



AAGG

KNOW HOW

Anil Agarwal
GREEN CENTRE

ANIL AGARWAL (1947-2001)

- 1970: Graduated in Mechanical Engineering from Indian Institute of Technology, Kanpur.
- 1973: Joined *The Hindustan Times*, a national daily, as a science journalist. The Chipko Movement catalysed his understanding of environment-development processes.
- 1982: Founder-director, Centre for Science and Environment (CSE).
- 1983: Co-editor, *First Citizen's Report on the State of India's Environment*.
- 1985: Co-editor, *Second Citizen's Report on the State of India's Environment*.
- 1986: Prime Minister Rajiv Gandhi invites him to address the Council of Ministers.
- 1992: Started *Down To Earth* magazine.
- 1996: Began Right to Clean Air campaign, instrumental in introducing CNG-based public transport in Delhi.
- 1997: With *Dying Wisdom: the Rise, Fall and Potential of India's Traditional Water Harvesting Systems*, started a campaign to popularise rainwater harvesting. *Making Water Everybody's Business* was a subsequent seminal publication.
- 1997: Launched the Green Rating Project, aimed at making industry more environment-friendly. Guided the rating of the automobile industry, and the paper and pulp industry.
- 1999: Co-editor, *Green Politics*, on global environmental negotiations. Along with *Poles Apart* (2001), considered important books on the Third World's perspective on multilateral environmental treaties including WTO.

AWARDS:

- 1979: First A H Boerma Award, by the Food and Agriculture Organization in Rome.
- 1984: Fifth Vikram Sarabhai Memorial Award by the Indian Council of Social Science Research, New Delhi.
- 1986: Padma Shri by the Government of India, New Delhi.
- 1987: Elected to the Global 500 Honour Roll by the United Nations Environment Programme. Honour Summus Award, Watumull Foundation, Hawaii.
- 1991: Distinguished Alumnus Award, Indian Institute of Technology, Kanpur.
- 1994: Environmentalist of the Year by Les Realites de l'Ecologie, France.
- 2000: Environment Leadership Award, by Global Environmental Facility, Washington DC.
- 2000: Padma Bhushan, Government Of India



multilevel approach

services		survival
planned		common
formal		informal
urban		rural
GDP		Gross Nature Produce
national income		well-being
property		biomass
asset		good
private		common
price		rights
accumulation		distribution
official environmental infrastructure		community demands
environmental degradation		poverty
technology		entitlement

Buckle, or build.

**Problems are conveniently structural. Solutions are always inconvenient.
The best way forward is to intervene.**

Know how.

growth		equity
create wealth		contain waste
privatisation		democracy
migration		watershed
development		post-development
aid		sovereignty
scale		tactic

Re: public

state-level regulators
state-level appraisal committees
state-level appraisal committees
state-level appraisal committees
state-level appraisal committees
civil engineers
architects
urban planners
environment consultants
municipal water managers
plumbers
municipal managers
municipal managers
students
policy-framers
decision-makers
lawyers
journalists
field-level practitioners
civil society groups including NGOs
civil society groups including NGOs
civil society groups including NGOs

outreach out

Towards green villages

A workshop on how to use environment to eradicate poverty in rural areas. Includes a field trip



FOUNDATION

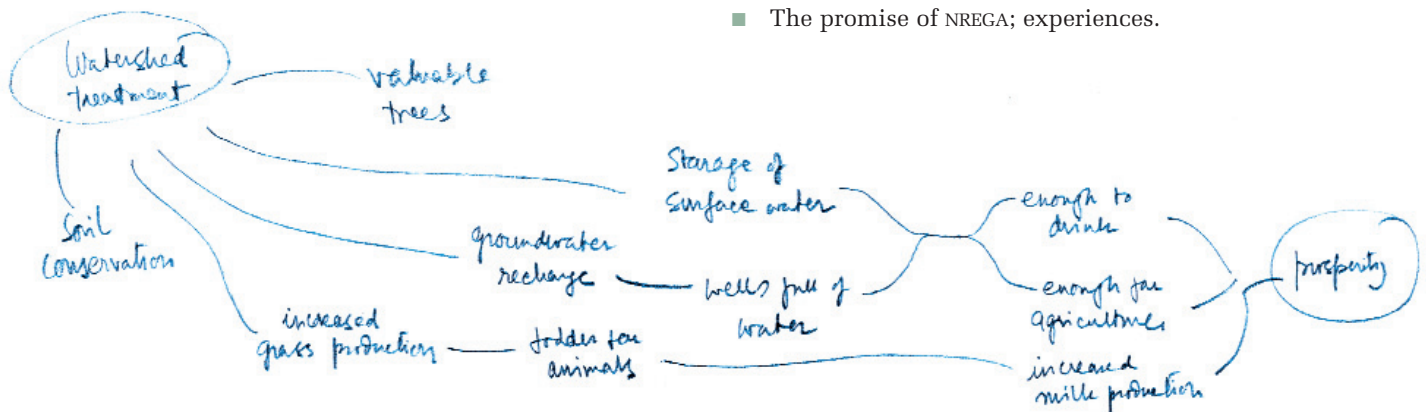
Why do some villages remain poor despite development programmes? Why is high growth in the Indian economy not translating into prosperous villages? Why is the gross national produce (GNP) not an indicator of real wealth? Why is the Gross Nature Produce an answer to sustainable villages? Why will the conventional development model not make villages poverty-free? How is a poverty line created? How can the National Rural Employment Guarantee Act (NREGA) be used to eradicate poverty?

