

# Recurring droughts & enduring truth

By Mahesh Vijapurkar

**S**TARK IMAGES of dry landscapes, columns of women bringing home pots of drinking water from far-off places or empty pots lined up, cat-carcasses strewn around, evoke readers' and TV viewers' horror. These periodic bouts of graphic pictorials have resulted in little mitigation of a recurring crisis across the country. If they have been relatively absent in the last one decade, it is due to the good, blissfully long, unbroken cycle of plentiful rains. No credit to any State or, for that matter, the Centre for any work done in the intervening years.

Some pictures are piercingly poignant; some do not tell an accurate story. It is not uncommon for flayed animals to be left undisposed. After the vultures pick them clean, the village panchayats do not do their job and leave them around, a not uncommon rural sight. But a photographer cannot but take note of it when hungry, thirsty villagers index a drought using the first visible — to the urban reporter, the only understandable — benchmark. I recall a sarpanch in a village beyond Jodhpur saying how he "misled" a national fortnightly into believing that a pile of camel bones, accumulated over years, was the result of one bad year. That was 1983 in Solankiya Tala.

In the best of times, the ruralscapes of Barmer and Kutch are not going to provide a lot of greenery, certainly not in April and May when the desiccating winds and scorching sun take their toll. Even places around a well are going to be as barren in semi-arid and arid regions, but such pictures do tell a tale. After all, when a system fails to note the signals and April and May show up the unfolding implications such pictures have a purpose. But what should be asked is, if such areas have tanks with some water and women wait simply because electricity is not available to pump it up, who is responsible for aggravating fickle nature's impact? They are not being asked.

It does not take more funds — States demand more than they need, get less

than they ask from the Centre, the reality is somewhere in between — to ensure that power is switched on at the right time so that women do not endure more hardships than required when scarce water is actually available? Does it need anything more than common sense to decide that if a drought was impending, a State (Gujarat in this case) should not sell its fodder cheap and wait for the distress to

spondent remembers how in the early 80s, officialdom in Rayalaseema had perfected a system to cream off more than was provided. It seems quite improbable — even mathematically impossible — but it was done. There is a report written by an Executive Engineer, a DSP and a Revenue Official on how this was accomplished: jungle clearance where no blade of grass could grow, procurement of ce-

and under-payment that is more a practice than exception in rural areas.

It took quite sometime for this correspondent to understand the difference sought to be conveyed by residents of village after village on a trip to the Jodhpur region in 1984. The drought, they said, was bad in that it had laid waste their agrarian economy that coped with paltry production in adverse conditions but the "Famine, saab, has been good". It needed an IAS official in the comfort of his palatial bungalow to make things clear. The year was bad, but the work done under what the villagers thought was a Famine Relief Code was good. They just dropped the other two words.

Saurashtra and Kutch, a region known for charity and community concerns, see a system of cattle camp management where distressed farmers can leave their cattle behind at camps run by the village *mahajans* who are actually traders. They are dutifully tended, with no return in terms of milk yield. When a farmer wants to take them back with the advent of a hopeful monsoon, he has to pay for it. So even charity has a price. But this is glossed over.

And the cake is taken by what happened in 1977 in Warangal. When the Zila Parishad discussed drought relief, each of the non-officials wanted as much as could be made available for their own constituencies, regardless of the intensity of the drought impact in that region of Telangana. An exasperated District Collector, know more for his soft-spoken words which had the impact of a sledge-hammer, quietly told them: this was a drought relief fund and not a booty to be distributed to the most demanding. The result: the well-meaning Collector's transfer was sought. But he stayed on, underscoring a simple fact — the people matter. Someone in Hyderabad realised the truth. But each year, it seems, the future will reveal more of such images. The truth: droughts are here to stay till prevention, not post-crisis management, becomes the norm.

## *Droughts are here to stay till prevention, not post-crisis management, becomes the norm.*

set in before importing at double the price from Punjab, tying up its strained manpower in avoidable tasks? Governments cannot wish, like people do, that droughts do not happen. They should prepare for it. Drought-proofing is difficult but could have been done. But the seeming insulation of the economy from droughts and their impact appears to have made those tasks less important. After all, what are a few disaster stories which will anyway disappear from newspapers when the monsoon washes the land with its plenty just weeks later? Chats with officials reveal their lurking respect for such stories because States are able to urge more relief from the Centre on that basis. Media hype helps.

The authorities will now spend lavishly, announcing big relief as succour to the thirsty and the jobless on the farms. But that will not prevent a scarcity in the future. Right now, two problems are to be squarely faced: 1) providing drinking water and 2) giving foodgrains either through food-for-work programmes or free distribution because the vulnerable do not have the resources to buy them even if available.

The experience of several droughts tells us that this round too will have its element of mismanagement, corruption, inadequacy and dissatisfaction. Each and every drought past has left its tell-tale, even grotesque, imprint. This corre-

le at rates that shamed the black. When prevailing. Plus the cor-pus itsr

This report should be available in the Government archives. What was done with it is not known. But work to be done was grossly overestimated at inflated rates and under-executed. All this points to not just the contractors' perfidy but official connivance. In drought relief, no payments are generally made unless Collectors certify. Even if all officials are not to be — and cannot be — painted with the same brush, petty officials at lower rungs have their own way of overcoming the best of supervision. After all, a drought is when crops fail and officialdom harvests gains by shortchanging the "beneficiaries".

But there are some generic issues that should be addressed. The frequency of droughts has actually generated even new linguistics. In Rajasthan, droughts are so frequent that the word "famine" too has gone into the rural vocabulary even when the official lexicon prefers "drought" — there is a qualitative difference between the two words. Famine speaks of unspeakable hardships, with no access to foodgrains. Drought is only scarcity because foodgrains can be moved and people can access them. Provided, of course, they have the money to spend on it because of the precarious employment opportunities and vast under-employment

# Environmentalists in way of nuke plant

BY OUR CORRESPONDENT

*Environmentalists*  
*AA-9*  
*376*

**Kolkata, June 2:** The proposed nuclear power project in the Sunderban came up against strong protests on Friday when environmental activists alleged it would deplete the forest in the world's largest delta.

The Sunderban forest has been declared a world wildlife reserve by the UN. It has the highest tiger population in India.

"Setting up a nuclear station here would mean felling trees over a vast area to convert the area into townships. The project will occupy at least 10,000 cottahs, and can come up only by felling all trees in this area. The destruction of trees has been banned by the

Supreme Court," Ganatantrik Nagarik Samity secretary Subhas Dutta said.

"Things are bad enough already with massive forest destruction in the last four decades. People have cut down rare and valuable trees like *kasurina*, *sundari* and *garan* to erect unplanned embankments, culture prawns indiscriminately and set up dried fish units that are polluting the delta. The last thing the delta needs is a nuclear project," he said.

The environmentalists demanded a risk analysis document from the government and rubbished claims that it was safe to set up a nuclear station. They challenged the people making such claims to set up their permanent homes near the nuclear station.

The hazards from nuclear plants are "invisible" and are felt when it is too late, the environmentalists said, citing the Chernobyl nuclear disaster of 1986. Mr Dutta said a plant in the Sunderban could endanger lives in the whole of eastern India.

"India lacks the technical ability to carry out such a project. A nuclear explosion in the area could cost hundreds of lives. There is not a single health centre near the forests, no civic infrastructure like bridges and concrete roads and no arrangement to counter a leak of radioactive elements or to dispose of the waste," said R.B. Dutta, an engineer at the world's first nuclear plant, Calder Hall.

☐ Photograph on Page 10

THE ASIAN AGE

3 JUN 2000

# Inequality harming global environment

By N. N. Satchitanand

**BANGALORE, JUNE 3.** Inequalities of wealth, power, opportunities, and survival prospects are confounding efforts to reverse environmental degradation, according to a study of global environmental trends, 'Vital Signs 2000', authored by Mr. Michael Renner and Mr. Molly O. Sheehan, researchers at the Worldwatch Institute. The study was funded by the U.N. Population Fund and the W. Alton Jones Foundation.

The study shows that though the world economy pumped out nearly \$ 41 trillion worth of goods and services in 1999, 45 per cent of the income went to 12 per cent of the world's population who live in western industrialised countries. The per capita paper use in industrial nations was 9 times higher than in developing countries. The number of cars per person was about 100 times higher in North America, Western Europe, and Japan than in India or China. Some 87 per cent of all Internet users lived in industrial countries.

Some of the other disturbing trends highlighted in the report included that although research had confirmed that a number of pesticides, industrial compounds, and other chemicals could interfere with human and animal endocrine systems, more than 1,000 new chemicals were introduced to the global market each year

without testing for effects.

Worldwide, people are over-pumping groundwater by at least 160 billion cubic meters a year — roughly the amount of water needed to produce a tenth of global grain supplies — threatening future food production and basic living standards. At the same time, human activities are sending massive quantities of pollutants into aquifers, irreversibly damaging the freshwater supplies that provide drinking water to almost a third of the planet's people.

Almost 50 million people have so far been infected by the HIV virus, and 16 million have died. Weakening the immune system of its victims, AIDS is also the single largest contributor to a worldwide resurgence in TB. The resurgence in tuberculosis (TB) may kill an additional 70 million people by 2020. 95 per cent of all new cases reported in 1998 were in developing countries.

Even though cigarette smoking has declined worldwide in recent years, annual deaths due to this are projected to jump from 4 million in 1998 to 10 million in 2030. Cigarette-related illnesses are likely to surge in countries that can least afford to treat them. Some 80 per cent of the world's smokers live in developing countries.

Worldwide, climate-altering carbon emissions from fossil fuel

burning fell 0.2 per cent in 1999, marking a second consecutive year of decline. However, far more serious reductions are necessary to achieve the 70 per cent cut that many scientists believe is needed to avert dangerous climatic change. In this case, consumption trends in rich countries is hindering progress, such as surging sales of fuel-guzzling sports utility vehicles.

Global disparities were found not just between rich and poor countries, but also between men and women. "Women make up more than two-thirds of the illiterate population and three-fifths of the poor," says Sheehan, "and they account for only 13 per cent of the representatives in national legislatures". Population growth is most rapid in the world's poorest regions, where women often lack access to family planning and education. The global population passed the 6 billion milestone in 1999, growing from only 2.5 billion in 1950.

On the positive side, the report notes several encouraging trends in utilisation of renewable energy and efficiency technologies. For instance, 1999 saw wind power, the world's fastest-growing energy source, surge by 39 per cent, production of solar cells expand by 30 per cent, and sales of energy-efficient compact fluorescent lamps grow by a robust 11 per cent.

Another positive trend is the growing popularity of organic farming products, the sales of which are growing by more than 20 per cent a year. Organic farming can reduce groundwater pollution, threats to wildlife, and consumer exposure to pesticides. Farmers in Europe have doubled the area cultivated with organic methods to four million hectares in three years. Farmers around the world are expected to scale back plantings of genetically modified seeds in 2000.

Tax reform is one of several policy tools that can accelerate positive environmental change. In the last decade, eight European countries pioneered "tax shifts", raising taxes on environmentally harmful activities and using the revenue to cut conventional taxes.

The list of international environmental accords now numbers almost 240. Five were forged in the past year alone, and more than two-thirds of the total were crafted since the 1972 U.N. conference on environment in Stockholm.

The 1987 Montreal Protocol on ozone depletion is among the most successful pacts, spurring a nearly 90 per cent drop in global chlorofluorocarbon emissions. However, most of these treaties are neither strong nor monitored and enforced sufficiently to reverse the decline.

2000

# Institute set up to spread awareness on environment

HT Correspondent  
Calcutta, June 3

SCIENTISTS and researchers on environment and related fields have formed an organisation to spread awareness on ecology. The Institute of Energy, Environment & Waste Management, was formed at a seminar held at the Central Glass & Ceramic Research Institute here today.

The institute aims to promote knowledge on management of energy, environment and wastes in industries, municipalities and hospitals, bring together scientists, researchers, planners and social workers to analyse issues and frame eco-friendly technologies, organise seminars and workshops and interact with educational institutions to include educational environment in the curriculum. The institute will provide services to Government and private institutions for survey, planning and implementation of projects.

Vice-chairman and managing director of MN Dastur & Co, Supriyo Dasgupta, inaugurated the seminar on 'environment & energy management in medium- and small-scale metallurgical industries' at the institute this morning. The seminar was organised by Corporate Monitor & SDG Met Project Pvt

Ltd in association with the Bengal Engineering College chapter of the Indian Institute of Metals. Institute director Dr HS Maiti and director of the regional research laboratory, Bhubaneswar, Prof H S Ray, were the guests of honour.

Two technical sessions followed the inauguration. Prof Ray delivered the keynote address on 'energy and environment in metallurgical industries'. Dr Amtabha Bandyopadhyay of the National Metallurgical Laboratory at Jamshedpur presented a paper on critical issues in environment and energy management, while more papers were presented by T K Chakravorty of the environment division of Steel Authority of India Ltd, Sarama Bhattacharjee and P Datta of the Regional Research Laboratory, Bhubaneswar, P Rajagopala Rao of Tata Korf Engineering Services and Anupam Halder of the Indian Institute of Environmental Engineering.

"The seminar was not just an academic exercise. The discussions resulted in evolution of concrete steps that can be adopted by metallurgical units in the small and medium sector to conserve energy and implement environment-friendly technologies that can reduce costs," said institute secretary D N Dey.

4 JUN 2000

# N-power plant in Sunderbans rapped

Calcutta, June 3

THE INSTALLATION of a nuclear power plant in World Heritage Forest of Sunderbans poses an environment disaster according to environmentalists.

Objecting to the plan, Ganatantrik Nagarik Samity, Howrah, a non-governmental organisation working for environment protection in West Bengal said it should be treated as a violation of the fundamental right (article 21) ensuring protection to life. Such a plant posed serious health hazards to the people in the vicinity apart from destroying the

fragile eco-system of the protected mangrove forests.

Samity General Secretary Subhas Dutta on the eve of World Environment Day said here yesterday that they were not against any sustainable development in the area of the Sundarbans or setting up of any such power plant elsewhere.

They were concerned about the

possible disaster the project might cause.

It would cause large-scale denudation of mangrove forest, which is already depleting rapidly.

While the apex court in India had already directed that "there will be no felling of trees in any forest, public or private place," the Centre's move to install such a plant in the Sunderban area would

obviously violate the apex court directives, Mr Subhas Dutta pointed out.

The samity also expressed concern about the storage, transportation and disposal of radioactive materials or waste that poses a risk to the environ-

ment and human beings in the vicinity and demanded a debate on the issue.

Criticising an expert's comment that the nuclear power plant was eco-friendly and totally safe, a group of experts in the field of nuclear science working with the samity said no one could predict the hazards and dangers of a nuclear power plant.

Such a plant, according to an NGO, poses serious health hazards to the people in the vicinity.

THE HINDUSTAN TIMES

4 JUN 1988

# A major environmental...

Continued from page 1

recharging groundwater should also form part of the landscape.

## Health security

This would include reproductive health issues like maternal and child health care services, reproductive health education, tuberculosis, AIDS and sexually transmitted diseases. It would also include provision of safe and affordable contraceptives with adequate emphasis on reproductive tract infection and follow-up. Emphasis should be given to the prevention of infant mortality and morbidity by ensuring deliveries supervised by trained personnel. The quality aspects of contraceptive services will receive particular emphasis. Sex ratios will be monitored in order to avoid female foeticide and infanticide. The younger generation will be dissuaded from tobacco smoking.

## Education

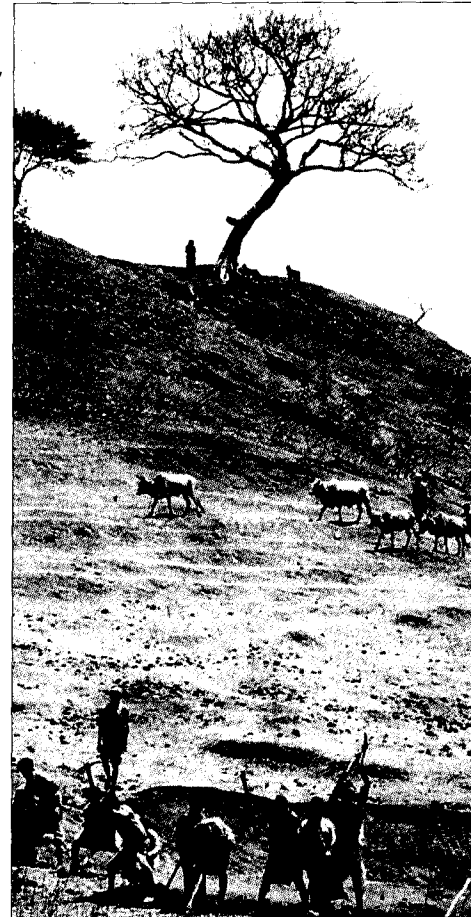
This would ensure higher enrolment in primary schools, reduce dropouts with particular attention being paid to the girl child. Equal emphasis would be given to non-formal and technical education. Special attention would be paid to adult literacy, continuing education and techniracy (i.e. acquisition of technical skills through learning by doing). Computer-aided knowledge centres will be established to facilitate rapid knowledge and skill empowerment.

## Nutrition security

This would aim at enabling access to balanced diets and safe drinking water. Special emphasis would be given to nutritional supplementation of pregnant mothers and children under five and to eliminating micronutrient deficiencies. The charter would focus on gender disparities with regard to nutritional intake. Particular stress will be given to maternal and foetal nutrition, in order to avoid the birth of babies with low birth weight.

## Gender code

The gender module will emphasise steps to end all forms of gender inequity and discrimination including adverse sex ratios, inequitable property rights, dowry, female foeticide and infanticide, higher female mor-

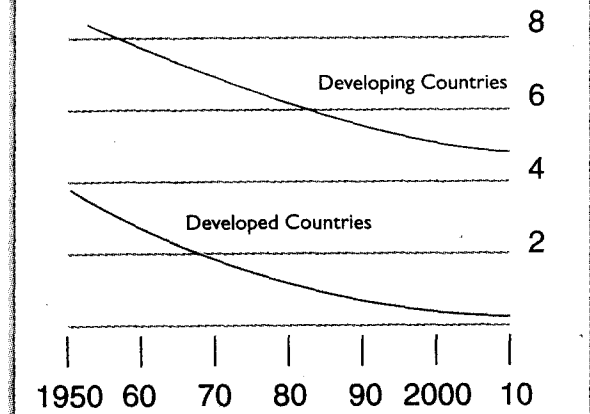


Relief work in drought-hit Rajasthan.

tality and morbidity, higher female illiteracy, feminisation of poverty and food insecurity for women. The role of women in the conservation and improvement of agrobio-diversity will be given explicit recognition.

To sum up, a local level socio-demographic charter will be a tool which helps rural and urban communities to understand the population supporting capacity of their local ecosystem and to promote an improvement in the quality of life through the sustainable and equitable use of natural resources, particularly land, water and biodi-

## Agricultural employment, Percentage of total employment



Source:FAO

Figure 1

versity.

## Integrated gene management

The ongoing gene-revolution will be a major factor in determining human ability to promote the productivity, profitability, stability and sustainability of major farming systems. The feedstock for the modern biotechnology industry is bio-diversity. Therefore, every nation needs to develop and spread an integrated gene management strategy based on concurrent attention to *in situ*, *ex situ* and *in situ onfarm* methods of conservation (Figure 2). Also, a multi-stakeholder national commission to deal with issues relating to genetic modification in plants should be set up. Fortunately, our national bio-diversity legislation as well as the Plant Variety Protection and Farmers' Rights Act, now before Parliament, provide for recognising and rewarding the contributions of tribal and rural families to genetic resources conservation and improvement.

## Community food and water security system

There is need for a decentralised community centred food security system based on attention to all the links in the conservation-cultivation-consumption chain. One male and one female member of panchayats should be trained to serve as members of a food and water security corps. Such a system

will include the following four major components:

### Field Gene Bank

This involves the *insitu on farm* conservation of land races and local varieties of crops, through the revitalisation of the conservation traditions of rural and tribal families, particularly women.

### Village seed bank

Rural families often lose their seed stocks due to drought, flood and other natural calamities. Therefore, in each village a community seed bank needs to be established through a seed security self-help group, supported by microcredit.

### Village water bank

Conservation of rain water, sustainable management of groundwater and the conjunctive use of surface, ground and recycled water are important components of the village water bank.

### Block grain bank

It is important to maintain grain reserves of local staples to meet emergencies like drought and natural calamities. For this purpose, a community grain bank should be established at a suitable location, each to serve about 25,000 families. The grain bank will be operated by a self-help group supported by a revolving fund.

## Integrated Gene Management

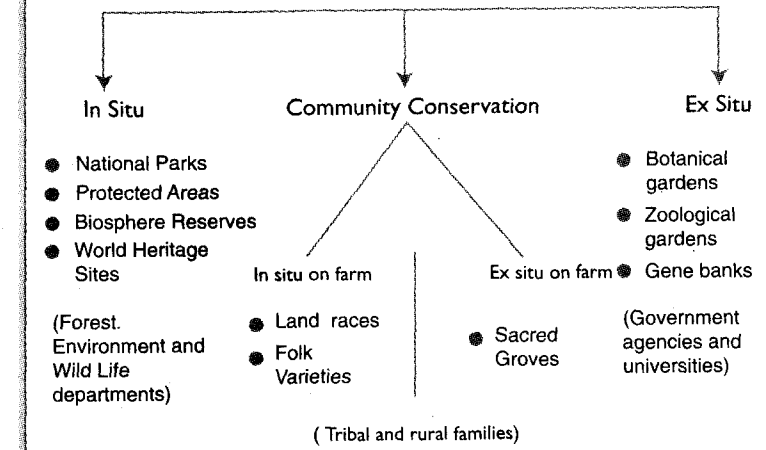


Figure 2

Thus the community food and water security system will foster a sustainable people-centred and people-controlled method of ending food and drinking water insecurity at the level of each individual. It will help to ensure both food security and bio-diversity conservation.

## Restructuring global institutions:

### World Trade Agreement

In the re-negotiated World Trade Agreement, the ethics and equity principles of CBD should be incorporated in Trade Related Intellectual Property Rights (TRIPS). Also, *sui generis* legislation relating to plant variety protection in industrialised countries should make provision for recognising and rewarding primary conservers of bio-diversity and holders of traditional knowledge, mostly found in developing countries.

### World Intellectual Property Rights Organisation (WIPO):

WIPO is already examining methods of conferring IPR on indigenous knowledge and technologies. This process should be completed soon, so that both individual and community innovations can be recognised under global and national IPR systems.

### Union for the Protection of New Varieties of Crops (UPOV):

UPOV should be restructured in the form of an organisation responsible for both breeders' and farmers' rights. Breeders and farmers are allies in the quest for sustainable food security; hence, their rights must be mutually reinforcing and should not be projected as being antagonistic. UPOV could thus become a Union for the Protection of Breeders' and Farmers' Rights.

It may be worthwhile recalling what the Roman philosopher, Seneca, said 2,000 years ago, "A hungry people listens not to reason nor cares for justice, nor is bent by any prayers". There is little use in preaching ecology and inter-generational equity to the nearly billion children, women and men who will go to bed partially hungry tonight. This is why I plead for urgent steps to stop the growing damage to the ecological foundations essential for sustainable food and water security. Without a community led ecological and food security programme, Malthusian fears about human numbers overtaking human capacity to produce enough food may still come true. ●

## Community Food and Water Security System

### Community Food and Water Security Committee and Community Food and Water Security Corps



VK

# Ecological Access to Food and Water: A major environmental challenge

*The overpowering images of famine and drought make it clear that there is no purpose served in preaching ecological and intergenerational equity to millions of people who are hungry. Instead, there has to be a community-led food security programme, argues noted agricultural scientist Dr. M. S. SWAMINATHAN, that protects the ecological foundations essential for sustainable food and water security. And on the eve of World Environment Day, he suggests a four-point action plan on these lines.*

**I**N 1798, when Thomas Malthus expressed his apprehensions about human ability to produce food to match the needs of increasing human numbers, the entire global population was 940 million. Even at that time, Marquis de Condorcet, a French mathematician, remarked that the population will stabilise itself if children are born for happiness and not for mere existence. The "happiness" referred to by Condorcet has social, economic, educational and ecological dimensions. The global population now exceeds six billion and both China and India have over a billion each. In spite of such a large population, Malthusian fears did not come true during the last century because of technological advances which could help to keep the growth rate of food production above population growth rates. The very progress in agriculture has, in several areas of the world, eroded water security, owing to the unsustainable exploitation of groundwater and inadequate efforts in storing rainwater.

Today, the food security challenge is one of economic access to food. A famine of jobs and consequently of income leads to a famine of food at the household level. Thus, at the end of the 20th century, the food security challenge shifted from physical to economic access to food. At least 300 million in our country suffer from poverty induced hunger. Every third child born is underweight (below 2.5 kg) due to maternal and fetal undernutrition. Such low birth weight

children suffer from handicaps in brain development. This is the worst long-term tragedy that can happen to our country, since we have entered a century christened as "Knowledge and Innovations Century".

#### Twenty-first Century challenges

Currently, the developing world is a net importer of 88 million tonnes of cereals each year at a cost of US\$14.5 billion. Since the early 1970s, the developing countries have become large net importers of milk and meat. It is projected that meat imports by developing countries will increase eight fold between 1995 and 2020. The global demand for cereals will increase at least by 40 per cent between now and 2020, with most of the demand coming from developing countries. The additional requirements will have to be produced under conditions of shrinking per capita arable land and irrigation water availability and expanding biotic and abiotic stresses.

