resources, etc. which could be shared. Five task groups were also formed to steer certain types of capacity-building exercises. The participants proposed the creation of a thinktank which would give direction to the NGO network globally.

Despite the temporary victory at Rio, the battle was still to begin. In March 1995, CSE was invited by the Director General of the UN Food and Agriculture Organisation (FAO) to a special meeting of NGOs on forests and forest people. This meeting preceded the first meeting even of forest ministers convened by FAO. Not surprisingly, the unsaid agenda was to give FAO a leadership role in global forest management. Worse still, FAO was reviving the idea of a forest convention. A draft statement of the forest ministers was prepared even before their arrival, and embarrassingly leaked out to the NGOs. It said that the ministers resolved to work on the "need, or otherwise, to proceed towards a legally binding instrument on forests."

The recommendations of this meeting would go to CSD and could well have been accepted. After massive lobbying, FAO backed out and the statement was watered down. CSD then decided to set up the Ad Hoc IPF. At the first meeting of IPF, the Swiss and Peruvian governments teamed up to set up an expert group to review the existing institutions and instruments on forests. The group consisted of government representatives from North America, Latin America, Europe, Africa and Asia and three NGO representatives - two from the South and one from the North. CSE's deputy dírector, Sunita Narain, was one of the representatives elected from the South through a worldwide election process.

Clearly, in this age of aid cuts, each multilateral agency is desperate for survival, and wants to bag the mandate to protect and manage Southern forests.

The main issue, to our mind, which needs to be resolved is not which institution but what work does it do. Forests are local resources, best managed by local communities. Therefore, what will be the role of supranational governance in forests? This is a chance to redefine the role of multilateral organisations in a crucial area of forests.

Another parallel issue is also gaining momentum — the development of a set of criteria and indicators (C&I) for sustainable management of forests. The idea is to use the C&I for labelling which woods are eco-friendly and vice-versa. There are reasons for serious concern. Firstly, the single-most important criterion and indicator for sustainable forest management has to be the direct control of local people in forest management. A study of the current C&I shows that in most cases people are not even mentioned, and if they are, then at best their participation is sought, not guaranteed.

Besides, since forests are local resources, the C&I have to be first developed by local communities and then harmonised into global standards. The extraordinary diversity of forest types and use by the forest people, and in particular, the diversity of life, styles, cannot be



coded into a national or global C&I. This can only be done for the single-use, humanmade, monoculture forests of the North, which till today control over 80 per cent of the trade in forest products.

It is our strong belief that the C&I process is controlled by the pulp and timber lobby of the temperate North. The real worry for the South lies in this process becoming the logical input into a legal framework, which then governs its adherence. The forest convention then would not be far away.

BIODIVERSITY

Sharing benefits

The new year heralds new challenges for nations that are party to the Convention on Biological Diversity, especially since last year witnessed the Second Conference of Parties (COP2), which marked the beginning of the implementation stage of the Convention. It is time for the NGOs active in this field to play a different role in identifying the relevant issues, and bringing them to a flash point.

The Centre focussed its attention on the issue of equitable benefit-sharing to stress the overwhelming need of setting up a viable mechanism that will monitor the outflow of genetic resources from the South. The Centre is convinced that the South should concentrate on garnering support from the world community on what concerns its people most --- setting a price for its natural resources, so that they are not available free for research institutes or multinationals in the North. It feels that while rights of the indigenous communities were deliberated upon at considerable length during the Jakarta forum, there has been no significant headway towards adopting concrete measures to mete out justice to the people.

CSE, in an attempt to take the issue beyond interminable and apparently fruitless sessions

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13

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of debates and dialogues, has organised an international workshop on benefit-sharing with indigenous people. A special advisory committee has been set up, comprising key persons like Anil K Gupta of the Indian Institute of Management, Madhav Gadgil of the Centre for Ecological Studies, who is also the Indian representative at the Subsidiary Body of Scientific, Technical and Technological Advice, Darshan Shankar of Foundation of Revitalisation of Local Health Traditions, R | Daniels of M S Swaminathan Research Foundation and P Pushpangadan of Tropical Botanical Garden and Research Institute. The Centre proposes to approach the governments and policy-makers at the national and international level, urging them to set guidelines which will help the local communities to reap profits from what is rightfully theirs.

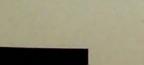
CSE has also taken a few other significant steps in this field. It was one of the prime movers in the process of setting up the International Liaison Group on the Biodiversity Convention (ILG), a networking system comprising nine interim regional liaisons including NGOs from developing and developed countries. The main endeavour of this group is to disseminate information and to maintain a steady flow of communication amongst organisations working in the same field. It comes up with regular circulars that provide NGOs with relevant information required to prepare themselves for COPs and other meetings related to the Convention. Besides this, the Centre is also co-sponsoring the Biodiversity Bulletin, a publication which seeks to provide a platform to express divergent viewpoints, and recommendations on future action to promote conservation of biodiversity. CSE hopes to voice its ideas on the benefit-sharing issue through this forum and identify its allies across the world.

PRICELESS NEEM

Neem, azadirachta indica, and the products derived from it have traditionally been widely used for centuries, especially in India, for medicinal purposes and pest-control. Recognising its vast potential, Western science and industry has embarked on a flurry of patenting neem's much-valued derivatives — 36 new patents in 10 years while India, the plant's native land, has been reduced to playing the role of a backbencher.

In an increasingly inter-dependent world where we all benefit from the knowledge of others, it would probably be unfair as well as impossible to outlaw any foreign interest in our inherited knowledge. But it would be extremely fair and legitimate to demand that if this interest results in a marketable product, a definite share in the royalties and other forms of income that emerge from the marketing of the product should accrue to India.

If India probibits exports or charges bigher prices, competing nations will begin producing the required raw materials. Moreover, tissue culture techniques could be used to produce natural products in the laboratory. In November 1992, the journal Science reported that the "big agrochemical companies have been slow to jump on the neem bandwagon." The reason? "It's extremely costly to extract the insecticide molecule, azadirachtin, from neem seeds, and no one's been able to take out a broad patent covering the molecule because its structure was published way back in the 1970s. What's needed, say business-minded pest-control experts, is a cheap way of making azadirachtin-like compounds that can be



patented." And that is exactly what may be bappening in Western laboratories.

But who do we blame? The government? Indian scientists? The politicians? Or just ourselves, members of the educated middle class who seem to have precious little interest and pride in their own roots and traditions. Partly everyone.

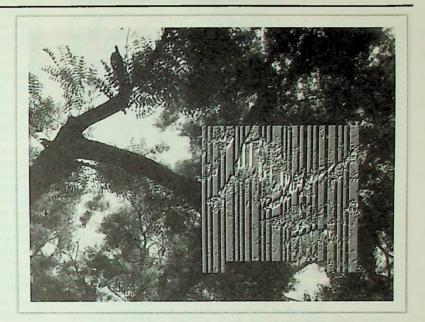
If India wants to enter the global pharmaceutical and agrochemical market in a big way, we must learn to innovate and patent and seize the world market with new products.

A three-pronged strategy is the need of the bour. Firstly, the country has to get its act together on ensuring that India's traditional knowledge becomes a legally valid entity. Everyone who wants to benefit from it is forced to pay royalties to the community from which it derives knowledge for commercial use.

The CBD contention that all biodiversily is national property means nothing in terms of the knowledge of use of that biodiversity and the community's rights to that knowledge. There is considerable confusion whether the World Trade Organization (WTO) agreement, which strengthens the patents regime worldwide, goes against community rights on traditional knowledge of uses of biodiversity. On the face of i, there is nothing in the WTO agreement which would prevent India from developing a strong patent system that would respect community rights to the knowledge about the use of plants.

The real problem in developing a system for protecting community knowledge arises not out of WTO but out of the legal principles on which pawat law itself is built. There are two problem areas. Firstly, patent law respects only private inventions; corporate inventions are respected only because corporations are accepted as individuals in patent law through a legal legerdemain. Community knowledge is therefore, by that very definition, knowledge in the public domain. How can that knowledge be patented under patent laws? All Indians constitute a community because the knowledge of neem is nationwide. Who will then receive the royalties on behalf of these communities? These are undoubtedly complex legal issues and only a committed group of legal scholars, given a clear charter by the government, can come up with solutions.

The second pointer that neem patents specifically raise is: How do we ensure that the benefits of our traditional knowledge accrue to India and not to a foreign multinational? This brings us to the realm of



research. Simply doing basic and applied research, as India bas done in the past, will only mean that foreigners will pick it up and take it through the later stages, which will allow them to exploit a world market. India bas an immense knowledge about plants. As an industrial giant, she must exploit the full world market by developing and launching products on her own.

Once there is clarity on this second issue, there will bave to be a third component of our national strategy. India's research programme must go beyond basic and simple applied research on to industrial and product research. This cannot be done simply by state-owned research laboratories; nor can this be done by Indian private companies. A CSE staffer who interviewed managers in Dabur, was told that they were not interested in developing any new product because it was too expensive.

The South Korean approach may be useful and instructive bere. Based on it, industrial and product research on neem could be declared an area of National Research Importance and given a specific budget over the next 10 years amounting to, say, Rs 300 crore. The programme could then be thrown open to any public or private sector scientist to develop a research project that involves public and private laboratories, or a collaboration of both. While the scientific and industrial merit of the proposal would, of course, receive due consideration by the peer review group, whose deliberations once finalised will always be open to public scrutiny, the government could try to push the programme towards industrial participation by giving greater weightage to those proposals in which industry is prepared to put a greater percentage of research costs.

To raise funds for research on plant products, a cess can be levied on all products that call themselves ayurvedic or berbal; the funds can be used to finance this research and thus reduce direct government subsidies, though the programme should get as much government financial support as necessary. There is one particular issue that would have to be taken account of while developing the above research strategy. According to several Indian neem researchers, many products of neem can be made using very simple processing techniques, which would be helpful to India's poor economy.

India cannot afford to neglect either approach. If she restricts herself to the appropriate technology route, then foreign companies will be left free to sell azadirachtin, and Indians can at best demand royalties for their traditional knowledge. The government could, however, provide free legal service to researchers who develop new plant products of this kind to explore if patent possibilities exist. If they do, the government could become a joint partner in the patent to ensure that no Indian individual or company is restricted from using the knowledge, and to disallow foreigners from developing such a product/use without prior benefit-sharing agreements.

TRADE & ENVIRONMENT

Green barrier

The world trading system today faces various new challenges. The most important is the growing use of non-tariff barriers, an example of which is the 'environmental' or 'green' barrier that confronts the exports of developing countries. As the North grows more environmentally conscious, it takes a bad turn for developing countries. And also, the barrier comes in simultaneity with the trimming of the tariff wall, diminishing the benefits that might be reaped from these trimmed walls. This, in turn, affects the markets for primary and other products that are exported from developing countries of the South.

TOXIC WASTE: RECYLING THE PROBLEM

The third Conference of Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal adopted a proposal to ban all trade in waste from January 1, 1998. The technical working group will make efforts during the next two years to evolve specific criteria relating to recycling and hazardous wastes. CSE believes that it is important to strike a balance between environmental and economic interests when considering issues such as recycling and trade in wastes. India has a sizeable recycling industry and in a business with a worldwide turnover of \$90 billion, one cannot ignore the competitive advantage accruing to Indian industry. At the same time, stringent legislation specific to this industry needs to be enacted to protect health and environment. But CSE is not certain whether the government is capable of stringent regulation because of widespread corruption and lack of transparency in government clearance and monitoring mechanisms.



CSE is involved in preparing a status report on trade and environment. It would bring together various experts from developing countries to finalise its formal position and agenda, which could also be used as an input for a future committee on trade and environment meetings. These issues are under the institutional umbrella of the WTO, specifically the Trade and Environment Committee. The Centre feels that people, who live closest to nature, will have the best ideas and the ability to conserve the environment. To make this possible, it is exploring the role of the grassroots, the system of property rights and the like.

OZONE

Time for celebration?

The Montreal Protocol to phase out ozone depleting substances (ODS) celebrated its 10th anniversary in December 1995, in Vienna. The

Centre's associate director Ravi Sharma, participated in the meeting and discussed if it was indeed time to celebrate.

On the ozone front, the Protocol has substantially reduced the amount of chlorofluorocarbons (CFCs) released in the atmosphere. But if one determines who is paying the cost for this phase-out, the Protocol leaves a lot to be desired. The Protocol strengthens a global governance system where the rich and the poor are being asked to share the costs for solving a global environmental problem caused by the rich.

In December 1995, more than 100 government negotiators decided to phase out CFCs in developing countries, 14 years from now, in 2010. Currently, since only few equipment in large developing country markets do not use CFCs, the consumers have no other alternative. Though new CFC-free refrigerators manufactured by foreign companies are using this opportunity to start marketing the HFC-134a (hydrofluorocarbon) based equipment, the cost and life of this new technology, patented by few multinationals, will be passed on to the consumers.

There are a couple of reasons for this. Firstly, HFC-34a is also going to be phased out under the climate change treaty, as it has global warming potential. And secondly, since the possibility of this shift in technology, prompted by the Protocol, receiving any significant subsidy from the shrinking Multilateral Fund seems grim, it will be high-priced.

In Vienna, no promises were made by industrialised countries to increase the shrinking size of the Fund, established to assist developing countries buy alternative technologies to the existing ozone depleting ones. The US is considering a cut in its partially paid contribution to this Fund, making it more difficult for budgetcutting European governments to continue funding as well.

India, for example, has seen less than \$20 million until now, and is pinning its hopes on attracting larger sums in the coming years. Even the Chinese, the largest recipients, have got less than \$60 million. These figures are far less than the internationally assessed need of about 2 billion dollars for each of these countries to phase out the ozone depleting substances. Therefore, the uncertainty of the Fund's future is especially unsettling for India and China.

However, if the Fund does not meet the demands of developing countries, these countries are legally not liable to meet the agreed phase-out schedules. Nice words, but unrealistic, keeping in view the brief history of the Fund. Firstly, industrialised countries, while reducing the size of the Fund publicly, never cite shortage of money as the cause. Instead, they use clever ways to reject project proposals on the basis of ever narrowing criteria. One Indian refrigerator giant has already withdrawn its proposal, after hearing of the massive cuts made by the Fund's executive committee on their demand.

Furthermore, the Fund wants the govern-

ment to pledge on behalf of the industry. The Fund recently refused money to all Indian aerosol companies, until the government pledges that this sector will not increase its use of CFCs in future. In view of the large number of small-scale units involved, this is one promise the government is afraid to make. In any case, informed consumers are likely to force changes on the Indian industry by showing preference for the latest technology, which happens to be CFC-free. This will happen for no other reason than to avoid the uncertainty of the future maintenance of 'dying' CFC-based technology.

CFC trade among developing nations

Fortunately, developing country CFC producers were allowed to trade amongst themselves in CFCs until 2010, giving most of them cheaper products, and some of them increased profits. In the wake of a very limited fund established for developing countries, CSE supported this move. Earlier, industrialised countries had united in their efforts to prevent CFC trading between developing countries, and keep it only between North and South until 2010 AD. CSE believed that this was blatant misuse of an environmental instrument to gain economic advantage. As far as the ozone layer is concerned, it does not matter whether the CFC is from a developing country or an industrialised country, as long as it is legitimately produced and used.

The Protocol explicitly prohibits the developing nations, as well as nations not members of the Protocol, to export CFCs to other developing countries. This implied that with total protection and monopoly, Western nations can switch to so called alternative technologies and at the same time use their quotas to export and increase trade.

India and China are rare examples of developing countries which have indigenous companies producing and consuming CFCs. In September 1992, a United Nations Environment Programme (UNEP) report detailed the enhanced production capacities of developing country manufacturers. It was logically expected that industrialised countries would be told to stop export oriented production, and let indigenous manufacturers take over. This would have enabled them to get the required money to support their respective country's ODS phaseout, which will not get the level of funds demanded from the Multilateral Fund. But the CFC giants were in no mood to relinquish their hold, and aside from raising their production quota from 10 to 15 per cent, they also exert considerable clout over the ozone fund.

Lessons to be learnt

These negotiations show clearly that promises made by governments in the North, for paying the costs to phase out polluting technology in the developing world, have little validity now. Firstly, Northern governments facing severe



resource crunch due to the demand for 'small government', are unwilling to tax their polluting industry to clean the mess caused by them in developing countries.

Secondly, the issue of technology transfer is a farce. The industry in the North, is not even considering selling its latest technology, forget doing it on concessional terms. This industry is only interested in selling its products, in this case alternative chemicals to CFCs, on which they hold an oligopoly.

Thirdly, the little money received from the Multilateral Fund by developing countries is used to push certain technologies, instead of assisting developing countries in finding alternatives to ozone depleting chemicals. The Fund supports those technologies defined as 'mature' by experts in Washington, who again belong to the few chemical multinationals in this business.

Therefore, expectations that environmental agreements will help in shifting to environmentally benign technology are not true. Developing countries, especially large ones, cannot escape from investing in research and development. For example, two Indian companies, Godrej and Voltas, with assistance from the German and Swiss governments, have invested in pilot plants to test the freely available technology of propane and cyclopentane (hydrocarbons) for domestic refrigerators. This technology which succeeded in Germany, could be the alternative for the Indian industry to supply the much demanded refrigerators. And all this at no cost to the environment, plus at an affordable price to the consumer, unlike the patented HFC-13-ia,

Ultimately, the governments, realising the cross-border nature of pollution, should ensure that the polluter-pays principle be made legally enforceable internationally to avoid similar problems in future. Until then, the victims of the pollution will be forced to share the costs of preventing pollution, and this is unacceptable by all standards.

In Vienna, no promises were made by industrialised countries to increase the shrinking size of the Multilateral Fund, established to assist developing countries buy alternative technologies to the existing ozone depleting ones. The US is considering a cut in its partially paid contribution to this Fund, making it more difficult for budget-cutting European governments to continue funding as well

Environment research and public policy

Winds of change

In order to carry on sustained work on environmental research and specific environmental policies of the government, the Environmental Policy and Advocacy Cell was formed in mid-1995. In particular, its task is to bring about policy-level changes in the government on issues such as decentralised governance of natural resources and water management, air and water pollution, forest management, wildlife conservation and the field, government, NGOs and representatives of people's movements.

The Cell is presently engaged in campaigning for changes in the government policies on wildlife conservation. It has also led a successful campaign against a proposal of the Ministry of Environment and Forests (MEF) to give degraded forest lands to the paper and pulp industry as captive plantations to grow their raw materials. The strength of the Cell as well as CSE has been to undertake comprehensive policy studies to support each campaign. The research work has been the cutting edge to change.

CAPTIVE PLANTATIONS

Not the remedy

In 1995, MEF proposed to give 2.5 million hectares of degraded forest lands to the paper



and pulp industry as captive plantations to meet the raw material needs of the industry. The proposal was opposed by CSE and several other NGOs and people's organisations for its adverse social, economic and ecological implications. It was feared that the move would affect the rural poor who depend on the degraded forests for their daily biomass requirements. It would also act as a disincentive to the small and marginal farmers to grow trees on their lands, if the industry meets its requirements from captive sources.

A team of CSE researchers travelled across the country to study the nature of the problem, validity of the industry's demand and capability of the farm forestry sector in meeting the industry's demand.

With raw material scarcity growing, the paper industry found it difficult to meet its wood fibre needs domestically. The industry has been demanding, for nearly two decades, that large tracts of degraded forest lands be allotted to it to be used as captive plantations to meet its raw material needs. After several state governments began to entertain such requests in the early 1980s, the Central government amended the Forest Conservation Act of 1980 to exclude such arrangements and also stated in its Forest Policy of 1988 that industry should source its raw materials from farmers.

The 1980s saw numerous developments. Firstly, the social forestry programme collapsed. Even the industry did not do anything to save its successful component of farm forestry. Moreover, as pulp prices were very cheap at the international market, the paper industry convinced the government to allow imports of pulp and timber at reduced customs duties. This became the major factor in the collapse of farm forestry.

Innovative attempts

Simultaneously, several companies, recognising the government's determination and environmentalist opinion not to open up state-owned forest lands for forest plantations, began to undertake innovative attempts to reach out to farmers. One of the most innovative attempts was made by a West Bengal firm — Titagarh paper mills — to reach out to poor farmers owning very poor quality farmlands to grow eucalyptus as pulpwood species. In the Chotonagpur region, thousands of poor farmers had received grants of poor lands from the communist state government but it could not support any crop on it. These land recipients remained migrant agricultural labourers. Due to high population density in the state, the government too did not have any degraded forest land which, even if available, was in a worse condition. The company, therefore, found it an even better proposition to reach out to poor farmers than insist on state-owned forest land. Other companies in other parts of India have also made efforts to encourage farmers to plant trees to meet the wood needs of the industry.