CSE's research and advocacy experiences for more than two decades show that India's poverty is ecological in nature. We have to regenerate our ecology to eradicate poverty. Many villages have done this. CSE has been studying their experiences.

The workshop seeks to learn from these village experiences and put in place a framework for sustainable villages.

CONTENT

- Understanding India's biomass economy
- Eco-systems, land use and livelihoods: linkages
- Rainfed areas in crisis: food security
- Jobless growth: chronic, concentrated poverty
- Key indicators: Environment and poverty linkages
- Poverty eradication programmes: a critique
- Ecological opportunities, economic value
- Decentralised governance: ecology, Panchayati Raj
- The promise of NREGA; experiences.



Towards sustainable cities

A course to tackle unsustainable commercialisation in cities: managing large commercial centres as ecosystem

FOUNDATION

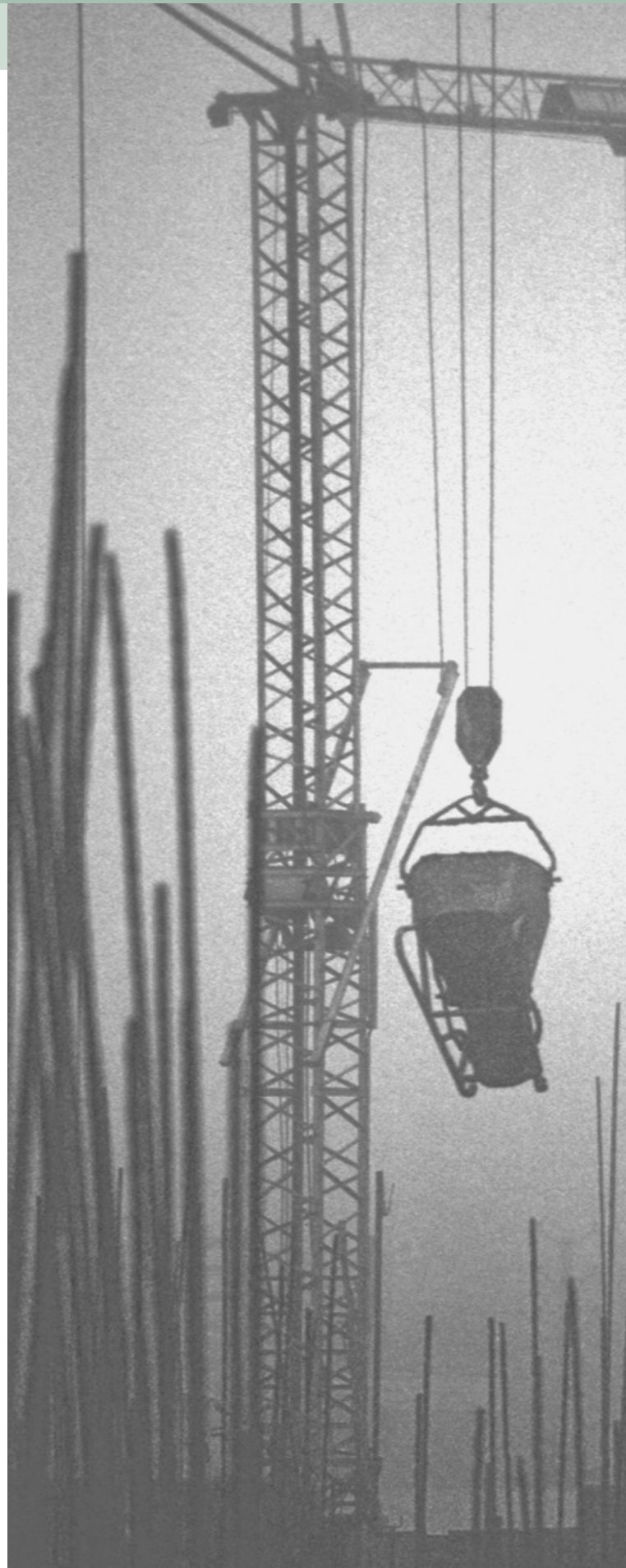
Urban growth is a difficult environmental challenge. The gregarious energy and resource metabolism and the enormous waste it generates make huge demands on the resource base: land, water, energy, building materials, among others.