*Food imports by predominantly agricultural countries will have the same impact as importing poverty and unemployment. Modern industry, by and large, promotes jobless economic growth. Only agriculture, including agro-processing and agri-business, is capable of fostering job-led economic growth, which is the need of the hour in population-rich developing countries.*

The challenges during this century will be both economic and ecological access to food. In some respects, ecological access will determine the fate of economic access, since most rural livelihoods in developing coun-



tries depend upon land and water based occupations, i.e. agriculture, animal husbandry, fisheries and forestry (Figure 1). The population supporting capacity of major ecosystems has already been exceeded in most developing countries. Population pressures are particularly high near megabiodiversity regions. The basic life support systems comprising land, water, flora, fauna and the atmosphere are all in distress.

Food and drinking water security are fundamental to human security. Therefore, ministers of environment, should be more appropriately designated ministers of ecological security responsible for safeguarding and strengthening the ecological foundations of sustainable food, water and livelihood security. I would like to suggest a four-point action plan for the purpose of promoting at local, national and international levels sustainable food security.

- Integrated Natural Resources Management (INM) through local level socio-demographic charters

- Integrated Gene Management
- Community Food and Water Security System

- Restructuring global institutions

**Integrated Natural Resources Management:**

Socio-demographic charters can be developed as planning and priority setting tools at the grassroots level, for fostering INM. They should be prepared by the people to better reflect their aspirations and felt-needs. A hierarchy of unmet needs can then be spelt out starting with the most pressing need. Plan implementation and finances can concentrate on meeting the hierarchical needs in a phased manner. A sense of recognition and self-esteem will promote a community spirit in planning and problem solving. The major purpose of a village level socio-demographic charter is to sensitise the local community on the population supporting capacity of their ecosystem. The major components of the village/ town socio-graphic charter are the following:

**Environment management:**  
Environment protection and the conservation and sustainable and equitable use of

common property resources are issues that are, to a large extent, amenable to local control. The degradation of the environment in villages, towns and cities is now seriously threatening both food and drinking water security. Local bodies need to incorporate in their plans, mechanisms to prevent loss of top soil, depletion of ground water, pollution of lakes and rivers, deforestation, loss of grazing lands, conversion of forests into agricultural land and air pollution. Water harvesting, watershed management and the efficient and economic use of water should receive overriding priority. Waste management and sustainable lifestyles especially in the urban centres are needed because these have implications for the ecology of the rural areas. Both in urban and rural areas, houses should be designed in a manner that they harvest and conserve rain water. Incentives for promoting renewable energy sources should be introduced. The steps necessary for managing common property resources of the area in an equitable and sustainable manner will also have to be developed. The local community will maintain bio-diversity registers to monitor the impact of development on bio-diversity as well as to safeguard their intellectual property rights. The environment component of the socio-demographic charter will be an important tool for improving the quality of life through the integrated use of monetary and non-monetary inputs.

Watershed management: Pages II, IV

#### Hygiene and housing:

This would include mechanisms for safe disposal and recycling of garbage, sewage and human waste. Sewage treatment and waste disposal should form part of housing design. Water storage tanks and ponds should be disinfected to prevent breeding of mosquitoes and made mosquito-proof. In both rural and urban areas, water and electricity shortages are widespread. Housing designs should have in-built mechanisms for harvesting sun and rain. Methods of

Continued on page VII

# Gujarat village tense over port plan

Aradhana Kalla  
Umbergaon (Gujarat), June 4

**U**MBERGAON, A small coastal village in southern Gujarat, is tense. On the eve of the World Environment Day, its residents are fighting to save their homes and their serene environment.

The holding of seminars and lectures on World Environment Day may seem an ordinary matter for armchair environmentalists. But residents of Umbergaon have been denied even permission to hold a rally tomorrow.

The protest is against a mega private port, Maroli-Umbergaon, which is to come up on the sea and land that has provided the local populace with food and shelter for as long as can be remembered.

The project proposes to destroy

not only their livelihood of traditional fishery and farming but also the fragile eco-system of the area, which comprises mangroves and immensely fertile wetlands. Both the elements are vital for the ecological balance of coastal areas and act as breeding and spawning grounds for fish.

After days of trying to muster support for an event to focus on their year-and-a-half long struggle, the villagers managed to get permission for only a public meeting.

"We did not know that holding a rally in defence of the environment would be so difficult," says Praveen Rasik Machi, member of the Kinara Bachao Sangarsh Samiti (KBSS).

The police refused to permit the rally till they produced before them the leaders who would participate in the march. "On June 2, I got a letter from the police saying that all those addressing the rally should be produced

before them by the next afternoon", stated Deepak Chandu Lal Mehta, a KBSS leader. "Since that was not possible, we settled for a public meeting."

But here too there was a problem. "We wanted permission to hold the meeting in an area shaded by Saru trees, but the Tehsildar said it had to be held in the open ground", said Machi.

Tehsildar M. N. Topiwala's defence, "It is windy season. Who

will be responsible if one of the trees break and fall on the people attending the meeting?"

"The police only wants that there is no law-and-order problem and thus wants undertakings from KBSS leaders assuring us of the same", said V P Chenoy, Deputy Superintendent of Police from the district headquarters at Valsad.

"Three of us have already given an undertaking," said Machi. He added that authorities were trying to create all possible hurdles. "The police have even called the sarpanchs of some nearby villages to dissuade people from attending the meeting," alleged Mehta.

But, all this and FIRs against 2,000 villagers later, the Umbergaon residents remain undeterred. "We will fight to the finish. It will either be the port or us", the villagers retort.



5 JUN 2000



# The mounting problems of garbage disposal

By Akila Dinakar

**CHENNAI, JUNE 4.** When the World Environment Day is observed globally on Monday, policy-makers and citizens of Chennai are once again forced to confront one of their mounting problems — how to get rid of rubbish.

Numerous city beautification schemes have gone by without giving the metro a clean image. No concrete steps have so far been taken towards segregation of garbage at the household level or scientific recycling at the macro level in the dumping yards.

Seen from an all-India perspective, Chennai ranks next to Mumbai and New Delhi in garbage generation — 3,500 tonnes per day of municipal solid waste. Solid wastes contain a high proportion of organic matter and are dumped in the two official landfills at Kodungaiyur in North Chennai and Perungudi in the south.

Besides the two dumping yards, the city's trash is thrown into several of the transit stations situated in residential localities. They are frequently set fire to, causing air pollution, obnoxious smell and associated health hazards.

Apart from organised garbage dumping, civic bodies in and around Chennai conveniently stow away the litter in open places along the coastline or on street corners and waysides.

In this manner, garbage from the Tiruvottriyur Municipality is dumped for a kilometre-long stretch on the Ennore coastline. The rubbish poses a great civic problem as it is often set fire to, besides the putrid smell caused when sea water which drenches and the mounds decay.

Despite several representations made to the municipal council, the problem remains unsolved, making the area slippery particularly during the high tide period.

A team of scientists, some from abroad, who came for a conference on the Chennai coastline were shocked to find the garbage dumped alongside the boulders meant to prevent sea erosion. They wondered why the Government did not realise the folly of pumping in tonnes of untreated garbage with its non-biodegradable wastes and toxic chemicals into the sea.

Another case of dumping is in a small pocket behind the Light House on the Marina Beach add-



**WASTED:** Despite the enormous potential to make wealth out of garbage, it is largely dumped all over Chennai and left to rot, as seen here along the Ennore coast. — Photo: S. R. Raghunathan

ing to the sanitary problems already plaguing the slums of the area. The section of the Cooum river near the Ambedkar Bridge is a collection point for thousands of thin plastic covers severely clogging the point behind the local slums.

According to Mr. P. J. Joseph who is on the Halon Alternatives Options Committee, residing in Korattur, the open garbage dump around the Red Hills road over-bridge is used as a public convenience causing a major civic hazard to residents. Any number of complaints to officials concerned had not yielded any fruit. The same story is repeated in every zone of the Corporation. "There is no scientific planning of disposal or reuse of waste material", he feels.

The much publicised privatisation of garbage collection on the

one hand, the mega disposal problem has not got any better. The city is unable to benefit by organic composting technologies for manure as the garbage contains glass, plastics, toxic metals, mercury lamps, all combined, along with compostible matter.

Urban landfills with enormous quantities of waste pose a major problem for the city's health, causing air and groundwater pollution. With several waste-recycling technologies, the civic bodies would have to inevitably focus their attention on evolving methods for developing a waste management industry for segregation, recycle and reuse. Recycled compost is in demand as fertilizer for the city's greening programme and "rooftop farms" mooted by NGOs such as Exnora International.

## NGOs protest N-plant plan for Jalpaiguri

HT Correspondent  
Calcutta, June 5

SEVERAL NORTH Bengal-based NGOs today held a rally in Siliguri to protest against the West Bengal Government's reported suggestion that an area in Jalpaiguri district could be considered for setting up a nuclear power plant. The Jalpaiguri district administration has reportedly identified Rajgunj on the highway between Siliguri and Jalpaiguri as a possible site for the plant. A former secretary of the Himalayan Nature and Adventure Foundation, told *The Hindustan Times* over the telephone from Siliguri that a number of NGOs decided at the rally to begin a movement from the third week of this month in protest against the N-plant proposal.

The NGOs were also upset by Railway Minister Mamata Banerjee's announcement that the 200-km metre gauge railway line between Siliguri Junction and Alipurduar would be converted to broad gauge. Bose complained that the railway project would cause irreparable damage to four wildlife sanctuaries.

THE HINDUSTAN TIMES

- 6 JUN 2000

# Be plastic-free, get 10% off in green hotels

FROM ANAND SOONDAS

Lucknow, June 5: Tourists bound for Uttar Pradesh, you have nothing to lose but plastic bags. The state government — suddenly thinking green — will shower a 10 per cent discount on anyone who checks into a Uttar Pradesh tourism hotel "without a polythene product in their luggage".

Surprising grouchy environmentalists, who for long have been crying hoarse over the "utter disregard for environment in India's most populous state," state tourism minister Ashok Yadav announced the decision today, fittingly on the occasion of World Envi-

ronment Day. This is just the beginning, he added, promising more measures which would leave a "benign environment for our coming generation".

Yadav underwent a change of heart after he heard that nearly 50 "unfortunate" stray cows had died in the last two months after consuming polythene bags.

"The message against polythene has to go out loud and clear," says the minister. "It is only a beginning but we are very serious about curbing the polythene menace. We cannot afford to leave an abusive legacy for the next generation."

The discount comes into effect from

today at any of the 53 state tourism hotels in the country. Yadav adds that they have totally banned the use of polythene in these hotels.

The state government's green turn has stunned the environment brigade, which maintains no one has taken the issue of pollution seriously in the state. "The government has spent a mind-boggling Rs 200 crore on the Ganga Action Plan but the river remains as polluted as ever. Another proposal to save the Taj hasn't yielded much either," says environmentalist Yogendra Bajpai.

Not the BJP government alone: the RSS has also stepped up its campaign to save the environment. Waking up to the

need to save the Gomti river, the organisation has identified 23 points from where it will start a drive to cleanse the river from tomorrow.

It is not clear though if the "ban" on plastic applies to the administration: the state government remains the biggest user of polythene.

There are 2,000 industries in the organised sector with about 60,000 workers dealing in polythene manufacture and recycling. The UP Plastic Manufacturers' Association says the government is the biggest consumer of polythene, using it for canal lining and also for forest plantation where saplings are kept in small polythene bags. Uttar

Pradesh alone produces 20,000 tonnes and recycled polythene, with a large unaccounted quantity being added by the nearly 5000 illegal polythene manufacturing and recycling units.

The state government also enjoys the blessings of the Centre. Last year Prime Minister A.B. Vajpayee inaugurated a Rs 2,500 crore Gas Authority of India Ltd plant in Oraiya which produces nearly 50 per cent of its output in the form of LLDPE and HDPE — basic raw materials for the polythene and plastic industry. Nearly half of the production is used by the state's polythene industry.

Will the environment survive that? good wishes of such a government?

THE TELEGRAPH

6 JUN 2000

# 'Environment, religion must go hand-in-hand'

HT Correspondent  
New Delhi, June 5

ENVIRONMENT AND religion going hand-in-hand? Quite an exciting proposition in a country where religions certainly thrive and where environment is equally certainly in peril.

Distinguished scientist and former Union Minister of State for Science and Technology Prof. M G K Menon came out with the arresting idea in his keynote address on "2000: The Environment Millennium--Time to Act" on the World Environment Day, today.

Prof. Menon said that religious leaders representing the various faiths should be brought together in a campaign to inculcate value systems in the people, especially the younger generation, which would go a long way in checking environmental degradation as environmental sanctity was

ingrained in Indian culture. Despite a rich cultural heritage that stressed the importance of nature in the daily life, the absence of well-propagated value systems had led to misuse of environment.

He said that inculcating environment-friendly value systems was important because the Ministry of Environment and Forests could not by itself ensure the creation of

Minister for Environment and Forests T R Baalu said that the hike of the project cost would be undertaken on a pilot basis in selected areas of each State and would be extended later to other parts.

He said that the Ministry was considering actively water harvesting in view of the unprecedented drought prevailing in several parts

organisations, voluntary groups and industry in achieving environment protection and ecological conservation. He was speaking after planting a sapling at a school near Manali on the occasion of the World Environment Day.

While environmental degradation has already reached frightening proportions, it was a revelation today that India's environmental laws could only be described as "antiquated" and "unimplementable", as Prof. Menon did.

And judging by the depressing list that Minister T R Baalu reeled off (polluted rivers, contaminated underground water, fast depleting water table and an endangered ozone layer), the laws are apparently falling short of serving their purpose. The Minister's remark that fighting these problems was the "biggest challenge before the country" could induce sobering thoughts.

## World Environment Day

a proper atmosphere for maintaining the ecological balance.

On its part, the Environment Ministry announced a welcome move, deciding to raise an Environment Protection Fund and hiking funds for soil and water conservation measures in new afforestation projects in the desert and drought-prone areas to 25 per cent from 15 per cent

of the country and to meet the urgent need for sustainable use of water resources.

The day also brought forth appeals from various quarters for co-operation and coordination between the Government and the civil society. Prime Minister Atal Behari Vajpayee asked for the active participation and co-operation of individuals, community

THE HINDUSTAN TIMES

JUN 2000

# Ukraine ready for Chernobyl closure

UKRAINIAN President Leonid Kuchma said on Monday that the Chernobyl power plant, scene of the world's worst civil nuclear disaster in 1986, would be closed down on December 15.

"The Chernobyl nuclear reactor will be decommissioned on December 15 this year," Kuchma told reporters after meeting US President Bill Clinton in the presidential palace.

However, environmental group Greenpeace warned that the target date could be too late to avoid the risk of further accident.

Clinton, on a six-hour visit to the ex-Soviet republic, welcomed the news and said the United States would give Ukraine \$78 million in fresh funds to help improve safety at the plant, 110 km north of Kiev.

"I am very proud and moved to be here today, this is World Environment Day, for this historic announcement by President Kuchma," Clinton said. "This is a hopeful moment, it is also a moment when we remember those who suffered as a result of the accident there." Ukraine, Belarus and Russia still spend huge sums cleaning up the aftermath of the fire and explosion that spewed radioactivity across Europe and contaminated large areas. The blast killed 31 people outright and is held responsible for thousands of deaths since. Thousands more have had their health affected.

Ukraine had promised the G7 group of leading industrialised nations it would shut down the plant's sole remaining working reactor by the end of the year if they provided financial help, but delayed setting a firm date. The government is also pushing the international commu-

nity to help fund completion of two reactors at other plants in Ukraine to replace lost generating capacity.

Kuchma said Clinton had undertaken to ask the G7 for assistance in shouldering costs.

Meanwhile, Greenpeace denounced both Ukraine and Western countries for allowing the Chernobyl nuclear power station to continue operating until mid-December. The environmental group said in a statement that it had evidence that fuel rods were in danger of rupturing, "causing a severe risk of accident".

"The closure date is 193 days away, and so the reactor can only safely operate for less than a third of that time," it said.

Analysts said more financial support from Washington and other Western governments was crucial to meet the deadline.

"Even though the date has been named, if no support is forthcoming then the country may well fail to deliver on that date," said Olexander Pavlyuk, head of the East-West Institute.

And Mykhailo Pohrebinsky, head of the Kiev Institute of Political Studies, told Reuters a closure date would be good for Clinton himself as he supports his Vice-President Al Gore as Democratic candidate in November's presidential election.

Clinton said the United States would give Ukraine a further \$2 million to improve safety at its four other nuclear plants.

The two countries also signed an agreement on a \$30 million project helping Ukraine to assess the technical performance of nuclear fuels from potential suppliers.

—Reuters

INDIAN EXPRESS

7 JUN 2000

# State moots fight against arsenic with Unicef help

ANUPAM DASGUPTA  
STATESMAN NEWS SERVICE

CALCUTTA, June 10. — The state government and the Unicef have drawn up a joint action plan to tackle the arsenic problem in eight worst-affected districts: Malda, Murshidabad, North 24 Parganas, Nadia, South 24 Parganas, Howrah, Hooghly and Burdwan.

The focus of the plan is to work out intervention methods to combat arsenic poisoning after identifying infected areas. Awareness-generation programmes will also be initiated through an effective communications strategy.

"Communication is a key tool in the fight against arsenic contamination," said the public health engineering department's chief engineer of water quality management, Mr Ashesh Roy.

The plan also seeks to educate the affected people about contamination of drinking water sources. A recent assessment of knowledge, attitude

and practice of a section of people in arsenic-affected areas has revealed:

■ Awareness about the term arsenic ranges from very low to moderate. There are certain misconceptions regarding arsenic contamination and its consequences. There is also a significant lack of knowledge about alternative sources of water.

■ Women are more vulnerable as they are the ones who mostly fetch water.

■ Water management in villages like Rajapur and Mokrapur in Murshidabad is dismal.

■ Villagers mostly consider arsenic mitigation exercise to be a state responsibility and do not participate in it. Neither do they seem to know that higher levels of nutrition reduces the risk of arsenic contamination.

■ Competing administrative priorities and a woeful lack of knowledge among health functionaries.

■ Testing of tubewells and methods of dissemination of

test results don't follow any systematic standardised procedure.

■ A distinct communication gap between the government and several other agencies that operate on the field.

The state-Unicef pilot project is to be launched first in Murshidabad and Malda. Later, it will be taken up in the six other districts.

The project sees the public health engineering department as the nodal agency in implementing the plan with zilla parishads and NGOs.

The project will also try and bridge the credibility gap caused by the general notion that not enough intervention at the government level is taking place to protect general health.

The project is spurred by the fact that there is a strong but latent demand for information on arsenic. Collective strategies should underscore the gradual nature of arsenic poisoning, public health engineering department officials said.

THE STATESMAN

11 JUN 2000

## Probe into killer explosion at Japan chemical plant

AGENCE FRANCE PRESSE  
TOKYO, JUNE 11

INVESTIGATIONS began on Sunday into a massive explosion which ripped through a chemical plant in Japan on Saturday, killing four people and injuring at least 27 others, a police spokesman said.

The blast gutted the plant, run by Nisshin Chemical Co Ltd in a residential area in Gunma some 100 kilometres north of Tokyo, and destroyed or damaged at least 80 houses. A huge fire raged for six hours before being extinguished.

Police said a total of 151 officers and investigators had begun an on-the-spot inspection at the plant, where workers had been refining chemicals to be used semiconductor production.

"We started investigations this morning, mainly trying to find the cause of the explosion," said a spokesman for the Gunma Police Department. "But we can naturally think that there was something wrong with the chemical refining procedures, which might

have triggered the blast," he said.

The four killed were employees of the plant, while the injured included local residents, the spokesman said. "The number of injuries may increase as additional people may claim their injuries later in the day," the spokesman said.

The plant reportedly manufactured various kinds of hydroxylamine, which is used in the processing of semiconductors and as an ingredient in medicine and pesticides. While they are not toxic for humans, the substances are chemically unstable and prone to explode when heated to about 130 Celsius, news reports said.

Naoshi Imai, president of the chemical plant, apologised on Sunday for the explosion. "I am sorry that we caused this terrible accident," Imai told a news conference. "The cause will be found later, but I am afraid that hydroxylamine exploded itself." The blast caused power failures at more than 200 households late Saturday, but electricity had been restored by Sunday morning, officials said.

INDIAN EXPRESS

12 JUN 2000

# Groundwater levels hit an alarming low

Apratim Mukarji  
New Delhi, June 12

*Govind HF-12*

**T**HE WATER situation in the country seems to be going from bad to worse. Not only is there a growing scarcity of water in the country, the agriculturally-important States of Punjab, Haryana, Tamil Nadu and Rajasthan are facing a steady fall in their groundwater levels.

While the per capita water availability in 1947 was 6,008 cubic metres a year, fifty years later it was down to 2,266 cubic metres. This is still above the danger level, that is 1,700 cubic metres when the situation is designated as one of "water stress". Water scarcity level is reached when the per capita availability goes down to 1,000 cubic metres and it is absolute scarcity at 500 cubic

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metres. These were the findings of a study conducted by the Tata Energy Research Institute (TERI).

Depletion of groundwater levels, however, is a cause for concern for India as its agriculture depends overwhelmingly on this source of water. One estimate has it that groundwater sources account for as much as 70-80 per cent of the value of agricultural produce attributable to irrigation.

Since agriculture contributes nearly 29 per cent of India's GDP with produce from irrigated areas being the mainstay, the availability of groundwater and the health of India's GDP are vitally inter-linked, which is all the more reason why the country should pay due attention to its depleting groundwater resources, the TERI study states.

However, there remains a contradiction over

groundwater exploitation in India. While groundwater availability is already a serious problem in a few States, the problem of its over-exploitation doesn't exist at the national level.

The danger bell is already ringing for Punjab that has reached an exploitation level as high as 98 per cent against the critical level of 80 per cent. Haryana has an exploitation level of 80 per cent, Tamil Nadu over 60 per cent and Rajasthan 53 per cent.

Six of the 12 districts in Punjab and three in Haryana have already crossed the optimum groundwater utilisation rate. Mehsana district in Gujarat and Coimbatore in Tamil Nadu are probably beyond redemption with groundwater aquifers (layers of rock or soil able to hold or transmit much water) having been rendered permanently depleted due to inadequate recharge.

THE HINDUSTANI TIMES

13 JUN 2008



# Germany decides to shut down its nuclear power industry

*Swimmer  
HF14*

HT Correspondent  
London, June 15

*15/6*

GERMANY HAS taken the lead in shutting down its nuclear power industry, the fourth largest in the world. Chancellor Gerhard Schroeder has, after hours of negotiations, concluded a landmark deal with chief executives of the four biggest electricity generators which entails a phased removal of over 6 per cent of the entire world's atomic energy capacity.

The companies represented at the meeting included RWE, Viag, Veba and Energie Baden-Wurttemberg. According to reports, the compromise between them and the Government is to

close down the nuclear industry fully in 20 years.

The reprocessing of the nuclear fuel will cease in five years.

The Greens, Chancellor Schroeder's coalition partners, had after coming to power in 1998, pressed for an immediate nuclear shutdown. One of its MPs, Reinhard Loske has now assured that Germany would be nuclear-free by 2019. The oldest reactors could be off-stream before the next elections in 2002.

The more radical Greens have threatened that they would demand pulling out of the coalition if the pace of de-nuclearisation remains slow. The deal, in any case, faces stiff political opposition

and legal writs by some companies. Many regional governments have their own interest and stakes in the atomic energy business.

The conservatives, like the CDU, have also indicated that they might block its passage in the upper Chamber. Many companies have threatened to sue for compensation for losses they would incur if forced to close down before recovering their investment.

There is a clash with environmentalists as well. They point out that the closure would lead to more burning of fossil fuels. Meanwhile the utility companies are expected to set up storage sites for waste as close as possible to the power plants.

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# Mangrove regeneration move fails

STATESMAN NEWS SERVICE

KENDRAPARA, June 16. — Despite claims by the state forest department, regeneration of mangroves in denuded patches has apparently failed.

Even as afforestation plans are afoot by the social forestry wing of the Rajnagar mangrove protection division from time to time, unscientific planning by concerned authorities has put the mangrove tracts in the estuaries of Mahanadi and Devi river virtually on the road to extinction, alleged reliable sources here.

According to officials, the social forestry wing of mangrove division has taken up afforestation on 1 sq km area with an allocation of Rs 15 lakh over the last three years. However, those at the helm of affairs having little expertise have allegedly chosen unsuitable sites for mangrove plantation for which the much-acclaimed scheme has failed miserably, officials said.

It is pertinent to note that unique natural mangrove vegetation, otherwise known as coastal woodland, is fast disappearing from Orissa coast at a rate of 2 sq km a year. Shrinking mangrove cover of 193 sq km, which acts as a natural buffer for cyclonic tides, has been matter of deep concern for the environmentalists.

A team of experts on mangrove which visited the mangrove nursery and afforestation points near Talchua and

Rangani hamlets near Bhitarkanika wildlife sanctuary recently had found techniques applied for mangrove plantations unscientific. They found gaps between the mangroves saplings planted.

While a natural vegetation about 2 km from the plantation site was found to be luxuriant in growth, the artificial plantation by the department showed signs withering. Local people who are familiar with the ecology of mangrove forests assert that the site selected for plantation was not conducive for mangrove regeneration.

Mangrove grow fast in areas where fresh water mix with saline water. But the plantation site was devoid of the process of water interaction. Though there is a need for free flow of sea water during tides to afforestation sites, departmental projects glaringly overlooked the necessity of digging channel to facilitate free flow of sea water, official sources said requesting anonymity.

Mangrove forests are adaptive to waterlogging conditions caused by tidal waves which other plants cannot survive. Fragile eco-system in mangrove forest areas in Kendrapara and Jagatsinghpur districts is struggling for survival following largescale deforestation and encroachment by shrimp farms.

Officers of the mangrove protection division, however, denied that the regeneration scheme has been a failure.