But the desire to corner state-owned forest land at zero and concessional costs for captive industrial plantations had remained high on the industry's agenda. With international pulp prices shooting up in recent years, the industry has strongly renewed its demand for state-owned forest lands. This time finding a more attentive forest minister, the matter reached the Indian Cabinet in 1995, for a decision to reverse the country's forest policy on this matter. The forest minister has since been moved to another portfolio. It is, therefore, unlikely that the issue will get raised again until the new government takes over.

The position that CSE has taken is that the Indian paper industry must source its raw materials from the farmers. If the industry was given access to cheap state-owned forest lands for captive plantations, it will destroy the development of a wood market in India. It argues that if state-owned degraded lands are given over for captive plantations, the poor, depending on these lands, will be badly affected as they will be prevented from collecting fuelwood or grazing their animals in these lands.

The strategy which CSE advocates for the country's afforestation is that state-owned forest lands should be largely tackled through joint for-

PROPONENTS AND OPPONENTS

est management so that participatory and community-determined forest regeneration can take place on them. Such forests will be ecologically diverse and will be better suited to meet the biomass needs of the people. Private farmlands should be brought under tree plantations directly with the support of the wood-based industries. This would restrict monocultures to farmlands. The industry should try to identify multipurpose fast-growing species which can be pulped so that farmers can also meet their fodder needs and increase their fodder supply in villages. The government should, simultaneously, identify policies that encourage and make it economically viable for industry to reach out to poor farmers.

The study concludes that a mix of policies are needed in India to develop a sustainable paper industry. On the supply side, India must make all efforts to develop technologies and promote non-wood raw material for paper and paperboard production. This would mean:

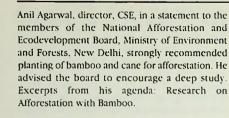
- A greater emphasis on paper recycling in a way that these recycled papers are used for making paper and paperboard.
- Greater use of bagasse for paper making.
- Greater emphasis on industry through economic instruments and regulatory measures to become more efficient in its use of raw materials, chemicals, water, energy and to become pollution-free.
- Consistent efforts aimed at producing better quality paper with the help of alternative raw materials, including reduction in water pollution resulting from the use of alternative materials like rice straw.
 - There will be an increasing demand for wood fibre because it is essential to produce

trees on low productive farmlands.

What industry says	What environmentalists say		
Captive plantations will green the country	Yes, but local people and farmers must be involved in afforestation		
Government reforestation bas failed	Yes, but industry's refusal to buy wood at fair prices led to the failure of farm forestry		
Industry bas money	Money will come from public financial institutions such as NABARD and multilateral banks like ADB. This money can be given to farmers instead of industry.		
lt will afforest wasteland	Firstly, these so-called wastelands bave intense users who will be displaced by industry. Secondly, industry has rejected all such degraded lands — in the desert, for instance, it wants better quality land as it needs quick returns.		
Farm forestry is unreliable and an insufficient source to meet industry's needs for raw material	No evidence to support this contention. Stable supply will be ensured by market mechanisms of pricing. It may even be cheaper.		
People's needs will be met.	Needs will not be met. The only way industry can grow biomass on these lands is by fencing the poor and their animals out. And by using force to do so. Rural communities dependent on these lands will suffer. Poor farmers will lose their chance of growing time on low Foundarities for a least of the second seco		



PROMOTION OF BAMBOO AFFORESTATION URGED



I bave proposed this agenda item for the consideration of the board because I have a sense that bamboo is not getting adequate attention in our afforestation programmes. In a presentation to the Union Council of Ministers in 1986, we had cited several cases from Karnataka and Maharashtra showing that the artisans were not getting easy or cheap access to bamboo while the forest departments were supplying them in bulk and at extremely cheap rates to the paper and pulp mills. This problem relates not just to these two states but to many other states too.

I strongly recommend to the board that it

good quality paper.

Industry must be forced to pay the price of its raw material usage. Therefore, not only must the state not give it subsidised land for captive plantations but it must also not give it subsidised wood from government forests.

On the demand side, there is a need to pay attention to the following:

Firstly, while cultural paper (for printing and writing) may be considered a necessity and its use encouraged, the use of industrial paper can be considered a luxury and its use discouraged through appropriate economic instruments. About half of the paper and paperboard consumption in India is for industrial purposes. But there are no policies to discourage overuse of paper and paperboard by industry. This is a sector that can afford to pay and its use of paper must, therefore, be taxed to a point that it becomes an incentive for it to reduce its use as much as possible.

Secondly, CSE study shows that the growing use of personal computers is leading to an enormous growth in the use of good quality paper. Paper use will probably get reduced only when computers in India get networked and, therefore, paper is not required as a medium to transmit information. New technologies to store information are needed and the government should promote them on a high priority basis.

It is clear, however, that India will have to increase its paper supply and cut on its consumption due to its high levels of poverty which will restrict the growth of electronic technologies, and low levels of literacy — which will mean that informational and educational demands will grow as people become more and more literate. It is hard to predict the future size make a deep study of what the needs are for research on bamboo and cane and what kind of recommendations should be made to the state governments for promoting bamboo and cane as a species for afforestation.

Bamboo bas three major roles to play in the national economy. One, at the bousebold level, it is a very useful material for making bouses... In the artisanal sector, it is used in making marketable products and can provide millions of jobs in tribal areas. In the large commercial sector, it can be used for pulping and for making a variety of products like bamboo mat boards, etc.

... It is estimated that the global bamboo products market today is of the order of US \$10-15 billion and it is growing rapidly... While China specialises in temperate bamboo, India can easily specialise in tropical bamboo. Bamboo gives quicker economic returns because it is a grass.

It is, therefore, necessary to develop a comprehensive policy for the promotion of bamboo afforestation and bamboo products.

of the Indian paper industry because it will depend heavily on the rate of growth in literacy and social development, on one hand, and industrial development, on the other. A combination of both 'supply and demand strategies' are needed so that industrial use of paper is kept under control, whereas cultural use of paper is allowed to grow, and this growing demand is met in such a way that it provides a big economic incentive to farmers to undertake massive afforestation across the country.

CSE on the offensive

CSE organised a debate on this issue between the paper and pulp industry representatives, bureaucrats, academicians and environmentalists. Public opinion was mobilised against the move by voicing CSE's views on the issue in the mainstream media and national newspapers. The debate was published in Down to Earth, which was widely distributed. Letters of appeal against the proposal were written to the Prime Minister, Vice President, ministers and Members of Parliament. CSE sent a letter to the Prime Minister, Narasimha Rao, which was signed by agricultural scientists like M S Swaminathan, economists like C H Hanumantha Rao and administrators like N C Saxena. The Centre works closely in this effort with other NGOs.

CSE campaign team members met the ministers personally to lobby against MEF's proposal. The response was positive as senior ministers gave categorical assurance to oppose the proposal. As a result of the lobbying, the proposal was stalled by the ministry. The Prime Minister referred the matter to a committee of ministers. The forest minister did not find much support in the committee, especially as the general elections



were round the corner and the move would be seen as anti-poor and anti-tribal.

Currently, CSE is preparing a counter proposal to the ministry's plan that addresses the raw material needs of the industry and meets India's socioecological needs simultaneously. The counter proposal will include different ways to achieve successful farm forestry by involving poor and marginal farmers and the changes needed in our legislations to make farm forestry a success.

WILDLIFE

By the people, for the people

With problems mounting around the issue of conservation of national parks and sanctuaries, the present state of India's wildlife and protected areas is in jeopardy. In most of the cases the malady has been identified as the largely unsci-

IN RESPONSE

Letters were received from Rajesh Pilot, the then Minister of Environment and Forests and I K Gujral, Member of Parliament, Rajya Sabha in response to the letters sent to them as a part of the wildlife campaign.

Minister

Environment and Forests, India 19th February, 1996 Dear Shri Anilji,

I thank you for your letter dated December 6, 1995 regarding wildlife conservation policies. I bave also noted your concern about the need to improve the system of wildlife conservation and management in the country and I am happy that your organisation is involved in such activities.

I entirely agree with you that it is only through people's participation that we can conserve our natural forests and protected areas. Our ecodevelopment initiative aims at addressing these very issues. The fundamental objective of a protected area is its effective conservation. and one of the ways in which this can be brought about is through people's participation through the ecodevelopment programme. I may mention that the planning of this programme is bigbly participatory and transparent and a large number of NGOs and people's institutions are involved in the process. The UP Van Panchayat Legislation, our Joint Forest Management Resolutions are functioning with more than 10,000 forest protection committees for looking after more than 1.5 million bectare mba of forest land are examples of alternative systems of management which have been successfully undertaken. The Wildlife (Protection) Act, 1972 also provides for three tribal members in the constitution of all State Wildlife entific and anti-people approaches adopted in dealing with the management of these regions. CSE strongly believes that India needs a more rational, sustainable and effective conservation policy which cares for the people's needs and rights.

Conservation is a genuine concern. While trying to evolve an effective system, the government must accept that the present policies are myopic and view the whole wildlife management issue very dogmatically. CSE believes in nurturing a strong concern for poor people who essentially depend on natural resources for their survival — people who are always neglected while conservation processes are planned and implemented, people who are denied access to their natural resources as more and more areas get earmarked for protection.

CSE strongly believes that a balance has to be reached between the priorities of conservation and people's needs. To preserve wildlife at the

Advisory Boards. A separate committee bas also been set up for reviewing the provisions of Wildlife (Protection) Act, 1972 to accommodate the grassroots-based issues.

We have recently set up the institution of Van Mukhia in each panchayat all over the country who shall act as a continuing link between the panchayat, local communities and the forest department. We have also formalised a consultative mechanism providing for quarterly meetings at block and panchayat levels between foresters and panchayats with a view to assess the performance of the forest officials and responsiveness of the community. A social audit panel bas also been set up for this Ministry which would evaluate and assess effectiveness of various policies and programmes. While I do agree with you that we need to build on these experiences and a lot more needs to be done, I am told that our position is not as bad as it may look. We have been able to do much better than many others. For instance, I am told that the rbino and elephant populations in Africa bave declined to less than one-eighth for rhino and one-balf for the elephant over the past 20 years, even though they do not have the kind of human population density as we have here. In India, the rbino population is stable and the elephant population is growing. Therefore, we have to develop a model that suits our own socioeconomic milieu and cultural etbos and in this endeavour, I would welcome your valuable suggestions.

I thank you for your interest in the subject and expect that your organisation will continue to contribute to the conservation of our rich biodiversity.

With best wishes, Yours sincerely, Rajesh Pilot CSE strongly believes that a balance has to be reached between the priorities of conservation and people's needs. To preserve wildlife at the cost of people's rights is self-defeating



cost of people's rights is self-defeating. So, the Centre seeks for reconsideration of the existing wildlife management strategy on the following grounds:

Inefficient and ineffective

India today has 521 national parks and sanctuaries, covering 4.3 per cent of our geographical area. There are ambitious plans to increase the number to 5 per cent, which is about 15 million hectare of land. The Eighth Plan had earmarked Rs 37.63 crore as assistance for the development of national parks and sanctuaries. Project Tiger itself has received Rs 7.7 crore in 1994-95. Despite such huge investment, tiger population has declined from 4,334 to 3,750 between 1989 and 1993, according to government statistics. The actual situation might be worse. Notwithstanding the fund spent for tracking poaching (more than Rs 1 crore spent between 1990-1993), there are speculations that we might lose the tiger forever by the turn of the century. And this is within a time span of 20 years after Project Tiger had won laurels as one of the biggest success stories in international conservation programmes.

However, the fact that a Tiger Crisis Cell had to be created in 1994 is indicative of the government's realisation about the impending doom.

Unscientific approaches

The existing policies smack mostly of an unscientific temperament. There has been increasing evidence to show that a wrong premise underlies the policy of trying to keep nature reserves pristine and free from human intervention. In fact, a large part of the world's so-called virgin or primary forest areas are ecosystems modified through centuries of human-nature interactions.

Studies on a Panama lake show that humans may have influenced rates of forest diversification and prevented the dominance of any one species. In the Bharatpur National Park, the ban on grazing of cattle inside the reserve, which led to police firing in 1981, has now proved to be a scientifically misguided decision. The Bombay Natural History Society studies show that cattle movement had helped to preserve grass and wetland ecosystems since ancient times.

Therefore, stringent measures to keep off human beings from trespassing forest areas can slowly impoverish wildlife habitats. In fact, by prohibiting people from using forest resources, the indigenous knowledge base about species and their multifarious uses as crop, food, medicines, and rural technologies may simply erode away.

Life vs wildlife

Traditional communities have always been dependent on natural resources, including forests, for their livelihood needs. It is, therefore, quite natural that they should have rights over the land they have lived in and resources they have used for centuries. But the Wildlife Protection Act of 1972, later modified in 1991, prohibits all human intervention or settlement in national parks, and allows only a very limited intervention in sanctuaries. While the government has taxed the locals to pay for biodiversity conservation, it does not guarantee any benefit to the latter from this exercise.

This alienation has spurred a serious backlash from local communities, and in places, this resentment has manifested itself in violation of the protected areas by the local inhabitants. And this is true not only in India, but has also been reported from other parts of the world, especially the developing world.

In Africa, in a sad show of antagonism to protected areas, there have been cases of poisoning animals and beating up forest guards. To cite a case in Namibia, in 1990, the Ovambo tribals living on the boundary of the Etosha National Park, celebrated their freedom by cutting the game fence and hunting down animals ruthlessly.

Closer home in India, the displaced Jen Kurumbas and the Betta Kurumbas in the Nagarhole National Park, burned down approximately 20 sq km of forest as a protest against wildlife guards who killed a poacher.

At the Manas Tiger Reserve in Assam, the insurgents have taken advantage of the resentment of the local Bodo tribals, who have lost their land to the reserve to carry out their activities. With most guards deserting the area, the Bodos have been killing wildlife to provide funds to the insurgents.

Piecemeal solution

In an attempt to reduce human and economic pressures on protected areas, the government initiated the ecodevelopment approach. This approach, however, only has an objective of providing alternative resources and income generating activities outside the protected areas. There is no structural change in the conservation policy involved and the people are still not recognised as partners in park management.

In fact, the ecodevelopment indicative plan stays away from formulating any plan for people residing inside the protected areas. The plan does not comment on the issue of rehabilitation of the forest people. As this is the basic issue to tackle before any plan is chalked out, the plan has a major loophole.

It is unfortunate that India today lags behind in a world that is fast realising the plus points of involving the local communities in the whole process of biodiversity conservation. Several experiments in countries of the North and South have shown that the people, NGOs and park authorities can successfully share benefits and responsibilities of biodiversity conservation.

CSE is of the opinion that under the present circumstances, the state-managed conservation policy cannot stay. There is considerable need for experimentation to develop wildlife management strategies suited to the different Indian



CSE believes that

community-based wildlife management strategies — given strong government and NGO support systems - will be most effective. It also believes that any single policy formulated at the national level is bound to run into serious implementational trouble

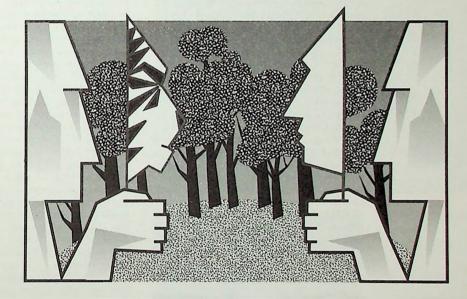
cultures and regions, keeping in mind the needs of wildlife conservation and people's survival needs. While CSE strongly believes that community-based wildlife management strategies given strong government and NGO support systems — will be most effective; it welcomes the idea of experiments in appropriate institutional development. It also believes that any single policy formulated at the national level is bound to run into serious implementational trouble and the ultimate cost will be paid by India's wildlife and biodiversity.

Conservation strategies which assign responsibilities to the people, and specific roles to the state and environmentalists, would definitely work better than state-managed strategies if there is enough experimentation and scientific implementation. Institutional flexibility, a marriage of conservation and development priorities, and creation of local stakes in biodiversity conservation, is the only answer. Otherwise, the entire conservation movement in India will get throttled in its infancy.

Why the campaign?

The rising conflicts in and around protected areas show that it is impossible to preserve these areas without giving the people living around it a stake in managing and protecting these areas. Keeping the crisis in mind, CSE has developed an advocacy strategy:

- Present policies of protected area management have proved to be ineffective and inefficient.
- Increasing evidences show that scientific premise over which these policies have been built are incorrect.
- The policies have ignored the rights and needs of local communities that are dependent on these forests.
- The latest government strategy on ecodevelopment to reduce pressures on protected areas will not address the root of the problem.
- The rest of the world has realised that local people have to be made active and equal partners in any strategy to manage



CSE RECOMMENDATIONS TO THE GOVERNMENT

- Produce a white paper on the status of wildlife in the country, which also evaluates the current conservation policies and their effectiveness.
- Reassess the Wildlife Act, 1972, and bring in appropriate modifications which would allow people to be involved in the management of protected areas, as well as create flexibility to experiment with innovative institutional mechanisms.
- Reformulate the committees that deal with wildlife management. The current constitution of committees, like the Indian Board for Wildlife, the State Wildlife Boards, and the Steering Committee for Project Tiger, are dominated by elite conservationists and foresters, with virtually no representation of people who are directly affected by the wildlife policies.
- The scope of these committees should be broadened from merely serving as a clearingbouse of
 policies, to that of think-tanks, more open and sympathetic to the grassroots concerns, and with
 broader constituencies.
- Create scope for experimentation in the development of institutional alternatives to manage protected areas, which are built on people's management and control.

biodiversity. Experiments to this effect are on in Latin America, Africa and rest of Asia.

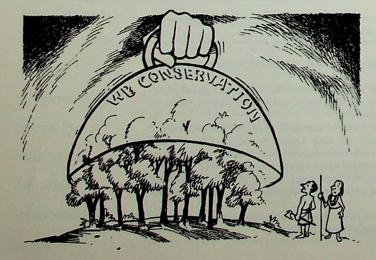
The first important task before the Cell was to get together all relevant and available material that would give an insight into the status of protected areas in India at present. Based on the issues that emerged out of it, a research theme as well as a campaign strategy would be formed.

A debate was organised in October 1995, to bring together the people involved in issues related to protected areas. A press conference followed the debate. CSE drafted a statement clearly stating its stand on the issue, which was released in December 1995. Simultaneously, letters were sent to the Prime Minister, minister for environment and forests and to Members of Parliament, asking them to take initiatives on the issue.

Ecodevelopment project

The Global Environmental Facility (GEF) and the World Bank are together funding the ecodevelopment project in India. The project, designed to reduce dependency of the people on protected areas, would cost nearly \$70 million, out of which \$28 million is in form of loans from the World Bank, and \$20 million in form of grant from GEF. In the pilot phase the project will take up seven protected areas namely, Ranthambhore (Rajasthan), Bench (Madhya Pradesh), Nagarhole (Karnataka), Periyar (Kerala), Buxa (West Bengal), Gir (Gujarat), and Palamau (Bihar).

The approach of ecodevelopment has certain basic flaws. It hopes to mitigate pressures on protected areas by giving alternative resources and income-generating activities to people, believing that poverty is the single-most important reason for people to depend on natural resources. It does, not recognise the environmental rights of the people to use their habitats. CSE believes that the first problem of forest-based people is not poverty but disempowerment by wildlife laws and programmes and erosion of their environmental rights to use their habitat.



CSE has been very critical of this project and feels that it would collapse because of its inherent contradictions. In a bid to generate a debate on the project, CSE organised a meeting of NGOs and representatives of people's movements in March 1996, and circulated a draft for discussion. CSE was the NGO focal point for South Asia at the GEF Council meeting which met at Washington in April 1996. CSE took the opportunity to convey to the NGO participants as well as the Council members apprehensions regarding the project in India.

Draft forest bill

In September, the draft rehabilitation policy was finalised by the NGOs and a few days prior to that the draft forest bill, too, was given the final shape. CSE took an active part in the drafting process, especially of the rehabilitation policy.

The process began in 1994 when the NGOs, through their contacts, procured a copy of the draft forest bill prepared by the Ministry of Environment and Forests. Alarm bells went off at the anti-people stance of the bill. In retaliation, the NGOs organised and began drafting a forest bill. Simultaneously, the group also began drafting a national rehabilitation policy, in response to the numerous draft rehabilitation policies prepared by the Ministry of Rural Development, Central Water Commission, Coal India and the National Thermal Power Corporation. These policies took displacement for granted and did not involve the people who were to be displaced.

The NGO rehabilitation policy, which was presented to the secretary, Ministry of Rural Areas and Employment, demanded a new land acquisition act, and a sharp definition of public purpose, under which land is acquired. It reiterates that before a project is finalised, all possibilities should be examined and that local people should be involved in the project's implementation. CSE stressed that area development plans should be made with active involvement of the local people and NGOs in order to avoid multiple displacement.

In view of the fact that economic development will bring in many projects which might displace thousands of people, CSE suggested that the provisions of the 73rd and 74th Amendment should be implemented to empower local bodies, including the *gram sabhas*, to decide whether they would accept a project which might displace them. This suggestion found its way into the rehabilitation policy.