Waste is urban growth's by-product: toxins, sewage, air pollution, greenhouse gas emissions, waste heat and noise. Managing waste demands strong regulatory capacity to improve the liveability of cities. Urban planning must shift focus: from questions of standard of living to quality of life. Integrated urban planning must encompass public health, urban design quality and especially urban community well-being.

In this context, the urban sustainability programme will focus on developing an integrated strategy for commercial development in cities. It will develop tools to enable regulators evaluate large commercial development based on a range of sustainability criteria.

CONTENT

- Assessment of energy impacts of commercial development: how to improve energy efficiency in commercial buildings and complexes; intelligent building design and planning
- Resource flow assessments: strategies employed to minimise water consumption and all forms of waste; its re-cycling and re-use
- Building design and materials: promoting eco-friendly design and materials
- Minimising impact of commercial development on travel, transport, parking demand and embedded energy through planning and enforcement strategies■ Developing regulations/regulatory tools to achieve sustainable urban development.



Rainwater harvesting

A workshop to teach the design, implementation and monitoring of rainwater harvesting structures

FOUNDATION

The need to create a technical component where plumbers, masons, building contractors, architects, students and home owners get into the nitty-gritty of creating and maintaining rainwater harvesting structures.

The need to create a policy component where planners, municipal water managers can understand the philosophy of rainwater harvesting and debate ways to transform an idea into practice.

CONTENT

- Water: tradition and current paradigms
- Understanding groundwater, hydrogeology and hydrometeorology
- Science and technology of rainwater harvesting
- Principles, components, design & construction techniques
- Filters, water quality issues and treatment options
- Costing, maintenance and monitoring mechanisms
- Harvesting rainwater in houses and public areas
- Water policy and legislations
- Fiscal incentives and disincentives
- Strategies for catalysing rainwater harvesting
- Experiences and examples.

River pollution: meeting challenges

A course to understand the status, cause and mitigation strategies of river pollution in India

FOUNDATION

Why are India's rivers dying? Why haven't river cleaning programmes worked?

How will urban development plans like the Jawaharlal Nehru National Urban Renewal Mission impact rivers? Are common effluent treatment plants the answer to industrial wastewater management?

Can our rivers be cleaned? As citizens, do we possess the right to clean rivers?

CONTENT

- River pollution in India: how unclean they are; why and what their present state is doing to us; the impact of the national river cleaning programme
- Impact of urbanisation and urban development programmes on rivers; assessing development plans

- The 'political economy' of water and sewage
- Water quality monitoring and assessment
- Performance of common effluent treatment plants for industrial wastewater management
- Laws, regulations and judicial interventions to fight river pollution and polluters
- Effective research and communication strategies for work on rivers
- Alternate strategies and methods for river pollution control — water-efficient homes, decentralised wastewater systems, safe re-use of treated effluents.

Decentralised wastewater management

A course that explores various, do-able alternatives to centralised, capital-intensive urban water management.

FOUNDATION

In cities the demand for water has exploded, while billions of litres of wastewater are generated every day and left untreated. How do we even begin to compute these costs, and assess the water-waste balance?

Clearly, cities can do more with less — by cutting down on inefficiencies and distribution losses, both signs of poor management.

But equally important is resource equity — the massive gap in water supply within the city. The challenge is therefore as much about justice as it is about technology.

We also need to address the enormous challenge of water pollution caused primarily by human waste. There is an urgent need to switch from the current paradigm of capital-, water- and material-intensive processes of waste management to a more cost effective, non-sewerage paradigm of human waste disposal.

CONTENT

- Status of water and excreta management in cities
- Water pollution and its management in cities
- Alternate sewage and pollution management strategies
- Fundamentals of wastewater treatment
- Planning, designing, implementing and monitoring local wastewater treatment systems
- Wastewater re-use: issues
- Policies, legislation on water pollution and wastewater treatment.