THE STATESMAN

17 JUN 2000

## Nuke mishap throws up toxic cloud in Russia

DEUTSCHE PRESSE AGENTUR

VLADIVOSTOK, June 17. — A huge cloud of toxic chemicals was spreading along the coastline near Vladivostok after an intercontinental ballistic missile was damaged while being unloaded from a submarine yesterday.

Four sailors were admitted to a hospital after the casing of the SS-N-18 Missile (Nato classification "Stingray") was ruptured, releasing a large amount of fuel near Dunai, 60 km east of Vladivostok, the NTV television station reported.

The 30,000 residents of neighbouring Fokino were told to stay inside and keep their doors and windows closed as the 300 by 500 metre yellow cloud approached.

Consisting of oxygen and nitric acid, the vapour is harmful to respiratory systems and can cause skin irritation, civil defence officials warned, but said the cloud was gradually dispersing.

The missile has a range of 8,000 km and can carry single or multiple nuclear warheads. It was not thought to have been fitted with warheads at the time of the accident.

The Russian Pacific fleet command has started a probe.

THE STATESMAN

18 JUN 2000

# Most city industrial units flout pollution norms: Report

HT Correspondent  
Calcutta, June 17

*Suburb*

MORE THAN 90 per cent of the city's industrial units do not possess a no-objection certificate from the Pollution Control Board (PCB). They do not conform to the prescribed emission norms either, says a report that the Calcutta Metropolitan Development Authority (CMDA) presented today.

"Our sample survey suggests that more than 90 per cent of Calcutta's industrial units have neither obtained consent from PCB nor have a proper stack (chimney or vertical exhaust pipe) within the premises," said Tapash Kumar Mitra, senior geophysicist, environment cell, CMDA.

He presented the findings at a workshop on 'Pollution control - Its Relevance to Industrial Development', jointly organised by Technology Alumni Association, Institute of Indian Environmental Engineering and NOISORB Noise Controls Private Ltd.

"Virtually all industrial units in the area covered by the survey discharge untreated effluents into the Calcutta Municipal Corporation drains," Mitra said. The survey also discovered that nearly 50 per cent of industries in the surveyed area fell in the red category — highly polluting — 15 per cent in

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18/6*

the orange category — medium polluting — and hardly 20 to 30 per cent in the green category — non-polluting.

"Pollution control measures can't succeed if achieved at the cost of unemployment," State Minister for Environment Manab Mukherjee said, while inaugurating the conference. "If pollution control creates unemployment, it will affect society," he added.

According to Mukherjee, most industries in the State are small and use obsolete technology. "They neither have the financial resources nor the technical capability to control pollution. But the Government is trying to develop appropriate technology for small-scale foundry units and lead-smelting units in east Calcutta," he said.

"The haphazard development and congestion is caused because more and more people are attracted to urban lifestyles and immigrating to cities. Planners need to keep in mind the pulls of industrialisation and urbanisation," State Municipal Affairs Minister Asok Bhattacharya said.

Many companies involved in controlling air, water and noise pollution participated in the workshop. The companies suggested strategies to check pollution and demonstrated their products and services for the purpose.

18 JUN 20

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## THE RADIATION HAZARD

THE REVELATIONS OF a study carried out by the Environmental Assessment Division of the Bhabha Atomic Research Centre (BARC) on the exposure of a group of villages in Karunagapally taluk of Kerala to a much higher dose of natural radiation from a monazite belt than the global average is shocking. Surprisingly, there has, however, been as yet no indication of any deleterious impact on the health of the people exposed to the radiation. This is probably the first time that there is a disclosure of our having to reckon with natural radiation as a hazard since very few would have seriously believed that an unprocessed mineral, even if it happens to be a nuclear raw material, could pose a threat. It is also a little unnerving to know from the study that Karunagapally taluk is one of the few High Background Radiation Areas in the world.

Since the study has said very little about the impact of the exposure on the health of the people living in the taluk, it is presumed that the doses of inhalation have so far not done much harm. Matters cannot rest there, however. There must be a medical investigation into whether the exposure has affected the health of the residents. Since the BARC study has stated that Karunagapally taluk is one of the High Background Radiation Areas, there should be a further enquiry into how the other areas in this category in the rest of the world have fared and into any adverse effects from such an exposure. The study has also not stated anything about the kind of protection the residents would need from radiation from the monazite belt. The facts it has collected about concrete and bare floors and roofings do not seem to throw much light on the kind of protection they could ensure to the people. Even if radiation-proof dwellings are provided on a large enough scale,

the protection would be very limited. If the exposure to the radiation which has now been brought to light by the BARC turns out to be really harmful, there could be no protection from the exposure to it in open spaces.

The findings of the BARC study should, however, not cause any panic simply because it draws attention to radiation from the monazite belt. Minerals, even if they happen to be nuclear and giving out radiation as in the present case, do not pose a serious health hazard until projects are launched to mine them without proper safeguards for ensuring environmental protection. The record of mining in India — whether it is of coal or of metallic ores — had for a long time been one of disregard for health and safety until recently. In spite of its being very well known that mining of atomic ores like thorium or monazite has to be hundred per cent safety-proof, it is doubtful whether India's record is as good as it should have been. Recent reports about radioactive pollution in the mining of uranium by the Uranium Corporation of India Ltd. (UCIL) in Jaduguda in Bihar are disquieting. There was a striking absence of a sense of certainty in the report of a committee constituted by the Director-General of Health Services and doctors of the State Government that the ill-health of the workers of the UCIL admitted to hospital could not be attributed to radioactivity.

The BARC study on the exposure to natural radiation in Kerala should be stretched further to throw light on its impact on the health of the people and what should be done to insulate them from any ill-effect. Such an extended study would also add to the existing knowledge about radioactive minerals like monazite.

THE HINDU

21 JUN 2000

# Panel's suggestions given the go-by

By S.K.Ramoo

**BANGALORE, JUNE 25.** The Karnataka Government has reasons to reject the draft guidelines relating to the National Water Policy, evolved by the Union Government. This was made known lately by the Medium and Major Irrigation Minister, Mr. H.K.Patel.

Interestingly, the States of Tamil Nadu, Andhra Pradesh and Uttar Pradesh have expressed reservations over them. Karnataka's flat rejection was mainly because several vital and relevant recommendations made by a Sub-committee constituted by the Deve Gowda Government were not incorporated.

The Sub-committee constituted in 1996, held several sittings and studied the draft guidelines in-depth, circulated by the Union Government and it had sought a number of relevant modifications to them. What dismayed the Karnataka Government was that the official document on the issue published by the Centre did not even make a cursory reference to them. It felt disconcerted to observe that while numerous reservations expressed by the States of Tamil Nadu, Andhra Pradesh and Madhya Pradesh had found a place in them, but not modifications sought by it. As a consequence, the Government and several leading politicians of the State nurtured feelings of distrust and this was mainly owing to the political leverage and clout the Tamil Nadu and Andhra Pradesh Governments enjoyed on account of being partners and supporters of the NDA Government at the Centre.

According to Mr. Justice H.G.Balakrishna, a retired Judge of the Karnataka High Court, who was a member of the Sub-committee, it had emphasised the priorities and factors, which were relevant to derivative equitable apportionment of water and had made suitable recommendations. It had recommended

that due consideration be given to the contribution of water made by each basin State, out of the total yield of the river basin, total irrigated area in each State, extent of drought region within them, total drainage and groundwater potential, advantages of monsoon enjoyed by them, water wastage, improved water and crop management techniques adopted, existing utilisation within the limits of total allocation of water made to each of them. The Karnataka Government found it distressing to note that hardly any of appropriate recommendations made by it were taken note of.

According to Mr. Justice Balakrishna that it was apt that guidelines should highlight the principle that a basin State of an inter-State river was entitled to a "reasonable and equitable" share and what is reasonable and equitable should clearly be defined. The related factors for determination of reasonable and equitable utilisation contained in Article 6 of the United Nations Law on Non-navigational Uses of International Water courses, 1997, need to be adopted, he felt. No existing utilisation of water be recognised as reasonable and equitable, if it has negative consequences on the neighbouring State, he noted. This law drafted by the International Law Commission seems to be a definite improvement over Helsinki Rules, according to him. Some methods suggested were universally-applicable, since they comprise broad principles, which are flexible enough to suit both the international and regional peculiarities, ground realities and variables, including facts and circumstances.

It was during September 1987 that the Union Ministry of Water Resources came out with a National Water Policy, but it blatantly lacked any guidelines. The Inter-State Water Disputes Act and River Board Act, 1956 also did not contain guidelines for sharing or allo-

cation of inter-State river waters. The Inter-State Water Disputes Act, 1956, according to some State jurists, required to be amended for rendering dispute adjudication by Tribunals to be made a last remedy as it should be preceded by adherence to alternate dispute resolution mechanisms, such as conciliation, negotiated settlement, mediation and arbitration. The setting of a time limit for adjudication of disputes was essential and any time, the "distributive justice" was preferable to "adversarial" system of justice.

The Public Trust Theory that the State is a trustee of all water resources in the country and hence it should play a dynamic role for its utilisation for the maximum benefit of a large number of people, be embodied in the guidelines. The "riparian theory" has now become outmoded and replaced by "equitable apportionment theory." It is appropriate that a request be made to the Union Law Commission to depute an expert consultant on the subject for assisting the finalisation of draft guidelines. The sum total of all relevant factors be taken into account, while determining reasonable and equitable water shares of basin States.

It is imperative that mutually-acceptable guidelines to the National Water Policy be put in place without further loss of time to enable the Cauvery Water Dispute Tribunal to be guided by them at the time of pronouncement of the final award on sharing of the Cauvery waters, among disputant States as the Inter-State Water Dispute Act does not contain any guidelines for water sharing and distribution. The modified draft guidelines are currently before the National Water Resources Council (NWRC), which had to take a decision shortly, following due consideration of all relevant factors.

26 JUN 2000

# Genetically modified food for Orissa victims

FROM NITHYA SUBRAMANIAN

**New Delhi, June 28:** Should one look a gift horse in the mouth? The question has come up with the distribution of genetically modified (GM) foodgrain to the Orissa cyclone victims.

Angered Indian environmentalists are planning to take up the issue of dumping GM foodgrain to the UN World Food Programme and other such international platforms. They are planning to form an alliance with other countries which have been used as dumping grounds by the US for such genetically-tampered foodgrains.

The US, which has provided food aid worth nearly \$4.15 million towards the cyclone has been air-dropping GM corn-soya blend in the state through Co-operative Assistance and Relief Everywhere (CARE), the nodal agency for all American relief.

According to Ashok Emani, re-

search associate with Delhi-based Research Foundation for Science, Technology and Ecology (RFSTE), "Dumping of GM foodgrain has taken place in East Timor and Mozambique and this is becoming a dangerous trend. It will have to be taken up at the international level."

The organisation has already started a good food campaign and has started taking endorsements from people against the supply and use of such foodstuffs. "The need to know what is in our food is our democratic right," Emani said. "Any tampering of the basic genetic structure is harmful and can trigger off different reactions which could be harmful," he added.

The RFSTE collected samples from the supplies made to the flood victims and sent them to a lab in the US. "We had asked US-based Genetic ID to test the sample of foodgrain supplied to the

Orissa victims and found genetically modified DNA in soya (in the corn soya blend)," he added.

This report prepared by Genetic ID will now be reviewed by the Orissa government, after which the next course of action would be decided. The revenue secretary of Orissa has admitted that such foodgrain was distributed to the people. As a first step towards increasing awareness, the foundation has alerted NGO groups across the state. This will be taken up at the national level later, said Emani. The GE foodgrains have been rejected by consumers in the West especially in Europe due to health hazards. Various big foodchains have also dropped such products from their shelves and demanded full product details from the manufacturers. The foundation has asked the US government to stop using money meant for relief to the poor for subsidising the biotech industry.

THE TELEGRAPH

29 JUN 2007

TUESDAY, MAY 2, 2000

## BEYOND THE ALAMATTI VERDICT *ms*

*2* IN THE IMMEDIATE context, a positive outcome of the Supreme Court's verdict on the protracted dispute over the sharing of the Krishna waters is that the construction of the Alamatti dam, which remained stalled because of a court injunction in the wake of a legal row between Karnataka and Andhra Pradesh over its planned height, can get going. Andhra Pradesh has reason to be pleased that the court has pegged the dam height at 519.6 metres, rejecting Karnataka's plea for raising it to 524.25 metres, and if its Chief Minister, Mr. N. Chandrababu Naidu, hailed the decision as a "vindication" of its position, it is quite understandable. What is significant is that the apex court, even while holding that the award of the Bachawat Tribunal placed no restriction on the Alamatti dam height, has gone along with, if not gone by, the conclusion of an expert group (a political initiative taken in 1996 by the United Front Government at the Centre) in determining the height at 519- plus metres; the panel had said the annual requirement of 173 tmcft of water contemplated under the Upper Krishna Project (of which Alamatti is a component) would be adequately taken care of by a dam of this height together with the Narayanpur storage.

Although the Alamatti dam related aspects of the judgment have hogged the limelight, they are not by any means the only substantive part of the apex court's pronouncements. In fact, what the five-member Constitution Bench has handed down is by far the most comprehensive and authoritative of the court's opinions on various contentious issues raised in respect of the Bachawat Tribunal's award over the years. For instance, it has ruled that the apportionment of water among the riparian States was not project-specific (as contended by Andhra Pradesh), that the Scheme 'B' framed by the Tribunal (for the sharing of surplus water) was not a "decision" and therefore not enforceable (as Karnataka would insist) and that Andhra Pradesh, as the lower riparian, had the liberty to use the 'remain-

ing water' (within the total allocation of 2060 tmcft) in any year without claiming any right to it. On the face of it, the ruling on 'remaining water' may look favourable to Andhra Pradesh, but the court's observation that such use "should not be by way of permanent construction of large projects..." could spell trouble for it and even some of its ongoing projects may become vulnerable on that count. In effect, the court has placed the different provisions of the water-sharing arrangement as laid down by the Tribunal in proper legal perspective, even as it has refrained from seeking to adjudicate whichever contentious matter was in the nature of a "water dispute", something that the judiciary is precluded from deciding under the Inter-State Water Disputes Act. *emitted*

Given that the Bachawat Tribunal's award itself is open for review any time after May 31, 2000, the importance of the Supreme Court's verdict is somewhat restricted to the extent that it dealt primarily with issues pertaining to that award. In a way, this factor and the readiness of the Centre to appoint a fresh Tribunal for the purpose, should any of the riparian State raise a dispute and seek adjudication, would appear to have weighed with the apex court in suggesting to Karnataka and Maharashtra that some of the issues they had raised could appropriately be taken up with the proposed adjudicatory body. Therefore it may not be long before a fresh crop of disputes, with much-too-familiar unseemly political overtones and chauvinistic posturings, surfaces. There will in fact be no end to such nationally detrimental wrangles unless the political class across the country pledges itself to making a success of the negotiation option, while seeking to resolve differences over the sharing of vital natural resources, particularly river waters. Even the higher judiciary has not unoften sought to drive home this message to the disputant States by its directions prompting governmental or political initiatives for a negotiated settlement.

2 MAY 2000



HD-12

environment

# Dams & activism

By P. V. Indiresan

**S**Ocial activists draw their awesome influence from the fact that they fight on behalf of human rights and wage their war against the selfishness of property rights. That induces their admirers to think of them as an incarnation of Vishnu, protecting the weak and destroying the wicked. For instance, the Narmada Dam activists have been on the side of the exploited tribals and against greedy landowners bent on destroying the river's ecology. From that angle, their case is a straightforward fight between good and evil, on behalf of poor tribals against the moneybags of Gujarat.

Suppose we broaden the canvas to include larger areas of the country. The scenario undergoes a dramatic change. It is no longer a struggle between the human rights of Narmada tribals and the rich landlords of Gujarat. It gets now revealed as a struggle between the property rights of tribals and the human rights of poor Gujarati peasants. The battle gets transformed with water-rich tribals on one side and water-starved peasants on the other. Tribals may now be described as saying "This is our land, our property. We, and we alone, have the right to use it. So, we will use it in any way we like; no one else has a right to interfere. If the river causes flood havoc, that is not our concern. If, thereby, ninety per cent of the water wastes into the sea, so be it. If millions and millions starve and many of them die, for want of water, that is their misfortune, not our responsibility. If they want relief, by all means find some solution but without damaging our rights over our private property."

Isn't that funny? The same activity looks exactly the opposite merely by changing the perspective! From a narrow angle, the issue is human rights of the tribals. From a broader view, it is none other than the property rights of the same tribals! Anti-dam activists can still argue that the Gujaratis have brought disaster on themselves. They will point out that even now, there are villages in Gujarat that are managing quite well merely because they built their own small dams. That is true. Once again, that looks good because the perspective is, once again, narrow. The villages with local check dams have some water, but not plenty of it. They can survive an occasional drought but not a prolonged one. In any case, the fact remains that the

tribals have excess of water, far, far more than what they can use. Yet, they do not agree to let others have that water though they do not need it themselves and others need the same badly. That is a repeat of the story of the Mahabharata — war between those who will not give up their excess property and those who have no assets and want a share!

Social activists and social conflict reinforce each other. Quite naturally, social activists flourish wherever there is social conflict. That is understandable. It is not so evident that where there are social ac-

The infringement of property rights is naturally extensive and localised in the case of big dams. With small dams that infringement is actually much more extensive but distributed widely. So, though the total quantum of infringements is much less with big dams than with small ones, the issue stands out only in the case of large dams. Something similar happens in an air crash. That causes huge dismay, but the far larger numbers that get killed daily in road accidents do not cause even a ripple. The same is happening with large dams. If the objective is minimising dis-

way civil engineers used to be not long ago? Will the love affair with information technology collapse the same way it has happened with irrigation dams? Will a new breed of Medha Patkars and Arundhati Roys erupt to wage a relentless war against information technology? It would be difficult for most people to visualise now that anyone would like to destroy information technology. Yet, who knows, fifty years hence (even ten years hence because IT moves faster), the sociological fashion may be "Down with computers. If we must have computing devices, let it be calculators at the most! Down with the cultural pollution of the internet, let us get back to letter-writing!"

We are currently in the midst of a major drought in Gujarat. Ms. Medha Patkar has been mainly instrumental in keeping the Narmada Dam height below the level at which water can be released. So even the water that is there in the dam is not available for the parched peasants of Gujarat. If that dam had proceeded on schedule, the ill-effects of this drought would have been largely mitigated. After 11 continuous years of good monsoons, we should prepare for poor monsoons in the coming years. So, the country should wake up to the realisation that we have no alternative but to build large storage dams to quench the thirst of our burgeoning population.

Anti-dam agitators did highlight the insensitivity with which displaced people were handled and the damage caused by unwarranted secrecy. However, they went too far in questioning technical decisions about which they had zero competence. The solutions they proffer are not the optimum for humanity at large; not the best even for the tribals themselves. The culture of tribals is so stultifying that they will never achieve their full human potential so long as they remain stuck in their present homesteads. All through the history of civilisation, more good than harm has come about when people are uprooted from their homes. In fact, the most glorious pages of human progress have always been preceded by the trauma of migration, forced or assisted.

Does that sound callous? Think! Who would have heard of Medha Patkar or Arundhati Roy if they had not migrated and had, instead, stuck to their villages?

*The country should wake up to the realisation that we have no alternative but to build large storage dams to quench the thirst of our burgeoning population.*

tivists, there will be increasing numbers of social conflicts. When dams were built in the early years of the Twentieth Century, there were no anti-dam activists. So, there were no conflicts about displaced people. Then, which is the cause and which the effect? Did the displacement of tribals create the activists or did the activists create the displacement problem? In fairness, the activists can argue, "The problem of displacement was always there. We have only discovered it, not invented it. The fact that no one discovered the problem in earlier years does not mean that it never existed."

Fine! It would be interesting to study the fate of those who were displaced when the Mettur Dam, the Bhakra Dam and the like were built. How badly off are those people now? Is their condition worse off than it would have been if they had continued the way their forefathers did — eking out a living under uncertain rains? Or, has it become better than what it would have been if no dam had been built? In hindsight, in the light of what we know now about the uses and abuses of large dams, was it wise to build them? If the answer is "No, those dams should not have been built", the unfairness of displacement existed even in those days but was not discovered. If the answer is "Yes, those dams should still be built", the problem of displacement is a matter of dispute about property, not one of a conflict between good and evil in the way Medha Patkar and Co. assert.

placement, anti-dam activists should be against small dams, not against high ones!

The relationship between social activists and social issues is a mutually beneficial one. The two reinforce and nourish each other. Social issues bring credit to social activists and social activists bring out social issues that, but for them, would not have come to light. On the other hand, the relationship between critics like social activists and doers like engineers is quite different. Activists proliferate when engineers increase but engineers dwindle when activists increase. That is like the relationship between fleas and dogs. The more dogs there are, the more fleas there will be, but the more fleas there are, the less dogs there will be! In other words, activists check that the society does not patronise too many engineers, but engineers cannot at all check that activists do not do too much harm.

Half a century ago, civil engineers were a respected breed. People like Sir M. Vishveshwariah inspired awe: the dams they built were worshipped. At that time, it would have been unimaginable that civil engineers would ever be abused the way they are now, or that big dams would be condemned as demonic; that at the most, small dams would be conceded as tolerable. Will the same fate overtake information technology which is in fashion these days, and the Narayana Murthys and the Premjis are the glamour boys the same

THE

25 MAY 2000

# WATER CRISIS

## Planners Need To Set Priorities

By VK BAHUGUNA

**D**URING the last few years, the beginning of each season has been full of natural calamities along with deaths and damage to life and property. There were landslides in the Himalayas and flash floods in the plains owing to excessive rain. In metropolitan areas more deaths were witnessed due to water-borne diseases in the monsoon months. During winter excessive cold has led to deaths of the poor who have to live under the open sky. The early summer months have become very hot for the last two or three years.

During the summer, we face water scarcity both in urban and rural areas. The situation has taken a serious turn this year. Last year, there was deficit rainfall in many parts. This year so far around 125 million people and 65 million cattle in 12 states are suffering because of the worst form of drought. People and cattle are dying of hunger and thirst.

Water sources have dried up and people have to travel miles to fetch drinking water.

Every year fire fighting operations are carried out and damage control exercises undertaken but seldom is systematic action planned. Life has become difficult for people in the wake of repeated natural calamities and under the pressure of rising human and cattle population. This is one face of India.

### SOFTWARE

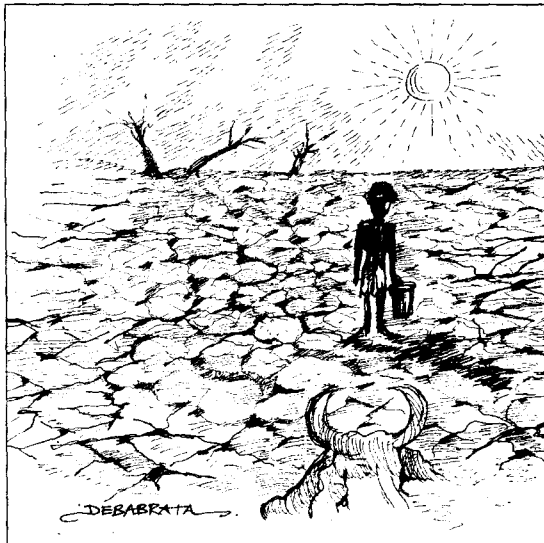
The other face is rising industrial production, liberalisation and boom in the technological areas like software, biotechnology, space, science and nuclear power etc. There is hope that India will be a knowledge superpower and earn within the next few decades foreign exchange more than \$ 50 billion. In the field of information technology alone, India is expected to rule the world.

The average Indian is caught between the possibility of a grim scenario where the basic resources for life, i.e., water, soil and clean air are getting scarcer and the possibility of a rich India full of growth and potential. This dichotomy stems from the fact that India has not planned its priorities. Our population is growing very fast and is almost one billion now and yet there is no realistic plan to control the population. How this population of one billion will be surviving on the dwindling physical resources has not yet been properly planned.

The average Indian's honeymoon with democracy and politics is not yet over. Eighty to 90 per cent of news items in newspapers relate to political parties and their leaders. There is

*The author is the Deputy Inspector General of Forests, Government of India.*

very little space given to other fields of life. Today more politics is played by the government officers, teachers, scientists in the name of lobbies they represent and caste and the region they belong to. The situation is worse in states where the grassroot level functions are carried out. Planning of resource management is lopsided and callous. Most of the



hierarchical pyramids of the country promote mediocracy, because of which most of the government programmes though well meaning are failures at the implementation level.

The water crisis in the country has just touched only 125 million people in 12 states. If remedial measures are not taken soon it will engulf the entire country, specially the Indo-Gangetic plains which is the granary of the country. And water riots will break out. The poor use of land and water resources has brought us to this situation. Due to depletion of forest cover, over exploitation of groundwater resources and ill-planned land use patterns, massive urbanisation threaten the base of life sustaining resources. As against 6,000 cubic metres of per capita water availability in 1947, today we have only around 2,000 cubic metres.

In many parts of the country specially in drought-prone areas, the per capita water availability is in the range of 400 to 500 cubic metres only. The average availability for the entire country by 2017 may be only 1,600 cubic metres as revealed by a study undertaken by Tata Energy Research Institute, New Delhi.

### MINISTRY

It is only recently that we had a water resources ministry at the Centre. The future of the sustainability of life giving resources is bleak unless the situation is tackled on a war footing. If we set our priorities right, things can be changed as some of the enterprising individuals have shown in Madhya Pradesh and Gujarat. Both the government and local people have come together to set the path to reach new goals in water and land management.

Areas in western Gujarat used to be drought-prone until a few years ago, but with the work of the Saurashtra Jaldhara Trust, more than 1,000 villages have become self-sufficient in water.

Rain water harvesting and construction of check dams have changed the face of these villages. Similarly, Jhabua in MP, a drought-hit area of state with the active cooperation of people today is a delightful sight. There is greenery and water all around. The water table has shown tremendous improvement. This has resulted in export of grass, expansion of forest cover and increase in agriculture and milk products. Now the people are prosperous and happy.