The alternate draft forest bill puts forest dwellers at the centre of forest management and begins with the *gram sabba* and the forest dwellers' communities as the basis of forest management.

The process of the draft formulation has strengthened the NGO movement in the country. There were several national-level workshops, the last being held at Anandwan in Chandrapur in mid-July, which was attended by the NGOs, forest dwellers, and displaced tribals from all over the country. Each group discussed the points to be made in the draft. The draft was then taken back to the states and zones and translated into local languages and each point was debated with the local people.

More than 1,500 NGOs and about 20,000 people were involved in the process. Finally, the Central Drafting Committee, of which CSE is a member, along with other NGOs, performed the Herculean task of incorporating these suggestions together in the form of a draft.

THE ARAL SEA

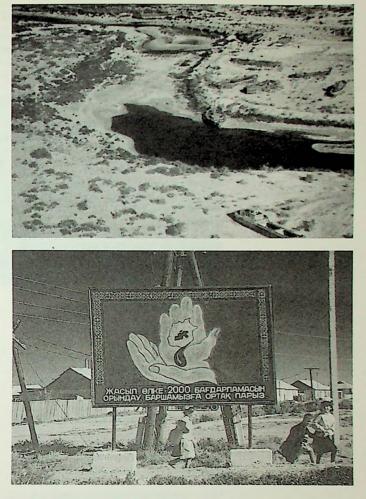
The curse of the white gold

In September 1995, Anil Agarwal, director, CSE, had a chance to visit Uzbekistan and the towns of Nukus and Muynak. What he saw and heard there shocked him out of his wits. The extent of this disaster exceeded beyond his comprehension. The scale of the Aral Sea crisis and its impact on the lives of the people living in the affected areas was absolutely mind-numbing.

Every nation and society has the right to use its natural resources to improve its standard of living and make life a little more easier. The erstwhile Soviet Union decided that Central Asia was the proper place to grow cotton and meet the needs of the entire nation. For this, it needed lots of water to irrigate the cotton fields. The overzealous Soviet engineers took so much water out of the two major rivers of the region, the Amu Darya and the Syr Darya, that there was almost no flow left in these rivers in their lower reaches. The people living in the lower reaches were basically receiving the irrigation drainage from the upper reaches. As cotton farming demands high use of pesticides and the Soviets over-liberally dosed their fields with pesticides, the water reaching the lower reaches was sated with poisons. Since treated drinking water did not reach everywhere, people continued to use water from the open wells and canals for drinking.

International attention was drawn towards this region due to the rare situation which prevails there. Unlike most rivers which end up in open seas, the Amu Darya and the Syr Darya end up in an inland sea called the Aral Sea. With so much water being taken out of the rivers, there was no water left to feed the sea and it began to shrink rapidly. The process was hastened as the area is a desert with low rainfall and high rate of evaporation. Slowly, the surface area of the sea dropped to about half of its original size. Those who earlier fished on the shores of the Aral Sea found it gone 50-100 km away from them. Fishing occupations crashed and they were left penniless.

The dried-up seabed was now a toxic wasteland, full of accumulated poisons that irrigation drainage had dumped into it. As the sea shrank, its moderating effect on the local climate also disappeared and the weather became drier with frequent dust storms. The dust picked up from





A lot can be done to ameliorate the lives of the people. But nothing can be done to restore the Aral Sea. It is clear that the solution to the region's ecological problems is still far from a permanent solution the seabed by these storms was highly toxic and the whole atmosphere became polluted, with million inhaling it into their lungs. Even the fish they ate was now poisoned. Nobody yet knows the scale and magnitude of the health problems created by this poisoning of the environment. There has been an incessant increase in cases of oesophagal cancers, disorders of the reproductive system, and strange medical phenomenon.

What is most astounding is that it all happened under the aegis of the state authorities. People knew that things were going wrong. But nobody was prepared to talk about them or take up cudgels against it. The disaster had to wait for the general opening up of the Soviet system to attract attention. What could be more pathetic? It was not a sudden disaster, but due to the wrongdoings of the state.

A lot can be done to ameliorate the lives of the people. By transporting water over, long distances, the local people can still hope to get clean drinking water. By planting trees over the exposed seabed, the dust storms and transport of poisonous materials can be somewhat reduced. By creating small wetlands near the human settlements, which were once close to the shore of the Aral Sea, some of the fishing activity can return.

But nothing can be done to restore the Aral Sea. The increasing salinity of the reducing sea has meant the disappearance of floral and faunal biodiversity, which existed in abundance along its shore. This probably can never come back. It is clear that the solution to the region's ecological problems is still far from a permanent solution.

Down To Earth has published a detailed report on the Aral Sea crisis and a longer version of the report has also been published as a booklet.

AIR POLLUTION

Breathing poison

As India is about to enter the 21st century, with all the complexities arising out of a liberalised economy, heavy population density, intense poverty and considerable pressure on natural resources, much has changed in terms of governance systems.

The government has repeatedly stated that it would pursue a path of economic development that does not lead to environmental harm. Over 20 years ago, soon after the Stockholm Conference, the country had enacted the Water Pollution Control Act in 1974. In 1981, India enacted the Air Pollution Control Act. Following the Bhopal disaster in 1984, the government realised that its legislative base was weak to deal with industrial accidents, and enacted the Omnibus Environment Protection Act in 1986. During this period, there was considerable institutional development with the creation of a full-fledged Ministry of Environment and Forests and a Central Pollution Control Board at the federal level and similar institutions in nearly all the 20-odd states of India. But despite this legislative and institutional framework, and a pollution control policy statement announced in 1991, precious little has actually changed on the pollution front, which continues to increase rapidly over time.

The Indian state has not cared to worry about any of these two obligations. The dramatic rise in air pollution in most Indian metropolises over the last one decade is a direct result of an inefficient state, both in terms of balancing responsibilities and precautionary activities.



RECOMMENDATIONS ON EMISSION CONTROL

- Each automobile firm should be asked to prepare a development plan for 10 years to indicate technological changes they are planning to implement;
- Industry and independent research organisations should develop a centralised inventory of the world's best emission efficient technology for different models of vehicles as a reference scale for comparison with Indian models;
- Liberalisation bas encouraged the Indian automobile industry to source new technology and new products through joint ventures;
- The emission characteristics of each model of vehicle should be stated at the time of sale, to
 enable the customers to make an environment-friendly choice;
- The research and development cess collected from the industry should be allocated to give priority to research on emission efficient technology.

On Inspection and Maintenance Strategies

- Comprehensive rules should be formulated to ensure proper maintenance schedule for old vehicles;
- Inspection and maintenance rules should be devised according to the age of vehicles;
- Parameters of judging road worthiness of a vehicle should be broadened to include emission criteria;
- It is urgent to address the issue of scrapping very old and polluting vehicles from city roads;
- A package of fiscal incentives and disincentives should be developed for vehicle owners.

Delhi and Calcutta are already rated as one of the worst polluted cities in the world and many others like Bangalore, once considered a garden city, are rapidly deteriorating.

A study was conducted by CSE researchers to review this highly complex problem and to get an overview of the problem. The study focusses on vehicular air pollution and not on air pollution in general. This is because if one looks at the total emissions picture of a city in the 1950s or 1960s, one would find three types of emissions: from industrial sources including power plants; vehicular sources; and, household sources.

The study confirms our worst fears. Vehicular air pollution is the result of the following combination:

· Bad vehicular technology, which means that

certain vehicles should not be allowed to leave the manufacturers' gates.

- Poor fuel quality as India is generally short on middle distillates (kerosene and diesel). As the government produces the lethal stuff and sets the standards, and is responsible for ensuring that the standards are met, we can be sure of a very unhealthy set of practices taking place in the Petroleum Ministry which amounts to slow murder.
- Poor vehicular maintenance; improperly maintained cars can be polluting.
- Non-existent traffic planning because it is not enough to fine-tune individual vehicles.

It is even more important to keep a strict control on the total population of vehicles in a city by:

PIRATES OF POLLUTION

CSE study reveals that a number of factors contribute to vehicular air pollution, which relate to different regulatory agencies and interest groups:

Problems	Regulatory agency	Interest group
Bad automobile technology	Ministry of Environment and Forests Ministry of Industry Ministry of Surface Transport	Automobile industry
Poor fuel quality	Ministry of Petroleum	State-owned refineries
Bad traffic planning	State/metropolitan transport authorities	
Poor fleet maintenance	State/metropolitan traffic police	Disinterested public
Aging vebicular fleet	State/metropolitan traffic police	Public resistance to pbase out old vebicles



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- Promoting non-vehicular mass transit systems so that a large proportion of passenger trips can be undertaken on trains or electric trams.
- Promoting non-motorised forms of personal transport like bicycles.
- Restricting vehicles in congested areas by allowing cars ending with odd numbers on one day and even numbers on another day.
- Declaring congested markets and residential areas as pedestrian areas.
- Promoting car-pooling by corporate employees.
- Installing technology like good traffic lights that ensure smooth-moving vehicular traffic.
- Forcing car, bus, scooter and truck owners to phase out old vehicles after some years, when they start becoming heavy polluters.

As no single solution will provide lasting relief, every problem cited above will have to be dealt with at appropriate times and in appropriate measure and both a long-term and short-term strategy will have to be identified and implemented in a phased manner. But despite the seriousness of the problem, the government has no comprehensive strategy to deal with the vehicular air pollution problem. The Ministry of Environment and Forests today has no mechanism whatsoever, except for some disorganised boards and expert groups, to analyse or to implement complex issues. Such issues, even if they are well-analysed, will not move without the involvement of none less than the Prime Minister. if they happen to be inter-ministerial in nature.

The MEF has never produced a comprehensive study outlining all the issues involved and explaining what measures are needed. It has shown no capacity to take quick decisions on traffic planning or regulate its own refining industry or the privately-owned automobile industry. And since the problem spans so many state and central agencies, the pollution control board officials only complain about the lack of seriousness amongst other agencies. Many pollution problems arise out of a complex set of problems and will need comprehensive solutions. The MEF cannot do anything about such problems.

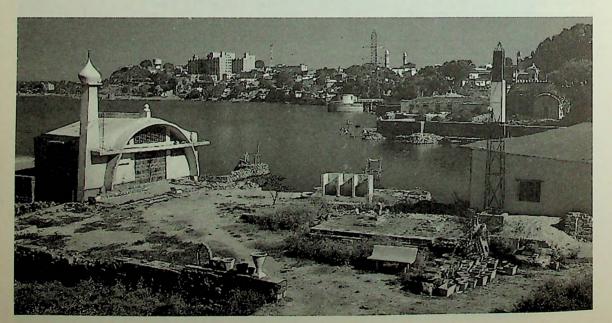
URBAN WETLANDS

Grim scenario

"A society is known by the water it keeps," This is because water - earth's purest fluid - has the uncanny ability to collect the human society's ills, and slowly but steadily reflect them in its own degradation. In India, urban wetlands have been reduced to filthy, foul-smelling cesspools with mosquito larvae drawing their lazy intricate patterns on the green surfaces. The only time lakes and tanks in urban areas draw a passerby's appreciative glance is when purple hyacinths bloom and disguise their filth. Orphans of a wiser age, these water bodies have few champions to their cause today. Spread all over the country, some of these urban wetlands are natural formations but most have been humanmade. And they were originally built to serve more useful purposes than just guzzling the city's muck.

In the urban hubs of the arid central and southern India, they store and supply water for drinking and irrigation and help in groundwater recharging. In Madras, which receives about 1,400 mm of rainfall annually, residents still get supplies once in two days. The reason being that there are not enough clean storage tanks. In cities enjoying perennial river sources they serve as flood cushions and as in the case of Calcutta, act as a resource recovery area.

One can even ask - do even the people



care? And yet, the resulting costs of ill-health, energy and labour to reach ever-so-distant water sources are enormous and increasing daily. The urban wetland crisis is eating into the entrails of Indian urban society. And it shows us that we no longer know how to govern ourselves, to manage our filth, and to live in harmony with our very life source. These are signs of a morbid society, which is reflecting itself in the sickness of our water systems.

Today, we are systematically destroying them and in the name of development we are digging our own graves. CSE researchers toured across the country to assess this tragic selfdestructive overdrive. They encountered the same horrifying tale everywhere. But the fact of ecological destruction per se is not so horrifying, as much of this is reversible. But the fact that very few care, is indeed, far more horrifying. The most dramatic contrasts are seen in Cherrapunji in Meghalaya, and Jaisalmer in Rajasthan: one receives, on an average, 15,000 mm of rainfall every year, and another just 100-200 mm of rainfall. There is surely no comparison between the two places. How far the dysfunction between water and society can go, is exemplified by this case. Cherrapunji, one of the wettest places on earth, receives the full force of the moistureladen monsoon clouds from the Bay of Bengal. But today, due to a massive drinking water shortage in Cherrapunji, the Rajiv Gandhi Drinking Water Mission - a national programme dealing with water problems - is supporting its waterstrapped villages.

Jaisalmer in the past cared for its water sources and survived long droughts by carefully collecting, storing and using water. The city site was, in fact, carefully chosen keeping in mind the threat of invasions and availability of water. The residents built a glorious and fabulously wealthy city around its limited water resources. Today, Jaisalmer is wearing off that part of its culture, and is becoming increasingly dependent on groundwater — the last resort in the desert.

Cherrapunji and Jaisalmer together tell Delhi, Hyderabad, Bangalore and Madras — all megacities — that God may shower riches on us in plenty but if we can't live with them respectfully, they will forsake us.

The answers lie not in Mother Nature but in the nature of the societies we construct. Those few NGOS and individuals from Calcutta to Bangalore and Madras who are trying to reverse the trend — while the rest don't even care deserve our full support and respect. They are the true leaders of India.

Case studies

CSE team found that in Karnataka, with a major part of the state in the Deccan Plateau's rainshadow region, lakes and tanks have been the crucial source of drinking water and irrigation. Tanks were built in Bangalore in the pre-British days. A chain of such interlinked tanks was created in each region. Situated in the same catchment area, the surplus water from one tank would flow into the lower ones. Kempe Gowda, the founder of modern Bangalore, and rulers before him resorted to a simple yet sophisticated technology of water harvesting, through which Bangalore managed to store at least 60 to 70 per cent of its rainwater.

But these tanks have been freely encroached upon, polluted and reduced to half their capacity. The government departments are the major culprits. They have built the city bus stand, a sports stadium, residential complexes and city markets on the tank bed. Today, these remain as nothing more than sullage pits.

Water has always been scarce in Madras since the time it was a small fishing village back in the 17th century. Not many government officials are willing to discuss this sensitive subject. And despite several projects being looked upon as big hopes, experts insist that it is imperative to renovate and modernise minor sources like the temple tanks and harvest rainwater from every rooftop.

There are 124 tanks in the Madras Metropolitan Area. In addition, there are 36 temple tanks in the city, with wells located in them. Experts hold that the system of tanks and wells were linked with aquifers for groundwater recharging.

With houses being built in the catchment areas of these tanks, it is mostly sewage that flows into them now. Governmental residential schemes, as well as slums, have come to encroach upon the non-temple tanks.

Like Madras, tank building and maintenance had been looked upon as a noble deed in Hyderabad too, where most of the tanks were created during the 16th to 20th centuries. The first source of water supply to Hyderabad was from the Hussain Sagar lake. It was used to provide drinking water. As population expanded, two other tanks — Himayatsagar and Osamansagar — started supplying water to the cities.

Yet, over the years, the twin problems of water shortage and flooding have plagued the city. Water supply in Hyderabad had been restricted to alternate days since 1993. With the population hitting the 5-million mark in 1994, water requirements have gone up from 45 million gallons (mgd) per day in 1961 to 170 mgd in 1993. The present availability is only 83 mgd.

The situation is critical. The lakes are in abject conditions. Hussain Sagar, for instance, is so highly polluted that divers who had gone down to locate the 60-fect high Buddha statue which had submerged while being erected, were unable to locate it. Industrial effluents flow in throughout the year, the rejuvenation takes place only once annually during the monsoon. High acidity water has led to large-scale destruction of fishes and fishing as a livelihood has been banned, affecting hundreds of families.

In central India, tank building has a long history. In the 11th century, the legendary king Bhoj



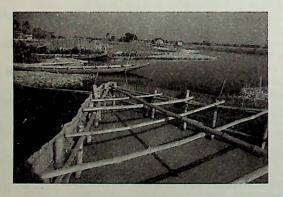
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constructed the Bhopal Lake over an area of 250 sq miles which was fed by 365 sources. The population of Bhopal is expected to cross the 2-million mark by 2000 AD, and water requirement is assessed to be around 200 mgd. The lakes of Bhopal clearly cannot keep pace with the demand and hence, the government has to bring water from outside.

History seems to have come full circle in Indore, the industrial and commercial capital of Madhya Pradesh. One of the reasons that the business community in central India traditionally favoured this 700-year-old city in the Malwa Plateau was its plentiful water supply. Today, no one even considers investing in the textile industry of Indore because of acute water shortage. However, the situation of neighbouring Dewas is worse. The crash-course industrialisation it had set up in the 1970s has ended in a whimper due to water crisis. Now, both Indore and Dewas await water from the Narmada river.

The wetlands of Calcutta have a different background. They are the remnants of the numerous distributories of the river Ganga which changed course in the 15th century. With the onset of the *zamindari* system in the 18th century, these areas were handed over to landless farmers.

Calcutta's main drainage line is river Hooghly, a distributory of the Ganga. Towards the beginning of the 19th century, the British decided to dispose off the burgeoning city's sewage into the Bay of Bengal through an intricate network of underground drains via salt lakes. That was the beginning of the end of the



Vidyadhari river, due to massive siltation.

The significance of the east Calcutta wetlands is enormous. It is a flood cushion for the eastern metropolis. Besides, Calcutta does not have a functional mechanical sewage treatment plant. The natural eastward incline of the topography lets the sewage flow eastwards. One-third of the 150 mgd of sewage that the wetlands receive are treated in a natural process. The wetlands provide the city with fresh air, fish and vegetable, livelihood to thousands, help groundwater recharge and form a major recreational area.

Yet, since the 1960s, when the city's first planned extension was contemplated, the natur-

al choice of the development authorities fell on the east. The Salt Lake City (now Bidhan Nagar) came up, taking away a large chunk of the wetlands. In the mid-1980s, the government was goaded by the real estate mafia to hand over larger areas of wetlands for housing estates and fancy business centres. Surprisingly, while one agency of the government has worked ceaselessly to get these listed as wetlands of national importance, the other wings are hell bent on their destruction.

According to experts, incidence of city inundations during monsoon have shot up; percentage of oxygen in ambient air has dropped significantly; average windflow has decelerated by at least 1 km per hour, helping retain air pollution; and there is almost 80 per cent drop in faunal biodiversity.

The lesson is clear: It is futile to indulge in high sounding jargonised rhetoric unless urbanites learn to live in harmony with nature in their own habitat.

ARTISANS

The sad part of art

Ethnic may be 'in' but craftspersons and artisans are 'out'. Or so it would seem if one looks at the plight of this section of society. Even as the number of craft exhibitions, fairs and *melas* mushroom, the creators of the crafts continue to languish, falling victim to the twin tragedies of government apathy and environmental degradation that has eaten away at their resource base.

Researchers from CSE spent the greater part of December 1995 travelling through the length and breadth of the country to meet and gather information on artisans from the best possible source - the artisans themselves. A CSE team met wood, cane and bamboo artisans, who depend on forests for their raw materials, to see how they have been affected by environmental degradation and resource diversion. Similarly, the leather and grass sectors, constrained by the loss of common property resources and ivory carving, killed by the government's 1986 ban on ivory trade, were also investigated. In addition, the team also had extensive interactions with government officials as well as individuals and NGOs working for the upliftment of the artisanal sector.

What emerged is a sorry picture indeed. The production in the handicrafts sector, a sub-sector of the artisanal sector, is estimated at Rs 13,260 crore and employment at 48.25 lakh. This makes the artisanal sector as a whole the second largest employer after agriculture. Yet, despite the large numbers involved and the tremendous employment and export potential represented by the sector, artisans are largely a forgotten lot, left stranded on the platform as the development train chugs by.

Nowhere is this better reflected than in the case of India's bamboo workers, who together

with cane and fibre workers, numbered 8.2 lakh in 1981. Although bamboo is found in almost every forest in India, artisans experience acute shortages of the material. This is because of governmental subsidies to industry which devours most of the available material, leaving artisans high and dry. Paper and pulp industries pay about Rs 2 for a standard length of bamboo, while for an artisan in the Delhi market, the same costs between Rs 30 and 50.

And yet, southeast Asia alone has a bamboo products market of US \$15 billion. The demand for basketware alone, which includes bamboo, wicker and rattan products, is substantial in countries like the US, Germany, Japan and France, with imports growing at 150 to 200 per cent every year. Despite the abundance of raw materials and vast repertoire of traditional craft skills in India, this export market remains untapped.