Monitoring growth



India – with its vulnerable ecology, diversified economic base and environmentally degrading activities – is set to build more industries, power plants, more homes and malls, open more mines, build more roads, ports and airports. In this context, we urgently need to monitor the environmental impact of this urge to grow. To shore up effective environmental governance. For which we need well-trained and skilled environmental regulators. At all levels: central, state and local.

More than ever before, regulators today need to know of new and emerging environmental issues, new legislations and latest technological developments in pollution prevention and control.

To effectively carry out their responsibilities, regulators need training in a wide range of skills: technical, legal, administrative and communicative. They need to know environmental statutes and regulations; industrial processes and operations; monitoring equipments and protocols; environmental assessment and audits. They need to be proficient in obtaining facts and collecting and preserving evidence to prosecute non-compliance. They need to be skilled in managing data, analysing and interpreting it. They need cross-sectoral exposure, and, importantly, first-hand experience of best practices followed in other countries.

Food safety



A workshop for regulators and public health professionals to re-build their technical competence and deal with the challenge of food safety

FOUNDATION

Processed food has an enormous ecological footprint and enormous consequences for public health. The food we consume is increasingly produced on an industrial scale. This shifts concern from microbiological contamination to newer, more toxic uncertainties.

Today, a veritable cocktail of toxins enters into our food chain: preservatives, stabilisers, artificial colours and flavours; antibiotics, aflatoxins, pesticide residues and heavy metals.

In this context, there is an urgent need to strengthen the capacities and build the technical skills of food regulators to meet these new challenges.

CONTENT

- Status of current food regulatory regimes; food safety standards: a critique
- Science of food safety
- Analytical techniques to test food for toxins
- Exposure to advanced testing methodologies and hands-on exercises in CSE's pollution monitoring laboratory.

CSE's Pollution Monitoring Laboratory is an independent analytical, research and development laboratory. It supports communities in their fight against polluters by providing scientific proof and documentation of pollution.

It has advanced instrumentation to analyse toxins – including pesticides and heavy metals – over a wide range of parameters in food, water, soil, air, blood, tissue:

- Gas chromatography-mass spectrometry (GC-MS)
- Gas Chromatography (GC)
- Atomic Absorption Spectrophotometer (AAS)
- High Performance Liquid Chromatography (HPLC)
- UV-VIS Spectrophotometer
- Respirable Dust Sampler (RDS)

Clean air imperative

An orientation programme on air quality governance and mobility management



FOUNDATION

Foul air, ill health and frenetic oil guzzling are manifestations of a crisis of air quality governance and mobility in cities. How soon can India and Asia see a turn around? Cities need the ability to interlink a full range of actions that form the big solutions.

CONTENT

- Science of assessing share, quantum and trends in air pollution sources
- Science of air quality regulations
- Regulatory capacity to better enforce clean air standards; ways to improve air quality monitoring to generate credible data for proper air quality planning and risk assessment
- Public health-based criteria for air quality planning
- Exposing the linkages: transport, pollution, energy and climate
- Understanding the technology paradigm, including regulation to ensure clean technology to enable their application in India and developing Asia
- Reinventing urban mobility: dangers and causes of automobile dependence; more sustainable travel options
- Action plans for cities to control air pollution and address mobility crisis; sharing best practices.

Environment Impact Assessment

A course that imparts to communities, civil society groups and regulators technical information and tools to actively scrutinise and participate in the environmental clearance process for industrial and development projects

FOUNDATION

Environmental Impact Assessment (EIA) is an important tool to inform decision-makers, regulators and stakeholders about the possible environmental, social and economic costs of a proposed project. To be effective, it requires the active involvement of all concerned stakeholders.

CONTENT

- Exposure to all aspects of EIA: from data required, to effectiveness of assessment methods, and issues to be addressed in an EIA report's terms of reference
- Better understanding of the EIA process: from screening, scoping, data collection to impact assessment, as well as the role of public consultation
- Improved understanding of the environmental and social impacts of industrial and development projects
- Better ability to review EIA reports and identify their strengths and weaknesses
- Increased ability to play active role in post-EIA monitoring.

The Centre for Science and Environment (CSE) recently conducted a 5-day training workshop on Environment Impact Assessment (EIA) in Dhaka for officials of the Ministry of Environment and Forest, Bangladesh. The sectors covered were coal mining, cement, pharmaceutical, pulp and paper and coal based thermal power plant. The workshop was conducted under the Bangladesh Environmental Institutional Strengthening Project (BEISP), which is a government of Canada (CIDA) funded project, aims to strengthen the capacity of the ministry officials.

The initiative is now taking the shape of a full-fledged programme.

"I found the trip most beneficial. We look forward to continuing our working relationship with CSE."