The examples of Gujarat and Madhya Pradesh need to be an eye-opener for the planners. Immediate steps should be taken up for recharging the depleting aquifers. Rainwater harvesting should be a permanent feature in the 23 per cent forest area in the country. A new scheme should be prepared to provide cost effective measures for harvesting rainwater in forests areas with the help of people. The harvesting of water would also help regenerate forests automatically. A five-year project would result in at least a 30 to 40 per cent rise in water tables. The rest can be improved through creation of water tanks and dams on the village land and harvesting of rainwater in villages. In fact, farmers can plan 60 to 70 per cent irrigation of their fields only by harvesting the rainwater.

### HARVESTING

In urban areas, rainwater harvesting and recycling of water should be made mandatory through a legal process. At the national level, a coordinated plan of action between different ministries should be carried out to maintain and enhance physical resources. Not only water but other resources also should be managed in an integrated manner. Most other developed countries have a vision for resource management in which the physical resources are managed efficiently by making use of technological innovations, social needs within the framework of the existing environment. In India, sadly, we have been working in different directions, pursuing goals that are rather obstructive and confusing. This is leading to poor governance and resulting in unsustainable use of resources.

It is because of this that in India, we have the problem of drinking water, poverty, and poor sanitation in the urban and rural areas. It is time to clear this mess, or else the economic gains of the other India, the fast emerging prosperous India, will help no one.

9 MAY 2000

THE STATESMAN

# Some long-term solutions for drought

By Vandana Shiva

The drought in Gujarat and Rajasthan has once again focussed the country's attention on water — our most vital resource. However, the crisis has been building up over the past few decades as we have abused and wasted our water endowment, and destroyed the capacity of our ecosystems to conserve water and be resilient to floods and droughts.

The current water crisis has created a national consensus on the value of indigenous water, harvesting technologies and the high cost of having neglected them and allowed them to fall into decay.

But the neglect of water harvesting technologies is not the only cause of the deepening crisis — unless we simultaneously address the other root causes of drought and water famine, droughts will continue to recur.

Deforestation of vulnerable catchments due to logging and mining is an important factor in the creation of droughts and floods. When catchment forests are eroded, or are replaced by industrial monocultures, ecosystems lose their capacity for infiltration and percolation; streams and groundwater sources are not recharged; the rain runs off immediately to cause floods in the monsoons; and in summers dry streams and rivers are left behind.

It is not an accident that the first water conservation movement in India was a forest conservation movement.

The Green Revolution also contributed to drought vulnerability by displacing drought-resistant local varieties, replacing them with 30 seeds which have a high response to chemicals but need three to four times more water than indigenous seeds.

Native wheat requires 12 inches of water while Green Revolution varieties need 36 inches

of. Lower and bajra, the traditional crops of Rajasthan and Gujarat, need only 500 mm, but rice requires 100 mm. In terms of water-use efficiency, millets which have been referred as "inferior grains" have two to three times higher efficiency than rice.

Bajra has two times more protein and iron, three times more minerals, and four times more calcium than rice. Both in terms of food security and water security, millets are more productive.

Yet, rice acreages have spread, while millet cultivation has dramatically declined, increasing water demand and water withdrawal. Non-sustainable agricultural technologies have an important role to play in the creation of drought and water scarcity.

The shift from organic manure to chemical

## OPINION

fertilizers has also made our soils vulnerable to drought and desertification.

Organic manuring reduces runoff by 50 per cent. Soil loss can be reduced by six tonnes per ha with six tonnes per ha of organic matter. Organic residues are also food for earthworms and micro-organisms which increase the water-holding capacity of soils.

Monocultures, typical of Green Revolution practices, also increase risks of crop failure. Sole cropped sorghum has been found to fail once in eight years, pigeon pea once in five years, but a sorghum-pigeon pea intercrop fails only once in 36 years in experiments carried out by the Project on Dryland Farming.

The long-term solution to drought therefore lies in water conservation both through water harvesting as well as promotion of sustainable ecological agriculture based on biodiversity

which prevents runoff, increased moisture-holding capacity of soils, reduces risks of crop failure and reverses the life-threatening processes of drought and desertification which have already engulfed large areas of our country.

To prevent the waste of scarce water resources through unjust and ecologically destructive practices, the Pani Panchayat movement was launched in 1972 by the Gram Gourav Pratishan in Pune in Maharashtra.

The central idea underlying the formation of the Pani Panchayats is that in a drought-prone area no individual should be deprived of a rightful share of the limited water resources on which life and livelihood depend.

To ensure justice, the Pani Panchayats manage as a community resource, not as private property. Sugarcane cultivation was completely banned for being inconsistent with the principles of responsible and sustainable resource use in drought-prone regions.

Anna Hazare's work in Ralegaon Shiddi and the Tarun Bharat Sangh's work in Alwar are also lighthouses in the search for solution to the crises of drought and water scarcity.

Yet, ignoring these community successes, the World Bank and Government are proposing privatisation of water as a solution to water scarcity. It is privatisation of water use that has created the crisis.

It cannot be a solution. Water conservation and sustainable use of water can only be based on democratic control over water resources.

Hence the need for a nationwide Jal-Swaraj movement to protect this vital resource and defend people's water rights.

—(The writer is Director of the Research Foundation for Science, Technology and Ecology.)

MAY 2000

# What a relief

Drought relief has thankfully not been overly politicised

REMEMBER the Orissa cyclone and the storm that followed? Remember how politicised relief became, with the BJP and Congress trading angry charges over whether the cyclone should be declared a national calamity or not? Remember how the quantum of relief led to angry charges and counter-charges? One of the reasons for those unedifying scenes was of course the political stakes involved in relief disbursal at that juncture. The state elections was to take place in Orissa a few months later and in that charged atmosphere, everything but everything became fodder for the imminent electoral campaigns -- even something so devastatingly tragic as that killer cyclone. The people of Orissa are still suffering from the consequences of political callousness.

Fortunately, there are no state elections looming on the nation's horizon for the moment, and the nation is free to address the drought tragedy as it has to be addressed: with one voice, one mind and one machinery. The Union Minister for Civil Supplies, Shanta Kumar, just back from a tour of Rajasthan, has struck the right note by observing that the Centre wishes to treat all the states equally when it comes to providing drought relief. The Rajasthan Chief Minister, Ashok Gehlot, has responded in the same spirit and has publicly acknowledged the efforts made by the Centre to this end. Rajasthan would like the Centre to treat the 1.5 lakh tonnes of foodgrain allocated to it for its Food for Work programme as a grant and Kumar promised to explore the possibility of doing so.

There is provision under existing famine codes to allow the free distribution of foodgrain to the really needy in conditions such as those prevailing in many parts of Rajasthan and Gujarat and therefore such a request should be treated seriously. At the same time, care must be taken to ensure that it does reach the people it is meant for and not sidled off by unscrupulous elements somewhere along the way, making governmental largesse into a charade, in the process.

There is enough corroborative evidence to suggest that, forget drought relief, even a system as well-established as the PDS does not often function as it is meant to. NCAER data from rural Bihar, for instance, proved that only a pathetic 5 per cent of the population have access to rationed foodgrain. More recent studies have indicated that at least 35 per cent of the grain earmarked for such distribution do not reach their destination. One way to ensure that this does happen is to involve the community. "Community participation" is more than a pretty sounding phrase in the global lexicon. If it can possibly become a part of government administration, it would ensure that a little grain would go a long way. If vulnerable groups -- including people living below the poverty line, female-headed households, tribal communities and so on -- are made aware of what they are entitled to, they will ensure that they get it. Rajasthan has just enacted the Freedom of Information Bill. Indeed, the efficacy of that law will be put to the acid test in these difficult times.

INDIAN EXPRESS

17 5 2000

# Several districts in Andhra heading for severe drought

**Amit Sengupta**  
Anantpur (Andhra Pradesh) May 10

**T**HIS IS one virtual reality in his own State which Chandrababu Naidu just cannot dotcom and escape. Not less than 3,000 villages are trapped in the slow unfolding of a massive tragedy, which, in all probability, could become worse than that in Saurashtra and Kutch in the days to come.

But it seems that those who live in the cyber city of Hyderabad are least bothered with this statistical magnitude of human suffering, designed by repeated droughts and failed crops, which come here every year like a fated inevitable occurrence. To say that people are dying of drought would be a misnomer. People are dying of hunger and thirst, years of sustained malnutrition and poverty, with no medical or economic aid worth its name.

This year it could be worse even than the 1988 drought because with more than a decade of failed

crops, drought-like conditions and low rainfall, starvation has reached a saturation point.

The kharif groundnut crop has again failed. There is not a drop of water to drink in most places and several areas like Raidurg Mandal are being declared as "new deserts" of Andhra Pradesh, with sand dunes taking over the dry, rocky soil.

The rainfall here is as low as 240 mm and other places record just about 350 mm rainfall. The situation is akin to that in Jaisalmer and Saurashtra. In other words, this most underdeveloped district of Andhra Pradesh, cursed by repeated droughts for more than a century and failure of rainfall every alternate year, is once again face to face with an impending catastrophe.

Every government official agrees that the situation is precarious and grim. They cite shortage of funds as an excuse even while the Naidu government has announced several doles worth crores.

Most locals allege that all the "Janambhumi" and

"Shramdan" programmes have been hijacked by contractors, bureaucrats and politicians. Even officials agree that there is an entrenched nexus blocking all reforms and this would now affect any disaster management scheme or drought relief measures sought to be introduced by the government.

The drought is so severe that an NGO, Janavignana Vedika, has appealed to two Union ministers Satyanarain Rao and B Dattatreya, who made an aerial survey of Siboy village on Wednesday, to work on the option of artificial rain through aerial cloud seeding in Anantpur district, especially in Rayalseema. However, the marlains at 'Cyberabad' remain detached.

Relief measures are not even symbolically being enacted, the Public Distribution System has turned anti-poor and Dalits, backward castes and tribals are all silently starving, migrating, or doing back-breaking jobs in this scorching heat for projects camouflaged as food-for-work programmes.

It is a common sight to see emaciated children and women and also very old women and men breaking stones, building roads and digging dry canals for a measly amount of money.

But even this work is not available in most areas. Village after village is surviving on rice and chilly powder, but even rice has become a luxury since the Rs 2 kilo rice has gone up to Rs 5.50 a kilo, which the poor find impossible to buy, hence forsaking their PDS quota. If they are lucky, it is one meal a day. At other times, there is no food for the family.

The old and infirm, who have been left behind by their sons and daughters who have migrated to other States looking for work, are the ones who are left starving in the near-empty villages.

Though the Dalits and the tribals are bearing the brunt of the drought, the upper castes, too, are just about surviving. This is the strange equality of slow starvation surrounded by the stark emptiness of vast tracts of parched, thirsty land.

THE HINDUSTAN TIMES

# Gujarat Govt to monitor water level

This will help decide how much area should be covered by crop and how much water to be used for drinking

**BASHIR PATHAN**  
GANDHINAGAR, MAY 16

**R**EELING under the severest drought in the past 100 years, the Gujarat government has finally decided to carry out an extensive survey and maintain a ground- and surface-water account in all talukas of the state after the monsoon this year.

In case of a failed monsoon, such an account will also help decide how much area should be covered under the rabi crop and how much ground water could be used for drinking purposes.

The survey will be jointly conducted by the state Irrigation and

Water Supply Departments and the Gujarat Water Resources Development Corporation.

The exercise is aimed at regulating the utilisation of drinking and irrigation water, based on the population of the taluka. M.S. Patel, Secretary (Water Resources), told *The Indian Express* that the exercise — the first of its kind in the state — would help keep track of the quantum of water being drained into the sea by rivers during successive monsoons. Patel said the blue print for the maintenance of ground- and surface-water account will be drawn up soon and sent to the concerned departments.

Referring to the present wa-

ter crisis in the Saurashtra region, Patel said that besides the much-delayed Sardar Sarovar dam, rain water harvesting

through checkdams was the only solution to the perennial problem. There are about 6.5 lakh farm wells located in the seven districts of the region, which could be recharged through building checkdams on a large scale, he added. "In the next two years, we plan to build about 65,000 checkdams in Saurashtra alone, under the existing scheme which will involve people's participation and help recharge all wells in the region," Patel said, adding that his department also proposed launch the checkdam scheme in the drought-prone districts of Panchmahal, Sabarkantha, Banaskantha and Vadodara.

One checkdam can recharge

## Plan Spelled out in Rs

**NEW DELHI:** A comprehensive water harvesting project would be implemented from the coming monsoon season to store rain water for use during the latter part of the year, Water Resources Minister Dr C.P. Takkur told the Rajya Sabha on Tuesday. "The Government is currently working on a plan to store water all over the country during the monsoon season for use later," he said. —PTI

at least 10 farm wells, with every such well having the capacity of irrigating one hectare of land, besides providing drinking water to the village, he said.

Giving details of the Sardar Patel Participatory Water Conservation Scheme being implemented in Saurashtra, he said about 10,000 checkdams were expected to be completed before the monsoon. "We have already received over 17,000 applications from the beneficiaries, out of which 10,242 have been sanctioned by the Department. While work on 890 checkdams has been completed, another 3,871 checkdams are on the verge of being completed," Patel said.

# Wellsprings of Hope

## Recharge Traditional Water Systems

By RANJIT NANDA

11-10 11/5  
IT is the same story every year — around this time, taps dry out, farmers do not have water to drink, let alone water for their crops and animals — there are drought conditions in which the western, central and southern states are worst hit. Then come the monsoons bringing floods in the east with excessive water finding its way into the seas. Meanwhile, debates go on, expert committees are set up which seem to have all the solutions but do nothing substantial in implementing these grand schemes. It is also distressing to find that in this moment of crisis, appeals have to be made to the public for donations to remedy the results of poor management.

We only remember our traditional harvesting systems when there is an acute shortage of water or drought to remind us. Once the rains come, all is forgotten and again complacency sets in till the next crisis. It is all too well known that India has the potential of being self-sufficient in agriculture since it has adequate raw material and other resources. However, it has been unable to provide water and electricity to everyone.

### Incredible Obstacles

Our objective, therefore, over the next few years should be to resolve all water problems with proper administration, on a priority basis, and complete all pending water management projects within a stipulated time-frame, even if it necessitates borrowing money. While going hi-tech is all very fine, no amount of this sophisticated know-how from the IT industry can solve the problems of the farmers whose needs of water and electricity are the real issues. To the farmer, his crop, livestock and subsistence is of far greater importance than being IT-savvy and, if hi-tech is to be used constructively, it should be used to monitor how water projects are being managed.

A similar situation existed in the western states of the US in the 1930s — drought conditions were prevalent in the deserts and there was almost no development until the Hoover Dam was constructed. In a matter of five years, Nevada, Arizona, Colorado, California and Mexico not only gained from the benefits of water supplied from Lake Mead (formed as a result of building the dam) but everything else ranging from tourism, agriculture, electricity and water. Besides, the economy also prospered and still continues to

do so in this region.

Before the construction of the Hoover Dam, in the summer and early spring, the Colorado often flooded low-lying areas along the route and in the hot, southwestern summer, the flow of the same river would slow down to a trickle making it an unreliable source for irrigation, public and municipal uses. Our situation is quite similar — from the melting snows of the Himalayas to the floods caused by the Brahmaputra in the northeast.

However, it was Herbert Hoover, the 31st President of the United States, who overcame some incredible obstacles before work could start on this great dam — he settled a 25-year water allocation controversy between the representatives of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. Throughout the construction of the dam, Hoover continued to sort out problems relating to engineering, water and power allocation.

In the context, it was the policy of the Bureau of Reclamation in the US to ensure that every available drop of water from the various streams and rivers in the dry southwest US was made available for municipal, agricultural or industrial use. To this end, Hoover Dam and the many other dams which followed were highly successful. Currently, the lower Colorado river provides water to irrigate over 1,000,000 acres in the US and 500,000 acres in Mexico. This dam is the keystone to a delivery system providing water to over 18,000,000 people in Arizona, California and Nevada. It has 17 generators which can produce 2,000 MW of electricity. Mead, and the Hoover Dam can store up to 9.2 trillion gallons of water in its reservoir. It is also a principal source for flood control and electrical power.

### Stream Tapping

Our current problems make it necessary to appreciate the potential of rain water harvesting. On a national scale, with the current population, if we assume that the average requirement per person is 100 litres per day and the average rainfall across the country is about 1,100 mm, the annual demand will be 34,675 billion litres. Each hectare can yield about 11 million litres of rainwater and, therefore, if we harvested only 3.15 million hectares which is about one per cent of India's land area, all household needs can be met.

As early as the third millennium

BC, farming communities in Baluchistan impounded rainwater and used it for irrigation. Dams built of stone rubble have been found in Baluchistan and Kutch. Dholavira, a major site of the Indus Valley civilisation had several reservoirs to collect monsoon run-off and also excellent drainage systems.

Some of the answers to this current crisis may lie in the lack of reliance on our own traditions by our communities. Indians, over centuries, developed a range of techniques to harvest every possible form of water, from rainwater, stream and river water as well as flood water. They have tapped water from hill streams or springs known as kuhls carrying a discharge of 15-100 litres per second. In Meghalaya, a 200-year-old system of tapping stream and spring water for irrigating plants by using bamboos still exists.

### Water Harvesting

Credit must go to the people of the villages of Rajasthan and particularly Jodhpur, where old water systems still exist and where the traditional system was maintained even after the advent of piped water. Villages which neglected their traditional systems and relied solely on piped water sources faced scarcity under drought conditions. An ironic contrast of water management is that between Jaisalmer and Cherrapunji which get 100 mm and 15,000 mm of rainfall respectively. Jaisalmer had enough water for itself until recent years, while Cherrapunji, the wettest place on earth faces a drinking water shortage. Alwar district, also in Rajasthan, has been successful in harvesting water thereby bringing prosperity to its villages.

Although we have also made dams in the past, no significant dam construction has come about in the last 25 years. While there should be urgent efforts to complete big and small dams, compulsory water harvesting schemes with the participation of villagers have to be set up.

Finally, it must not be forgotten that a drought in 1987 almost brought down the Union government. Therefore, if the country and the government needs to focus on a single meaningful issue for now, it has to undertake the completion of all water-related projects without any further delays and also emphasise the need to revert to our traditional methods of water harvesting.



11 MAY 2000

# Does India need big dams?

Yes, says B.G. VERGHESE. Along with traditional knowledge systems of water storage, big dams can solve the country's water crises

MANY HAVE labelled the prevailing drought situation as a man-made disaster. Towns and villages over large parts of the country are desperate for water. Many are dependent on periodic tanker supplies ferried across considerable distances. As summer advances, communities may be compelled to migrate unless help comes their way.

Rainfall is often erratic and unevenly distributed over space and time. Many regions regularly experience recurrent drought and/or flood as part of their normal hydrological cycle. Droughts, like floods, are therefore no surprise. It can be mitigated, even averted, by drought-proofing and, like flood, must be appropriately managed as and when it occurs.

Population growth and development aimed at enhancing the quality of life entails larger water use. This is subjecting India to increasing seasonal and regional water stress, with deteriorating water quality being an aggravating factor. Water conservation at all times and places, improved water management and maintaining water quality are therefore critical. Since all freshwater emanates from rain (snow and glacial ice), it must be harvested at all levels through a variety of means and practices, groundwater recharge and micro to mega storages.

These measures are not necessarily mutually exclusive and each has certain costs and benefits. The objective should be to secure optimality. The notion that rainwater harvesting, groundwater recharge and sound water management by themselves can provide a complete or sufficient answer to India's water needs is mistaken. Pursued as a panacea that obviates the need for large dams, it could rob the country of vital insurance against disaster.

It is wholly fallacious to argue that if hundreds of large dams (over 15

metres high) have not averted the drought this year, the hugely demonised Sardar Sarovar, for instance, will make no difference. The simple answer is that the hundreds of dams and storages on local rain-fed rivers and smaller conservation works and traditional systems must fail if the rains fail. Deserted villages are mute testimony to this truth.

Sufficient rain must first fall before it can be harvested *in situ*. North Gujarat, Saurashtra and Kutch suffer aridity. But the Narmada rises over 1300 kilometres away in a relatively high rainfall region. If its abundant flood waters are stored, these can be diverted from the terminal Sardar Sarovar dam to the very areas of Gujarat most troubled by drought. Gujarat's allotted share of nine million acre feet of water — or even half that quantum — would have averted much of the present distress had the dam height reached 110 metres when the canals would begin to flow and generate energy.

The distribution system is far advanced and would have guaranteed drinking water, fodder and livelihood to millions. It would have recharged groundwater and filled hundreds of village ponds and depressions en route.

Dams are not a unique or absolute solution. But it is a dangerous *mantra* that small is beautiful, big is bad. The two go together. What would northwest India, indeed all of India, be minus the Bhakra-Pong? The country has a huge task ahead to manage its water resources sensibly, optimally and equitably. This is what the nation must address unitedly without losing more time in futile, wholly unproductive arguments. The present drought is both a crisis and an opportunity. Which shall it be?

Big dams are a waste of time and money. Thanks to such massive projects, real solutions are neglected, argues SANJAY SANGVAI

THERE ARE a number of reasons why the Sardar Sarovar Project cannot be a real solution for the drought in Gujarat. Even if it had been completed, only 1.6 per cent and 9.24 per cent of the total cultivable lands of drought-affected Kutch and Saurashtra would have benefited. Even before it could have possibly reached these regions, sugar factories, water schemes for metros and "water marketing" for industries would have gobbled up the water.

The estimate of water availability in the Narmada has been 22 million acre foot (MAF). The irrigation efficiency presumed by our bureaucrats was 60 per cent, which in real terms is impossible. The India Irrigation Review (1991) of the World Bank and the report of the Tenth Estimates Committee of Gujarat Legislature make it

amply clear that the average irrigation efficiency in India has been 45-50 per cent. In the Project Completion Report (1995), the World Bank stated the untenability of the claims of benefits and estimated that about 20 per cent of the command area would have to be curtailed. This obviously means the Kutch and Saurashtra region will be denied the dam's services.

Dam authorities claim that the Sardar Sarovar Project will provide drinking water to 135 towns and cities along with at least 8,215 villages. The number of villages to be provided with drinking water has been mysteriously increasing from zero at the beginning to "all the villages in Kutch and Saurashtra" at present. Recent information claims that 0.86 MAF water is reserved for 135 urban centres and 8,215 villages and puts the number of beneficiaries up to 40 million!

The real, long-term solution lies in a decentralised water conservation

network along with optimum utilisation of the available rainwater and groundwater in the drought affected regions. Imperative measures for groundwater recharge include restriction on its excess extraction for cash crops and Green Revolution-style agriculture.

One has to scrutinise the babble of the dam building lobby about the lack of rain in Saurashtra and Kutch. Newspapers have asked the question: "Despite ten consecutive good monsoon years, why could the water problem not be solved"? It was pointed out that during the monsoon, many areas of Saurashtra were inundated only for a few days. Why could this water not be conserved? The answer lies in the fact that the Gujarat Government has done nothing during all these years to arrest the rainwater in small dams or in the form of groundwater.

From the summer of 1995, the Saurashtra Lok Manch, along with the disciples of Swadhyay Parivar and other organisations, have initiated a campaign for recharging wells in Saurashtra on a large scale. Saurashtra has 700,000 wells spread all over its territory. The recharging of even 200,000 wells would bring up the groundwater level throughout Saurashtra.

The campaign could recharge thousands of wells during 1995-98. The endeavour involves no big budget, no bureaucratic and unwieldy planning. It is in the hands of peasants and can be implemented cheaply with early results.

Sustainable and lasting development cannot be reduced only to one dimension of increasing agricultural output, as is the case with large dam projects. Neglecting all other solutions, Gujarat continues to facilitate work on the Sardar Sarovar Project, which alone consumes about 85 per cent of the State's irrigation budget, efforts and attention. The worst part is that it may not benefit the needy areas at all.

MONDAY DEBATE



# Raidurg is Jaisalmer of Andhra

Amit Sengupta

Anantapur (Andhra Pradesh), May 14

KC 15/5

**G**EOGRAPHY TEACHERS will now have to add another chapter to their text books. A new sand desert has been "created" in the geographical map of India, which could spell a gigantic ecological and human disaster in the days to come.

Believe it or not, this desert is not in Rajasthan. It is in the perennially drought-stricken Raidurg region of Anantapur district in the Kanakal and Bommanhal mandals, where a 20 sq km tract has been submerged by a vast stretch of shifting sand dunes moving in high velocity wind.

If you close your eyes and open them, it seems like an illusion. It is uncanny, this creation of a desert where it should not be.

But, mile after mile, a sheet of white sand has covered this wasteland with rainfall as low as 200 to 240 mm, just like that of Jaisalmer.

"Raidurg is the Jaisalmer of Andhra," said A N Choudhary, Additional Director, Ground Water Department. In fact, villagers might not be aware of the "hi-tech city of Cyberabad," but, surely, they all know about Jaisalmer.

It is sand which hides the tamarind trees and the slopes of hilly rocks. The hand pumps and bore wells are clogged with sand, agricultural activity has been rendered impossible and the ground water level has gone down as low as 500 ft. At least, 20 thirsty villages and thousands of acres have been turned fallow by this rapid desertification, which was detected by ecologists and remote sensing agencies way back in the 1980s.

Successive State Governments chose to ignore the grim warnings, not realising that this could lead to an ecological calamity with large tracts of the district getting covered with huge deposits of sand.

## NOT A DROP



## TO DRINK

to new areas. The dependence on dryland for cultivation should stop. New small-scale enterprises should be started. Or else, there will be a massive exodus of people, families will break up, a new human tragedy will take shape," said Gangi Reddy, watershed specialist in Lepakshi.