CSE team found that lack of raw materials is a pressing problem almost everywhere. In the case of grass, leather, cane and wood, this is due to a large-scale deforestation, coupled with reduced access to resources. In Sawai Madhopur, for instance, an entire community of wooden toy-makers, the *khairatis*, was pauperised when the forests they depended on for their raw material, the *khirit* (*Wrightia tinctoria*), was declared part of a national park.

The crunch for raw material has led to a desperate search for alternative materials to work with, which are more easily available. In Karnataka, for example, as rosewood disappears from the forests, more and more carvers have switched to producing handicraft items made of plywood.

Not that artisans are always hapless, passive victims of changing circumstances. In a rather dismal scenario, the collective action by Calcutta's cane workers in Rambagan *basti* shines like a beacon. Their association, Karmi Brinda, set up in 1954, has successfully been able to get better prices, organise raw materials and even provide housing for its members through collective action.

POLITICAL PARTIES

Tall claims

Do our politicians consider environment to be an important political priority? With an eye on the 1996 general elections, a team of researchers from CSE travelled across the country to document how the major parties of India — Congress-I, Janata Dal (JD), Bharatiya Janata Party (BJP) and Communist Party of India-Marxist (CPM) were responding to environmental issues.

In this massive exercise which took months, numerous senior politicians, including Union ministers and chief ministers, were interviewed along with lower levels of the political cadres of different political parties and local environmental activists and analysts.

The study shows that environmental issues began to find a place in the manifestoes of almost all the important political parties since the 1980s, with different parties taking slightly different positions. The Janata Dal has generally embraced a more radical position which emphasises the importance of maintaining a healthy natural resource base for the survival and growth of the poor. The Congress-I, on the other hand, has had a somewhat more conservationist emphasis in its manifestoes. CPM continues to give a marginal attention to environmental issues, with a rhetorical use of the phrase "environment policy in line with sustainable development" in its manifestoes. BJP manifestoes outlined a series of technological options to combat environmental problems facing the country - a far cry from a holistic policy.

But beyond the different shades of rhetoric, our study shows that there is not much to be happy about. The political action of almost all the parties has been generally counter to the requirements of the environmental balance. There is a big gulf between political rhetoric and real action and it runs counter to the commitments made in the manifesto of almost every party.

Each political party tries to out-do the other in degrading environment. The JD-ruled states of Karnataka and Bihar are going full steam with controversial projects like Cogentrix and Koel Karo, respectively. Congress-I has also floated anti-people moves like giving degraded forests lands to the paper and pulp industry as captive plantations, against the interest of the rural poor who depend upon these lands to meet their biomass, fuel and fodder needs.

BJP-ruled states do not show much environmental awareness either, as BJP politicians have not cared much for green causes. CPM leadership is also supporting environmentally controversial projects like Pooyamkutti power project and Gosree tourist development project in Kerala.

CSE researchers' experience with the politicians was also malafide. Then Janata Dal Chief Minister of Karnataka, Deve Gowda (now the Prime Minister), showed an open contempt for the environmentalists and called them "publicity hunters".

Finding the Congress manifestoes was another Herculean task as the central party office of the Congress-I had only one manifesto of all the elections held till now. Finally, the manifestoes were located in a library in Delhi. The BJP and CPM party offices were probably the most organised and party documents could be located smoothly. Their political leaders were also more accessible than the others.

New cell

CSE has recently established an Environmental Economics Cell in order to address an area of growing importance worldwide. Environmental economics, as a subject area for detailed study, has already made considerable advances abroad. India, as is the case with most developing The political action of almost all the parties has been generally counter to the requirements of the environmental balance. There is a big gulf between political rhetoric and real action and it runs counter to the commitments made in the manifesto of almost every party





nations, has been a relative late starter in the field. The objective that has been set out for the Cell is to emerge, in point of time, as a major group catalysing the pace of research and activities in the field of environmental economics in the country and to lobby for the incorporation of environmental concerns in economic policymaking.

GREEN RATING

Greening of industrial investments

The Cell has taken up a project to identify the means of green rating of different industrial plants. The purpose of such an exercise is to make environmental considerations a major factor in the share market. With the recent spurt in litigation and judgements in favour of safeguarding the environment, the proposed environmental rating will help investors to identify those companies where the risk of closure due to environmental regulations is minimum. The proposed rating will also be a good tool in the hands of both policy-makers and the industry for evaluating their environmental performance.

Maintaining environmental balance with economic growth is a subject of state policy in India. Since 1974, several environmental laws have been enacted and numerous institutions have been set up to implement the objectives of these laws. But this form of governance - enacting a law and then setting up a bureaucracy to implement that law - has proved to be a miserable failure. Environmental pollution continues to grow despite all the efforts of the isolated agencies of the government, whose own performance suffers deeply from lack of competence, inadequacy of resources, bureaucratic inertia, lack of transparency, and public accountability. Government agencies have failed to keep the public informed in a way that would enable constant debate on how to reconcile the oft difficult contradictions between environment and development and, thus, unleash an energy that would overtake the woodenness of bureaucratic institutions and corrupt practices of the bureaucrats, industrialist and politicians involved. There is, therefore, a widespread feeling in India that alternative forms of governance should be built which are built on public participation, transparency, non-bureaucratic institutions and market-oriented policies.

A CSE paper attempts to present a marketoriented framework by which the environmental impacts of industrialisation can be controlled and influenced. It aims to create greater environmental awareness and responsibility in the investor community. As a result of growing public interest litigation, encouraged by an activist judiciary, a number of industrial plants have recently been closed down by the Supreme Court and the High Courts. Major battles are currently going on in the various courts against polluting industries in Gujarat, Calcutta, New Delhi, and the trapezium around the famous Taj Mahal, which could seal the fate of thousands of industrial firms (see The Courts: Deep in Dirty Waters, Down To Earth, Society for Environmental Communications, New Delhi, September 30, 1995). Though most of these firms involved are of a small and mediumsize because this sector of industry has proved itself to be highly polluting, there is no reason to believe that in the future large-scale industry will also not get affected by anti-pollution litigation.

It is obvious that in case a company closes down or its stock value goes down, investors can lose substantial money, which for many could be their life savings. Therefore, if investors can be made environmentally conscious, they would prefer to invest in projects where their investment will be safe from such potential dangers. This, in turn, will put pressure on companies to improve their environmental performance to enable them to raise more funds from the market. There is no available evidence to suggest that Indian investors and the share market are very conscious about the environment. It must be admitted that till date no such event has taken place, except for the Bhopal tragedy, which could influence the stock market. However, people involved with the functioning of the stock market admitted to us in interviews that in the event of the number of closures of polluting industries increasing, the stock market will definitely respond to environmental concerns. Industrial confederations are already trying to promote environmental awareness among their members. They also agree that in the foreseeable future, environment could become an important factor affecting the share market.

The proposed measures basically aim to provide potential investors with information to judge the possible environmental impacts of the production unit they are planning to invest in and the environmental track record of the companies involved. Investors have reason to fear that their investments could get affected if there was adverse public opinion against the stocks they have invested in. After the Bhopal tragedy in 1994, where a Union Carbide pesticide factory killed several thousand people, the share prices of the company dipped sharply. The proposed measures, thus, attempt to forewarn potential investors about such dangers.

Apart from educating investors, these measures will also be useful to the industrial managers to assess their own environmental perfor-

ASSISTANCE BY FINANCIAL INSTITUTIONS

Financial	Reporting	Area of	Money disbursed (Rs crore)	
institution	ministry	work	1992-93	1993-94
NABARD	Agriculture	Investment in agriculture and rural development	-	-
IDBI	Finance	Development of big industries	6,041.8	7,677.3
ICICI	Finance	Development of big industries	3,315.2	4.413.3
IFCI	Finance	Development of big industries	1,732.5	2,163.1
UTI	Finance	Investment in existing companies	6,229.8	5,937.7
SIDBI	Finance	Development of small industries	1,291.2	1,778.7

mance and, equally, for regulatory agencies of the government to take note of their performance. These measures may also come in handy for the government in the formulation of the country's future industrial plans. In sum, such measures have the potential to improve the current standards and pattern of investment.

Funds for industrialisation

Investment funds for industrialisation in India mainly come from two sources. Firstly, government financial institutions, and, secondly, private investors (individuals and corporations). We believe that different strategies are required to influence these two different sources of industrial investment funds.

It is difficult to determine the exact size of the share market in India. However, a fairly reliable estimate of the amount of money that goes into the share market can be obtained from the 1993-94 provisional estimates of Reserve Bank of India which show that new capital issues by non-government public limited companies was Rs 19,501.3 crore. During 1992-93, the same was Rs 19,825.6 crore. In addition, the assistance from all-India financial institutions (that is, excluding the state financial corporations) amounted to Rs 22,197.3 crore during 1992-93 and Rs 25,632.5 crore during 1993-94.

Bid to influence companies

Western NGOs and environmentally concerned individuals have basically adopted two approaches to use the share market to influence industry.

Firstly, some of them have bought shares of environment-unfriendly companies to gain access to their annual general meetings to raise their complaints in the presence of other stockholders and try to get members' resolutions passed. In some countries, a few NGOs have also tried to influence large shareholders like the church to put pressure on environmentally and socially-indisciplined companies.

Secondly, several groups have made efforts to set up green mutual funds which invest only in clean companies. However, there are several problems with this approach:

- It is difficult to determine which company is truly green. Particularly, once a company has acquired the reputation of being environment unfriendly, it is difficult to determine when and whether the company has improved its environmental performance or not unless it becomes open to periodic checks.
- Investments are made in a particular company and not in a particular industrial plant. The same company can have one good and one bad plant from an environmental viewpoint. In such a case, it becomes difficult to judge whether to invest in the company or not.
- Thirdly, financial returns from green funds have often not been very high. Consequently, managers of green mutual funds have had to be very careful in choosing their investment basket. As a result, it also becomes difficult to mobilise large sums of money for green mutual funds.
- As the number of green mutual funds and the total amount of investment they make remains small compared to the overall size of the investment market this strategy, howsoever attractive, fails to affect the investment market as a whole, and green mutual funds remain fringe players.



Science and environment information

Initiatives taken so far...

Over the last one year, CSE's role in disseminating information on environment and science has only been enlarged. *Down To Earth* (DTE), one of CSE's main associates in this initiative, has been transformed from a purely niche magazine based on environment and reaching only subscribers to a regular magazine in the open market. It was inevitable because something like *Down To Earth* could not have possibly been kept as the esoteric preserve of the urban elite: a new intellectual fief was not to be created. But going public had its own far-reaching impact also.

It was required to talk in a layperson's language and be far more responsive to mass sensitivities and take up their issues, too. The more far-reaching of these were the investigation on captive plantation for the paper industry, the status of India's urban wetlands, investigation into the ecological impact of prawn farming in the coastal regions, the state of India's artisans, the major inquiry into the environmental commitments of the mainstream political parties, the reflection of the worldwide struggle by the indigenous people for their environmental resources, which saw Ken Saro-Wiwa martyred and Brazil's Yanomami-land looted.

One important investigation was conducted through international database accessed from Washington. It related to one of the most crucial questions of our times, an issue which is a major North-South irritant: the issue of patenting by Northern multinationals of products of Southern biodiversity. In this case, it was the question of patenting of neem products, for which the race is fast gathering pace, but the Indian scientific community is still either somnolent or is occasionally griping about being fleeced. This report, startling as it was, has elicited a broad range of responses: most of them asking for a more responsive scientific community and a more constructive science policy for the country. One obvious reason behind such a widespread response is that the Indian (non-scientific) community is starting to hold the scientists responsible for carting away of what was so common and evidently ours. That people's demand, albeit muted today, is bound to grow.

WINDS OF POISON

Global warming has been one of CSE's stated concern. But global poisoning? Horrific as it may seem, the one report, 'Winds of Poison', clearly established on a scientific basis the fact that persistent organic chemicals like DDT and other pesticides, which we are using mindlessly, take wings, literally, from the tropical zones, where they are most intensively used, and travel right up to Arctic waters, where they affect the whole ecosystem, which in turn poisons the entire food chain.

Indeed, the report, which was sent to us by one of our overseas environmentalist friends, triggered off a new area of investigation, namely, pesticides, herbicides, solvents and dyes, and their linkages with cancer and heart/respiratory problems.

SCIENCE COVERAGE

The Editor's Page has in recent times evoked much debate and heat. And at least in one instance, it has opened the doors of a hitherto tightly shut bastion — the Indian scientific community. It is necessary to mention in brief what that particular edition of the Editor's Page stated. In response to a very senior scientist's regret that we do not carry more news of Indian scientific achievements and studies, the editor had pointed out that most Indian scientists and the establishment was reluctant to open its doors to magazines like ours. The editor regretted that this is not the situation in the West, where the establishment regularly advertises its findings and let reporters pick up reports.

This has opened a floodgate of outpourings from scientists. In fact, one senior scientist from Goa has recently written to us saying that the mandarins of the scientific establishment have specifically ordered that only those theses by Indian scientists, which are published in "high impact" journals, that is foreign journals, will be recognised as valid intellectual activity! The debate is now on, and the science bosses will have to change their stance or face internal ire, which will not bode well for them.

The problems of the scientific community are many. Towards the middle of 1995, CSE had looked into the whole issue of peer review, and came up with the conclusion that the system of scientific grants are not necessarily based on merit. At least, there is no basic peer review system through which the real merit of a scientific achievement's real worth can be judged. And then, it was also clear that most of the work which attracted such grants did not boil down to benefitting the common man who pays for that research. In fact, in retrospect, it seems that since that time, CSE has been working towards the whole question of a correct science policy. Some work has been done. Much is in the pipeline for the coming year. But eventually, that will be the concrete result of such endeavours.

However, despite such hiccups in coverage, CSE continued to enrich its information base by tracking the latest developments in the West, including the historic journey of Galileo to Mars and the remarkable baboon bone marrow transplant to save an AIDS patient.

On the Indian front, CSE devoted considerable time to examine the claims of auyrveda practitioners that certain metals, purified and processed, can lead to medicines which can cure critical diseases. This is undoubtedly a premier research on the issue of alternative medicine.

TRAVESTY OF JUSTICE

CSE reporters looked into the Supreme Court orders for relocation of polluting units in Delhi, West Bengal and Gujarat and the ensuing controversy around the issue. While exploring the issue they found that nothing has really happened on the ground, except for a couple of industrial units being closed down in West Bengal and Gujarat. The travesty of justice is perhaps most glaring in Delhi, right under the nose of the Supreme Court. CSE, however, had analysed the issue indepth and concluded that the all-round failure of the executive in taking care of pollution and health issues has forced the judiciary to don that mantle, which is bound to have far-reaching impact in terms of policy, especially, as one of our later researches showed, since none of the mainstream political parties have any real urge to address these crucial issues.

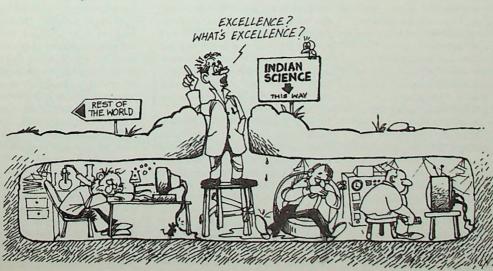
But the worst example of the travesty of justice came to light through our investigation into the Bichhri affair. Seven years ago, this hamlet in the downstream of Udaisagar lake of Rajasthan, had been devastated by sludge and effluents from

two factories producing H-acid, whose production has been banned the world over. Public agitation had already forced the factories to be shut down seven years ago. In the meanwhile, a public interest litigation, praying for compensation for the villagers and the restoration of the environment there, was being heard. In April this year, the Supreme Court ordered the (already closed) factories to be closed! There was no immediate compensation ordered for the people, and the concerned authorities were asked to look into what needs to be done to restore the environment, and to attach the property of the factory owner. The latter had, in fact, closed shop seven years ago, and is now merrily polluting the environment of Vapi, Gujarat. The court has not addressed the problem of producing H-acid

RESOURCES AND RIGHTS

CSE has always held that environmental resources are the property of the communities which have been using them sustainably over the ages. We have been especially strident about the environmental rights of the indigenous people wherever they may be. The grassroots-level struggle of the Yanomami people in Brazil had started gathering strength since May last year. especially with the demarcation of their land being challenged through a legislation being pushed by Brazil's minister of justice. CSE kept a watch over the situation, determined to follow the struggle to finish. We also did a major report for DTE, when the outrageous murder of Ken Saro-Wiwa, the Ogoni people's leader in Nigeria, took place. The inhuman regime of general Sani Abacha had exterminated a shining torch of the struggle of indigenous people for their rights to environmental resources. It made a sad cover story for us, but the combined report on Ogoni and Yanomami-lands reflected the gathering strength of the indigenous people's movement worldwide.

CSE has been working towards the whole question of a correct science policy. Some work has been done. Much is in the pipeline for the coming year. But eventually, that will be the concrete result of such endeavours



PEOPLE'S FIRE BRIGADE

There has, of course, been a sunshine side, and DTE has not failed to report that either. In early July 1995, after devastating fires had razed thousands of hectares of prime forests in the hills of northern India, CSE sent its reporter to Patial, a small village in the Sivalik foothills in Hoshiarpur



district. Punjab, whose fire-fighting and fireprevention skills are legendary in the area. Staying in Patial, talking to the women and the village elders, he discovered that the secret of their success lay in the strong community spirit of the village backed by commonsense and unwritten laws: trenches are dug around the forest, the forest floor cleared regularly and there is a social taboo against smoking in the forest. And in the unlikely event of a fire, the entire village rushed as one to battle the it. Evidently, local people are the best managers of their natural resources, provided they are empowered to do so. This is something which CSE has long believed in, a belief which was strengthened by the example of Patial.

AUTO DRIVER'S INNOVATION

Similar was the quaint report of an individual's struggle against pollution. In August, a CSE researcher, while travelling in an autorickshaw, met 30-year-old Mohanlal Madan, who has never stepped into a college in his life, but is the brain behind an ingenious method of reducing dust from the air filters in autorickshaws. Madan cut out the filter from his brother's vehicle, welded the L-shaped pipe and lifted it 50 cm above the vehicle's roof. It cost him Rs 100, and saved him

PARADISE LOST

In the land of Kalashnikovs and Wazwan, CSE reporter Max Martin narrates his experience with the Mujahideen militants, army officers and local people, while on a visit to Kashmir in November 1995, to report on the ecological degradation and unchecked deforestation as a direct result of separatist movement in the state.

"I bave seen militants destroying Kashmir forests." It all began with this statement of a spirited army officer. Antennae up, I combed the Environment Ministry yielding next to nothing and the army source too went "dry". Worse, the story had already been sold and the editor was on my back, refusing to accept any innovative excuses snowfall — avalanche, kidnapping...

"Meet you in 15 days, inshah allah," I told my colleagues and packed up for Kasbmir. What the newspaper colleagues would call "startling info" started pouring in right during my flight, again from army officers. But no figures, dates, not even location were disclosed to lead me to a definite place. "...Somewhere in the northern sector," was the usual reply.

In Srinagar, my first step was to conduct a few rapidfire interviews with officials all admitting to deforestation, again in vague terms, with ancient data. So I had to cool my beels.

My first break came after I gained access to a meeting of top bureaucrats, who discussed in detail Kashmir's deforestation and the choked Dal Lake. I soon became a familiar face with these top guns. Some talked, some gave me a few government reports. The information began to fall in place. So, now I had a story, figures, confirmations and allegations.

But still the key to the whole issue was missing. Where exactly was this illegal felling going on now? A guide took me on a five-bour bumpy ride to a godforsaken place in Anantnag and made me trek for three bours into the forest. There was no trace of felling. In fact, there was no proof that a forest existed there in the recorded time.

On my way back, a local militant leader got into my car, with Kalasbnikov, ammunition pack and all. "Hukum kijye," said the bandsome young man, in a tone that reminded me of Aladdin's Djin. To the borror of the driver, I grilled bim on bis group's involvement in illegal timber trade. He very politely denied all allegations and bapplity posed for a photograph.

Where do they fell trees? I asked everybody? Even the bardboiled local

"journos" bad no answers. They said their beat was to cover only buman toll. A 19-year-old bubbly Kashmiri girl, whom I had befriended, took me to a village and introduced me to a man who was an assistant to a bigtime timber smuggler. That made my story. I saw and shot the entire logging operation, which was going on like clockwork.

My return from the logging site was equally dramatic. I was on a billtop, at the beight that required a good twobour climb. Somebody trekked up and told me that an army patrol bad detained my driver and was looking for me. Later I got to know that they bad been combing for militants, and thought that I bad come to cover the operation, or to meet the militants.