— Gary Holm (CIDA representative in Bangladesh)

"Thank you for organising a very successful study tour, congratulations! We gained valuable experience and it has been a learning process throughout."

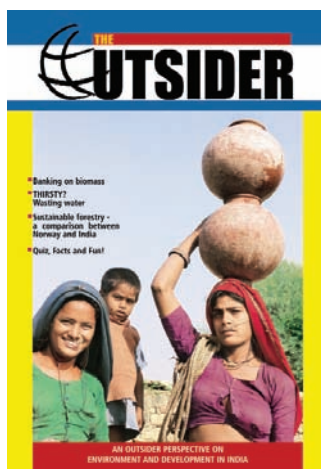
— Iqbal Rahman (Head finance, Bangladesh Environmental Institutional Strengthening Project, CIDA project in Bangladesh)

"I sincerely acknowledge the esteemed professionalism of CSE, its highest cooperation and friendly attitude towards DOE. Your sincerity and heartfelt cooperation and friendly attitude is unforgettable. I hope that our relationship will continue in future."

— M I M Shameem (Deputy Director, Department of Environment, Ministry of environment, Bangladesh)

Challenge of the balance

Among AAGC's most successful initiatives is the month-long orientation programme conducted for students of *The Centre for Development and the Environment (SUM)*, University of Oslo, Norway. Titled *Challenge of the Balance: Learning the practice of environmental management in India*, it offers international students a first-hand experience of the myriad challenges facing the developing world, enabling them to understand and critically evaluate the environment-development interface: poverty, democracy, equity, justice and culture. AAGC has conducted this programme for four years now.

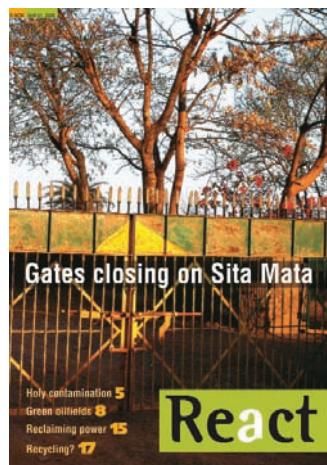


The course comprises classroom lectures, field visits and a definable course outcome: students are expected to put together, entirely on their own, a mass communication product



Batch of 2006:
magazine Outsider
Batch of 2007:
online documentary
(cseindia.org/oslo2007)

Batch of 2008:
magazine React
(cseindia.org/react.htm);
a website and campaign
presented at the university



Intense briefing apart, field trips and meetings with villagers serve to illustrate innovations communities make that enables them to manage their natural resource base. Students attending *Challenge of the Balance* considered it the most rewarding experience in their academic career. Many students chose to return to India to conduct research for their Masters thesis.

At a review meeting held at the University of Oslo, SUM director Bente Herstad presented the AAGC course as among the more important and innovative of SUM's activities. The president of the University of Oslo praised the initiative, saying it served as a model for other courses.

Summer certificate course for students and young professionals

Students and young professionals explore the complexities underlying the environment-development debate in India.

Lectures. Readings. Presentations. Occasions to debate, deliberate, appear before an audience. Time to read, or report. Watch a film; review it. Attend seminars, interrogate guest speakers, eminent activists and policy makers.

The course includes module-related outings and a week-long field trip to rural India.

The course is inspired by a concern that animated the work of eminent environmentalist Anil Agarwal, whose ideas on environment and sustainability remain relevant even today: the need to balance economic growth and ecological concern. He called it ‘the challenge of the balance’.

- Managing natural resources today
- Urban growth and its challenges
- Sustainable industrialisation
- Poverty and the biomass economy
- Global environmental negotiations: focus on climate change
- Challenges of environmental governance.



Internet for advocacy

An intensive, hands-on workshop to teach participants how to strategically deploy internet-based tools to maximise the visibility of their campaigns and network more efficiently with stakeholders.

FOUNDATION

Many civil society organisations working in the development sector do not maximise the full potential of their outreach and communications initiatives, despite investing vast amounts of time, effort and money in setting up websites, or starting e-newsletters, bulletin boards and forums.

Targeted at information managers, web editors, webmasters and campaign communicators, the course helps organisations sharpen the impact of their outreach efforts.

CONTENT

- Planning: deploying appropriate e-tools to meet outreach, advocacy goals
- Requirement analysis: plan for websites and technology platforms that meet organisational goals
- Information architecture: understanding usability principles
- Writing, editing skill sessions
- Design considerations: packaging information for the internet
- Reach out: how to deploy e-newsletters, online petitions, forums
- Strategy: increase visibility of Internet-based initiatives
- Web and email analytics: monitor and measure website, email traffic
- Other tools: e-groups, discussion boards/forums, online petitions.