Meanwhile, at Veerampuram village in the Hindupur Mandal, the birds did not come this summer. Depressed locals are missing them. Their absence is also a psychological sign and a prophecy, that the drought has once again doomed them.

There is a stretch of marshy land where hundreds of birds used to arrive to breed for six months. Villagers say that they are Siberian birds and some could be cranes as well.

Bird migration experts might not agree, but as per local folklore, a group of 20 "Siberian birds" came recently to survey the scene. They sensed the drought and went back all the way to Siberia to warn the other birds. Hence, the birds did not fly to Veerampuram this year.

For instance, in central Anantapur villages, there are no sand dunes. The soil here is red. Choudhary picked up the soil and warned: "There is no reason why these red granules will not turn white due to soil erosion, siltation and prolonged absence of water. The Raidurg phenomena might become the reality of the entire district."

The sand moves from the barren riverbed of Vedati Hagari. Between the months of June and August, high velocity winds drown the Raidurg area with sandstorms. Huge deposits of river bank sediments move with the wind. Roads are cut-off, emptiness stalks the land and desolate villages are trapped between layers of sand. Locals still refuse to believe it, but their homeland has really turned into a desert.

Only water can save this "new desert," if it can still be saved at all. "Huge plantations and canals linking the rural hinterland can be used to stop the desert to spread to new areas. The dependence on dryland for cultivation should stop. New small-scale enterprises should be started. Or else, there will be a massive exodus of people, families will break up, a new human tragedy will take shape," said Gangi Reddy, watershed specialist in Lepakshi.

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## 62 nations sign pact on GM foods

*Committee*  
**NAIROBI, MAY 25.** A United Nations agreement that will introduce new regulations for trade in Genetically Modified Organisms (GMOs) has been signed by 62 countries. *20/5/2000*

After years of wrangling and U.S.-led opposition to key parts of the treaty, the Cartagena Protocol on Biosafety was agreed at a conference in Kenya's capital Nairobi on Wednesday. But some delegates criticised what they described as a watered-down agreement. They accused the U.N. Convention on Biological Diversity of bowing to the so-called Miami group, which links the world's biggest GMO exporters including the U.S., Canada, Australia and Argentina.

Only Argentina among the leading Miami group nations signed the agreement, although the U.S. — barred by Congress from putting pen to paper — said it would abide by the Convention. GMO products include genetically modified seed and fish, which environmentalists fear could make their way into the wild. They also include products made with GMOs, such as cooking oil, pasta sauces and other prepared foods.

The agreement means that anything made with or containing GMOs will have to be labelled "may contain GMOs". For some products exporters will also have



**A Greenpeace demonstrator stands in front of police personnel as thousands of environmental activists, wildlife conservationists and students take to the streets of Geneva, Italy, on Thursday, in a march towards the venue of an international biotechnology conference, to protest against genetically modified foods. — AP**

to tell importers in advance if their product contains GMOs. Governments or importers will then have the right to refuse such products.

"We still have problems with the vague nature of the protocol," said Mr. Tewoldeberhan Egziabher, spokesman for African Governments at the conference.

"There is a lot of latitude for national interpretation with countries being restricted by the power of the big companies." The

U.N. Environment Programme executive director, Mr Klaus Toepfer, said the protocol would help avoid situations like the accidental contamination of oilseed rape crops which provoked uproar in Europe last week.

The seed company, Advanta, said last week that it had sold imported seeds from Canada containing traces of GM material to farmers in France, Britain, Germany and Sweden by mistake. — Reuters

26 MAY 2000

# World Bank and water crises in India

By Vandana Shiva

Building insurance against drought should be the highest environmental priority in India. However, World Bank development "aid" has contributed to the increased occurrence of drought and desertification, and a growing water crisis. The World Bank is now using the crisis it has created to propose privatisation of water resources and their management. This will further intensify the water scarcity and related water conflicts.

In Gujarat ground water is obtained from a depth of 1,500-1,800 feet leaving shallow aquifers and surface storage systems like tanks, dams and rivers empty. The State used to be the land of tanks and wells. In the 1930s, 78 per cent of the irrigation needs were met by wells.

Intensive irrigation shifted and water-use technology from open wells to tube wells, financed by aid agencies. India now has more than 17 million energised wells. The World Bank has played a major role in promoting non-sustainable ground water exploitation which is the most significant aspect of the water crisis in India.

For example, the present water crisis in Gujarat is a product of a World Bank recipe for dealing with the 1985-86 water crisis. In 1985-86, potable water was being supplied to Gujarat by special trains, tankers, camels and bullock carts. The Government's crash programme in 1985-86 to provide drinking water, estimated to have cost nearly Rs. 86 crore, has left the problem as acute as ever. New sources dried up, and the 4,000 tube wells dug ran dry. The Government was then ready to spend another Rs. 93 crores on long distance transfer and on more tube wells. Gujarat also had World Bank-aided water supply project of Rs. 136 crores, but both technology inputs and financial inputs are failing in providing water in the face of depletion of water sources themselves.

The water famine in the 1980s in Maharashtra was also a creation of the World Bank.

Traditionally, ground water extraction in Maharashtra has come mainly from open dugwells. Fifty-nine per cent of the State has been irrigated by groundwater through 9.39 lakhs of open dugwells. Ninety-three per cent of Maharashtra is made up of hard rocks consisting of the Deccan Trap. Recharge here is slow because the storage space for groundwater is developed through secondary features like joints, weathering, fissuring and so on. All these features do not occur in uniform fashion, in depth or lateral extent. In the Deccan Trap, therefore there is nothing like a subsoil water-table. Water is stored in joints and bedding planes and is recharged locally. This seriously limits the availability and recharge of groundwater, a limit which new technologies of water exploitation have tried to overcome by digging deeper and using more power for the withdrawal of water.

In the World Bank logic of market efficiency, water used for "Water Parks" for the entertainment of the rich in Gujarat has higher value than the needs of pastoralists. Water wasted on flowers or shrimps is a "higher productivity use" than "low value" use for growing millets for food security and quenching the thirst of the poor who have no purchasing power. Or the poor will create purchasing power by bartering their very lives as in the case of kidney sales by poor farmers in Andhra Pradesh to finance deep tubewells.

These are recipes for conversion of water into a tradeable commodity rather than a life support base. Privatisation will aggravate the water crisis, because given the inequalities between the rich and the poor, industry and agriculture, urban and rural, water markets will take the water from the poor to the rich, from impoverished rural areas to af-

fluent urban enclaves. It will also lead to over exploitation of water, because when access to water is determined by the market and purchasing power and long distance trade and transport and not by limits of renewability, the water cycle and people's water rights will be systematically violated and the crisis will deepen. Local community management is a precondition for both conservation and equitable use.

## Privatisation not the answer

The World Bank privatisation proposals do pay lip service to local level institutions, but convert the local community from common property owners to "water users", and equate local people's institutions with the private sector. The World Bank also refers to NGOs and private sector in the same category, indicating that the role of NGOs is viewed in the context of privatisation.

Ignoring limits of water availability and the conservation imperative, the Bank recommends a shift from "supply-oriented" to "demand oriented" approach. Demands of the economically powerful will therefore override the needs of the poor and the limits of nature. Partial application of this logic through World Bank lending is at the root of the present crisis. Full implementation of the logic of privatisation will not reverse the crisis, it will aggravate it.

Privatisation is not the answer to the water crisis because it will strengthen the very ecological and political processes which have brought it about. The water crisis has been created by ignoring the ecology of the water cycle and the politics of water democracy.

While commons are based on inalienability of shared rights derived from use, privatisation is based on tradeability of private property. The assumption that alienability is more conducive to conservation is derived from the

false association of price with value.

Sustainable use of water resource depends on the maintenance of the water cycle. This requires that water use technologies and land use technologies respect the limits put by nature. Intensive irrigation from deep ground water sources can create an illusion that nature can be outwitted and her limits transgressed. But a few years of extraction of ground water reserves for water-intensive crops can create a water famine which destroys the very possibility of agriculture as witnessed in Gujarat, Rajasthan and Andhra Pradesh. The ecological imperative is to shift to cropping patterns that respect the water endowment of the ecosystem. Food security depends on water security, and maximising food security in the context of water scarcity implies maximising nutrition per unit water use. Flowers, shrimps, hybrid seeds, would then reflect low productivity value rather than the high productivity claimed in World Bank's trade liberalisation logic.

Democratic use of water resources is based on democratic, community control over water, to prevent its over exploitation and ensure its equitable sharing so that no member of the community, especially women, children and the poor are denied their entitlement to water. A water democracy requires that water be managed as common and not as the private property of those with economic power who sell this vital resource as a commodity to the poor and hence deprive weaker sections of society of their water rights.

Privatisation is derived from the word 'private' which means to deprive. The World Bank water privatisation reforms are an organised theft of water from the poor. This theft should not be allowed. (The author is Director, Research Foundation for Science, Technology and Ecology, New Delhi)

26 MAY 2000

# Fisherwomen's health at stake

By Akila Dinakar

CHENNAI, MAY 24. Industrial waste and sewage let into the Ennore Creek and Buckingham Canal have seriously polluted the pristine Pulicat Lake, a bird sanctuary on the city's northern outskirts, affecting the health of hundreds of women who live off the lake.

In a situation similar to that in Ennore Creek where a large number of fishermen were afflicted by industrial pollution, at Pulicat, scores of women, who earn a living by fishing in the lake, complain of skin eruptions all over the body. "The water really bites", says Ms. Suguna, a fisherwoman of Karimanal, a hamlet on the banks of the sprawling waterbody. She is exposed to the water of the lake most of the day while handpicking prawns by immersing herself. Ms. Neela, whose back is scoured and pocked with ruddy eruptions, says the only remedy for the itchy feeling is to keep off the water, but she can hardly afford to do it. "It is the only source of our livelihood. How else can we fend for ourselves?", she asks.

Out of the 1,00,000 people in the 44 fishing hamlets around Pulicat, over 10,000 in 32 villages are directly dependent on the lake. Known as a haven of migratory birds, Pulicat is the second largest brackishwater lake in the country. It is also a biodiversity hotspot.

The problem of the natives is three-pronged: pollution, sea erosion and loss of livelihood. According to Mr. S.



Several fisherwomen at Pulicat suffer from skin eruptions, suspected to be caused by the pollution of lake water. — Photo: R. Raghu.

Rajasekaran, joint secretary of the Pazhaverkadu Kadarakarai Meenavar Sangam, most of the fisherfolk here are "industrial refugees", evacuated first from the Sriharikota rocket launching site and now facing threat of displacement.

The pollution, according to experts, is caused by discharges into the Buckingham Canal by petrochemical, fertilizer and pesticide industries, sewage and thermal power stations. Reduced fresh water inflow and periodic closure of the lake's mouth compounds the problem.

Fishermen are being pushed to the brink as toxic effluents and hot water are discharged from the North Chennai and

the Ennore Thermal Power Stations besides industries. Fly ash and other chemicals kill the juvenile prawns breeding in the nursery. Mr. M.E. Raja, General Secretary of the National Union of Fishermen, says that pollution is slowly killing exclusive marine species like 'Pazhaverkadu Nandu'.

Mr. Arul, who has also been afflicted by this "strange fisherfolk disease", says during prosperous days a decade ago, they used to catch 3,000 kgs of fish per day while today even in a whole season they cannot get more than 10 kgs. Studies reveal that there is a steep drop in the catch of fish, prawns, mullets and crabs since 1951. Prawns and mullets take a major share of an average 1,200 tonnes of fish and crustaceans harvested. On sea erosion, scientists say that the construction of the

Ennore Satellite Port has started washing away parts of the villages, Koraikuppam and Sathankuppam. Ecologists warn that in 10 years, the verdant sand bar could disappear.

This will have a telling effect on their livelihood, avers Mr. Rajasekaran. "We have a specialised method of fishing called 'Paadu', in which one can work only in an earmarked area. Prawns are caught by fixing trammel nets, which is different from deep-sea fishing". The fisherfolk fear that erosion of the sand bar is a direct threat to their livelihood as the lake ecosystem would disappear and merge with the Bay.

# Environmentalist warns of landslides in western U.P.

**The Times of India News Service**

DEHRA DUN: There is a possibility of landslide again in the hills of western Uttar Pradesh in the coming monsoon if the watersheds along the high altitude belt in the region are not demarcated, warns environmentalist Chandi Prasad Bhatt.

He demands to develop of a system which could give an early warning so that the damage after a natural disaster is minimised. "I am forced to arrive at this conclusion after 1999 Chamoli earthquake ..as these watershed are located in the vicinity of Main Central Thrust (MCT) a zone of recurrent seismicity," he added.

Mr Bhatt, who had met the Planning Commission Vice Chairman K.C. Pant and Cabinet secretary Prabhat Kumar some time ago apprising them with an urgent need for disaster management, is also a member of an ad hoc committee formed to look into natural disaster management headed by former Union agriculture secretary J.C. Pant.

In fact, after the 1998 Okhimath landslide which claimed 58 lives in district Rudraprayag in Garhwal, the government organised an official meeting to identify the landslide prone areas. The meeting was also attended by non-official persons including Mr Bhatt.

"We find that areas near MCT experienced maximum destruction in the last year's quake. The magnitude and nature of destruction diminishes as one moves south of MCT... We wanted identification of fragile watersheds in the MCT zone, change in the techniques for house building, and a technical survey to be conducted by concerned competent departments in the tremor prone MCT zone," says Mr Bhatt.

But, despite this specific demand, the survey was being done only on the traditional tourist routes on the high ways.

Today, this survey is being done between Kedarnath to Rudraprayag, Purali to Gaumukh, Pithoragarh to Malpa, Bhatwari to Maneri, Rishikesh to Uttarkashi, Rishikesh to Rudraprayag, Chamoli to Okhimath, Peepalkoti to Rudraprayag and Joshimath to Badrinath.

Organisations such as ISRO, SAC, Ahmedabad, IIRS, Dehra Dun, Roorkee University, CBRI, URSAC are involved in these surveys.

According to a paper prepared by Physical Research Laboratory (PRL) Ahmedabad in collaboration with Dasholi Gram Swrajya Mandal (Chamoli), district Chamoli is identified and included in seismically-active zone V of seismic zoning map of India, incorporated in the Indian standard criteria for earth quake resistant design of structures.

Around 19 major earthquake have occurred in the vicinity of MCT in district Chamoli. One can find huge landslides at various locations proximal to MCT in the central Himalayas viz Bajang-Dharchula in Kali Ganga basin, Pipalkoti-Helong in the Aalalnanda basin and Bhatwari area in Bhagirathi basin.

"This zone has also been identified as one of the most active zone of earthquake activity ...seen any where in the Himalayas," says the report. According to Navin Juyal of Dasholi Gram Swaraj Mandal, the south facing slopes of the watersheds in the vicinity of MCT are extremely steep with visible scraps which receive full blast of southwest monsoon, thus at times cloud burst leads to torrential rain, and if not contained within the watersheds, it gives rise to flash floods of storm surge character." Examples are the 1970's Alaknanda flood, 1977's Twaghat landslide in Kali basin and 1978's Kanodiyagad landslide in Bhagirathi basin," he says.

30 MAY 2000

# Polluters, get ready to pay damages

Syed Liaquat Ali  
New Delhi, May 13

THE SUPREME Court has ruled that any person found polluting the environment and disturbing the ecological balance is liable to pay damages.

A Division Bench, comprising Justice S Saghir Ahmad and Justice Doraiswamy Raju, said: "Anyone found guilty should also pay damages to those who have suffered because of the pollution."

The Court issued notice to a motel owned by former Union Minister Kamal Nath in Himachal Pradesh. Its management has been

asked to explain why exemplary damages, besides compensation, should not be imposed on it for polluting the Beas River.

The motel has been asked why a "pollution fine" should not be

imposed for interfering with the flow of the river, damaging its bed and the banks. The apex court will take up the matter after six weeks. In 1996, the Supreme Court had cancelled a deed for the lease of 27 bighas of land surrounding the motel. It had directed the State Government to take over

the area and restore it to its original condition. The motel was directed not to discharge untreated effluents into the river.

The Himachal Pradesh Pollution Control Board was asked to monitor its pollution control devices. NEERI was asked to inspect the area and assess the cost

for reversing the damage to the area's ecology.

The Court has now withdrawn the notice for imposing "pollution fine" and issued a fresh notice to the motel management for exem-

plary damages.

The Bench said it would be difficult to impose the pollution fine without holding the motel guilty of the offence under the Environment (Protection) Act.

"A person found violating the provisions of the Act has to be tried for the specific offence and if found guilty may be punished with imprisonment or fine," Justice Ahmad said.

The Bench recalled that the apex court had, in a series of judgments, widened the scope of right to life under the Constitution. Any disturbance to the air, water and soil came under the "right to life".

## Supreme Court Ruling

# New 'uniform' forest law aims at ecological conservation

By Chandrika Mago  
The Times of India News Service

NEW DELHI: A "uniform" law to conserve and develop forests may, finally, find place among statutes after 11 years of tortuous exercise. In culmination of an effort begun in 1989, the Union environment ministry is finalising a note for the cabinet on amending the 73-year-old Indian Forest Act, shifting the emphasis from commerce — forests managed for production — to ecological conservation.

The aim is to consolidate forest and related laws. The position at the moment is complex and varied. States have not only had the power to make rules under this Act, but have also made amendments to it to suit their needs. The Act doesn't apply in certain states, which have made their own laws — such as Assam. When the amended law comes into force, all this would change.

In addition, to coordinate and integrate the effort of 40-odd departments in the Union government, the ministry hopes to have an apex body, under the Prime Minister, looking at forestry management issues. "For, it's not something the environment ministry can address single-handedly," says a senior officer

in the ministry.

Officials, preparing for Tuesday's start to a conference of state environment and forest ministers, say the changes would empower the Centre to direct states on how to protect shifting cultivation to restore affected areas and for giving village communities a greater say in managing forests to meet their requirements — a change from the "colonial" law which "alienated" communities. The defini-

tion of village forests would include community and institutional land, village common land and wasteland. Moreover, tree plantation on private land will be actively encouraged; a land-owner

## New Indian Forest Act

- The process to amend the Indian Forest Act began in 1989, with a nine-member committee being set up.
- The draft prepared by it was sent to the states for comments in June 1991. Comments came in by 1993-94.
- In 1994, a conference of state forest ministers recommended an expert committee to be set up. This gave its report in December 1994.
- The draft was given to the Indian Social Institute, a voluntary organisation, for suggestions. A series of workshops were organised and about 1,500 NGOs consulted.
- The ministry set up a seven-member committee in October 1996 to prepare the final draft. This readied the draft Bill by January 1999. The environment minister approved it in February 2000. A cabinet note is now being finalised.

who does this could register himself as a tree grower. Plantation forests would not be included in agricultural land holding for the purpose of ceiling laws.

State governments will be empowered to relax curbs, especially on felling and transport of certain species from private land, to encourage social and farm forestry. But states may restrict removal of any kind of tree, or all trees. A tree authority has been suggested for urban areas, and in parts of rural areas, to mobilise support for plantation and preservation.

Under the proposed rules, states would also get the power to levy a forest development tax on sale of forest produce. There will be controls on forest-based industries and provision for government to fix a support price for any forest produce to save farmers from exploitation.

Protection measures are to be made more effective and penal provisions uniformly more stringent. Encroachment would become a non-bailable offence. Forest officials would be able to confiscate seized forest produce, including equipment used in committing offences.

# WATER OF DISCORD

BY SUNANDA K. DATTA-RAY



Women walk across Cholistan desert in Pakistan in search of water (AP)

**C**alcutta: A small well in the Rajasthan desert, from which no one has been allowed to draw water for 35 years because half of it is in India and the other half in Pakistan, symbolises the acute problem of drought that hundreds of millions of South Asians are facing and its possible solution.

Villagers on the Indian side plan to ask foreign minister Jaswant Singh to persuade Pakistan's military ruler, General Pervez Musharraf to revive the well. It has been out of bounds since the two countries went to war in 1965. If they can agree to this small but momentous step, it could turn thinking in both countries toward more ambitious plans for water management.

The challenge is global. In Washington, the Worldwatch Institute has warned that three billion people will suffer chronic water shortages by 2025.

The prediction is accompanied by a sombre warning of strife if access to shrinking water resources is not regulated by international rules that forbid those who have plenty from arbitrarily denying those who do not.

The consensus is that just as the Green Revolution transformed Third World agriculture in the Sixties, only a Blue Revolution can ensure peace by conserving, managing and augmenting freshwater supplies, developing and expanding resources, and ensuring that reserves are shared equitably.

With 22 per cent of the world's population but only 7 per cent of its freshwater, China practices what experts call the "zero sum game of water management." It denies one competing area to supply another, depriving agriculture to favour industry.

Such a policy is possible within a single jurisdiction, but not when 100 countries share 13 major rivers and lakes, and when at least 214 river systems straddle international borders.

Already, conflict over water underlies many interstate tensions, especially in West Asia. Turkey and Syria almost came to blows last year. Egypt had earlier threatened war if Ethiopia drew any more water from the Blue Nile. Israel used its military might in the early Sixties to stop a Syrian-Jordanian irrigation project, and later occupied the Jordan River's headwaters to control the flow.

The Palestinians are bitter that Israel means to keep their

long-desired state on a short water leash. A 1995 Israeli-Palestinian agreement recognised the right of West Bank inhabitants to groundwater, but Worldwatch points out that "on a per capita basis, Israeli settlers use about four times more water than neighbouring Palestinians, and pay about a

third as much per cubic meter."

Farmers in northern Thailand have been clamouring for an agreement with Burma to draw on the Salween and Moei rivers because the alternative of rationing would damage crops. All five Central Asian republics are embroiled in dis-

putes over the Aral Sea and the Amu and Syr rivers.

Water is a source of constant carping between Singapore and Malaysia. Mexico complains that American overuse has reduced the Colorado River, which used to flow into the Gulf of California, to an often vanishing trickle.

**T**he World Bank reckons that it may cost up to \$800 billion over the next decade to meet the total demand for freshwater for drinking, sanitation, irrigation, power generation and other purposes. But in spite of a series of United Nations conferences since the first was held in Argentina in 1977, and a host of reports and recommendations culminating in a set of guidelines, there is still no enforceable global strategy.

This is a field in which, war alarms and tensions notwithstanding, South Asia has set a commendable precedent.

When India was partitioned in 1947, the network of Indus River canals fell in Pakistan while the headworks remained in India. Prime Minister Jawaharlal Nehru called the 1960 India-Pakistan treaty, which divided the Indus and its tributaries and also gave the Pakistanis financial compensation for the headworks, a symbol of cooperation from which both countries would benefit physically and psychologically.

In December 1996, India demonstrated similar statesmanship in guaranteeing a share of the Ganges River to Bangladesh. The accord ended nearly half a century of bickering. Now India must attend to imbalances within its territory. Several blueprints exist for grand canals to link the major rivers, with vast reservoirs to store flows from the annual monsoon rains that run to waste in the sea and direct them to regions like parched Rajasthan in lean years.

Such projects are expensive, but probably not as costly as India's nuclear weapons. The benefits would certainly be far more obvious.

Linking India, Pakistan, Bangladesh and Nepal and Bhutan (the two Himalayan kingdoms where many of the great South Asian rivers begin) in a common grid would be an ambitious undertaking. The political, strategic and financial obstacles are enormous. Yet nothing would more dramatically demonstrate concern for the human condition above diplomatic one-upmanship and a barren arms race.

By arrangement with the International Herald Tribune



# HF-13 All that litter is gold 17/5

The history of garbage dumps and waste in cities can be turned upside down with creative imagination and collective participation, writes URVASHI DHAMIJA

**T**HIS MIGHT be a case of the Capital, but this dustbin of history syndrome stalks most cities of India. If anything, it proves how societies and its officialdom can create piles of waste and garbage, and leave the rot to its public fate.

The Government of Delhi, stung by the Supreme Court's scathing comments in February that the litter of Delhi's streets was a direct consequence of its own lackadaisical attitude towards the human and material resources at its disposal, put a brand new scheme in place in a matter of weeks.

The city was divided into 12 zones under sanitary inspectors whose precise jurisdiction and phone numbers, both official and residential, were publicised in national dailies. One hundred and thirty-four executive magistrates were authorised to impose fines up to Rs 50 on those who put litter anywhere except in specified receptacles.

Market places were to be dotted with 3,000 yellow bins with green markings. The ordinary citizen's reaction to these moves was one of annoyance or scepticism — he was familiar with the local authorities' penchant for the dramatic and the symbolic, as in the case of a ban on smoking in public places and the periodic reminder to "say no to plastic bags". Two months later, even as the initial lack of enthusiasm would seem justified, scattered groups of Delhiites are struggling to make a difference in the management of waste generated by their professional institutions and residential complexes.

In an alternate programme, the government can emerge as an influential ally in denting the prevalent mindset about handling waste which regards it as a frivolous matter. Instead of being regarded as an instrument of unnecessary force, the government can become a catalyst of change. With each city dweller disposing about 400 gm of waste — food scrap, paper wrappers, polythene covers, broken china, an occasional bandage and mud and leaf waste — the Delhi Government is required to render invisible 800,000 metric tons of garbage every day.

## PLATFORM

Studies have shown that 54 per cent of total urban waste is produced by residences and 31 per cent by shops and offices. Sixty per cent of all this is bio-degradable and compostable, about 80 per cent of the rest can be sold and ensured entry into the recycling chain.

That waste is wealth in the wrong place became evident to women students of Miranda House in Delhi when they brought clean non-biodegradable waste from home and filled it in separate bags meant for polythene, plastic, paper card-board, glass and metal.



A ragpicker gladly bought 19 of the 20 kgs collected over two days for Rs 48. It was interesting that while cartons in which fast food is sold were acceptable for purchase, tetrapack containers, the thin covers of instant noodles and the increasingly popular thermacol glasses were not.