As I rusbed downbill, I could see at least a dozen armed personnel marching up and down in search of me. One man carried a rocket-launcher. My beart skipped several beats. "Take me to your officer," I said cockily, but nervously eyeing the rocket-launcher. The officer chided me for venturing out into the jungle when an operation was going on. Seeing myself, my camera, the car and the driver, all in working condition, I quipped: "You should have told me that earlier. thousands otherwise spent on repairs. Madan's innovation drew excited letters from DTE readers, who urged him to apply for a patent.

WHEELING ISSUES

The report that the government is planning seven high-speed national cargo highways, and supplemented by the running debate in Western European countries over which is more environmentally benign, railways or vehicular highways, CSE set up a team of two researchers to investigate the issue in India. The investigation revealed that by ignoring capable and cost-effective indigenous technology, the policy-makers are pushing for capital-intensive technology import, despite being ticked off for that by Parliamentary standing committee on railways. Interestingly, CSE also brought out that the World Bank, in a pioneering study on Indian railways, found that electrification was more expensive than settling for diesel engines.

RIGHT TO KNOW

The issue of the communities' right to information suddenly surged up in November-December last year, first, due to a new set of rules by the Ministry of Environment and Forests (MEF) notified under the existing environment protection statutes. Though this came from top, the right to



know also made a powerful entry from the subaltem level, when the people in a small township in Rajasthan, during the recent election campaign, forced the chief minister of the state to grant them the right, albeit quite superficially, and said that villagers are entitled to access any document

BRAINS TRUST: EXTERNAL CONTRIBUTORS' CELL

When one talks about globalisation, it would be unwise to keep intellectual interaction out of it. CSE bas been aiming at creating a global forum for writers, thinkers and planners across the world to express their ideas and views on issues of local regional and global significance in the arena of environment, science, technology, development, health, energy, etc. The Cell is thus a means to access research information on a variety of topical issues from persons who are pre-eminent in their respective fields. There are our regular contributors from India, who, apart from research inputs, keep us abreast of the latest developments from the far-flung corners of the country. The specialists based in other countries feed into the Centre's research work, enhancing the value of the inputs provided by our in-house staff. The Cell undertook the task of identifying experts in various fields of interest. The response has been excellent, and our brains trust has grown remarkably over the last year.

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Kathmandu, Nepal	Brazil	Bangalore

relating to developmental projects in their respective areas. CSE was not only the first to scoop the news about the MEF rules, which our director and deputy director sniffed out in Washington, but also reported the subaltern-level moves. It was our grassroots-level networking that allowed us to do so, and DTE was the only one in the Indian media which could rise over petty election coverage to bring out one of the genuine people's issues.

THE UNIQUE EXPERIMENT

CSE also sent its reporter to the *adivasi* area of Mendha in Gadchiroli district of Maharashtra to witness a unique gathering where the urbane intellectuals joined hands with the Gond tribals to chalk out a plan for developing the *adivasi* hamlets. The residents of this nondescript village have raised the revolutionary banner of *mava nate mava raj* (our rule in our villages), and waged a war with the authorities to gain control over their own natural resources. Twice a year, in September and March, scientists from urban

FILM AND TELEVISION UNIT

Last year, CSE finished the production of its maiden video venture, a series of three videos on sustainable village ecology called The Wealth of the Nation. The video Harvest of Rain was selected in the competition section of the first video festival on science and development in Thiruvananthapuram. The video deals with the traditional Indian knowledge on water barvesting and the social institutions that protected it from ages. The video was well received among the audience.

The other video of the series, The Village Republic was selected in the Mumbai Short Film Festival. We take this only as the beginning of a long innings in environmental communication.

This year, CSE bas started shooting a 16 mm documentary film on sacred groves. The first location shooting for the film in a village called Abupe in Pune district, bas already finished. The other locations where the film will take us are in Karnataka, Rajasthan and Meghalaya.

The film will explore a unique system that bas preserved all these forests for hundreds of years. It will also outline the threats these forests are facing as well as the erosion of values that undermines the value of god. The film will try to learn the lessons from sacred groves to go forward to a more secular form of protecting resources.



areas rub shoulders with the *adwasis* to study the village's 18,000 ha of forests. These 'outsiders' help the villagers to study the region's pristine forest for proper resource planning.

STEPS FORWARD

Steadily pursuing its objective of ensuring a wider dissemination of information and sensitising the readers of the global print media on a whole variety of issues the CSE/Down To Earth Feature Service — the first green feature service in India - has been making rapid progress, notching up many of 'firsts' on its list, including a new column - Green Politics. It analyses the economic, social and political considerations behind environmental processes and presents forcefully the Southern perspective. Newspapers and newsmagazines have responded enthusiastically to this. Many of our analyses and debates on the realpolitik behind green issues have been reproduced in a cross-section of the media. Among those who have given exposure to CSE Feature Service are FAO Newsletter, Bangladesh Observer, Himal, The Hindustan Times, The Times of India, The Week, The Telegraph, Deccan Chronicle, Newstime, The Tribune and M P Chronicle, to name a few.

An international edition of the service has also been launched this year to increase the relevance of the service and widen its subscriber base. This specialised, ready-to-use package of articles, comprising features to interest an international readership, has been received enthusiastically and has generated a lot of curiosity among prospective buyers.

An exhaustive mailing list has been drawn up for this brand new addition and we are now awaiting responses from readers and prospective readers.

FAIR DEALS

With DTE having gone public, one inevitable task for the furtherance of advocacy was to establish a market presence and identity. It was widely felt that the outreach must be expanded as soon as and as swiftly as possible. One of the best ways that came our way were the two major book fairs, the International Book Fair in New Delhi, and the Calcutta Book Fair, both extremely high impact affairs.

An inter-departmental team of six, coordinated by the deputy director, was set up to deal with the task. It was much tougher than had been estimated at the early stages, requiring rigorous deadlines and hard intellectual and physical activity. However, the rewards have been not just more than rewarding, they have been enlightening, too.

The first realisation is that environmental awareness, or more precisely speaking, environmental curiosity as it exists today among the urban literate section is much more widespread

ENVIRONMENT UPDATE

The Book and Newsletter Production Unit of the Cell for Science and Environment Information works on the editing of the Centre's publications, newsletters, pamphlets and other printed materials.

In an effort to disseminate information and create awareness amongst our readers about different environmental issues, the unit has launched a series of booklets on the state of environment. The State of the Environment Series deals with indepth studies and critical analyses of various national and international issues on environment.

The Curse of the White Gold

The first of our series focusses on the Aral Sea crisis — the result of economic processes set in motion by the planners of the erstwhile Soviet Union in the 1950s. It is one of the biggest ecological disasters, second only to Chernobyl.

Protection of Nature Parks: Whose Business?

Our second publication is on protected areas and wildlife conservation. It presents the proceedings of a debate on the state of our national parks and sanctuaries, and whether the people living in and around these protected areas should be involved in their management or not.

In the pipeline

Slow Murder: A Deadly Story of Vehicular Emission in India

This booklet on vehicular air pollution reveals the grim story of state-supervised slow murder. Vehicular pollution emerges as the key culprit in the overall problem of air pollution. There is no coherent policy to deal with the problem except an absolute mish-mash of ad hoc ideas.

The booklet on political parties and their 'green' promises deals with Indian political parties,

than we had estimated. Our editions of DTE, of the various books, some of the video films and even some of the advocacy posters that had been designed specially for the book fairs, were swept off the market. Some readers, after having browsed through some recent copies, came back to buy entire old stocks. It was a major breakthrough for the Centre's Environmental Information Dissemination Unit, and indeed, for the whole of CSE.

The heartening fact was that the market

more concerned about greenbacks than green issues, who go to the polls with an agenda of development that destroys the very resource needed — environment. Behind the tall claims and pledges of their manifestoes, are they really serious about the problems that plague our environment?

The booklet on the state of India's urban wetlands assesses the tragic destruction of this lifeline of India's cities which for centuries have been protected by tradition and preserved by people.

The unit will shortly bring out two major publications which are in an advanced stage of production:

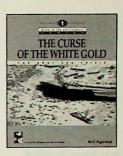
Traditional Water Harvesting Systems

This book looks into the water barvesting systems that bave existed traditionally in different parts of India. The book traces the bistory of water barvesting in India, dating back to the prebistoric period. Different sections cover the systems found in different ecological regions of the country such as zings in Ladakb, kuhls in Himacbal Pradesb and Uttar Pradesb, bamboo drip trrigation in Megbalaya, ahars. pynes and johads of the Indo-Gangetic Plains, khadins of Rajasthan, bandharas of the Deccan Plateau, and tanks in Andbra Pradesb, Tamil Nadu and Katbiawar. The book is in the final stages of production.

The Challenge of the Ecological Balance

With the opening up of the economy to liberalisation and a market framework, the integration of economics with environment has become urgent. There are ecological costs of the process of economic growth. What are these costs and bow do we quantify them? How do we ensure that consumers pay these costs? The book sets down the attempts of eminent economists and environmentalists to answer these questions and evolve public policies on these issues.

revealed a very sharply-focussed need. People, for instance, wanted to buy "everything related to biodiversity," or say, related to wetlands, or vehicular pollution, etc. This meant that the level of urban environmental literacy was higher than we knew. People were not buying a fashionable, almost elitist, talking-point of our times: environment. They were buying real information on real problems. And DTE was not just another glossy. It had taken environmental issues off the coffee table and placed it firmly on the streets.





Environmental resources

Green wisdom

'Libsys', an integrated library management software package, has been installed to take care of indexing, abstracting, subscription orders and other financial management of the section. This multi-user package runs on the LAN system which has made the library more accessible

Over the past 14 years, CSE has acquired a vast treasury of material on environmental issues. This material is in various forms - textual, visual and audio-visual. CSE has been trying to strengthen its environmental resource unit (ERU) with a view to systematically document and disseminate this material. ERU has four distinct sections - books, documents and periodicals; newspapers and newsmagazines; audiovisuals; and a database section. With the intention of expanding its sphere, the unit has undertaken several innovative projects to make itself more accessible and user-friendly. All four sections in this unit are knit together by a common thesaurus of keywords to retrieve information. This year was marked by efforts to upgrade the technological base of the unit to cater to new development

Green leaves

The section has reading and reference material on science, technology and environment, including their interfaces with industry, energy, agriculture, economy, health, history, art and culture and education for information, research, and policy-making at national and international levels. The books, documents and periodicals track down the progress made in various branches of environment and development throughout the world. Hence, the section is a primary target for freelance researchers, doctoral and post-doctoral fellows, journalists, media persons and the like. A thesaurus of more than 4,000 selected terminology helps the user in locating the classified choice. There is also an exhaustive section on various statistical references.

The total holding of books is around 30,000. The Centre also subscribes to 117 Indian and foreign periodicals and receives about 585 on complimentary basis. These include bulletins, journals, newsletters and reviews.

In an attempt to strengthen it further, the CSE library went in for a complete overhaul, with modern furniture and new computers. All books have been taken stock of, duplicate books were weeded out, old books bound and revitalised, and missing books identified. Keywords on the stacks and computers will help the user to locate books faster and easily. 'Libsys', an integrated library management software package, has been installed to take care of indexing, abstracting, subscription orders and other financial management of the section. This multi-user package runs on the LAN system which has made the library more accessible.

The section has introduced a Book and Journal Attention Service since July 1995. It offers a concise description of the environment-related themes and reviews as presented by researchers and activists. It also provides details regarding the author, publisher, year of publication, price and availability of the written material.

Green news

Newspapers and newsmagazines, a crucial section of ERU, plays a major role in the day-to-day work of the unit. It provides a newspaper clipping service in the fields of environment, science

MAKING OF THE GREEN FILES

Each day the Centre receives around 35 newspapers and news magazines from around the world. These are marked for relevant articles, which are then selected, cut and pasted, and filed subject and section-wise. Each section has a code and the marked clippings are classified into 25 sections. On an average, around 500 clippings are filed daily.

These clippings not only come in bandy for the staff members but are also used for making the Green Files.

The newspaper and newsmagazine section publishes India Green File and South Asia Green file every month. Each file is divided into 16 sections such as environment, agriculture, dams, forests, living resources, health, pollution, energy, etc. India Green File is a compilation of about 350 clippings on various issues while South Asia Green File carries around 200-250 clippings.

For the Green Files photocopies of the clippings are used, reduced or enlarged depending on the column size of the original clippings. The photocopies are arranged as per section, issue and date. These are then given to a paste-up artist to do the page layout.

Each article is keyworded and an index made for easy reference. Both the Green Files carry an executive summary which is done section-wise to provide a bird's eye-view of the contents.

Selection of clippings for the Green Files is indeed a lough job owing to the vast volume of material available and the constraints of space. Utmost importance is given to environment-related news items. and technology, including their interfaces with other issues of importance to the society. The section subscribes to a total of 47 Indian and international newspapers and nine newsmagazines. These are scanned daily and marked for clippings.

Since July 1995, the section has introduced a daily bulletin board, which draws attention to the latest news appearing in the national and international newspapers and newsmagazines. It covers important issues like environment, health, agriculture, energy, science and technology.

The tremendous response received for the *India Green File*, published every month since 1988, led to the birth of the *South Asia Green File* in August 1995. *India Green File* deals exclusively with news articles related to Indian environment while the *South Asia Green File* carries news items on all South Asian countries.

The section has also compiled clippings on Enron and Nylon 6,6 issues into two booklets. It has put together all available information on the Enron and Nylon 6,6 project, starting from the stage of negotiations till the events at the end of September 1995.

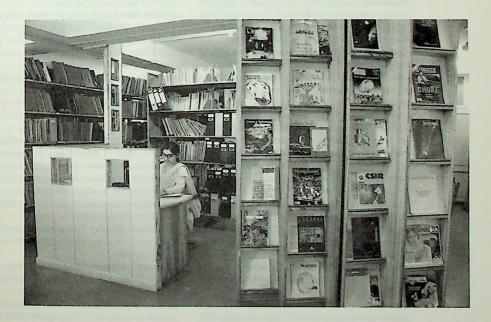
Pictorial guide

The audio-visual section provides audio-visual products as an aid to enhance awareness in the field of environment, science and technology. It has collected a total of 228 films on environment from different parts of the world. CSE has been granted the right to copying many of these films. The section boasts of an exclusive collection of slides. In 1995, CSE acquired some new films and audio cassettes from the US and other countries.

The section has slide shows and photo exhibitions on its agenda. These shows and exhibitions will be organised in schools and colleges. The first slide show package — The Story of a River — captures the environmental crisis in India, focussing on the pollution of river Ganga, both by the industrial and domestic polluting agents.

Databank package

To facilitate researchers, planners, NGOs and journalists, the database section has strengthened its reference and research base on environment and other related materials, and plans to make it available in digital forms to provide easy and integrated access. The section has developed a resource persons databank, categorised under various headings - individuals, universities, NGOs working in the field of environment, forest, wildlife, etc. This database is now available on a single platform with a user-friendly interface. Within a year, over 880 lists have been developed from this data. Some of the lists are regarding NGOs, journalists, wildlife, protected areas, global climate change, ongoing research on environmental issues in India, CSE resource persons, government departments and officials. pollution control boards and researchers in the field of biodiversity.



Events

Lecture on Sustainable Development and People's Participation at PRIA, New Delhi, April 1995: Anil Agarwal delivered a talk.

Workshop on Ecology and Politics at Delhi University, organised by the Centre for Professional Development in Higher Education, New Delhi, April 1995: Anil Agarwal participated as a resource person.

Third National Consultation of the State Forest Ministers, organised by the Ministry of Environment and Forests, New Delhi, May 1995: Amit Mitra attended.

Delhi's Water Crisis and the Role of Students — a talk delivered to students and Faculty of Delhi University Women's Home Science College, New Delhi, May 1995: Lecture by Amit Mitra

Water Shortage and an Agenda for Action, organised by the Centre for Social Action, New Delhi, June 1995: Amit Mitra spoke to village women around Vasant Kunj.

Multipurpose Workshop on Environment Education for school teachers of Tibetan schools, organised by Tibet House, New Delhi, June 1995: Anil Agarwal delivered the valedictory lecture.

National Seminar on the Linkages between Forest and other Sectors of the Indian Economy, organised by the Indian Institute of Forest Management, Bhopal, June 1995: Anil Agarwal delivered the inaugural address.

Interview by ZEE TV on Deforestation and Industry, June 1995: Interview with Anil Agarwal.

Meeting on Conflict Resolution in Biodiversity Conservation, organised by WWF and IPCO, Bhopal, June 1995: Neena Singh attended the meeting.

Adivasi Women's Conference, Rourkela, June 1995: Supriya Akerkar attended.

Meeting of the Delhi Core Group on Resettlement and Rehabilitation, Indian Social Institute, New Delhi, July 1995: Amit Mitra attended the deliberations.

Making Forest Policy Work, summer course programme, organised by the Oxford Forestry Institute, Oxford, UK, July 1995: Sunita Narain gave the opening lecture.

Meeting of NGOs to finalise People's Forest Bill and Draft Rehabilitation Policy, Anandwan, Warora, July 1995: Amit Mitra attended the meeting.

Interview by BITV on Environment for the Series Eco-Logic, July 1995: Interview with Anil Agarwal.

Workshop on Children and Environment organised by the Centre of Concern for Child Labour, New Delhi, August 1995: Anil Agarwal delivered the keynote lecture. Amit

Mitra participated.

National Workshop on Forest Lands, organised by the National Committee for Protection of Common Land Resources (NCPCLR), Bangalore, August 1995: Anil Agarwal chaired the session on Leasing of Forest Lands to Industries. Supriya Akerkar attended and presented recommendations on the future course of action at the concluding session.

15th World Conference of the International Union for Health Promotion and Education, Tokyo, August 1995: Anil Agarwal delivered the keynote address.

A National Consultation on Child Labour, organised by the International Working Group on Child Labour, The Campaign Against Child Labour, The Defence for Children International and the India International Centre, New Delhi, September 1995: Amit Mitra attended the meeting. Deliberations on People's Draft Forest Bill, Indian Social Institute, New Delhi, September 1995: Amit Mitra participated.

International Conference on Sustainable Development of the Aral Sea Basin States at Nukus, Uzbekistan, September 1995: Anil Agarwal participated.

Meeting of the Board of Directors of ETC, The Hague, The Netherlands, September 1995: Anil Agarwal attended the meeting.

First Indian Video Film Festival, Thiravananthapuram, September 1995: Pradip Saha and Harsh Singhal attended the festival to present CSE's film, *Harvest of Rain*, in the competition section

Workshop on Environmental Pollution and Human Health, organised by the University College of Medical Sciences and GTB Hospital, New Delhi, October 1995: Anil Agarwal delivered the keynote lecture.

Programme Policy Committee Meeting of the Urban Waste Expertise Programme of WASTE consultants, Gouda, The Netherlands, October 1995: Sunita Narain participated as a member of the three-person committee set up at the request of the Netherlands Ministry of Development Cooperation.

The Photography Symposium, New Delhi, October 1995: Kalpana Bandiwdekar attended the symposium.

Film on Environmental Science by Insight Productions telecast by ZEE TV, October 1995. New Delhi: Anil Agarwal participated.

Business Breakfast by Television Bazaar telecast by Doordarshan's national channel, October 1995: Anil Agarwal reviewed the business headlines with Jairam Ramesh.

International Conference on the Cultural Dimension of Education and Ecology, organised by UNESCO and the Indira Gandhi National Centre for Arts, New Delhi, October 1995: Amit Mitra participated.

NGO Consultation for Global Environmental Facility, Washington DC, October 1995: Ravi Sharma presented a critique of the GEF Operational Strategy on climate change and biodiversity.

Meeting of the International NGO Forum, Manila, November 1995: Ravi Sharma coordinated the environment and development networks of South Asia and was elected the Asian representative to the International Facilitating Committee.

20th Anniversary Celebrations CRIDEV, Rennes France, November 1995: Anil Agarwal participated in these celebrations and gave a series of talks at Rennes, Caen, Lyons and Lorient. Round Table with Gunter Pauli, meeting on zero emissions, organised by the Tata Energy Research Institute, New Delhi, November 1995: Harsh Singhal attended the meeting.

Seventh Meeting of the Montreal Protocol, Vienna, December 1995: Ravi Sharma presented a paper at the meeting to celebrate the 10th anniversary of the Vienna Convention.

Meeting on Biodiversity Convention, organised by Worldwide Fund for Nature, New Delhi, December 1996: Sumita Dasgupta attended the meeting.

Meeting to draft People's Land Acquisition Act, in lieu of The Land Acquisition Act, 1896 and discussing the People's Rehabilitation and Resettlement Policy organised by the Indian Social Institute, New Delhi, January 1996: Amit Mitra attended the meeting.

Himalayan Women's Workshop on National Policy on Women, organised by Himalayan Action Research Centre, Dehradun and the Society For Participatory Research in Asia, New Delhi, January 1996: Amit Mitra participated.

Workshop on Farmers' Rights, organised by M S Swaminathan Research Foundation, Madras, January 1996: Sumita Dasgupta attended the meeting.