Media fellowships programme

Conceived for the first time in 1987, CSE media fellowships provide journalists the opportunity to study and report environmental issues in depth. The effort is also to work towards integrating the vital concerns that affect the lives and livelihoods of millions into the national debate.

Open to active print/television/radio journalists, photo-journalists and freelance feature writers and reporters, the programme especially encourages journalists working in regional language papers.

Since 2000, the Media Resources Centre in conjunction with AAGC has conducted fellowships on the following subjects:

- Making water everybody's business
- Discovering the desert
- Forests as habitat
- Innovating survival: sustainable development and livelihoods in India's northeast
- Mining, environment and people's protests
- National Rural Employment Guarantee Act: opportunities and challenges
- Rivers: used and abused.

Programme fellows have reported their findings in regional and national newspapers including *The Times of India*, Delhi; *The Hindustan Times*, Sambalpur (Orissa); *Gomantak Times*, Panaji (Goa); *Pahar*, Nainital (Uttarakhand); *The Hindu*, Hyderabad (Andhra Pradesh); *Ranchi Express*, Ranchi (Jharkhand); Greater Kashmir, Srinagar (J&K); *Economic and Political Weekly*, Mumbai; *Kannada Prabha*, Bangalore (Karnataka); *The New Indian Express*, Bangalore (Karnataka); *Grassroots*, Delhi; *Dainik Jagran*, Morena (MP); *Daily Sakal*, Kolhapur (Maharashtra); *Kashmir Times*, Leh (J&K); *Vaaritha*, Hyderabad (Andhra Pradesh); *The Assam Tribune*, Hailakandi (Assam); *Asam Bani*, Guwahati (Assam); *Prabhat Khabar*, Ranchi (Jharkhand); *Deshabhimani*, Kochi (Kerala); *Manipur Mail*, Imphal (Manipur); *Imphal Free Press*, Imphal (Manipur); *Nainital Samachar*, Nainital (Uttarakhand); *Greater Kashmir*, Srinagar (J&K); *Rashtriya Sahara*, Lucknow (UP); *The Deccan Herald*, Bellary (Karnataka); *Mathrubhumi*, Mallapuram (Kerala); *Asomiya Protidin*, Guwahati (Assam); *Dainik Bhaskar*, New Delhi; *Deshbandhu*, Bilaspur (Chhattisgarh); *Daily Chhattisgarh*, Bilaspur (Chhattisgarh); *Bhimal* (Uttarakhand); *India Today Bangla*, Kolkata (West Bengal)

Environmental audit

The Green Schools Programme is a hands-on initiative for school-going children to inspect, survey and create an audit of their school's environmental practices. Students form teams to explore: how is the school managing its water use, its energy, land, air and waste? They then prepare a report card of the school on its environmental performance.

So far, 3,500 schools are part of this programme.

The audit is done with the help of a handbook, the *Green Schools Programme Manual*. Developed by the Environment Education Unit of CSE, this manual provides step-by-step guidelines on how to conduct the environmental audit. It has now been translated into several regional languages to reach out to more schools.

The process leads to a recognition of schools that have used the manual to raise awareness to a level where action can be taken. The 20 best schools are feted with the Gobar Times Green Schools Award.

Name of the trees

S.No	Local Name, Latin Name	Local Name
1	35 111 मोहकाल	21) 35
2	दिलिमा पत्रादी 112 प्रिमाव केरा	22) मोदी
3	दिलिमा पत्रादी 113 गामाव	23) दिलिमा
4	मिमा 114 टन पांजा	24) 7
5	मोदी 115 बूबे गमगी	2
6	मिमा 116 डमोली	2
7	35 117 डीपु	2
8	मोदी 117 Durantia डमोली	28
9	मोदी 118 बोटेट	29
10	35 119 विमगा	30) डीपु
11	दिलिमा पत्रादी 120 मलावडा	31) 33
12	कगाल 121 उडनकेला	32) गामाव
13	पापरी 122 लोका वला	33) गामोली
14	गामाव 123 बिराव गाम	34) डमोली
15	कगाल 124 पाम	35) 35
✓ 16	दिलिमा पत्रादी 125 डमोली	36) 36
17	डोडा वला 126 वीगमोली	37) 37
18	मोदी 127 डमोली	38) 38
✓ 19	35 128 कगाल	39) कगाल
20	दिलिमा पत्रादी 129 पापरी	40) पापरी



Teacher training workshops

The Green Schools Programme also conducts workshops to train school teachers to make their school's environment-related curriculum more relevant.