Clearly, for the litter on Delhi's streets, it is not the careless citizen who is alone responsible. It is also the leeway available to commercial interests in the packaging and the hospitality industry.

In 25 residential colonies, kitchen waste, both vegetarian and non-vegetarian, is put in pits. The widely shared fear of stench was invariably proved to be misplaced. After a pit is filled and sealed for eight months, rich black organic manure becomes available. Where space is a constraint, red earthworms can be used to consume fruit and vegetable

waste — 100 gm of worms can eat up to 200 gm of food scrap and turn it into odour free manure in six weeks time. An alternative to worms for aerobic composting is a microbial powder which is indigenously produced and marketed. Should the government decide to shift its priorities from removal of waste to segregation and recycling, the pressure to locate new sites for dumping waste will ease.

There is no alternative to land fills for the 13 per cent of total urban waste which consists of non-degradables such as drain silt and building activity waste. Also, it can focus more effectively on isolating and sanitising bio-medical waste from nursing homes and hospitals which, while constituting the remaining two per cent of urban waste, is a huge environmental hazard if left untreated as it often happens.

Against this background, if the Delhi Government decides to review its February initiative to clean up Delhi, sanitary inspectors and magistrates can become link persons between office-bearers of residents' and traders' associations, professional institutions in their respective areas and NGOs like *Vatavaran* and *Chintan*.

The latter can offer practical help in segregating binning and waste. Instead of distributing largesse to set up eco-clubs, matching grants should be given to not only schools but also colleges for setting up paper recycling units.

The city needs enthusiastic people for this apparently "boring" task. What distinguishes a metropolitan citizen, it is said, is his (or her) willingness to invest time, money and energy to evolve a private solution to a public problem. If there is a water shortage, he will bore a well. If electricity is in short supply, he will get himself an inverter.

In keeping public spaces clean, if a citizen is approached with imagination and some financial assistance, (but no coercion) he is bound to cooperate. That is, the history of the garbage dumps and mass waste rotting all over the place can be actually turned upside down with creative imagination, collective participation and human will.

# Krishna boycott threat puts off Cauvery meet

PRESS TRUST OF INDIA

NEW DELHI, May 18. — The Centre today postponed tomorrow's scheduled meeting of the Cauvery River Authority after Karnataka decided to boycott it saying it had been called "in haste".

The postponement came hours after an all-party meeting in Bangalore, convened by Karnataka chief minister Mr SM Krishna, decided to appeal to the Prime Minister that the meeting be held after the first week of June.

The Centre's announcement came as Tamil Nadu chief minister Mr M Karunanidhi flew to Delhi to attend the meeting.

A new date will be announced later, a PMO spokesman said.

**SNS adds:** According to the accord on Cauvery reached in

1998, all chief ministers of the concerned riparian states are required to attend the CRA meeting, if and when convened.

Today, Mr Krishna called an all-party meeting in Bangalore to discuss the Almatti dam issue and the Supreme Court verdict on the height of the dam. Leaders of political parties also took up the Cauvery issue.

The consensus view was that the chief minister should not attend the CRA meeting tomorrow as the state needed more time to prepare itself. The meeting had been convened following complaints by Tamil Nadu that Karnataka was not adhering to the interim award of the Cauvery Water Disputes Tribunal.

Mr Krishna told newsmen after the meet that the state needed time to study the issues

raised by Tamil Nadu. He said that Karnataka had complied with the Tribunal award and there was no question of having reneged on it.

He said it would have been better for the Centre to refer Tamil Nadu's complaint to the monitoring committee set up after the Cauvery accord. He said: "Before we go to the Cauvery River Authority, let the monitoring committee study Tamil Nadu's complaint. Let Tamil Nadu give statistics to prove its point."

The all-party meeting suggested that the state government needed more time to study the implications of the Supreme Court's verdict last month on the contentious issue of utilising the surplus waters of the Krishna and the raising of the dam height on Karnataka side.

19 MAY 2000

# Wetland pollution in Assam to be probed

Rahul Karmakar  
Guwahati, May 20

*Swain  
MF 7*

THE ASSAM Pollution Control Board (APCB) will be investigating the incident involving the release of toxic pollutants into the waters of Deepar Beel Bird Sanctuary on the outskirts of the city which has resulted in the depletion of precious aquatic life.

Deepar Beel, spreading over 30,000 bighas was declared a wetland of national importance in 1993. The concern over the danger to the fish and aquatic life was voiced a few days ago when its usually clear waters began changing colour. Thereafter, dead fish were found floating on the surface of the water.

Preliminary investigation indicates that the Flood Control Department is responsible for the mishap. It had diverted vast amounts of untreated water of Bharalu canal (a major waste carrier bisecting the city) into Deepar Beel.

Flood Control officials admit that untreated water was diverted to Deepar Beel as they had no option in view of the serious water-logging problem in the city. What's more, the construction of a sluice gate and treatment plant on the canal prevented them from releasing the water into the Brahma-

putra river, the officials said. Naturally, the APCB was annoyed as they were not intimated about the decision to divert untreated water by the Flood Control Department. APCB chairman Lakhinandan Borah told reporters that Bharalu was a highly toxic canal with no aquatic life form and the diversion could have serious repercussions.

Borah said that samples of water from Deepar Beel would be collected to study the extent of damage caused to the wetland. He termed the Flood Control Department act as a violation of the pollution norms, adding that an inquiry would be instituted.

Environmentalists, including Anwaruddin Choudhury have expressed deep concern over the insensitive Deepar Beel episode. Since rare birds depend on Deepar Beel aquatic life forms for food, the very existence of the bird sanctuary would be at stake if steps were not taken to check the damage caused by pollution, they added.

As one of the key wetlands sustaining the biodiversity of the region, Deepar Beel has been in focus ever since the Northeast Frontier Railway decided to lay a track through it a decade ago. A string of protests forced NFR to relay the track skirting the wetland.

THE HINDUSTAN TIMES

21 MAY 2000

# DRY CYCLE

## India Never Far From Drought

By M RIAZ HASAN

ADDRESSING young computer whizzes in Hyderabad on 24 March, President Clinton exhorted: "Getting people connected to fresh water is as important as getting connected to the Net ... The information technology that is creating 25-year old multi-millionaires should not be governed by higher profits but higher purpose." In these few words President Clinton encapsulated the basic dilemma of modern India. Today India is the 11th strongest economy in the world — more powerful than Holland and South Korea. It has the world's third richest man, according to reports in the British press. A nuclear power to reckon with, it has the second biggest army in the world. Software development has become its forte and Indian software engineers are the most sought-after specialists in the world. It does not lag behind in glamour or cinema. Bollywood today is on par with the Hollywood and three of the last five Miss Worlds have been Indians.

### CLIMATE

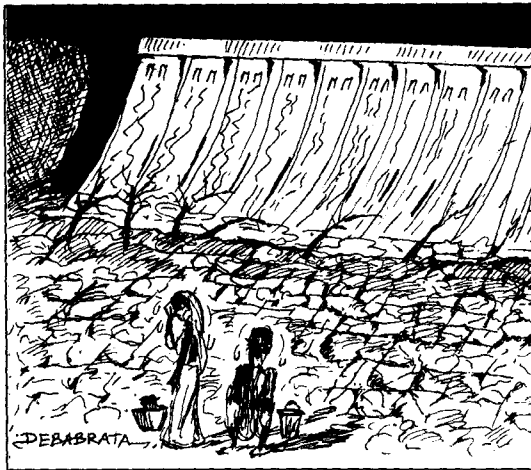
But as soon as the news of the drought in Rajasthan, Gujarat, Maharashtra and Andhra Pradesh hit the headlines, India's vulnerability to the elements was exposed and the world reminded that India is still a Third World country. It is ranked 132 among 174 countries in the UN's latest (1999) Human Development Index. Its position in the development league is below Sri Lanka (HDI 95) and Myanmar (HDI 128). Reports on the drought in the international media have already raised the spectre of the Bengal famine.

Climatically, India is a semi-arid or seasonally arid country where droughts can occur more often than in humid or temperate climates. The causes of droughts in Asia and Africa are complex and a lot of research needs to be done to establish whether global warming has increased their frequency or severity. Extreme dry (and wet) conditions in the tropics are often caused by abnormal northward and southward movement of the inter-tropical convergence zone (ITCZ). Droughts in India are not the result of a total rainfall failure — as happens in parts of Africa — but of partial failure. According to the Centre of Atmospheric Modelling at the University of Reading (UK): "Indian rainfall has been monitored for well over a century and there is little evidence yet of any change in the monsoon that might be attributed to global warming. Two factors have combined this year to make the situation in Rajasthan critical. First, last year's local monsoon rains were deficient by as much as 50 per cent ... Secondly, the recent winter weather patterns have brought unusually dry and hot weather to large parts of the Middle East, extending into Pakistan and north-west India."

According to another report, the Centre for Mathematical Modelling and Computer Simulation, a private forecasting organisation based in Bangalore, has predicted that the monsoon rainfall this year will be six per cent less than last year's nationally. This prediction does not augur well for the governments of those

states where the drought has already had a severe impact.

India is thus never far away from drought and after 12 years of good monsoons India is perhaps entering a dry period because hydrologically, wet and dry periods follow a cyclical pattern. What makes the impact of the drought severe even in its initial stages is the fact that our politicians, planners and administrators have paid no attention to past droughts. Lack of planning cou-



pled with institutional weaknesses both at central and state levels have exacerbated the effects of the drought.

In 1987, our legislators realised the need for a water policy when the Lok Sabha adopted the national water policy, which gave top priority to drinking water for the first time since 1947. Until then all water development was focused on irrigation. Although the mentors and guiding spirits of our planners in Yojna Bhavan have dumped Marx and Laski for Adam Smith and Milton Friedman, their yardsticks for identifying the urgent needs of the people remain unchanged. They left no stone unturned to build mega dams and reservoirs to produce more food but completely forgot that a person could survive without food much longer than without water.

Delhi suffers a chronic drinking water shortage in summer. Although the population of Delhi has increased nearly tenfold in the last 50 years, very little has been done to improve its water supply in summer. Successive Prime Ministers have hobnobbed with visiting dignitaries in the rarefied atmosphere of their British-built bungalows and consumed bottled mineral water while hundreds of thousands of Delhi-wallahs living in shanty towns around the capital drink polluted water from the Jamuna or other noxious sources.

### DAMS

Similarly, the residents of Hyderabad suffer severe water shortages every summer when drinking water supply to private households is restricted to one to two hours on alternate days. Successive chief ministers of AP have promised to initiate action for a long-term water supply scheme for the city but despite the construction of dozens of major dams not far from the city, the situation with regard to drinking water supply has not changed. According to the *Deccan Chronicle*, a local daily, something like Rs 340,000 crore would be required for rural water supply and Rs 18,000 crore for urban water supply in the next two decades. The state government does not have resources of this magnitude despite the grandiose plans of the AP chief minister outlined in his Vision 2020.

Both central and state gov-

ernments should strengthen and reinforce the institutions that design, implement and administer water supply and sewerage systems. Not many bright engineers and administrators are attracted to water supply and sewerage departments. Peers make fun of those who join the public health department. Also, hydrologists, hydrogeologists (groundwater experts) and geologists, who are vital to the investigation and development of surface and ground water resources for drinking water supplies, are not treated on par with civil engineers.

A hydrogeologist or geologist in many states cannot aspire to the status of a chief engineer. His/her professional progress stops at the superintending engineer grade. This distinction between civil engineers and other equally qualified experts should be abolished without further delay. The ongoing World Bank funded National Hydrology Project, which will for the first time collect, collate and process all available water resources data and create computerised data banks at state and national levels, has addressed some of the institutional problems.

### MAINTENANCE

The computerised hydrological databases will be important in planning and designing both rural and urban water supply schemes.

Operation and maintenance of water supply or sewerage systems is indispensable for their sustainability. But in India, like in many other developing countries, O&M is either totally ignored or starved of resources. Several rural water supply schemes established under the Drinking Water Mission in the eighties have been abandoned because the handpumps which were to deliver water fell apart either due to lack of adequate O&M or inferior quality.

Having built hundreds of mega dam schemes primarily for irrigation in the last 53 years, the government should now listen to Gandhians like Anil Agarwal, director of the Centre of Science and Environment. He is a leading exponent of community-based water management systems. The community-based approach might be more effective in harnessing drinking water supplies from local sources with the total involvement of the village community. A similar approach is being practised in China where villagers are encouraged to harvest rainwater from rooftops.

In Hebei, Inner Mongolia and Qinghai provinces rainwater harvesting in villages is almost mandatory. In Hebei province, villagers build underground tanks of up to 10 cubic metre capacity below their houses where rain is diverted during the short rainy season. The stored water is used during the dry season and the water quality is monitored by government inspectors. In addition communal drinking water cisterns with a capacity of up to 1,000 cubic metre are built in villages by diverting water from a permanent or ephemeral stream or a spring.

India may not have learnt any lessons from droughts in the past but the lessons from the current drought should not be wasted because the causes of the drought appear to be as much man-made as they are natural.

The author is a water resources and irrigation consultant to several UN agencies.

# Harvest rain water, Centre tells drought-hit states

MDHAN SAHAY  
STATESMAN NEWS SERVICE

NEW DELHI, May 22. — The overall drought situation in the states, particularly Rajasthan and Gujarat, seems to have been brought under "control" with no report of any starvation death from any part of the affected region so far. With the expectations of an early break of the south-west monsoon over Gujarat and Rajasthan, the Centre hopes the situation will ease by June.

However, reports from Rajasthan and Gujarat reach-

ing here indicate loss of cattle-head in the affected region for want of fodder. Though huge quantities of fodder were moved by the railways and road transport, the same could not be distributed to the remote areas because the states concerned accorded priority to reaching potable water and foodgrains to the people.

In a renewed message to all the drought-affected states, the Centre has asked to go all out to "harvest" the rain water which is the only solution to avert yet another drought next year, according to Dr SK

Swamy, director of the National Disaster Management Committee.

Although there has not been any significant work of laying a network to preserve rain water either under the Food for Work programme or the National Calamity Relief Fund released to all the affected states, the officials in the Krishna Bhawan have emphasised the need to prepare the ground to harvest rain water in the coming four weeks on a war footing.

In fact, the Prime Minister, Mr Atal Behari Vajpayee today

made a special mention of "rain water harvesting" at a seminar in the Capital. He warned the people to conserve and make proper use of water resources or else in the "21st century, water will be as scarce as oil in the 20th century".

"Already, a billion people of the world, that is one-sixth of the world population, have inadequate access to clean drinking water and in our own country if we fail to take action now, in another 25 years one out of every three people would not have clean water to drink", Mr Vajpayee cautioned.

THE STATESMAN

23 MAY 2000

## COPING WITH DROUGHTS AND DEATHS

IF THE PERSISTING drought in many parts of the country points a finger at the overall preparedness of Governments to face up to the impending crises of water management, the suicides and organ sales in Andhra Pradesh have thrown up a deeper and perhaps the most naked moral challenge to the commitment of modern states towards fulfilling their most basic obligations, i.e. of protecting human life. Whatever the impact of associate factors, these tragic episodes are an ugly reminder of the depletion of institutional financing and the baneful effects of the rural credit system on the poor; especially in a year of acute monsoon failure. The incidents over the last few weeks, widespread in Telengana and Rayalaseema and even parts of the southern coastal belt of the State, seem to be different from the cotton deaths of 1998 in the sense that they do not seem to bear any obvious connection to any one set of causes, owing instead to a conglomeration of factors having to do with impoverishment and indebtedness, aggravated by the current spell of drought, culminating in acts of extreme desperation. The cynical resort to the sale of kidneys in this general scenario is but a craving for survival. However, reports that the practice of sale in human organs has been prevalent for some years now only goes to suggest that the situation during the so-called "normal times" is not after all vastly different; only that it does not receive the attention it warrants.

The studies conducted after the 1998 suicides of Warangal in Andhra Pradesh, Karnataka, Maharashtra and Punjab had found that

despite the increase in agricultural growth in recent years, the farmers have little share in this growth-inducing economy. Experts had pointed to the reduction in institutional credit, increased recourse to rural credit and lack of extension services as factors that contributed to the gap between unrealistic expectations and actual output. Against this background, it is hardly surprising that the entire system is thrown out of gear in the aftermath of a bad monsoon and a prolonged drought. It is obvious that unless these mechanisms are effective during normal times, they cannot be expected to meet a crisis situation such as a drought.

The Andhra Pradesh Government's efforts at water harvesting and desilting watersheds in the region are clearly a case of waking up after the event, considering that no action plan seems to have been drawn up even though both the northeast and the southwest monsoons had brought below normal rainfall last year. Worse, responsible Ministers in the Government have been issuing loud denials amidst the crisis about the suicides having anything to do with the drought by resorting to rather absurd reasoning. Counterpose this with the migration of the young and able-bodied to urban centres in search of employment, the plight of the old and the infirm bearing the brunt of the crop failure, indebtedness, and water shortage. Even the most sympathetic of Mr. Chandrababu Naidu's commentators must ask in wonder why the "Janmabhoomi", "Neeru Meeru" and the IT revolution have not made any real difference.

## CAUVERY POLITICS

Objective mechanisms needed *5/1/8*

*29/5/8*  
**T**HE dispute settlement mechanism set up for the Cauvery waters issue functions imperfectly, mainly because of statistical discrepancies between what Tamil Nadu thinks it has a right to and what Karnataka deems necessary to release. In September last year the monitoring committee, whose rules and functions are yet to be laid down, decided that Tamil Nadu should receive 20 tmc ft of water in addition to the releases sanctioned under the interim award of the Cauvery tribunal. The committee had found that water levels in Karnataka were very low indeed, the state's difficulty was real. This, of course, means nothing to farmers in Tamil Nadu who have to see their crops wither and die.

No satisfactory solution has been found to shortfall situations. The Supreme Court in its clarificatory order had said that Karnataka was not obliged to respect monthly and weekly schedules, but had to release 205 tmc ft in a season from June to May. One supposes the details are a matter for the monitoring committee, which assists the Cauvery River Water Authority to assess shortfalls and prescribe releases. Objective systems for evaluation shouldn't be too hard to set up, but there are disputes in this regard as well. There are technical factors that can be interpreted one way or the other, depending on how much bad faith one wants to read into the other side's stand. Above all, there is politics, any weakness in the official stand taken by the ruling party in either state being open to exploitation by the opposition. To which one will shortly add the accusation of partisan rulings, the two governments in question being on opposite sides of the NDA. Since it is natural for lower riparian states, not in control of the catchment areas, to feel aggrieved all the time, most decisions are likely to be for Karnataka to release additional water. In the current situation, the Karnataka chief minister is better placed to filibuster since his opposition has to fall in line causing additional discomfort to the ruling combine.

24 MAY 2000

# Quit notice to polluting plants

FROM R. VENKATARAMAN

New Delhi, May 3: The Supreme Court has ordered all hazardous, noxious, heavy and large industries in the capital to surrender their land within one month.

The division bench of Justice B.N. Kirpal and Syed Shah Mohammed Quadri, in an order on April 28, directed all industries to hand over their land to the Delhi Development Authority (DDA) as per the court's directive dated May 10, 1996.

"If this is not done, the DDA will be duty-bound to file an application for execution of the order before the district judge, Delhi. The district judge shall thereupon execute the order and report compliance within four weeks of the filing of the execution application. The application should be filed by the DDA not later than eight weeks from today," the judges said. Once they give up land, the industries will be relocated on the capital's outskirts.

The May 1996 order had directed the units to comply with the Master Plan of Delhi (which came into effect in 1990) under which the industries "should shift within three years".

The apex court set the new deadline after an environmentalist lawyer complained that none of the factories had complied with the order.

The Master Plan placed a bar on any new heavy or large industry coming up in Delhi. Existing units were told to "shift to the Delhi Metropolitan Area and the National Capital Region keeping in view the MCR plan and the National Industrial Policy of the government", the bench said.

Almost all industries had since closed down their units, but "a large number of them had not surrendered the excess land to the DDA". The apex court also rejected a petition asking for compensation for the surrendered land.

THE TELEGRAPH

4 APR 2000



## RADIOLOGICAL POLLUTION / JADUGUDA'S WOES

# The price for nuclear capabilities?

By Aarti Dhar

NEW DELHI, APRIL, 5. All the uranium for the 10 Pressurised Heavy Water Reactors (PHWRs) in the country comes from a single plant at Jaduguda in Bihar, a sprawling complex fed by three underground uranium mines and the by-product from three nearby copper mines. This complex is the foundation on which the Indian nuclear fuel chain rests. But nearly 30,000 people of 15 villages within 5 km of Jaduguda are paying for India's nuclear capabilities.

Besides dumping radioactive waste from the mines and the plant, Jaduguda is becoming the dump yard of radioactive and toxic waste from other parts of the country as well. Highly dangerous radioactive waste from the Nuclear Fuel Complex, Hyderabad, is dumped in the tailing dams of Jaduguda.

According to the Jharkhandis Organisation Against Radiation (JOAR), an NGO working in the area, the tribals here have noticed that small animals, including mice, monkeys and rabbits, have disappeared over the years. Kendu fruits have mutated into seedless varieties, and cows are born without tails. Fish are being discovered with unknown skin diseases.

At a press conference here today, Mr. Ghanshyam Biruli, JOAR president, said it was impossible to gauge how much radioactive material was circulating in the environment and how much taken into the food chain. The Uranium Corporation of India Limited insisted that there was no radiation here and refused to commission independent studies on the overall impact on the environment, he said.

Jaduguda had been operational for over 30 years, and little attempt has been made to isolate the local people or the workforce from the mine effluents. Several villages virtually sit on the tailing dams — where the waste from the plant goes — and crops are grown in the run-off areas. Also, miners work underground and in the mill without any protective clothing apart from their gloves.

### Survey's findings

A survey conducted by the JOAR along with another organisation, BIRSA, found a high degree of

chronic skin disease, cancers, TB, bone and brain damage, kidney problems, nervous system disorders, congenital deformities, nausea and blood disorders. The incidence of miscarriage and stillbirths had shown an abnormal increase.

However, the most visible and heartbreaking impact has been the genetic damage which is spoiling the coming generations.

Having lost all hope of getting response from the UCIL authorities, the JOAR activists have sought the intervention of the Prime Minister in saving the people of Jaduguda.

The organisation submitted a charter of demands at the Prime Minister's Office, demanding among other things, setting up a multi-disciplinary team to look into the impact of the mining operations on the environmental, health, safety and economy of the region. The study should commence within three months and the report made public within a year, it demanded.

Also, the import of radioactive waste and radio-medical waste here should be banned and the Department of Atomic Energy should find dump yards which are at a safe distance from waterbeeds and human habitation. Besides, transportation of all radioactive material should be done according to internationally specified norms and no land around Jaduguda should be acquired for construction of tailing dams.

Another demand made to the Prime Minister was that all the villages around the tailing dams should be shifted to safer places and a full-fledged medical centre set up at the site to treat low level radiation related diseases.

A documentary film "Buddha Weeps in Jaduguda" on radioactive pollution from uranium mines was shown at the press conference. The film has won the Earth Vision Grand Prize at the 8th Tokyo Global Environment Film Festival and the third prize at the South Asian Film Festival held in Kathmandu in January this year.

APR 7 1991

# Jharkhand people seek safe disposal of nuclear waste

Apratim Mukarji  
New Delhi, April 6

**A**T LONG last, the enormous responsibilities of a nuclear energy and weapons country are coming home to roost for India, with the people in the Jharkhand region demanding that the disposal of uranium waste be managed with necessary sophistication and care and without endangering their lives.

While the declared nuclear weapons States continue to be sceptical about India's nuclear waste management abilities, the villagers of Jharkhand have now raised serious questions about the prevailing practices.

In fact, one of the reasons for the declared nuclear powers' reservations about India's overt nuclearisation in May 1998, was their doubts about its ability to manage nuclear waste safely. India and France have since begun to collaborate on strengthening nuclear waste management infrastructure but the actual transfer of technolo-

gy and equipment is hampered by India choosing to remain outside the Non-Proliferation Treaty.

The people in the Jharkhand region have demanded that the Government constitute a study of the impact of uranium mining operations (low-level radiation) on the environment, health, safety and socio-economy of Jadugora area of Jharkhand, south Bihar.

Jharkhand's Organisation against Radiation (JOAR) has accused the management of the Uranium Corporation of India Ltd (UCIL) of callousness towards the plight of the people in the region. It has appealed to Prime Minister Atal Behari Vajpayee and chairman of the Department of Atomic Energy (DAE) Dr R Chidambaram for a "more humane" response.

It has demanded that the Government constitute a multi-disciplinary team, comprising medical personnel, radiologists, ecologists, sociologists, chemists and biologists for carrying out the study. It has also asked that the DAE find other safe places to store,

dump or recycle uranium waste at safe distances from waterbodies, sources and human or animal habitations. The location selected should be made public and sea or ocean-bed should not be used as an alternative.

Another demand is that transportation of radioactive material be done according to international norms. Most stringent standards should be immediately implemented for storing radioactive waste at the saturated Tailing Dam No 1 and 2 in Dumridhi and Telaitand villages and in Tailing Dam No 3 in Chittijkocha village.

The JOAR has also demanded that all villages around already existing tailing dams or ponds should be evacuated immediately to safer places until their proper rehabilitation is effected. It has demanded that the DAE, Bhabha Atomic Research Centre and UCIL set up a full-fledged medical centre in the Jadugora area for the treatment of low-level radiation-related diseases under the supervision of the AIIMS, New Delhi.

# Bangla factories poison Nadia rivers

SANTOSH BISWAS  
STATESMAN NEWS SERVICE

RANAGHAT (Nadia), April 8.

— Fish are dying in large numbers in the Mathabhanga and Churni rivers. Villagers in the area are suffering from skin diseases. The reason: two factories located just across the Gede checkpoint, in Bangladesh.