Meeting on Tribal Culture and Identity, Indian Social Institute, New Delhi, January 1996: Amit Mitra participated.

NGOS Meet on Environment, organised by Ministry of Environment and Forests, New Delhi, January 1996: Amit Mitra attended.

The Second Development, Management and Education Programme on Sustainable Development, organised by PRIA, New Delhi, January 1996: Amit Mitra spoke to the participants.

Meeting on Community Forest Management of Protected Areas, organised by Rural Litigation Entitlement Kendra in Dehradun, February 1996: Sunita Narain and Neena Singh attended the meeting.

Seminar on Inclusion of Environmental

Issues in the Manifestoes of Political Parties, organised by Lokshakti Abhiyan, Jan Vikas Andolan, People's Science Institute, New Delhi, February 1996: Supriya Akerkar attended the seminar.

Head to Head Debates, organised by the Oxford Centre for the Environment, Ethics and Society, Oxford, UK, February 1996: Sunita Narain debated with Andrew Steer, director of the environment department of the World Bank, on the issue of Global Environment Concern — At whose expense?

Protest Campaign against Non-implementation of the Bhuria Committee Report, organised by Bharat Jan Andolan on New Delhi, February 1996: Supriya Akerkar participated.

National Convention of Voluntary Activists on Nation Building. organised by VANI, AVARD and VHAI, New Delhi, February 1996: Amit Mitra attended the meeting.

Workshop on the Rights of Tribals and Indigenous Peoples, organised by the Commonwealth Human Rights Initiative and the Minority Rights Group. New Delhi, February 1996: Amit Mitra attended the meeting.

Meeting on Ecology and Development — The Role of Academics organised by the Indian Social Institute, New Delhi, February 1996: Amit Mitra attended the meeting.

Meeting of the Task Force of the Planning Commission on River Cleaning Systems. New Delhi, March 1996: Harsh Singhal attended.

NGO Meeting to Discuss Changes in the Wildlife Act, organised by Indian Social Institute, March 1996: Neena Singh attended the meeting.

Meeting on Impoverishment Risks in Involuntary Resettlement, organised by the Social Development Unit, The World Bank, New Delhi, March 1996: Amit Mitra attended.

First Session of the Independent Expert Group, established by the Swiss-Peruvian governments as their initiative on forests, Geneva, March 1996: Sunita Narain attended the meeting as the representative of NGOs.

Meeting on Consumption Patterns, organised by Consumption Production Systems Change Action Network, East London, South Africa, March 1996: Ravi Sharma participated.

Framework Convention on Climate Change, Geneva, March 1996 Ravi Sharma presented a paper on NGO involvement in climate change negotiations.

GEF Council Meeting, NGO Consultations. Washington DC, March 1996: Ravi Sharma presented a critique of GEF funded ecodevelopment projects.

Environment and the Poor, organised at the World Bank, March 1996: Lunch lecture by Anil Agarwal.

In print

WHAT WE WROTE

CSE researchers and writers prepared a series of reports on science, environment, health and energy issues in 1995-96, which include:

Down To Earth, New Delhi, April 15

- Anumita Roychoudbary 1995. Writing off the World's Forests. A report on the spiralling consumption of wood by the paper industry and global initiatives to direct the industry towards sustainability.
- 2. Anjani Khanna and Devendra Chauhan 1995, **Teasing Death**. The report analyses the existing system of drug trials which has gaping holes in the methodology of the trials and leaves room for misinformation and suppression of evidence.

Down To Earth, New Delhi, April 30

- Rabul Shrivastava 1995, A Question of Industry. A report on the Supreme Court order against polluting industries to clean up or shift out of the capital.
- Anto Akkara 1995, Spirited Battle. A report on the united action by tribal women in Kerala against the liquor lobby strongly entrenched in the tribal belts.
- 5. Rakesb Kalshian 1995, A Matter of the Mind. The report analyses the current swing towards mind and body medicine which accords an important role for attitudes, beliefs, and emotional state of the mind in influencing physical health.

Down To Earth, New Delhi, May 15

- 6. Max Martin 1995, The Mystery of the Aquadeaths. The report examines the reasons behind the devastating white spot disease which destroyed the entire season's crop of shrimps in the country and looks at its impact on the pisciculture industry.
- Anjani Khanna 1995, Visionary. An interview with Carl Kupfer, director, National Eye Institute, Bethseda, on the current state of eye research and future directions.

Down To Earth, New Delhi, May 31

- 8. *Rita Anand* 1995, **The Forgotten Waters of Sanchi**. A report on the Archaeological Survey of India's efforts to revive the ancient water harvesting system in Sanchi.
- Uday Shankar 1995, Power Struggle. An analysis of the review of Nepal's controver-

sial Arun III dam by the recently constituted inspection panel of the World Bank.

 Sumita Dasgupta 1995. Greens Scream Blue Murder. A report on the response from environmentalists to Republican moves to modify key environmental Acts such as the 1972 Clean Water Act and the Endangered Species Act.

Down To Earth, New Delhi, June 15

- 11. *Rabul* 1995, **Windowdressing Forestry**. A report on the plight of tribals under the tyranny of forest department in Harda in Hoshangabad district of Madhya Pradesh, where the World Bank had sanctioned a loan of Rs 800 crore for forest development.
- 12. Sbobbit Mahajan 1995, Top Quirk. A detailed report on how the elusive top quark, which had been detected for nearly two decades, was finally pinned down at the Fermi Lab in Batavia, Illinois, USA thus proving the Standard Model the theoretical framework of sub-atomic phenomena.
- 13. Amit Mitra 1995, Dang and Blast. The report traces the history of exploitation of the forests belonging to the Dang tribals resulting in their poverty.

Down To Earth, New Delhi, June 30

- 14. Sujit Chakraborty 1995, Muckraking. A report on the innovative waste management techniques employed by the Calcutta Metropolitan Water and Sanitation Authority.
- Rakesb Kalsbian 1995, The Essence of Being. The article explores the elusive mental phenomena of consciousness.

Down To Earth. New Delhi, July 15

- Supriya Akerkar 1995, Sustainability and the Southern Perspective. A critical analysis of "Towards Sustainable Europe" — a report brought out by Friends of the Earth.
- Max Martin 1995, Hellfires in the Hills. A special report on the forest fires in Pauri Garhwal and the reasons for apathy of both the forest department as well as local people.

Down To Earth, New Delhi, July 31

 Sumita Dasgupta 1995, The Great Nuke Snobbery. A special report on France's plans to go ahead with nuclear experiments in South Pacific in the face of international opposition.

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 Rakesb Kalsbian 1995, Killer Chlorine. An analysis of the recent findings on hazardous effects of chlorine, once hailed as a boon to health.

Down To Earth, New Delhi, August 15

- 20. Rakesh Agarwal 1995, Extinguished. The story of a unique village of Patial in Hoshiarpur, Punjab, which has framed its own rules to protect forests. Today, this selfsufficiency is being threatened by alien systems of governance brought about by urban politics.
- Kavita Charanji 1995, The Last Frontier. An analytical report on the over-drive of the world's fishing industry backed by belligerent politics.

Down To Earth, New Delhi, August 31

- 22. Manjula Balakrishnan 1995, Damned Bodyblow. A special report on the proposed Rathong Chu dam in Sikkim, touted as a harbinger of prosperity currently caught in legal action by environmentalists protesting against the environmental impact of the dam.
- Ashish Vachhani 1995, Sex on the Brain. A report on the controversial findings on gender differences in the brain.

Down To Earth, New Delhi, September 15

- 24. Supriya Akerkar 1995, Fencing in Territory, Fencing out Inequality... A report on the *adivasi* women's conference in Rourkela, Orissa, a forerunner to the Beijing World Conference of Women.
- 25. Supriya Akerkar 1995, Oiling the Wheels of Globalisation. An analysis of the report: Our Global Governance, brought out by the Commission on Global Neighbourhood which calls for a democratic world governance.

Down To Earth, New Delhi, September 30

- 26. Max Martin, Madhumita Dutta, Himanshu Thakkar and Sujit Chakraborty 1995, Green Justice: Up in Smoke? A special report on polluting units across the country in the light of court orders to shut down units.
- Rakesb Kalsbian 1995, Power Crunch in Paradise. An analysis of the developmental policies of the Andaman and Nicobar Islands.
- Manjula Balakrishnan 1995, Swamped by Sewage. A report on the environmental conditions of small towns taking Aligarh as a case study.

Down To Earth, New Delhi, October 15

 Neena Singb 1995, Conservation Crunches. A review of panda conservation and social development — a study based on an assessment of Wolong and other panda reserves in China, 1994.

30 Rustam Vania 1995, A Sandy Paradox. A report on the changing agricultural practices in western Rajasthan, with water-intensive agriculture pushing out the sewan grasslands which are the traditional pasturelands.

Down To Earth, New Delhi, October 31

- Meera Iyer 1995, Blood on its Hands. A report on the pollution and hazardous waste from the chemical unit zone, packed with 1,500 units in Ankleshwar.
- 32. Ambika Sharma, Anju Sharma, Uday Shankar, 1995 Criminal Waste. A feature analysing the state of the country's urban wetlands which are being destroyed systematically by developmental forces.

Down To Earth, New Delhi, November 15

- 33. Supriya Akerkar 1995, Major Battle for Minor Stuff. A report on the movement by Ekta Parishad, a coalition of tribal groups to fight for their rights over minor forest produce.
- 34. Anil Agarwal 1995, Will the Aral Sea Ever Come Back² A report on one of the world's greatest ecological disasters — drying up of the Aral Sea, once the world's fourth largest lake.

Down To Earth, New Delhi, November 30

- 35. Anupam Goswami 1995, The Price of Power. A report on the movement against the Cogentrix power plant against the background of opposition to industrialisation of the pristine Dakshin Kannada region.
- 36. Meera lyer 1995, Alimentary Cases. A special report on the trial brought by McDonald's against two nondescript environmental activists in the United Kingdom, which boomeranged.
- 37. Rakesh Kalshian 1995, Mystique of Metal Therapy. An analysis of the therapeutic powers of metals as practised by ayurvedic and metal therapy practitioners of today.
- 38. *Sunita Raina* 1995, **Plagued by Rats**. The report examines different aspects of the plague problem.

Down To Earth, New Delhi, December 15

- 39. Sumita Dasgupta 1995, Patent Paradox. A report exposing the greed behind plant utility patent models developed by US firms being pushed as ideal systems to be adopted by the signatories of the World Trade Agreement.
- 40. Sumita Dasgupta 1995, Outrage. A report on the Ogonis' battle to preserve their lands

against developmental ravage by multinationals culminating in the execution of Ken Saro-Wiwa, the leader of the Movement for the Survival of the Ogoni People.

Down To Earth, New Delhi, December 31

- 41. Rakesh Agaruval 1995, **The Swaraj Dream**. A report on the unique experiment to chalk out planning and development in *adivasi* hamlets, initiated by Gram Niyojan Evam Vikas Parishad, with the help of academicians.
- 42. Max Martin 1996, Of Barren Hills and Barren Smoke. An analysis of the environmental ravage in the last green frontiers of Kashmir by militants while the army looks on passively.

Down To Earth, New Delhi, January 15

- 43. Max Martin 1996, Crisis in Krishna A special report on deforestation in Krishna district of Andhra Pradesh, with active connivance from political heavyweights of various hues.
- 44. Asbish Vachhani 1996, Encounter Jovis Pater: A report on the space exploration venture to Jupiter by the Galileo spacecraft.

Down To Earth, New Delhi, January 31

- 45. Meera lyer 1996, The Dam Sham. A report on the controversial Bakun dam project across.river Balui in Malaysia, which has been opposed by environmentalists on various grounds.
- 46. Mustafa Kamal Majumdar and Sumita Dasgupta 1996, Prioritising People. A report on the two-day meeting of donor agencies of Flood Action Programme launched in 1988, in Bangladesh.
- Rakesh Kalshian 1996, Evolution with Full Stops and Commas. A report on the recent research findings which lend credence to the punctuated equilibrium theory championed by Niles Eldredge and Stephan Gould.
- Meera Iyer 1996, The Dam Sham. A report on the proposed Bakun dam across river Balui, in the face of opposition from environmentalists.

Down To Earth, New Delhi, February 15

- 49. Saumya Chaudhri 1996, To Sell a Resource. In the face of growing demand for water, the report projects solutions for future management of water through tradable property rights in water and development of water markets.
- 50. Joseph Antony 1996, Vigyanotsavam. A

report on the unique movement to bring about a change in educational system to inculcate a spirit of enquiry in students.

- 51. *Ambika Sharma* 1996, **The Original Mus**. The report analyses the theory that the house mouse had its origins in India, established by researchers at the National Institute of Immunology, in collaboration with researchers in France.
- 52. Manjula Balakrishnan 1996, Pest of a Problem. A special report on the continued use of DDT in India, while it is banned in developed countries as a substance highly stressful to the environment.

Down To Earth, New Delhi, February 29

- 53. Ashish Vachhani and Rajat Banerjee 1996, Geared to Derail. A special report on the state of the Indian railways, the largest railway network in the world, and its future plans.
- 54. *Rakesh Agarwal* 1996. **Pouring Prosperity** A report on the successful efforts of a local NGO, the Marathwada Navnirman Lokayat, which introduced a micro-watershed development project in the village of Ambajogai, in Beed district of Maharashtra.

Down To Earth, New Delhi, March 15

- 55. Kavita Charanji 1996, Hour of the Green Crusader. The report looks into the American response to the announcement of a third party candidate in the form of Ralph Nader, the renowned crusader for consumer rights.
- 56. Anil Agarwal 1996. What's in a Neem? An analytical report which exposes the inaction on the part of Indian scientists to cash in on the wonders of the neem tree, while there have been a flurry of patents taken out by Western companies on neem-based products.

Down To Earth, New Delhi, March 31

- 57. Frederick Noronba 1996. Unveiling the Past. A report on the Second Congress on Traditional Sciences and Technologies of India.
- 58. Amit Mitra, Meera Iyer and Rakesh Agarwal 1996, Artisans — The Untold Story. A detailed report on the despair and devastation facing the artisans of India, due to vanishing resources, administrative apathy in marketing their produce and lack of technology.

WHAT OTHERS SAID

"It is bigb time we wake up to the realities of pollution and take preventive measures rather than wait for it to take its toll on us," writes Anil Agarwal. **The Hindustan Times**, New Delhi, January 1, 1996.

On the Montreal Protocol amendment, Ravi Sharma of CSE wrote: "All stakeholders should be involved in planning and global negotiations." **Business Standard**, New Delhi, January 15, 1996. On the US environmentalism, a newspaper wrote, "Americans are good at acting locally, but not thinking globally, as the editor of Down To Earth fortnightly. Anil Agarwal recently told, this may be a phenomenon associated with countries of continental dimensions and in that sense too, Indians tended to be more preoccupied with national (though not necessarily local) issues than world ones." **Frontier Post**, Pakistan, December 6, 1995.

In a letter to Prime Minister P V Narasimha Rao, the Centre for Science and Environment has demanded a white paper on the status of wildlife in the country and a reassessment of the Wildlife Act 1972, amended in 1991. **Economic Times**, New Delhi, December 8, 1995.

Ravi Sharma was quoted on the Montreal Protocol, "According to the new agreement, the production of CFCs have to stop completely by 2010. "The Asian Age, New Delhi, December 8, 1995.

On the Wildlife Management a newspaper wrote, "The Centre for Science and Environment, an NGO, bas demanded that the government reassess the Wildlife Act and introduce suitable modifications allowing local communities to participate in the management of protected areas CSE bas written letters to Prime Minister P V Narasimba Rao and Minister of State for Environment and Forests Rajesh Pilot, putting forth this and several other demands." The Pioneer, New Delhi, December 10, 1995.

On wildlife management, Anil Agarwal was quoted, "It is most unfortunate that India today lags behind in a world that is fast realising that to conserve biodiversity local people have to be active and equal partners in the process." The **Pioneer**, New Delhi, December 27, 1995.

In an interview, Anil Agarwal was quoted, "I bave found that politicians are more interested in the environment than the bureaucrats because they seek vote on the issue." Sunday Observer, New Delhi, November 12, 1995.

On conservation of national parks and sanctuaries, a journalist wrote, "People's movement activists like Anil Agarwal of the Centre for Science and Environment advocate giving over protected areas to local people because they know best how to manage local resources in sustainable manner." Indian Express, New Delhi, November 15, 1995.

On the Basal Convention ban Ravi Sharma was quoted, "Enforcement of the ban, bowever, is still doubted by many, including NGOs like the Centre for Science and Environment." The Statesman, Calcutta, November 25, 1995.

Reporting on a debate on joint forest management organised by CSE, Anil Agarwal was quoted, "Our wildlife is under a serious threat. With too many park-people conflicts, we have to ask if we are saving the wildlife and biodiversity with our existing policies." **The Economic Times**. New Delhi, October 15, 1995.

In a workshop on environmental pollution and human health, held in New Delhi, Anil Agarwal was quoted as saying, "Prevention of physical and chemical bazards in work environment and food safety against contamination are a must." **The Hindustan Times**, New Delhi, October 16, 1995.

On the Montreal Protocol treaty, a journalist wrote, "The Centre for Science and Environment has opined that the processes adopted by the treaty establish wrong precedents for solving global problems." Indian Express. New Delhi, September 16, 1995.

On the shuffling out of Kamal Nath from the Ministry of Environment and Forests, just a day before the Geneva meet on Basal convention, Vinayaka Rao of CSE has been quoted as saying. "Needless to say, Kamal Nath bad very strong credentials as an acting environment minister from a major developing country. The environmental issue area today calls for more expertise than ever before. Given the politics of quick transfers, it is not possible to pin bopes on the bureaucracy maintaining institutional memory. "The Economic Times. New Delhi, September 17, 1995.

Writing about the Himalayan region, Anil Agarwal has been quoted as saying, "Cultural diversity is not a historical accident. It is the direct outcome of the local people learning to live in barmony with the region's extraordinary biological diversity." North East Observer, Guwahati, September 21, 1995.

In an interview regarding granting of forest land to private parties, Anil Agarwal was quoted as saying, "It is my considered view that the first claims over forest lands must be with the communities that have been installing them traditionally. They should have the right to lease out the forest lands if at all." Legal News and Views, September 1995.

Writing on a workshop on children and environment, Anil Agarwal has been quoted as saying, "The Environment Ministry before clearing projects for new industries in backward districts should present an index on the impact of such industries on the local children." The Pioneer, New Delhi, August 5, 1995.

On Sukhomajri and its development, Anil Agarwal has been quoted as saying, "The lesson of Sukhomajri is that the starting point for environmental regeneration is water and not trees." The Hindustan Times, New Delhi, May 18, 1995.

CSE's Executive Board

Dr G D Agarwal Chairperson

Environmental Engineer; former Dean of Faculty, Indian Institute of Technology, Kanpur; former Member-Secretary of Central Pollution Control Board; now works in an honorary capacity in Chitrakoot Gramoday Vishwa Vidyalaya, Chitrakoot

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Management Expert, Managing Director of Industrial Development Services, which offers consultancies to industries. He is also on the Board of Directors of several leading industrial enterprises, such as Shriram Industrial Enterprises Ltd. INALSA Ltd, Punjab Scooters Ltd, and others

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Environmentalist and journalist, former science correspondent of The Hindustan Times and the Indian Express, and Fellow of the International Institute of Environment and Development, London

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Eminent medical scientist; former Director of the All India Institute of Medical Sciences; former Director General of the Indian Council of Medical Research; currently a National Research Professor

Anupam Mishra Member

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Industrialist, Managing Director of Indfoss Industries, and former Chairperson of the environment committee of the Confederation of Indian Industry

B G Verghese Member

IN REMEMBRANCE

Eminent journalist: former Editor of The Hindustan Times and the Indian Express; currently works with the Centre for Policy Research on South Asian Water Issues

With the passing away of Dr Anand Prakash on February 12, 1996, the Centre has lost an honoured Board Member and a very dear well-wisher. Dr Prakash bas had long years in the legal profession and was well-known for his tremendous depth of knowledge, ability and wisdom. For us, Dr Prakash was much more than a lawyer. Like all other growing institutions, CSE needed experienced friends who could guide its young managers towards success. Institution building, particularly in a country like India, requires energy, patience and above all an experienced bead. And, Dr Prakash was a great help with all his years of competence and expertise.

Dr Prakash, in just a few years of his association with CSE, provided the strength to keep going. The Centre needed his support to stay at the forefront, facing all challenges. He gave us his precious time and guidance. We will miss his useful advice and most of all his understanding about what it takes to build an institution. We are deeply grateful to him for his belp.