While it is compulsory in India for schools to undertake environment education, teachers face a dearth of material. Through these workshops, therefore, EEU caters to a felt need: how environment education can be made more interesting and practical.

Information management

The Environment Resources Unit is a specialised information and documentation resource centre on science, environment, and development. Pivotal in offering a host of research services and online bibliographic help to researchers, policy-makers and activists in the South Asia region, it helps build capacities among grassroots organisations in South Asia by conducting hands-on workshops on digital documentation, information services and outreach.

THE LIBRARY

South Asia's largest collections of books, journal articles, newsclippings, films and photographs, this vast information repository has been carefully built up over a period of 25 years. Today, the environment resource centre is acknowledged as a leading repository comprising hard-to-find, unpublished information resources on environment and development.

DIGITAL NODE

A digitised workspace with state-of-art cataloguing and retrieval systems.

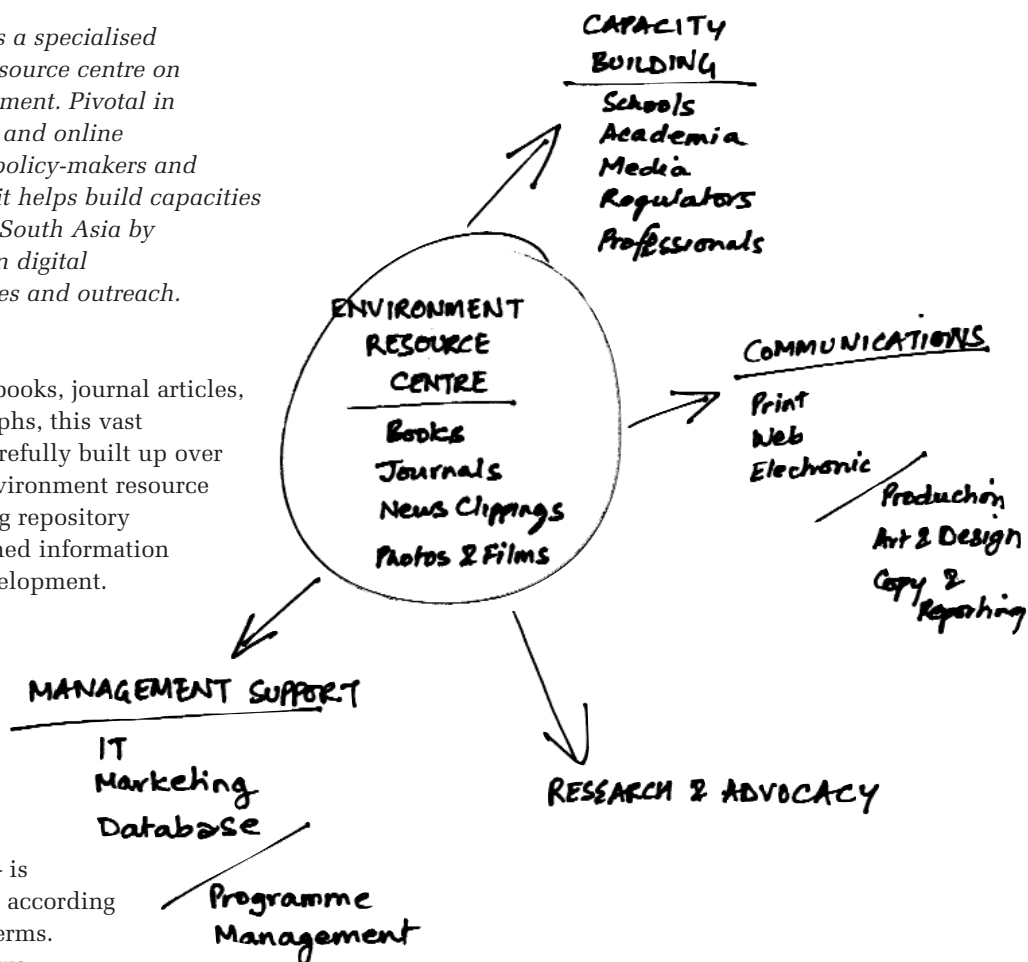
Each piece of information — a book, unpublished thesis, a bill being introduced in Parliament, a photo, or even a contact address — is carefully keyworded and classified according to a 'thesaurus' of environmental terms.

This customised thesaurus allows researchers to track each resource, not just by the subject (over 7,000 terms), but where it is located (geographical terms — states, districts, or rivers, dams, thermal power stations, wetlands) and who is the agent involved (government institutions, NGOs, industries, individuals, etc.)