The pollution level in the two rivers has increased because the factories discharge untreated effluent into the water just across the border, district officials said.

At least a hundred fishermen are out of work as a large number of fish have died in both the rivers, according to official reports.

People living along these river banks suffer from different types of skin diseases. Agricultural yield has also gone

down since farmers use river water for irrigation.

The Union Minister of State for External Affairs, Mr Ajit Panja, was informed about the situation during his visit to Ranaghat a few days ago. But the government has not taken any action yet.

On the bank of the Mathabhanga, in Bangladesh, are a distillery unit and a sugar factory. After flowing into India at Krishnagunge, the river divides into Ichhamati and Churni.

The Churni flows through Krishnagun, Ranaghat I and Ranaghat II blocks and merges with the Ganga at Shibpur near Payratanga. The banks of both rivers are dotted with villages and agricultural land.

On 20 February, the Ranaghat municipal corporation informed the SDO, Mr Onkar

Singh Meena, that fish in the Churni were dying and villagers were falling ill.

A large amount of effluent was released on 16 February and it reached the Ranaghat area on 18 February.

Officials of the fishery department and engineers from the West Bengal Pollution Control Board looked into the matter, Mr Meena said.

People were put on alert and asked not to drink the water of Churni or eat fish from the river.

Environmental engineer of the WBPCB, Mr SK Adhikary, and assistant environmental engineer, Mr B Majumdar, collected samples of water and sediment from different points on 20 and 21 February.

The preliminary report showed that the river's acid and alkaline level was very

high (7.34 at the Indo-Bangladesh border, 7.13 at Ranaghat and 6.97 at Shibpur).

Another report was submitted to Mr Meena after the assistant director of fisheries (Nadia) tested the samples.

The report revealed that there was an abnormally high amount of phosphates and nitrates in the river, the SDO said, this was probably why the fish were dying.

The level of carbon di-oxide and hydrocarbons in the water has increased because of the sugar mill effluents, the report said.

Mr Meena submitted a detailed report to the DM (Nadia), Mr S Suresh Kumar on 22 February, requesting him to discuss the matter with the deputy commissioner, Chuadanga (Bangladesh) or any other authority.

The problem is not new — it has only worsened over the years.

About a decade ago, Mr SK Konar, an ecologist and teacher of Zoology at the Kalyani University, conducted a government-sponsored study on the effects of pollution on Mathabhanga and Churni. He submitted his findings in 1989.

The report had warned that the rivers would soon dry up if dredging was not done immediately. The discharge channels of the sugar mill and the distillery should be sealed, Mr Konar said.

The chief minister, Mr Jyoti Basu, had asked the then Union home minister, Mr Buta Singh, to take up the matter with the Bangladesh government.

But nothing was done to save the rivers or the villagers.

# NO-10 'Jaduguda operations safe'

Mr. S. K. Malhotra, Head, Publicity Division, Department of Atomic Energy, Government of India writes: This refers to the article titled "Radiological Pollution/Jaduguda's Woes — The Price for Nuclear Capabilities?" by Ms. Aarti Dhar in *The Hindustan* April 6.

The article is not based on scientific facts and gives a 'story' about UCIL as narrated to the author. Incidentally this is not the first such article. It is ironical that such stories get published without the facts being verified from the 'alleged party'. Similar question has been raised by Ms. Nirmala George in her report titled 'A hefty dose of clap trap', filed after a site visit and which appeared in *The Indian Express* dated August 22, 1999. In this article Ms. George has raised the question "So how and perhaps more importantly why, did these reports of radiation induced abnormalities get play in the newspapers without their veracity being checked out?" She in fact has provided the answer herself in the same article by saying "The recent radiation scare about the Uranium Corporation's mining operations suggests an attempt to compromise India's nuclear competence." It further says — "Attempts have been made to whip up a scare among the villagers here about radiation from the uranium mining operations at Jaduguda. Mining officials see it as an attempt to strike at the basis of Indian nuclear competence."

Contrary to the allegation that no independent survey has been conducted by UCIL or DAE, we have in fact, commissioned two independent surveys in the villages around Jaduguda. The first one was by the faculty from Radiotherapy and Radiology Department of the Patna Medical College and in their report, they say that the radiation emission in the areas were well within the tolerance limits and also that none of the villagers from these villages have mentioned any problem to them related to radiation hazard. The second survey undertaken on request from the Bihar Government covered inhabitants residing within 2 km radius of the tailings pond. The medical team comprised the civil surgeon of East Singhbhum District, a physician and nuclear medicine specialists from the Tata Main

Hospital Jamshedpur, a senior medical officer from the Mercy Hospital, Jamshedpur and doctors from the BARC Hospital, Mumbai, and the Chief Medical Officer, UCIL. The unanimous view of this team was that the cases examined had congenital anomalies, diseases due to genetic abnormalities such as thalassaemia major and retinitis pigmentosa, moderate to gross splenomegaly due to chronic malarial infection (as this is a hyper endemic area), malnutrition, post encephalitic, post head injury sequelae and certain habits (alcohol) and have no relation to radiation. Here it may be worthwhile to note that while the Indian Council of Medical Research (ICMR) has estimated the national average incidence of cancer to be 74 per one lakh population, in Jaduguda the incidence is only 22.

A radiation survey of the area around Jaduguda was also conducted by scientists from BARC and they have concluded that the operations undertaken by UCIL in the Jaduguda environment have not resulted in any increase in the natural background radiation levels beyond levels prescribed by Atomic Energy Regulatory Board. The background radiation prevailing at Jaduguda is about 1179 uGy/year which is about the same level as observed in other parts of East Singhbhum District, e.g. at Jamshedpur it is 1150 uGy/year and at Ghatsila it is 1226 uGy/year. The limits of radiation exposure for general public is 1000 uGy/year over and above the natural background radiation.

In 1999 a team of journalists visited the tailings ponds along with officials of the UCIL and Environmental Survey Lab, Jamshedpur. The three ponds which cover an area of 82.88 acres, 35 acres of 76 acres are surrounded on three sides by verdant hills. The first two have solid embankments on the fourth side as prescribed by the AERB. The bund for the third is under construction. During this visit radiation measurements in air were done in and around these ponds in the presence of the journalists. Except for inside the pond, the radiation level was shown to be below the permissible limit set by ICRP.

As far as effluents from UCIL operations are concerned, they are treated fully before they come in contact with the local aquatic stream. The concentration of uranium in Gara Nala, Subernreka river and Gara river have been always found to be less than the limits set by AERB and World Health Organisation. An independent Health Physics unit regularly monitors the concentration levels and discharges, if any. It ensures that the activity is not polluting the environment. The Environment Survey Laboratory collects the environmental samples for analysis for surveillance of environment. This includes: samples of streams passing through Jaduguda and local river upto several kilometres away downstream, ground water samples from wells and tube-wells from Jaduguda and surrounding areas. Samples of soil, grass, vegetables, food stuffs and aquatic organisms such as algae and fish, measurement of Gamma radiation and environmental radon in and around Jaduguda, evaluation of the natural background gamma radiation at Jaduguda and other localities upto a distance of two km.

Thus it can be concluded that the mining and milling operations at Jaduguda are conducted in a safe manner and adequate precautions are taken so that the stipulations laid down by ICRP and AERB are strictly followed to maintain the radiation exposure levels to the workers as well as to the public well within the limits.

Further, we would like to add that out of the 102 acres of total land acquired for slime dam, private land is about 51 acres. For private land, the company has paid compensation for land and house and has given employment to every adult of the relocated families. For rehabilitation the UCIL has paid for building houses and has also arranged land. The land was levelled and tube wells with hand pumps have been provided by the UCIL. We understand that the members of Environmental Committee of Bihar Legislative Council had given the responsibility of shifting these persons to Mr. Ghanshyam Birlu of IOAR. But so far he has not been able to take any concrete steps.

## G-8 ministers disagree on global warming protocol

TOKYO: Environmental ministers from the world's leading industrialised nations ended a conference on Sunday without agreeing on a single timetable for ratifying a historic protocol on global warming.

Ministers from the group of eight industrialised countries concluded two days of talks in the western Japanese city of Otsu with a final communique that said they would ratify the 1997 Kyoto Protocol "as soon as possible."

"For most countries, this means no later than 2002," the communique added.

That's the year by which the European Union and Japan want Kyoto signatories to start cutting their emissions of carbon dioxide and five other heat-trapping gases by levels specified in the protocol.

But the delegation from the United States hesitated to commit the world's largest economy to a specific date without approval from Congress, participants said.

"I think that we agreed to disagree," said Henning Arp, a member of the EU delegation.

G-8 ministers also left untouched the thorny question of how to regulate market mechanisms for trading emission rights.

The Otsu communique expressed "interest" in holding the milestone Rio plus 10 conference in a developing country. The conference is scheduled for 2002 to mark the tenth anniversary of the Earth Summit in Rio de Janeiro.

The agenda will include developmental as well as environmental trends, it said. (AP)

THE TIMES OF INDIA

10 APR 2000

# Against the Tide

## Do Not Foreclose Big Dam Options

By R K PACHAURI

*Environment*

THE World Water Forum held in the Hague last month attracted participants from all over the world, including government officials, international bureaucrats, water resource specialists, NGOs and corporate executives. The Indian presence was very visible on the occasion — and noticeably vocal — with activists like Medha Patkar and her recently acquired compatriot, Arundhati Roy. It is reported that much heated debate took place between a minister from Gujarat on the one hand and Medha Patkar and Arundhati Roy on the other.

Annasaheb Hazare, who has done remarkable work in water harvesting in the village of Ralegaon Siddhi situated in Maharashtra was clearly ill at ease with this discord between India's officialdom and NGO activists, and he gently suggested that these domestic issues need not be brought to an international forum. The Forum itself was not confined to discussion on big dams versus small and solutions involving river waters, but focused on the looming problem of water scarcity in several parts of the world, the deprivation of hundreds of millions of people lacking access to clean drinking water; the coverage included policy as well as technical issues related to water supply and consumption. To that extent a discussion by the Indian participants on the Narmada project in an international forum of this nature, to the exclusion of larger issues of water management, revealed a limited view.

### 21st Century Dams

However, attention on large dams has increased throughout the world in recent years, and it was against this background that the World Bank and the IUCN established the International Commission on Large Dams (ICOLD) in February 1998. The Commission was required to carry out a two-year review of the effectiveness of large dams and develop standards and guidelines for advising nations on future dam-building decisions and an assessment of alternatives. Meanwhile, in March 1999 WWF International published a useful discussion paper entitled *A place for dams in the 21st century?* This publication was brought out obviously in response to a need for an objective and comprehensive view of large dams in general, and identifying their benefits and costs.

Unfortunately, much of the debate on large dams has become po-

larised and generalised. Yet, by their very nature the impacts of dams are very location specific, and need to be analysed comprehensively, which is often a very complex exercise. Typically, those responsible for the construction of dams take a narrow and limited view of the quantitative benefits achieved in harnessing large volumes of water for distribution in areas that are deficient and generating electricity often at costs that appear financially attractive. Opponents are not prepared to accept that large dams have any benefits at all. Undoubtedly, these hardened positions have come about as a result of neglect of a wide range of impacts apparent in several projects in the past, heightened greatly by impoverishment and loss of welfare of those displaced.

### Negative Impact

Interestingly, there are several NGOs in the developed countries who oppose large dams in the developing world, even though the earliest examples of large dams are found predominantly in the developed countries. In the case of India, it should be accepted that only about 12 per cent of the country's hydropower potential has been exploited, as against 52.3 per cent in Canada, 86.8 per cent in Switzerland, 56.3 per cent in Norway, 56.1 per cent in the US and 68 per cent in Japan.

There are several negative impacts of dams which require rigorous assessment. According to the WWF international, India lost an estimated 4,79,000 hectares of forest land to various river valley projects between 1950 and 1975. Dams can also lead to changes in chemical water quality, sedimentation, erosion and unfavourable effects on fish production, because they block migration of fish resulting in overall loss of quantities of fish as well as their diversity. Other impacts often noticed include landslides, seismic activities, changes in groundwater level, changes in flow and impact on downstream hydrology in a river. Perhaps, in a highly populated country like India the most serious and certainly the most visible negative effect of dams lies in the displacement of people.

All of this may suggest that we are at the end of the big dam era. Yet, it may be a mistake to foreclose the option of constructing big dams for all time to come. Even if one excludes the potential of generating power from hydro projects, in several cases the irrigation bene-

fits themselves could make a compelling case for dams as possible solutions. If demand for food is to double by the year 2030, water will have to be used far more efficiently for agriculture, but this may not eliminate the need for larger areas under irrigation.

### Humane Dimension

However, the Food and Agriculture Organisation (FAO) predicts that the growth rate of irrigated land in developing countries would slow down from the peak of an annual increase of 2.2 per cent in the 1970s to 0.8 per cent in the future. But larger irrigation can also lead to unfavourable impacts on agriculture. Salinisation and water logging are common problems which have negative impacts not only on agriculture but on soil quality in general. In future, therefore, the impact of specific projects on natural resources such as soil, biodiversity and forests would have to be considered explicitly. For too long the economics of dams has been confined only to a very narrow assessment of project accounting and an optimistic assessment of benefits.

The WWF document comes out with a set of conclusions and recommendations which are not revolutionary in nature, but reinforce the common sense that has been developed by those concerned with development strategies, which are consistent with environmental protection. In essence, the approach to be followed in future dam-building activity in India would have to deal with a number of issues that have emerged from past experience. Dams have serious environmental impacts which need to be systematically evaluated. However, these impacts are neither uniform nor equal. Hence, a single strategy is not desirable.

In essence, a flexible and open approach has to be adopted in assessing future projects, and in a country like India the human dimensions of this challenge need serious and sensitive handling. A clear policy should be adopted both by the Centre and the states in assessing environmental risks associated with dams as well as in the resettlement and rehabilitation of those who are displaced as a result. But despite the seriousness of problems that have already occurred with several dams, it would be shortsighted to adopt a policy that places a complete ban on the construction of new large dam.



# G-8 ministers agree to disagree over global warming protocol

ASSOCIATED PRESS

TOKYO, April 9. — Environmental ministers from the world's leading industrialised nations ended a conference today without agreeing on a single timetable for ratifying a historic protocol on global warming.

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"For most countries, this means no later than 2002," the communique added.

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But the delegation from the USA hesitated to commit the world's largest economy to a specific date without approval from Congress, participants said.

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The Otsu communique expressed "interest" in holding the milestone Rio Plus 10 Conference in a developing country.

The conference is scheduled for 2002 to mark the 10th anniversary of the Earth Summit in Rio de Janeiro.

The agenda will include developmental as well as environmental trends, it said.

The weekend Otsu meeting was a prelude to the sixth conference on the United Nations framework convention on climate change, scheduled for November in The Netherlands.

Scientists believe rising levels of carbon dioxide from the burning of oil and other fossil fuels are warming the earth's atmosphere. Some worry that melting polar ice caps could flood low-lying areas, while warmer weather elsewhere could lead to widespread drought.

A UN-sponsored panel has predicted that average global temperatures will rise two degrees to six degrees in the next 100 years if greenhouse gas emissions are not curtailed.

# Trade and the environment

By Rajeswari Sarala Raina

**M**OST DEVELOPMENT economists consider trade a jaded tool for economic development. Following the failure of export-led and import-substitution growth models, experimented with evangelical vengeance in Latin American and Asian countries in the 1970s' and 1980s', this is a well-justified attitude to trade. Yet, the post-Rio developments in the WTO, the UNCTAD, and the recent Seattle and Bangkok negotiations have attracted public and academic attention to trade. There is increasing pressure on less developed countries to enter free trade regimes. Now, the campaign for trade is amply buoyed up, by including the environment in trade negotiations.

Trade does not damage the environment; if anything, trade improves the quality of the environment. This is the central myth that sustains the debate on trade and the environment. Mainstream neo-classical economists and policy makers claim that trade increases economic growth. They have now established proof of the myth; over time, enhancing economic growth increases the demand for cleaner environments. In other words, the quality of the environment is directly related to the purchasing power of the people — those who can afford it have clean environments, and those who cannot, continue to pollute the environment. An indigent people, who can be better off with increased volumes of trade, will miss the boat if they do not enter global free-trade regimes soon enough.

Neo-classical economists tell us that during the initial phases of economic growth the consumption of natural resources and emission of wastes increases with an increase in income. Beyond a threshold in income, the relationship is reversed, with increasing incomes coming from less resource use and waste production. Furthermore, increasing incomes enable people to pay for a better environment; the economic grounding of the myth is complete. The inverted U-shaped environmental Kuznets curve draws from Kuznets inverted U hypothesis, which tells us that a developing country must go through a long period of

accentuating income inequality before a GNP threshold is reached, following which the distribution of income becomes better. The environmental Kuznets curve is now academically validated by empirical analysis in neo-classical economics. Sit back, and let the invisible hand guide you to the riches and pleasures of higher incomes and cleaner environments!

However, salvation for these poor, unclean, polluted, teeming millions in less developed countries comes from exploiting this myth. This environmental Kuznets curve, now the main weapon

## *The growing international demand for free trade is a direct threat to environmental quality, especially in the less developed countries.*

deployed by free-trade lobbyists, is based on assumptions that are gross violations of reality. The first assumption is that economic growth beyond a certain point draws on smaller quantities of natural resources and produces less waste. We know well, from economic history that economic growth (especially in the developed countries) has been associated with technological progress. There is no reduction in the use of natural resources, but a more efficient use, strictly in terms of resource productivity measures. Second, this better use of natural resources, fossil fuels or any heavy metal or chlorinated chemical, does not mean that wastes are reduced. Every material extracted from the environment is a potential waste. Contrary to the apparent cleanliness of the developed countries, their rich populations are now in a trap they themselves are not aware of. There are methods and measures to assess the level of emission of pollutants. But ecologists and economists alike have no idea how to measure the system's concentration of the pollutant. (The system may be a landscape, local waterbodies, the ocean, etc.)

Again, this alleged liaison between economic growth and environmental quality is limited to national boundaries. How

is Scandinavian economic growth or welfare to be measured, knowing that British industrial growth has been directly responsible for the acidification of Scandinavian lakes? So much for what we do not know. What we do know about trade and economic growth is even more damning. We now have empirical evidence that in all the developed countries, especially the U.S. and the highly industrialised European countries, the answer is not economic growth. Ecological economists claim that in six developed country cases studied, escalating GNP growth rates since 1945

industrialised countries export their wastes to less developed countries? There is mounting evidence that this is a lucrative business, despite agreed international restrictions.

The WTO, and the growing international demand for free trade, is a direct threat to environmental quality, especially in the less developed countries. What we need today is a complete reversal of the argument about trade and the environment. Neither trade nor the environment is limited to the economic realm. These are issues that have to be politically and ethically debated. The environment is not an issue that can be assessed in economic measures; especially not within trade negotiations. All the groups negatively affected by recent trade regimes and globalisation have reason to unite politically whether they are located in developed or less developed countries. Farmers and fishermen, cottage and small scale industries, need to work out mechanisms for sustainably managing their landscapes and ecosystems without jeopardising their livelihoods and promising environmental quality. These in turn demand localising economies with globalising environmental consciousness, as well as politically informed trade regulations.

If the less developed countries are forced, for whatever binding economic pressures, to join the so-called free trade regimes, they must walk into it with no illusions. Trade, the no-holds-barred variety being promoted today, will only bring large-scale and rapid environmental degradation. Wherever possible there must be parallel political negotiations on the negative environmental consequences of trade, and clauses that enable poor countries or communities to pull out of debilitating trade relationships. For those of us who have no power to purchase and guard the little environmental quality that we have, and work collectively towards improving it.

*(The writer is scientist, National Institute of Science, Technology and Development Studies, Delhi.)*

AD-12 1994



# Don't allow Chitravathi dam: Naidu

By Our Special Correspondent

HYDERABAD, APRIL 13. The Andhra Pradesh Chief Minister, Mr. N. Chandrababu Naidu, has urged the Centre to restrain Karnataka from undertaking construction of an anicut across the Chitravathi river at Paragodu village near Bagepalli town. He has also requested the Centre to instruct the Karnataka Government to furnish a copy of the project report and not to take up any construction without its concurrence.

In separate letters addressed to the Union Minister for Water Resources, Dr. C. P. Thakur, and the Karnataka Chief Minister, Mr. S. M. Krishna on Thursday, Mr. Naidu pointed

out that the proposed construction would be contrary to the agreement signed between the erstwhile States of Mysore and Madras in 1892.

Under this agreement, Karnataka was under an obligation to furnish full information about any work it proposed to take up on the river. Work could be taken up only after obtaining the concurrence of Andhra Pradesh.

The Chief Minister said newspaper reports that the Karnataka Government was planning to construct an anicut across the Chitravathi had raised serious apprehensions that irrigation and drinking water supply to several tanks downstream in the drought-

prone Anantapur district would be seriously jeopardised. The river was the source of water for more than 61 irrigation tanks in Hindupur, Penukonda, Dharmavaram, Tadipatri and Kadiri Mandals and served the drinking water needs of the entire southern part of the district.

Mr. Naidu recalled that this issue was discussed at the inter-State meeting convened by the Central Water Commission, Hyderabad, on February 21 when the Chief Engineer of Minor Irrigation, Karnataka, was advised to furnish project details to Andhra Pradesh. But, the Karnataka Government had not sent any report so far, he said.

THE HINDU

THE HINDU

14 APR 1957

## U.S. to compensate radiation victims

WASHINGTON, APRIL 13. The U.S. Government has reversed decades of denial and proposed paying at least \$400 millions to thousands of ailing workers who were exposed to radiation while building the nation's nuclear arsenal.

The Energy Secretary, Mr. Bill Richardson yesterday called the people who worked at the nuclear plants "courageous" and essential to winning World War II and the Cold War. But he said they often were not told what they were working with and, in part because of the secrecy surrounding their jobs, they were denied compensation when they got cancer or other radiation-caused diseases.

"Justice for our nuclear workers is finally happening," Mr. Richardson said at a news conference announcing the programme. "The Government for a change is on their side and not against them." Under the compensation plan, which would have to be approved by congress, nuclear workers who got sick would receive payments for past medical bills and lost pay. Those with certain cancers would be eligible for compensation beginning at \$100,000. Mr. Richardson said the biggest change in policy

is that the Government will not contest many of the claims and workers would receive the benefit of the doubt when plant medical records are missing or flawed. "The burden of proof is on the Government and not on the worker," he said. "We're not going to make workers find past records because in many cases the workers weren't told the truth."

Mr. Richardson said after some start-up costs in fiscal 2001 his Department would seek \$120 million a year for three years and another \$70 million after that. The cost is expected to decline as cases are settled. The production of 70,000 nuclear weapons over 50 years employed more than 600,000 people at 16 major sites and dozens of smaller ones.

Workers testified in a series of recent hearings that they were frequently exposed to high levels of radiation as well as hazardous chemicals. The U.S. Government in January confirmed for the first time that nuclear weapons workers exposed to radiation and chemicals experienced higher-than-expected cancer rates, reversing years in which the Government minimised the dangers of exposure to radiation. — Reuters

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## RADIATION HAZARDS

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THE U.S. GOVERNMENT'S decision to compensate the ailing workers who had suffered from radiation at the nuclear plants is a welcome departure from its customary indifference to the hazards to which the managements of its nuclear establishments had exposed these workers. Its failure to inform the workers before they were drafted about the deadly material they would be handling is probably attributable to its anxiety to guard against the possibility of the recruits refusing to accept the jobs offered to them. The number of workers who became incurably ill because of their exposure to radiation was very high and could be seen from hospital records.

Radiation hazards in the nuclear establishments in India render the U.S. Government's decision very relevant to this country. The workers in the Jaduguda mines of the state-owned Uranium Corporation of India in Bihar have been exposed for quite sometime to radioactive pollution. The Government's response to the fears expressed over such exposure, as one should have expected, was to dismiss them by drawing attention to the report of a Committee of the Bihar Legislative Council that the "disease pattern" among the workers "cannot be ascribed to radiation exposures". This, however, did not sound very convincing in view of what the Committee itself had said after a study of the cases of suspected radiation exposure. If, as its report had stated, the Committee "could not come to any conclusion as to whether there was any problem due to radioactivity or, for want of examination of the issues by specialists on the effects of radioactivity", it only meant that the study was not as thorough-going as it ought to have been. The report further said that a team consisting of radiation experts of the Health Physics Unit of the Bhabha Atomic Research Centre (BARC) shortlisted 29 cases, further examination of which indicated that the "disease

pattern cannot be ascribed to radiation exposure". Whether the matter should be allowed to rest there is open to question since there is a disturbing ring of complacency in the findings.

The risks to which workers in the nuclear establishments — whether in the mines or in the power stations — are exposed could be fully guarded against only with a hundred per cent enforcement of the stringent regulations laid down to the last detail in the safety manuals. A major recommendation made and accepted in this regard at an international nuclear safety conference in 1998 in Dijon, France, was that radiation sources in power plants should not be allowed to drop out of the regulatory control system. The regulatory authority should monitor the transfer of the sources and track their condition at the end of their useful life. While these might sound very elementary to those who have been entrusted with the operation of nuclear power plants, the radiation leak at the Tokaimura power plant in Japan last year revealed a lack of vigil in enforcing nuclear discipline even where it should have looked very obvious because of overconfidence at top management levels. An illustration of how even the slightest negligence in the running of nuclear power stations could be deadly was the entrusting of the use of plutonium without any stringent protection for the first time to civilian hands at the Tokaimura plant for which mixed oxide fuel from Britain was imported. Among the other lessons learnt from the radiation leak at Tokaimura is the danger of entrusting the running of nuclear plants to private parties without the most rigorous scrutiny of their record. This came to light from the findings about the meagrely adopted procedures laid down in an "illegally drafted manual" of a private company for the Tokaimura plant. Nuclear establishments should be kept out of bounds for such dubious presences.