Who's who at CSE

Director Anil Agarwal

Director's OFFICE Harsh V Singhal Gita Kavarana Jainamma George

Deputy Director Sunita Narain

Deputy Director's Office V S Rao

Cell for Global Environmental Governance Coordinator: Ravi Sharma

> Sumita Dasgupta Vinayak Rao Raksha Khushlani

Cell for Environmental Research and Advocacy

Policy Research Unit Anumita Roychoudhary Anju Sharma N Raghuram

GRASSROOTS UNIT Coordinator: Amit Mitra

> Meera Iyer Rakesh Agarwal

Advocacy Unit Supriya Akerkar Neena Singh Himanshu Thakkar

Cell for Environmental Education Coordinator: Malini Rajendran

Cell for Science and Environment Information Editor: Anil Agarwal ENVIRONMENT, SCIENCE AND TECHNOLOGY REPORTING TEAM Coordinator: Sujit Chakroborty

> Rajat Banerji Max Martin Sunita Raina

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> Debjani Chatterjee Nandita Bhardwaj Bindu Nambiar

FILM AND TELEVISION UNIT Coordinator: Pradip Saha

Cell for Environment Resource

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Newspapers and Newsmagazines Unit Coordinator: Kiran Pandey

> Madhumita Paul Pushpa Thapliyal Tito Joseph Inder Kumar

Dатаваяе UNIT Coordinator: Kanak Mittal

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> Samapti Praharaj Sourav Banerjee Ikhlaque Khan F Vallabha Reddy

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> Anupam Varma B Venkateswaran Ajay Kumar

SALES AND DESPATCH Manager: Subir Banerjee

> K C R Raja R Kalyani

ADMINISTRATION Manager: K Sivasankaran

> R K Shukla Suresh Kumar C C Shahira

PRODUCTION Manager: B Paul William

> R Arokia Raj Shri Krishan Anand Singh Rawat Kirpal Singh Surender Singh

SYSTEMS AND COMMUNICATIONS Coordinator: Col Sudhir Manchanda

K S R Srinivasan

Our partners worldwide

The Centre interacts with numerous organisations, both in India and abroad. It works with like-minded organisations to lobby for the inclusion of Southern perspectives in international fora. Nationally, CSE works with several groups to support the concept of 'environmental rights'.

Some of the partners with whom CSE has been collaborating are as follows:

Akshara Prakashana, Kamataka

Akshara Prakashana has made CSE's State of India's Environment reports available in Kannada.

Approtech Asia, Manila

CSE is a founding member of this Asia-wide appropriate technology network.

Bangladesh Centre for Advanced Studies (BCAS), *Dhaka* CSE and BCAS work together on issues of global warming and poverty-environment interface.

Both Ends, Amsterdam

CSE and Both Ends keep in regular contact on issues of environment.

Centre for Ecological Sciences, Bangalore

CSE and CES work together on issues of biodiversity.

Centre de Reflexiond' Information et de Solidarite (CRISLA) This organisation has published CSE's publications including the *State of India Environment* reports in French.

Centre International de Recherche sur l'Environnement et le Developpement (CIRED), Paris

CSE and CIRED exchange information regularly on scientific and political issues of global warming.

Centre rennais d'information pour le developpement, (CRIDEV), Rennes

CSE works with CRIDEV on numerous international issues.

Climate Action Network (CAN), Washington

CSE is an active member of the global Climate Action Network, which has members in all regions of the world to lobby governments to strengthen the Climate Change Convention.

Community Aid Abroad (CAA), Melbourne

CAA has assisted CSE in reporting on environmental developments in Australia and the Pacific.

Concerned Citizens, Sikkim

CSE works with Concerned Citizens on environmental issues in Sikkim.

Council for Professional Social Workers (CPSW), Bhubaneshwar CSE assisted CPSW to produce its *State of the Environment* report on Orissa by providing available information on the state.

Creative Learning for Change (CLC), New Delbi

It coordinates the production of CSE's series of children's story books on environmental issues.

Desertification Network, Geneva

CSE worked with African NGOs to formulate positions on the Desertification Control Convention at a meeting in Ougadougu, Mali. Since then, CSE has been an active member of the network, formed globally to prevent desertification.

Economie et Humanisme, Lyon

CSE works with Economie et Humanisme on environmental issues.

Environment and Development Research Centre (EDRC), Brussels

CSE is the South Asian member of the international Network on Trade and Environment which is located at EDRC.

Environment Liaison Centre International (ELCI), Nairobi

CSE is a member of ELCI. CSE's director, Anil Agarwal, was chairperson of ELCI from 1984-87. CSE is a founding member representing South Asia in the International Interim Committee to Liaison on Biodiversity Convention, whose secretariat is also located at ELCI.

Educational Training Consultancy (ETC), Amsterdam

CSE's director is a member of the foundation's board of directors. The foundation is deeply involved in promoting low external input agriculture.

Folkekirkens Nodhjaelp, Copenhagen

This organisation collaborates with CSE to generate reports on environmental issues worldwide.

Foundation for Community Organisation and

Management Technology (FCOMT), Manila CSE is helping FCOMT to popularise the concept of communitybased national accounting systems.

Foundation for the Progress of Humanity (FPH), Paris

FPH and CSE work together to promote concepts of global democracy.

Friends of the Earth-Canada (FOE-Canada), Ottawa

CSE and FOE-Canada have a joint project to monitor the Montreal Protocol to phase out ozone depleting substances.

Friends of the Earth, International (FOE-I), Amsterdam

FOE-I and CSE have an agreement to consult each other before initiating campaigns on international environmental issues. CSE also plans to attend the annual meetings of FOE-I partners and members.

Friends of the Earth-Netherlands (FOE-Netherlands), Amsterdam

CSE has a collaborative project with FOE-Netherlands on strategies to change consumption patterns of the North.

Gandhi Peace Foundation (GPF), New Delbi

GPF and CSE have collaborated in the past to translate and produce the first two citizens' reports on the *State of India's Environment*. CSE continues to collaborate with GPF on the latter's studies on traditional water harvesting systems.

Indian Social Institute (ISI), New Delbi

CSE is working with ISI on the draft forest bill and the draft rehabilitation policy of the Central government.

International Institute for Environment and Development (IIED), London

Development (neb), London

IED collaborates with CSE to report on environmental events worldwide and to undertake joint analytical projects.

IUCN-Nepal, Kathmandu

It is an active member of the South Asian NGO Network initiated by CSE, without whose help the Third South Asian NGO Summit could not have been organised in Kathmandu.

IUCN-Netherlands, Amsterdam

CSE has been collaborating with the World Conservative Union's Netherlands chapter on the issues of institutional change in Global Forest Policy.

IUCN-Pakistan, Karachi

CSE and IUCN-Pakistan jointly organised a major India-Pakistan Environment Conference in Labore, whose proceedings have been published by IUCN-Pakistan.

Kashtakari Sangathana, Mabarashtra

CSE was involved with the Sangathana on their campaign for tribal self-rule.

Mihikatha Trust Fund (MTF), Colombo

CSE is working with the Fund on South Asian environmental issues.

Mohammad Ali Society (MAS), Karachi

MAS and CSE work together on issues relating to poverty and environment, with CSE resource persons in training workshops and seminars.

Orissa Mahakrushak Sangh (OMS), Orissa

CSE has been involved with the Sangh in campaigns to save the Chilika lake.

Panos Institute, London

Panos provides CSE with regular inputs for its worldwide cov-

erage of environmental events.

Parivartan Prabodhini, Maharahstra

CSE and Parivartan Prabodhini work together on issues of environment and development, in particular on issues of tribal rights.

Project Swarajya, Orissa

Project Swarajya has translated CSE's environmental publications into Oriya.

Royal Society for the Protection of Nature (RSPN),

Thimphu

CSE is assisting the Society to produce its report on the state of environment of Bhutan.

Rural Litigation and Entitlement Kendra (RLEK), *Debradum* CSE is working with RLEK to build up a movement to empower local communities to manage national parks, sanctuaries and other protected areas.

Shirkat Gah, Labore

CSE and Shirkat Gah work together to draw up common positions on global environmental issues and exchange news clippings to produce a *South Asian Green File*.

Society for Hill Resource Management School (SHRMS), *Bihar*

CSE assists SHRMS in promoting its ideas of wealth creation by the poor through participation and good natural resource management.

South Asian NGO Network

Several leading environmental NGOs in India, Pakistan, Bangladesh, Sri Lanka and Nepal are working together to develop and strengthen an environment and development NGO network in South Asia.

Sri Lanka Environmental Journalists Forum, Colombo

It assists CSE in distributing its feature service to Sri Lanka's media.

Sustainable Development Policy Institute (SDPI), Labore

CSE and SDPI work together to draw up common South Asian positions on global environmental issues.

Swedish Society for Conservation of Nature (SSCN), *Stockholm* The society collaborates with CSE to generate reports on environmental events worldwide.

Tarun Bharat Sangh (TBS), Rajasthan

CSE works with the Sangh on environmental campaigns to save the Sariska sanctuary.

Television Trust for the Environment (TTE), London

It works with CSE to help make environmental videos available to Indian and South Asian institutions.

Ubeshwar Vikas Mandal (UVM) Rajasthan

CSE works with UVM on environmental issues in Rajasthan.

Waste Consultants, Netberlands

CSE's deputy director is a member of its programme policy committee. Centre works with Waste Consultants on hazardous and municipal waste management issues.



NEW TITLES

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State of the environment E E

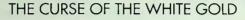
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THE CURSE OF THE WHITE GOLD

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ection of nature parks Whose business?



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notebook

A newsletter from the Centre for Science and Environment No 5 April-June 1996

Dear friends,

India's environmental governance systems are in a state of crisis. On top of that, the current government and its leadership does not appear to have any interest in good environmental management. The first major step that this government is proposing to take in this field is to take power away from the Union Ministry of Environment and Forests (MEF) for clearing power stations and devolving this power onto the state governments. Since state governments are also proponents of these projects, it is unlikely that they will strike a balance between economic devel-

opment and environment conservation. The MEF bas strangely not uttered a word against these decisions.

Many people suspect that nobody less than the Prime Minister H D Deve Gowda (PM) is behind this move. As chief minister of Karnataka, he bad strongly opposed environmentalist concerns

on the coal-based Cogentrix-sponsored power station. But instead of making the decision-making structures more transparent, his government is out to sabotage

the little that exists in the name of environmental governance.

H D Deve Gowda was the chief minister of Karnataka when my colleague, Supriya Akerkar, interviewed him. We were then trying to document the records of different political parties in environmental management. And Deve Gowda, deeply involved with the controversial Cogentrix power project, was extremely piqued with environmentalists. He offered gratuitous advice to Supriya: "Often, people are being misled by environmentalists who tend to be anti-development. Take my advice...you are young and bave a bright future ahead, don't be led by such people, " (Down To Earth, Vol 5, No 3).

I found this statement by a person who has since become chief executive of the country quite bewildering. It is extremely important to note that environmental management is an issue which by its very nature constantly demands Prime Ministerial intervention. Every environmental dispute becomes an inter-ministerial or Centre-state conflict and if the environment minister does not have PM's support, environmental issues

(a) (III)

into the background and environmentally destructive development will come to the fore. Deve Gowda's attitude, therefore, constitutes a very serious threat to the enviromental movement

will steadily recede

To me, Deve Gouda's stance shows that the country is going back on its environmental commitments. And the environmental movement has failed to acquire enough power to force the political system to accept the value of its arguments.

I am glad that Supriya did not take Deve Gowda's advice and continues to work with me and trust me. What is even more bewildering to me is that by Deve Gowda's standards, I am an anti-national person, Yet, exactly 10 years ago, the then PM, Rajiv Gandhi who had seen our report on the state of India's environment, had asked me to address bis entire council of ministers on this important subject. So, while one PM felt that our work on environment was important enough to be brought to the notice of all bis colleagues. The current PM feels it is holding up India's development

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unnecessarily. As the council of ministers meeting was about to end, the Parliamentary Affairs minister said that the same presentation be made to all MPs. Rajiv, however, said that to ensure any serious discussion I should address all the parliamentary consultative committees. Since every MP was a member of one committee or the other, every MP would be reached in this manner. Moreover, he recommended that each minister should ensure that the discussion focus on the environmental role bis or ber ministry can play.

Two days later I came to know



through T N Sesban, the redoubtable chief election commissioner (the then secretary, environment), that I had to address as many as 27 committees. I told Sesban that I would address about 15 committees whose ministries were more central to environmental management and suggested that the rest be addressed by his staff.

Sesban must have conveyed this to Rajiv. My first presentation was to the Ministry of Planning chaired by Rajiv bimself as minister of planning. The moment he sat down he leaned over to ask me whether I would deliver all the lectures. Amazed by the PM's extraordinary interest, I somehow tried to explain my position. He was clearly unhappy, and asked, "So which ones are you leaving out?"

"Commerce, defence, finance, etc", I answered. He politely said, "Mr Agarwal, I would strongly urge you to reconsider. I want you to reach every MP. Even 1 as a PM cannot do much for the environment unless the Parliament backs me. When droughts strike, more MPs want to dig tubewells rather than undertake water conservation measures. I would like you to address all the committees." I, obviously, bad no answer. "Of course, sir, how can I say 'no' to a PM," was all I could mumble.

So what has gone wrong over the last decade that the present PM should take such a negative position? It is possible to dismiss this as a personality trait and say that he is insensitive to the green cause, which is probably true. But clearly, it cannot be the entire story. The question to ask is: Is environmental governance in India going to be built on such whims of successive leaders?

Anil Agarwal

CELL FOR NATIONAL ENVIRONMENTAL ADVOCACY

World Bank plays foul...

The ecodevelopment project is an attempt by the Ministry of Environment and Forests, jointly funded by the Global Environment Facility and the World Bank. The project, designed to reduce dependency of the people on protected areas, has certain basic flaws. It hopes to mitigate pressures on protected areas by giving alternative resources and income-generating activities to people, believing that poverty is the single-most important reason for people to depend on natural resources.

Centre for Science and Environment (CSE) has been very critical of this project because the people who will be affected have been totally ignored in the conceptualisation stage. The Centre believes that the problem of forest-based people is not only poverty but disempowerment by wildlife laws and alienation from their habitat. People will continue to use forest resources unless they have a stake in managing and protecting the forests.

While campaigning against this project, CSE became a victim of what can only be called the classic doubletalk of the World Bank. The skill and ease with which they co-opted adverse opinions, or simply pushed all dissent under the carpet, proved to be an eye-opener.



In May, CSE was contacted by the resettlement and rehabilitation specialist of the World Bank, and was verbally invited for a one-day meet on the ecodevelopment project. The World Bank also wanted CSE to recommend names of non-governmental organisations (NGOs) who could be invited for the meeting. CSE immediately faxed a list of eight NGOs who had never been given an opportunity to air their opinions to the project designers.

Meanwhile, CSE contacted all the recommended NGOs to appraise them of the meeting. Ironically, the World Bank did not send an invitation either to CSE or to the NGOs recommended by it. Anita Cheria, an activist who works with the *adivasts* of Nagarhole in Maharashtra, and whose name was recommended by CSE for the World Bank meet, relentlessly pursued the matter individually, and forced an invitation at the last minute. Avdhesh Kaushal of Rural Litigation and Entitlement Kendra (RLEK), received the invitation on the day of the meeting, and hence could not attend.

A series of letters were immediately sent to David Marsden, chief of the social development unit, World

Skewed approach, Mr Prime Minister!



"Often, people are misled by environmentalists who tend to be antidevelopment. Take my advice...you are young and have a bright future ahead of you. Don't be led by such people," was the advice given by the Prime Minister of India, H D Deve Gowda, to a CSE researcher interviewing him. By counter-

posing environment with development, Deve Gowda betrayed his ignorance about the impoverished state of millions of people in this country due to degradation of natural resources. The interview was conducted when he was the Chief Minister of Karnataka.

Most of Deve Gowda's responses projected similar insularism concerning environmental issues affecting his state. He added, "environmentalists criticise that industrial effluents released in water affect the fish. But this is not true. Industries and refineries in other states (Gujarat, for instance) have been releasing effluents into the sea. But, neither the fish nor its consumption, have been affected in these areas." This was said in the wake of protests by fisherfolk in Karnataka and other parts of the country against the rising pollution in rivers.

Deve Gowda dreams of making Karnataka the most industrialised state, by inviting liberal amounts of private capital. Almost all his responses lacked weight and were cliches. Most queries were met with the off-repeated idiom, "we will take steps on that."

Indeed, state protocol and democratic functioning require Deve Gowda to react in a more rational manner in the future, especially on becoming the Prime Minister. One can only hope that Deve Gowda will take cognisance of environmental issues in the country in a far more serious vein.

Bank, protesting against this blatant doubletalk. A copy was also directed to, Jessica Mott, task manager, ecodevelopment project and to several NGOs in India.

CSE also organised a joint press conference with the Indian Social Institute and released a statement against ecodevelopment, signed by a group of eminent people. Among the signatories were Anil Agarwal and Sunita Narain (CSE), Madhay Gadgil and Ramchandra Guha (Indian Institute of Science). Medha Patkar (Narmada Bachao Andolan). Baba Amte (social activist), George Fernandes (Member of Parliament), Walter Fernandes (Indian Social Institute), Soli Sorabjee (former solicitor general), and Rajni Kothari and Avdhesh Kaushal (RLEK).

The statement was sent to national and international organisations, with the request to campaign at their own levels.

Unfortunately, showing total insensitivity to the protests, the World Bank has gone ahead with the final negotiations with the Ministry of Environment and Forests. According to the feedback received, the meeting broadly endorsed the project, barring a few minor changes which do not redress the concerns raised. If this is an indication of things to come, we have a long and hard battle ahead of us. \Box

Out with vengeance



The wildlife policies of the government have been coming under increased scrutiny and flak, as NGOs do vigorous iklife people issues

research on wildlife-people issues, refuting most of the bureaucratic policies. This on-going tussle takes a new turn when the wildlife bureaucracy recently reacted, in a manner that reflects its intense resentment at being questioned.

A recent press report in *The Pioneer* (August 16, 1996), quotes S C Dey, additional inspector general of forest. expressing "concern over the negative publicity being created by certain NGOs regarding official wildlife conservation activities."

Dey bas directed all chief wildlife wardens of the states to ensure checks on the activities of such organisations and ensure that unauthorised persons are not allowed to carry out research on wildlife in India, specially protected areas. Dey accuses NGOs to be "publicity mongers", who get a lot of foreign funds and indulge in all kinds of activities to get press coverage.

CSE immediately reacted by sending a letter to Dey, asking him to verify the authenticity of the report and to clarify his position. It has also sent a response to the editor of *The Pioneer*. The matter has been brought to the notice of the Minister for Environment and Forests, Jai Narain Prasad Nishad. The Centre will send a copy of the report to other NGOs as it has serious implications for them. especially for NGOs working in protected areas.

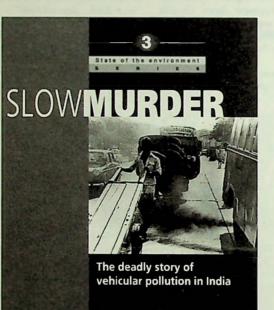
Ecological bistory: conference planned

CSE is organising a meeting to understand how people in the past dealt with ecological issues and how they used their knowledge to solve environmental and developmental problems.

With this objective, the Centre is organising a three-day workshop on ecological history and sciences in October 1996. The seminar will focus on how our communities managed their natural resources, biodiversity, forestry, wildlife, etc, and bring to the fore key lessons for sustainable ecological management. Interested readers are invited to participate in the exercise by writing to the Centre.

A database of ecological historians is also being compiled which will eventually be made into a directory. \Box

If you are not already suffocated, we have a suggestion: buy this book...



Study directed by Anil Agarwal Written by Anju Sharma

Rs. 75.00 per copy

and read the smog in detail



*For details, write to:

The Marketing Manager CENTRE FOR SCIENCE AND ENVIRONEMNT 41, Tughlakabad Institutional Area, New Delhi - 110 062 Phone: 6981124, 6981110, 6983394 Fax: 91-11-6985879 Email: csedel@cse.unv.ernet.in

4

Readers, join in...

To intensify our campaign on captive plantations and the ecodevelopment project, in the coming months CSE will concentrate on building public opinion against the issues.

- Madhya Pradesh Forest Development Corporation has invited tenders from the private industry to grow plantations on 3,500 acres of forest lands. The move is a death knell for scores of rural poor dependent on these forest lands for their fuel and fodder needs. CSE is contesting this move as it violates local people's fundamental right to life by impinging on their livelihood needs. The Centre will be liasioning with Madhya Pradesh NGOs to build up a public opinion against the move.
- The months of September and October would be crucial for the campaign against ecodevelopment. The board of directors, of the ecodevelopment project, would meet on September 5, to discuss various issues of the project including the agreement on dispersal of the ecodevelopment fund. Another crucial meeting in October, to endorse ecodevelopment proposal by the GEF Council, is in the offing. CSE's thrust would be to bring together people and NGOs working on the issue, to create effective pressures. It would also meet some sympathetic Members of Parliament and lobby with some key international institutions.