Today, the resource centre has strong linkages with a network of leading information and research institutions across India, and closely supports CSE's research, advocacy and outreach initiatives.

INFORMATION ALERTS

The Daily News e-Bulletin, sent out to thousands of subscribers each day, comprises a careful selection of leading news articles — tagged subject-wise — culled from more than 80 international, regional and vernacular newspapers and magazines. Alerts are also sent for books, journal articles, and periodicals.



PORTAL

The India Environment Portal, supported by the National Knowledge Commission, is an ambitious project that seeks to become a one-stop shop for all resources on environment, news, documents, books, links to organisations, people working in the field, in campaigns, in scientific institutions, in research and in industry.

Based partly on a wiki-model, the portal is built on an open-source platform that allows easy collaboration and content sharing from other institutions working on environmental issues across the country and the world. It seeks to build a network of nodes to the portal by working with NGOs, researchers and public institutions in different parts of the country to share content, accession and collate data.



Books **50,000**

Documents **25,000**

Journals **1,800**

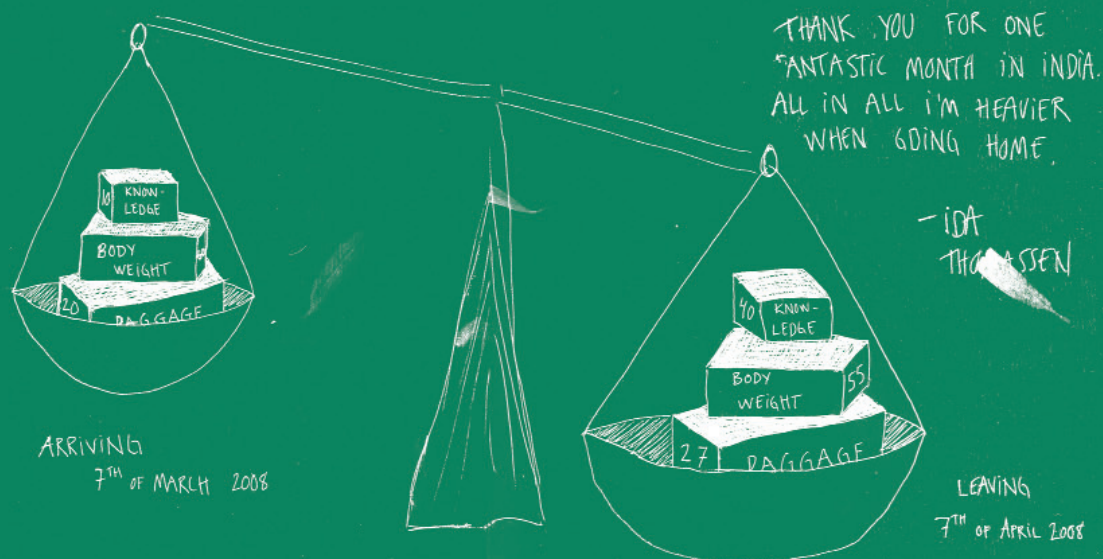
Articles **1,47,193**

News Clippings **2,50,000**

Films, documentaries **1,500**

Photographs and slides **1,50,000**

Directories of experts, research institutions
& government agencies **30,000**



The Anil Agarwal Green Centre (AAGC) is built to communicate the science, complexity and politics of environment across India, South Asia and the developing world. Our filiation to the Centre for Science and Environment provides us the know-how to do so.

There is an aim: create a ripple effect among human beings who make decisions, wherever they are, or may do so in the future, so that they work to bring about change.

WHY?

South Asia is facing the twin challenges of economic and ecological globalisation, on the one hand, and maintaining the integrity of natural systems and protecting quality of life, on the other. The entire region follows similar patterns of the urban-industrial model of economic growth, leading to degradation of natural resources and pollution.

Given the overwhelming priority of governments for economic growth, the role of civil society to intervene in policy-making in these countries becomes very crucial. Thus, civil society must build its capacities, be informed about available choices in strategies for development.

There is also a need to strengthen the hands of regulators to understand the scientific and technological aspects of environmental management and so intervene in the decision-making process.

Hence the need to know how, in the public interest.

Ida Thomassen of the University of Oslo attended the 1 month course 'Challenge of the balance: learning the practice of environmental management in India' (see p10)

ANIL AGARWAL GREEN CENTRE

CENTRE FOR SCIENCE AND ENVIRONMENT

38, Tughlakabad Institutional Area, New Delhi 110 062, INDIA

Tel: +91-11-2995 6110/5124/6394 Fax: +91-11 2995 5879

Email: aagc@cseindia.org Website: www.cseindia.org/aagc