Readers are invited to air their opinions which will help us form a consensus, so please write to us at the Centre's address, and let us know if you support us and would like to work with us on these campaigns. Suggestions on how to go about the campaigns are most welcome.

extend your vision

(people in Srikakulam must know how Sukhomajri made it)



HARVEST OF RAIN

As misdirected hydraulics countrywide build mammoth dams and canals to solve the water crisis, this video turns to the wisdom of traditional water management. We have forgotten the basic principle: conserve water where it falls.

48 mins PAL VHS

Dir: Sanjay Kak

For details contact:

Marketing Manager Centre for Science and Environment 41, Tughlakabad Institutional Area New Delhi 110 062 Tel: 698 1110, 1124, 6399, 3394 Fax: 698 5879 Email: csedel@cse.unv.ernet.in



THAR: SECRETS OF THE DESERT

The Indira Gandhi Canal: all malaria, no development. But once, a rich culture and trade bloomed in the world's most populous desert. The video shows how humans, animals and nature interacted in those flourishing times.

52 mins PAL VHS

Dir: Sanjeev Shah



THE VILLAGE REPUBLIC

Progress helps those who help themselves. Empowerment begins in the village; it does not end there. This video is about those who thought so and put their heads, and resources, together: small, and huge, success stories.

50 mins PAL VHS

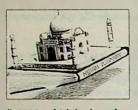
Dir: Christopher Rego

WEALTH OF THE NATION

A series of 3 videos Produced by Centre for Science and Environment

Each VHS Cassette is Rs 850.00 Series of 3 Cassettes is Rs 2000.00 A discount of more than 20% Special offer for educational institutions

NEERI threatens legal action



A recently published article, 'The Trouble with the Trapezium' in Down To Earth (April 15, 1996), on Taj pollution and the role of scientists, especially those of the National Environmental Engineering Research Institute

(NEERI), which had conducted studies on air pollution in the Taj Trapezium in 1993, has sparked off a controversy.

The story vindicated, contrary to the claims of NEERI scientists, that even after two decades of scientific research on air pollution in and around Agra, and the feared consequential damage to the Taj Mahal, experts are still groping in the dark. The article pointed out that it is unjustifiable on the part of scientific bodies and expert committees, including NEERI, to target some specific industries and exonerate others, as there was not enough evidence regarding sourcewise contribution of various industries to the total pollution load. The story also described several discrepancies in NEERI reports, as pointed out by various scientists.

Perhaps, the idea of being made accountable for their claims did not appeal to NEERI. In May, it sent a 20-page rejoinder to a five-page story, threatening legal action against Down to Earth, if an apology was not published immediately. The rejoinder not only contended all allegations to be baseless and malafide, it also questioned the motive of the editor in publishing the article. The rejoinder alleged "the editor by publishing the aforesaid article, demoralises the scientists and their selfish motives. If the editor contends that NEERI scientists are against Agra Foundary Association, then through this article, he (the editor) has shown vested interest in small-scale industries located in the Taj Trapezium by publishing the aforesaid article without careful perusal of NEERI reports and without verification of facts from NEERI."

By mid-June, a detailed point-by-point rebuttal was sent to NEERI, defending the story and affirming the magazine's stand on it.

On July 19, the Press Council of India wrote to *Down To Earth*, decreeing that NEERI has complained against the magazine for the same article. NEERI's complaint claimed that *Down To Earth* had not responded to the objections filed by them regarding the article.

In its reply to the Council, *Down To Earth* clarified that a response was sent to NEERI's objections, and reiterated its position that scientific and environmental facts cannot be altered by administrative positions and legal threats. It reaffirmed its stand on the article. A copy of the rebuttal that was sent to NEERI was also enclosed.

ENVIRONMENTAL ECONOMICS

Bridging the gap



The three-day workshop on environment and economics by the CSE in New Delhi (June 27-29, 1996), was well-attended by

economists, business persons and environmentalists.

The aim of the workshop was to bring

- to centrestage the new concepts towards forging stronger alliances between environment and economics; and.
- to attract more economists at the national level and direct their research in this area.
 The workshop discussed several issues like
- natural resource accounting, use of market-based instruments for pollution control and economics of trade and environment;
- ozone protection and resource conservation.

Ramprasad Sen Gupta,

Jawaharlal Nehru University, while delivering the opening lecture, highlighted the "gaps" in understanding the subject of climate change which have been widened due to uncertainties arising from the work of climatologists and economists who are ascertaining the impacts of climate change on economy.

N C Saxena, director. Lal Bahadur Shastri Academy, Mussoorie, while acknowledging joint forest management (JFM) as the route to the future, cautioned against some of the inherent flaws in the approach being implemented.

The session on economics of biodiversity conservation highlighted the important issue of conserving not only the genetic resources but also the traditional knowledge systems possessed by the local communities. Without this we are left with a library full of valuable and rare documents but no catalogue," said Anil K Gupta. Indian Institute of Management, Ahmedabad, who delivered the keynote address.

P R Sheshagiri Rao of the Indian Institute of Sciences, Bangalore, dwelt on the issue of sharing profits, arising from commercialisation of resources, with the people or communities who, for generations, have been protecting them sustainably. The discussion emphasised the need to build a concrete model of "sharing" that will give people what is rightfully theirs.

The session on economics of sustainable water management stressed that large irrigation projects should be taken up only as a last resort: the need of the hour is demand-based management measures like proper pricing. CSE's paper at the workshop, pointed out how cost-benefit calculations of such projects are manipulated to get sanctions for the projects. This session was chaired by L C Jain, former Planning Commission member. and the keynote address was delivered by Ramaswamy R Iyer, former secretary of the Union Ministry of Water Resources.

The workshop concluded with Parthasarathy Shome, director, National Institute of Public Finance and Policy, deliberating on the issue of levying pollution taxes on industries both at the global and local levels. His paper talked of the feasibility of internalising the environmental costs of production which are normally externalised. CELL FOR GLOBAL ENVIRONMENTAL GOVERNANCE

Sharing benefits in biodiversity



The issue of sharing benefits, aris-ing out of the commercialisation of natural resources with local communities -- one of the central themes of the Convention on Biological Diversity (CBD) - is a key element of CSE's work on biodiversity. The Centre is organising a workshop in August to explore this specific area, in a bid to chalk out a set of concrete principles which will help develop a model of fair and equitable "benefitsharing" with the people. During the workshop, various alternative mechanisms, offered by experts both at the national and the international level, will be put under scrutiny. CSE believes that organising a forum of this nature at this particular time, is of crucial importance.

The third Conference of Parties of the CBD is coming up in early November and the issue is expected to be taken up for negotiations. Through the August workshop, CSE hopes to initiate an international debate which can form the groundwork for the negotiations.

Meanwhile, the experiences of the International Technical fourth Conference on Plant Genetic Resources, convened by Food and Agriculture Organisation (FAO) in Leipzig from June 17-23, are helping in preparing ground for a strong and concerted campaign to start an international debate on the issue. The highlight of the conference was a charter - the global plan of action (GPA) for conservation of plant

Defining rights

Basmati, the long-grained, fragrant rice, typical to the subcontinent, is in a hotpot. It is being grown in the US as "Texmati" rice by a US-based company called Rice Tech, which had taken the germplasm from the gene bank, International Rice Research Institute in the Philippines. The rice variety is being sold not only in the US but also in countries like Kuwait, Saudi Arabia and the UK. Till recently, these countries were potential markets for India and Pakistan.

In other words, the legitimate stakeholders, India and Pakistan, are losing their share of profits. The exist-



ing intellectual property regime under World Trade Organisation (WTO), acknowledges the claim of a region over products that are associated in a "special and specific" way only with that region. The Trade Related Intellectual Property Rights chapter of the WTO, in a clause named 'geographical indication', offers proprietary rights to a specific geographical area over the products associated with it. The clause has been used very effectively by the European nations in the past to preserve their monopoly over speciality products like champagne.

CSE contacted the Agriculture and Processed Food Products Export Development Authority (APEDA), a government agency, whose primary task is to safeguard exporters' interest, and was told that some measures, albeit temporary, have been taken. APEDA in collaboration with the All India Rice Exporters' Association Economic Court had issued a litigation against Rice Tech. And earlier this year, they have entered into an out-of-court settlement with the company, which bans the latter from exporting Texmati to the UK for the next three years.

The Centre, however, believes that the time has come to chalk out a strategy for a more permanent solution, which centres around the much-awaited Plant Varieties Protection Act. The legislation would protect the rights of Basmati growers in India and likewise other products that are being commercially exploited. India can launch its offensives by brandishing the Convention on Biological Diversity (CBD) which endows the nation states sovereign rights over its genetic resources, and forbids any other party from accessing them without the "prior informed consent" of the country of its origin.

genetic resources — originally drawn up in 1993 but finalised in Leipzig. The GPA gave official recognition to one of the most widely discussed issues in the international arena, that of the farmers' rights in conserving, improving and making available plant genetic resources and it also allows them to share the benefits derived from their improved use.

CSE has been following these development with avid interest. It believes that this is a step forward towards ensuring farmers their right to profit. The issue till now was only being debated upon, with the indus-

LIBRARY

trialised nations refusing to make any concrete commitment. Now it is a part of an official document. The Centre feels that developing countries must make a united effort to activate GPA, and use FAO forum to assert the rights of the farming community. \exists

Trade and environment: Undesirable linkages

Fifty-five delegates from five South Asian countries — India, Nepal, Pakistan, Bangladesh and Sri Lanka met in Kathmandu from May 20-24,

1996, to discuss the inclusion of a social clause in the World Trade Organisation (WTO). The meeting was attended by labour organisations, environmental organisations like CSE, and trade unions.

A South Asian charter was drawn up, suggesting that while labour issues and environmental standards should not be linked to trade, countries in the South Asian region should, nevertheless, take steps to ensure that atleast minimum standards are adhered to.

CSE representative Raksha Khushalani, participated in the conference and presented a paper on environmental standards to a working group on environment. Ten representatives from the five South Asian countries formed this working group.

A set of guidelines were developed in an attempt to put into perspective the aims, objectives, implications of and alternatives to environmental standards. While labour and environment standards received a general consensus, it was against the linkage of these standards to trade. There are better and more equitable instruments available to ensure that developing countries enforce their environmental and labour standards.

Nothing substantial, but...



"Issues in which the economic interests of industrialised countries coincide with their ecological interests are acceptable in the UN; the rest is usually a sham," writes Anil Agarwal after attending the United Nations Development Programme (UNDP) meeting in April. Excerpts from the write up that ensued after the meeting.

At a recent UNDP meeting in New York, to discuss the upcoming special session of the UN General Assembly in June 1997, which will consider the development made on the recommendations of the 1992 Rio Conference, several environmentalists and experts expressed considerable disappointment at the lack of

progress on the environmental front.

...I agree that little has happened since Rio. The only clear agenda put forward at Rio was by the Western nations, which wanted a certain set of global treaties to protect their long-term economic interests. The three most important treaties they had chosen were on biodiversity conservation, prevention of global warming and forest conservation. They got the first two, but the third on forest conservation was strongly opposed by developing countries at the Rio Conference itself.

In biodiversity conservation, there has been no progress because of the extraordinary clauses in the treaty like any company or country taking a genetic resource from another country will have to share its research...with the donor country, ...industrialised countries will never agree to this.

A forest conservation treaty may now well be on the horizon — a major economic benefit for industrialised governments because keeping forests intact is a cheaper and popular way to reduce future emissions of green house gases (GHG), than cutting down the number of cars in the US and Europe. ...So, on all issues that Western governments were interested in, there has been a slow but steady progress.

Issues which had interested developing nations at Rio: The African nations were keen about a desertification convention. There has been progress here, but the convention has not attracted any money worth the name. On the contrary, in Rio, Canada had expressed its great keenness for a conference on straddling fish stocks. Several rounds of talks on this issue have already taken place and despite the extraordinary legal complexity involved, the world may soon see another treaty.

The lesson, therefore, of Rio and its aftermath is clear. Issues in which the economic interests of industrialised countries coincide with their ecological interests are acceptable in the UN; the rest is usually a sham.

Entitlements in climate for a better future

Global Wanning in an Unequal World, a Centre for Science and Environment publication, bas inspired discussions, debates, papers and research work all over the world. CSE deputy director, Sunita Narain, recounts the remarks the publication incited at a meeting she attended in the US.



Global Warming in an Unequal World has been reprinted and is available in a new package at the Centre, for Rs 30.

The Centre's publication, Global Warming in an Unequal World, has made a seminal contribution to the discussion on a cooler and greener earth. The booklet published in 1991, at the height of the discussions for a framework convention on climate change, raised the issue of ecological space and demanded that the South should be entitled to a fair share of the earth's common resource - the atmosphere. The report has been widely used, discussed and debated all over the world. We know of many different schools in the US which use the book as teaching material; it has spawned many research papers and books. It has also helped in

building a school of thought on 'equity and entitlement' in environmental negotiations.

In May, our work was further recognised when Anil Agarwal and I were invited by a group of academicians from the US who were organising л meeting on 'Environmental Justice and Global Change' The organisers - Michel Gelobter, assistant professor, Rutgers University and Bunyan Bryant, professor of Natural Resources and Environmental Policy at the University of Michigan - have been deeply involved in the environmental justice movement in the US which has made forceful links between environmental degradation and different human races.

This group of academicians, working closely with the grassroots movement in their country, has focussed the nation's attention on the fact that it is more than just coincidence that toxic waste sites are located near the homes of poor, black Americans. It had resulted in President Clinton signing the environmental justice executive order and to the setting up of an office of environmental equity in the Environmental Protection Agency.

Having worked for environmental justice at the national level, this group was attracted to the concepts put forward in the book by us, asking for justice in global environmental governance. Michel Gelobter is already working with a student, Niraj Kumar, to explore the empirical implications of a concept we had raised, 'survival versus luxury emissions'.

The first meeting which I attended — Anil having gone to Paris for medical treatment — brought together a stimulating group of academicians and analysts. During the meeting, it was also agreed that all of us would work together in the future, on research and advocacy for environmental equity.

CSE is committed to help facilitate a second meeting during its International Conference on Entitlements, Joint Implementation and Tradable Permits. At the end of the meeting, Michel Gelobter wrote to all participants saying, "I realised during the first workshop what a conceptual debt we owe Sunita and Anil Agarwal for their 1991 work on green house gases." We are very grateful to Michel for this acknowledgement.

CELL FOR SCIENCE AND ENVIRONMENT INFORMATION

Saving water the Gond way

SE reporter Rakesh Agarwal. travelled to the Gond region of Orissa, to document the traditional water harvesting systems for the Centre's forthcoming book on traditional water harvesting systems of India. Gond region covers the districts of Bhubaneswar. Sambalpur and Balangir. The Gonds have built remarkable water harvesting structures on the gently sloping lands of the region. Most important of these are katas or tanks which are large reservoirs for the storage of runoff water.

The Gonds received patronage

A spiritual odyssey

A story on spiritual healing took CSE reporter Sunita Raina to an ashram, Shantikunj in Hardwar. The work of the ashram's research wing left her agog. Here she shares her experience...

Writing about spiritual healing was a challenge in itself. I, personally wouldn't have taken up the assignment had it not defied my sense of reason. While a lot of scientific research has validated spiritual healing in the West, the area remains largely neglected and somewhat scorned in Indian scientific circles. Hoping to find some research inputs for my story, I planned a trip to Shantikunj in Hardwar.

Dressed in casual denims, I landed this *ashram*, which in retrospect I would rather call a university. With saffron-clad inhabitants all around me, initially I felt slightly uneasy in my away-from-the-norm attire. Reminding myself that I was just a reporter and not a *sadhak*, as these ashram dwellers are called, I set out on my task of interviewing a number of scientists. These intellectuals, hailing from various streams of science, have dedicated their lives to the *ashram's* work.

I was fairly impressed by the scientific work the research wing of the *ashram* — the Bhramvarchas Research Institute — is doing. It has an impressive herbal farmland on its premises, a well-equipped laboratory to test the effects of spiritual practices on human health and a strict and simple lifestyle for its inhabitants.

Shantikunj certainly fits the image of an institute where tradition and modernity coexist. The aim is to recognise the

richness of our culture and to propagate it to those who seek it. It wouldn't be wrong to call it a university where human virtues are taught to people as an integral part of their mental, physical and spiritual development. Besides this, a holistic approach to health through ayurveda and spiritual healing form an integral part of health management here.

What intrigued me most was the reluctance of some scientists to give me the details of their work. The reason given was their lack of interest in publicity. It took some effort on my part to convince them that renouncing the world should not be a deterrent in providing direction to humanity at large. Skeptical as some were regarding my intentions, I had to assure them that I was not out to hunt for some sensational scoop. Rather, it was a genuine effort to inform our readers of the advantages of meditation, relaxation and prayers in coping with diseases. Finally, they saw reason and were ready to answer my queries.

To get the feel of things and to authenticate my story, I decided to participate in all the activities of the ashram. Measuring my mental tranquillity and concentration on a special alpha wave recorder, devised by the institute, the scientist-in-charge felt that I possessed all the attributes that a sadhak should have. Elated, I ventured further into the unfathomed realm of spirituality. Before I could understand what was happening, I was deeply into it. A metamorphosis took place. The reporter clad in a pair of worn-out jeans throughout, was last seen in a saffron coloured saree. The journey to realise the self had just begun. from the kings for the construction of these structures. The village headmen called *gauntias* were offered revenue-free land from these kings to take care of these structures.

In most places, these structures are lying in utter neglect and are fast becoming derelict. Some *katas* are still functioning but are heavily silted up and are full of weeds.

The possible solution to revive these structures is to give land and water rights, forests and the catchment areas to the people, and their institutions.

Spreading the green word

CSE/Down To Earth Feature Service offers a well-packaged selection of deeply researched articles on environment, science, technology, health, energy, sustainable development and trade. The attempt is to cover a wide range of topics to suit the needs of the various theme pages of the newspapers.

The *Green Politics* column of the feature service analyses the realpolitik behind the green issues and is written by leading experts in their fields of specialisation.

The international packet of the feature service presents a southern perspective to the international readers while the national packet gives the national perspective. Each packet of the feature service is accompanied with a cartoon page or a statistics page. The feature service will

Graph surfers

The Sales and Despatch unit looks after the sales of CSE publications as well as their despatch. The unit is headed by a manager, and has two sales assistants.

S Banerjee, head of the unit, is a commerce graduate with a diploma in marketing management. As manager, he is responsible for maintaining sales and subscriptions and the smooth functioning of the despatch section.

KCR Raja is a science graduate with a post-graduate diploma in systems management. As a senior sales assistant, he handles the subscription database of the unit. He also supervises the timely despatch of periodicals.

R Kalyani, a post graduate in economics, works as a junior sales assistant. She assists in the day-to-day clerical functions of the unit and maintenance of stocks.

soon be available on the Bulletin Board Service. 🛛

Environment in motion

For a long time, CSE has been putting its research and newsgathering efforts on paper. Now, the time has come to move to the audio-visual medium. Its first venture is a 16 mm film on sacred groves in India. The film shot in Maharashtra, Kamataka, Rajasthan and Meghalaya, explores the dynamic relationship between man, nature and the 'sacred'.

CSE is also producing a series of well-researched, short videos, focussing on different issues of sustainable development and governance. The first in the series is on vehicular pollution and has been shot in Mumbai, Calcutta and Delhi. Currently, the film is on the editing table. \Box

On the horizon

- The newspaper and newsmagazine section of the Environment Resource Unit (ERU) is coming out with four booklets — a compilation of newsclippings on India's forest issues, mining issues, wildlife issues and renewable energy in India over the last decade. The booklet on forest issues is nearing completion. It has been compiled statewise, covering the topics like resource apprasial, afforestation, deforestation, conservation, etc. These booklets will help serve as comprehensive references on a particular issue.
- The books and journals section of ERU will soon launch a 16-page quarterly book review supplement, which will contain indepth reviews, book abstracts and suggested list of books in the area of environment, environmental economics, multimedia, and science and technology, along with the name of the publisher, number of pages and price. It will also carry a spolight on films on the aforesaid issues.
- The communications and systems section of the Management Support Unit will soon display a few CSE publications on the bulletin board service, these include CSE/Down To Earth Feature Service, Notebook, etc.

Shot in the arm

Availability of Down To Earth on newsstands brought it into the limelight. The marketing department has been receiving numerous appreciative responses. Ananda Dasgupta of British Oxygen Corporation, feels that the "niche into which the Down To Earth readership falls is of a very high standard." He likes the magazine's appearance and appreciates its availability on the newsstands.

Sabyasachi Ghosh, media planner, Hindustan Thomson Associates, (HTA), Calcutta, finds the magazine of "international standards" and wants data on subscribers' profile to convince some of his clients.

Indrani Sen, vice president, HTA, Calcutta, is sure that with proper publicity and necessary inputs, the magazine will be an "important niche magazine with a readership profile of the best class of people."

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