## US proposes global alliance on water security

Apratim Mukarji  
New Delhi, April 14

THE US has proposed a global alliance for water security as interstate competition for water intensifies in the 21st century, with the pressures of population growth and economic development, giving rise to unpredictable and potentially unmanageable regional conflicts.

Predictably, it will be an alliance in which diplomacy and science and technology will function in a close-knit strategy.

The Clinton administration will invite representatives from key donor countries to Washington in early summer to discuss cooperation in dealing with regional water issues with the focus on supporting nations willing to develop and implement constructive strategies.

A \$2 million fund is being created within the UNDP to improve regional water management.

The proposal for the alliance was made when US Secretary of State Madeleine Albright spoke in Washington on April 10 in advance of the 30th anniversary of Earth Day 2000 on April 22. Identifying water as the world's "most indispensable resource" she said, "As competition for water intensifies, further disagreements over access and use are likely to erupt. Unless properly managed, water scarcity can be a major source of strife, as well as a roadblock to economic and social progress."

THE HINDUSTAN TIMES

15 APR 2000

# BMC files affidavit in SC about waste management

**By Our Civic Correspondent**  
MUMBAI: The BMC has filed a detailed affidavit in the supreme court about the solid waste management (SWM) system in Mumbai and the steps it has taken to collect and dispose of garbage in an environment-friendly manner.

The matter is likely to come up in the apex court early next week. It is in response to a PIL filed by Bangalore residents Almitra Patel and B.L. Wadhwa. The petitioners have sought the court's direction for providing habitable environments in Mumbai, Delhi, Chennai, Bangalore and Calcutta, which are the largest and most populated cities in the country generating several thousand tons of garbage everyday.

According to them, solid waste services in these cities are not up to the mark and civic administrations have not addressed environmental issues properly. The supreme court has directed the municipal commissioners of these cities to submit detailed affidavits.

Chief engineer (SWM) R.P. Chitravanshi told this newspaper on Friday that the BMC's affidavit had comprehensively listed the various projects that the administration had undertaken or plans to implement to tackle the garbage problem in the future. These include plantation work at Mumbai's largest dumping ground at Deonar and a proposed project to convert municipal waste into energy. Global tenders have already been invited for the project by the BMC.

The city generates 6,000 metric tons of garbage daily, of which 2,000 tons consists of debris. The garbage is transported to four dumping grounds at Deonar, Mulund, Chincholi and Gorai. The Deonar dumping ground is the largest (110 hectares) and handles more than 65 per cent of the city's garbage.

The BMC's former SWM chief engineer M.R. Shah says that there are various complex issues involved which need to be taken up before the court. "Solid waste manage-

ment requires a proper diagnosis. Otherwise, no implementation strategy will work," he says.

According to him, the BMC has failed to recognise the need for planning and is paying a heavy price for neglecting this basic issue. "Today there is no planning for any infrastructural changes even for the disposal site, which are being operated on the orthodox theory of simple dumping. Such dumping grounds are therefore a potential threat to society," Mr Shah says.

It is shocking that there is no reservation for dumping grounds in the development plan. "In no Indian city has a dumping ground been considered to be a statutory requirement like a playground. After all, it is part of basic service," he observed. The Chincholi dumping ground was dereserved a few years ago.

Mr Shah says the SWM chief engineer's job is taken as a liability and not many are keen in the BMC to take charge of this department, which consists of a staff notorious

for its inefficiency. The BMC's conservancy department staff of over 30,000 workers are over-protected under various service regulations. "Since they are over-protected they tend to take advantage of the system," Mr Shah says. If a municipal sweeper retires or dies during service, either his widow, son, daughter or even an adopted child automatically gets his job as well as the municipal service quarter.

Mr Shah says that unless all these issues are looked into there is no point in talking about keeping the city spic and span. "The apex court should be made aware of these problems," he suggests.

In Delhi, the supreme court, acting on the PIL, has already asked the authorities in that city to remove unauthorised slums and stop their further growth. It also asked the Delhi civic administration to comply with ten directives aimed at providing better hygienic and clean environment.

# Pollution board sword hangs on Digha hotels

ALOKESH SEN  
STATESMAN NEWS SERVICE

CALCUTTA, April 17. — Visitors to Digha will be in hot waters if the state Pollution Control Board's threat becomes a reality.

To save this beach resort from environmental hazards, the board has threatened to issue closure notices to local hotels if the hotel authorities fail to adopt immediate pollution control measures. There are more than 100 hotels in Digha, including around 26 big ones.

Most Digha hotels do not have proper sewerage systems. They

throw wastes into the sea without treating them, a senior PCB official said.

Probes by environmental officials have revealed that food rejected by the beach front hotels, too, is thrown into the sea without a thought to the region's pollution problems.

The PCB had earlier discussed with the Public Health and Engineering department proposals for developing a trunk sewerage system in Digha which could be linked to the sewerage systems

of hotels. A plan to set up a waste treatment plant is afoot as well.

The scheme, the board says, is already under consideration. "Once it is built, we can compel hotels to use it," the official observed.

The board representatives also met Digha Development authorities to discuss the issue and chalk out plans to check pollution hazards.

Moreover, nearly all of Digha's hotels and restaurants have generators that cause noise pollution. An inspection by board

officials showed that this affected both the environment and the ambience of the resort. The PCB has issued instructions for installing sound-control devices in the generators to reduce noise pollution.

The hotels had been warned earlier, but very few among them took steps to control pollution, Mr KS Ramasubban, member secretary of the board, added.

Although no deadline had been issued to the hotels so far, the board has now announced that it will take harsh steps against offenders, including the hotel authorities.



# CPI calls for all-party meet

HT Correspondent  
New Delhi, April 23

THE COMMUNIST Party of India today demanded an immediate convening of an all-party meeting by the Central Government to discuss the drought situation prevailing in large parts of the country.

It also called upon the Governments in the affected States - Rajasthan, Gujarat, Orissa, Maharashtra, MP, Haryana and Andhra Pradesh - to form all-party committees at the district level to help the affected people in an effective and non-partisan manner and to supervise the relief work.

It said that a riot-like situation was prevailing in Gujarat where the BJP Government had failed to provide drinking water to the people and fodder to cattle and the relief operations were inadequate.

The National Council of the CPI, in a three-day session which concluded here today, also demanded immediate financial help from the Centre to the affected States, initiation of the "Food for Work" scheme in all the districts of Rajasthan and Gujarat and the release of more wheat, rice, sugar and

kerosene to the drought-affected States, especially for the people living below the poverty line (BPL).

"The BJP-led Central Government," the party said, "is unconcerned with the volatile situation in these States. The Agriculture Ministry's Disaster Management Committee, set up last year to tackle natural calamities, has failed to respond to the severe drought conditions in Gujarat and Rajasthan."

The party also demanded that drinking water must be supplied to the affected States on a war footing.

While the severely affected people living in villages must be brought under the BPL category, the Central Government must finance all projects of water resource management and ensure their speedy completion to avoid drinking water problems in the future.

The party said that while a famine-like situation was prevailing in Rajasthan, the entire Gujarat was reeling under an acute water shortage.

Incidents of violence over water were occurring; three men were recently killed in police firing at Falta near Jannagar where farmers blocked a highway in protest against a reported move to divert water from a local dam to the town.

# Opposition seeks drought relief on war-footing

By Our Special Correspondent

NEW DELHI, APRIL 24. Widespread concern was expressed in the Lok Sabha today over the drought situation in various States with members cutting across party lines demanding urgent steps to meet the crisis. There was also criticism of the Centre for failing to anticipate the seriousness of the situation and its slow response.

In the Rajya Sabha, the Opposition criticised the Prime Minister, Mr. Atal Behari Vajpayee, for not taking Parliament into confidence and instead issuing an appeal through Doordarshan and AIR. Members said a political consensus on dealing with the crisis could have been evolved if the Government had come to Parliament with a statement.

Describing the drought in some States as one of the worst in recent years, members in the Lok Sabha called for relief measures on a warfooting saying thousands of people were suffering for lack of drinking water, while the cattle were dying of hunger.

The focus of a special discussion on the issue in the Lok Sabha was that the immediate priority should be to ensure that no more lives were lost, and to mitigate the sufferings of people in the affected areas. Members insisted that the Centre should not hesitate to give whatever help the drought-affected States needed to tide over the crisis. Programmes such as "food for work" could be started immediately.

Even as ostensibly the issue was apolitical, members did tend to speak occasionally along party lines. The Opposition was particularly critical of the Centre's handling of the situation. From the Congress(I), Mr. Sisram Ola attacked the Vajpayee Government for its "meagre" help to Rajasthan despite the fact that 26 out of the 32 districts had been severely affected by drought. Though the State Government had sought Rs. 1,145 crores, the

Centre had given a mere Rs. 103 crores.

Another Congress(I) member from Rajasthan, Ms. Girija Vyas wanted the Prime Minister to visit the State and get a first-hand report. She was upset that Rajasthan was getting less assistance than Gujarat where only seven districts had been affected as against Rajasthan's 26.

The CPI(M)'s Mr. Mahbood Zahedi wondered why the Centre had not anticipated the drought looming over various States, while

## All-party meet today

By Our Special Correspondent

NEW DELHI, APRIL 24. The Prime Minister, Mr. Atal Behari Vajpayee, has convened an all-party meeting tomorrow to discuss the drought situation in some parts of the country, the BJP spokesman, Mr. M. Venkaiah Naidu, said here today.

Mr. Naidu said political parties should not politicise the issue and work together to help those affected in Rajasthan, Gujarat and parts of Orissa.

"We appeal to all political parties to join in this endeavour and not politicise it, otherwise it would divert the nation's attention from the problems confronting the people," he said.

Mr. Anant Geete (Shiv Sena) warned that Maharashtra too could be in trouble.

The Telugu Desam leader, Mr. K. Yerran Naidu, suggested that the Centre release the second instalment of funds for centrally-sponsored schemes to the States without waiting for the utilisation certificate.

In the Rajya Sabha, as members insisted on a full-scale discussion on the issue, the Minis-

ter of State for Law, Mr. O. Rajagopal, said the Government had no objection to a debate.

## Review meeting

By Our Special Correspondent

NEW DELHI, APRIL 24. The Cabinet Secretary, Mr. Prabhat Kumar, today reviewed the steps taken to provide relief to the drought-affected Rajasthan and Gujarat at a high-level meeting.

The meeting considered measures for providing all possible assistance. Following last week's Cabinet decision, one lakh tonnes of foodgrains each has already been made available for drought affected areas. The Railways will transport drinking water free of cost. One rake each has already been sent to the two States.

PTI reports:

The Government today directed the Water Resources Ministry to take steps on a warfooting to tackle the drought in Gujarat, Rajasthan and other areas. A Central control room has been set up here for monitoring the situation. In Ahmedabad, a BJP press release said the Union Home Minister, Mr. L. K. Advani, would visit Gujarat on April 30.

## First victim

By Manas Dasgupta

JAMNAGAR, APRIL 24. The acute shortage of drinking water has claimed its first victim in Gujarat. A 35-year-old woman fell down into a deep, near-dry well and died today. The incident occurred at Rajpur village in Dhrol taluk of Jamnagar district in the drought-hit Saurashtra region.

The mother of four small children, Baluben Bharwad, like other village women, was tied to a rope and lowered into the well. While being dragged up with a pot of water, the rope snapped and she fell, hitting the stony bottom of the well. She died instantaneously.

More reports on Pages 11, 14



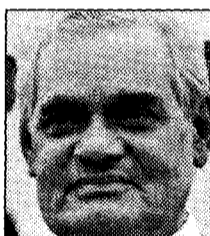
# Divided they stand, united they fight

*All parties have agreed to sink political differences to fight drought: Vajpayee*

**The Times of India News Service**  
**NEW DELHI:** With five major states in the grip of drought, leaders of the ruling NDA and the opposition consensually agreed to fight the crisis unitedly, rising above partisan politics. "We have all agreed to forget our differences for the next two months to face the challenge of the drought," Prime Minister Atal Behari Vajpayee told reporters after a two-hour all-party meet-

released to cyclone-hit Orissa "because the Congress was in power there". Mr Vajpayee assured her that the Centre would not "look at the political colour" of a state while fighting the drought.

Finance minister Yashwant Sinha told the meeting that the Centre would release next year's funds in advance if states had already used up this year's allocations. The Centre's own burden of



A.B. Vajpayee



Sonia Gandhi



Sharad Pawar

## DROUGHT WATCH

Union government figures on the number of districts, villages, people and livestock hit by drought in each state.

State	Districts	Villages	Population	Livestock
Gujarat	17	9,421	2.5 crore	71.33 lakh
Rajasthan	26	23,406	2.62 crore	345.6 lakh
Andhra Pradesh	18	17,431	3.64 crore	Not available
Madhya Pradesh	7	3,240	Not available	Not available

ing called to discuss the grave situation.

The government said during the meeting that adequate supplies of foodgrains and funds would be made available for the affected areas in Gujarat, Rajasthan, Madhya Pradesh and Andhra Pradesh.

The entire demand for foodgrains from Gujarat and Rajasthan had been met by the Centre in view of the drought, parliamentary minister Pramod Mahajan said.

"Rice and wheat have been provided to the two states at the rate fixed for the below-poverty-line segment," he added.

Congress president Sonia Gandhi warned against discrimination against any state on the basis of the party in power. She claimed that funds had not been

subsidy for foodgrains would be about Rs 421 crore. "Relief operations will not suffer because of inadequate funds," Mr Sinha said, adding, "The Centre has released Rs 954.43 crore to Gujarat, Rajasthan, Andhra Pradesh and Madhya Pradesh."

CPM leader Somnath Chatterjee said that in view of the severity of the situation, the central government should have made a suo motu statement in parliament.

After Sharad Pawar and S.R. Bommai spoke of how droughts in their states were tackled, others called for a long-term programme to beat the drought.

The leaders said that their party MPs would contribute a month's salary each to the PM's relief fund.

26 APR 2000

Karnataka claim of 524 m rejected

# 518 Tribunal fixed 269 Almatti height at 519 metres: SC

OUR LEGAL CORRESPONDENT  
STATESMAN NEWS SERVICE

NEW DELHI, April 25. — The Supreme Court today held that the Krishna Water Disputes Tribunal had allowed Karnataka to raise the height of the Almatti dam to 519.6 metre subject to clearance by the Centre and other authorities concerned.

Delivering the much-awaited judgment on the Almatti Dam controversy and the implementation of scheme B of the Krishna Water Disputes Tribunal award (Bachawat award), a Constitution Bench held that the main question involved was the height of the Almatti Dam and whether Karnataka was entitled to raise its height to 524 metre as claimed by the state.

The Bench — comprising Mr Justice S B Majumdar, Mr Justice G B Pattanaik, Mr Justice V N Khare, Mr Justice U C Bannerjee and Mr Justice R P Sethi — dealt with the original suit filed by the state of Andhra Pradesh.

The Bench observed that though the tribunal had not gone into this aspect of the matter, in the circumstances of the case and after going into the contentions of the rival parties, the tribunal had directed that Karnataka could raise the height to 519.6 metre.

While dealing with the height of the dam, the court relied upon the expert committee constituted by the four chief ministers under the United Front government and reports of the technical committee of the Bangalore Institute and the expert evidence of the state of Karnataka.

The leading judgment was delivered by Mr Justice G B Pattanaik. Three other judges delivered separate judgments but concurred with Mr Justice Pattanaik's conclusions and his directions. Mr Justice V N Khare has not given a separate judgment.

The court dismissed the original suit filed by the state of Karnataka — Q.S.—1/1997 — holding that scheme B is not part of the tribunal's judgment and is not a binding decision. Further, the two contingencies on which the scheme is dependent for operation have not happened —

neither have the parties consented nor has Parliament enacted a legislation as contemplated by the tribunal.

Since it is not a binding decision, scheme B cannot be notified under Section 6 of the Inter-State Water Disputes Act. In view of this, the court held that it was not necessary to go into the question of whether

## Naidu welcomes judgment

HYDERABAD, April 25. — The Andhra Pradesh chief minister has welcomed the Supreme Court judgement on the controversial Almatti dam, saying justice has been done to the state.

Mr N Chandrababu Naidu said the judgement vindicated the state's stand that the dam's height should not be higher than 519 metres. Had Karnataka been allowed to raise the height to 524 metres, it would have jeopardised Andhra Pradesh's interests. — SNS

Section 6A was legislative or administrative in character.

The court held that if any of the riparian states seeks constitution of a tribunal for review of the award, the Central government will constitute a tribunal to consider the reallocation of the water and also the height of the dam.

After 18 hearings stretched over three months, the court passed a unanimous judgment after hearing senior counsel Mr F S Nariman, Mr K R Nagraj, Mr Sanjay Hedge and Mr Mohan Karteka for the state of Karnataka, and senior counsel Mr K P Parasaran and Mr A K Ganguli, assisted by Mr Guntur Prabhakar, advocate on record, for the state of Andhra Pradesh.

26 APR 2000

# Medha holds court at Kolkata

HT Correspondent  
Calcutta, April 27

**F**ULL-THROATED cries of 'Damodar Bachao, Desh Bachao' rang through Kolkata today. This city's namesake, a sleepy village in the midst of lush green paddy fields kissed by the Amta river in neighbouring Howrah district, played host to environmentalist Medha Patkar on Thursday.

Medha, clad in her trademark wrinkled deep green cotton saree, became *Didi* to the villagers and social activists who had converged there for an unusual 'court' session. The playground of the village school was the venue of the fifth public hearing (*jana sunani*) in India being conducted by the World Commission of Dams.

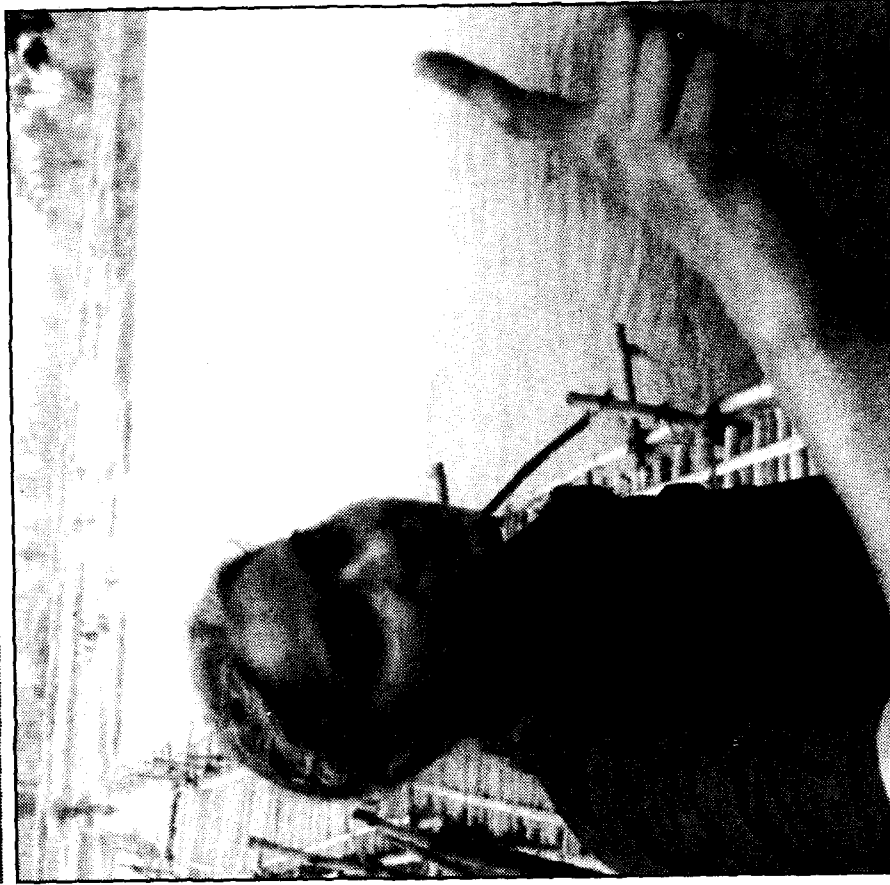
And, public representatives, experts, educationists, farmers and social workers from Hooghly, Howrah, Burdwan, Midnapore, Malda and Calcutta made 21 submissions against the Damodar Valley Corporation (DVC).

The case was People Vs DVC and West Bengal Government. Five judges patiently heard the submissions, which stretched over five hours, before regretting that the defendants had not bothered to send any representatives.

After brief consultations among themselves, they declared the defendants guilty of causing untold miseries to millions of people in Burdwan, Hooghly and Howrah districts. The judgment, which will be "technically modified" later this week, was greeted by cheers and assertions that natural resources belong to the people.

Medha who sat amid the judges throughout the proceedings, delivered the closing arguments on behalf of the people in her inimitable and passionate style. "The opinions of the masses have to be taken into consideration by the Government and its policy and project planners," she asserted. It was, she said, inexplicable that the mistakes of mega dams were being repeated

## Public Hearing Slams DVC



**MAKING A POINT: Environmentalist Medha Patkar on her way to a 500-year-old remote village of Howrah Amta called Kolkata on Thursday.** Photo: Subhendu Ghosh

even today. Medha, who is one of the nine commissioners forming the Durban headquartered World Commission, wondered why no cost-benefit analysis of the 50-year-

old DVC project had been carried out till date. She said that the people affected by the DVC project, DVC officials and experts should sit together to evolve both short and

long-term solutions to the perennial problems caused by the mega project. Medha recommended scientific watershed management and micro-level planning to conserve rainwater through water bodies.

The 'prosecution' witnesses spoke of floods, changing river courses, soil erosion, sedimentation and displacement of people caused by the Damodar Valley project.

The entire project, they said, was faulty and had not achieved any of its stated purposes. The 'expert witnesses' pointed out that the fallacy of the project lay in the fact that it was planned on the model of the Tennessee Valley Project (TVA) in the USA.

One of them, Dr Kalyan Rudra, a river expert, put up a slide show to drive home his point that the negative fallout of the DVC project outweighed the positive effects many times over.

Legislator Sanjib Das, former MLA Aftabuddin Mandal, educationists Dr Basudev Dey, Prof Mainak Dey and Prof Kuntala Lahiri Duita, farmers' activists Sheikh Daud, Amiya Roy, Ratan Ghosh, Rishikesh Mondal, Bibhuti Jasu, Gunadhar Majhi, Ms Minoti Mete, Kartick Ghosh, Nemai Kundu, Abdul Samad Midda, Mulyaban Porul, Prayash Sadra, Mrinal Kaniti Bodhak, Maheshwar Besra and Mohammad Khidir Bux made submissions for the prosecution.

The judges-former Jadavpur University vice-chancellor Dr Anirban Basu, legislator Pratyush Mukherjee, Viswa Bharati Professor Dr Arabinda Biswas, President of state Drug Action Forum Dr Sujit Das and a local school teacher Nimai Manna recommended a number of measures to provide immediate relief to the floods-scarred people of the three districts.

The 'court' session over, Medha tapped her feet to the beat of a folk song before hopping onto a car that made its way gingerly through a narrow, red-mud-caked road away from Kolkata to the highway leading to Calcutta.

Mr. A. K. Rakesh, told *The Hindu*. So will the Shivlaakha dam. So far 12 dams in the region were earmarked for irrigation. Now, with no sowing in rabi, the functional dams will provide drinking water, he said.

"The situation has developed because of uneven distribution of water. Every local councillor wants to provide water only to his body. A sort of crisis of confidence has developed," said Mr. K. Jagdeshan, Secretary in charge of providing water to the scarcity-hit area.

Not only that, there has been a flip-flop on schemes for providing drinking water to Saurashtra and Kutch by Congress(I) and BJP Governments with each scrapping the projects of the other, without much consideration for the people's needs.

Besides, because the chore of fetching water and using it pragmatically is seen essentially as a woman's job, men holding on to positions of power and decision-making have not applied their minds to finding solutions to remove this drudgery from women's lives. On the contrary, in the drought-affected districts of Gujarat, even today tanker water is being freely supplied for construction work, brick kilns, agriculture and hotels — which appear to be the priority areas. There is no awareness or education about conserving water during the crisis period. Tanker and borewell contractors are doing brisk business.

The woman sarpanch of Kasturba-dham village (where Kasturba Gandhi was kept under house-arrest) in Rajkot district, Ms. Jiyaben, said she had been struggling to get permission to dig a borewell in the village for the last month, but had not received a response from the State Government so

far. So intensive has been the over-exploitation of ground water in this village that Ms. Jiyaben wants to go to a depth of 2500 feet!

But just three km away from Kasturba-dham is Raj Samdiyala village where ground water is available at 50 feet. The village sarpanch here, Mr. Hardev Singh Jadeja, who has been a sarpanch since 1974, has created water bodies which are still gurgling with water. Some of the stop-dam streams which came alive during the last monsoon have dried up, but the wells here have water and the borewells yield potable water.

A beaming Ms. Kaluben whom we met on her way back from a borewell said, "We are having a festival here. There is plenty of water." This success story needed to be replicated, so this much-sought-after sarpanch has decided to adopt 15 villages for water harvesting. As part of clever management, this village let go of the rabi crop and went in for short-duration vegetables to tide over the phase. Mr. Shyamjibhai Antala is another individual NGO credited with recharging hundreds of wells in Dhoraaji and neighbouring villages. He said fodder for animals was a major problem and its supply through the Government was being rationed. It was available at a premium in the open market, but the problem was that the fodder imported from other regions was not suitable for local cattle. In Kutch, the cattle population is higher than human population and to tide over the situation some NGOs and farmers have started growing fodder.

In Rajasthan, 26 of its 32 districts are said to be affected by scarcity conditions. Even as the planners and politicians had grown complacent thinking

that droughts would be a thing of past with the advent of the Indira Gandhi Canal waters and adequate foodgrain production. However, the malady has returned to the State — and the Gehlot Government was caught unprepared. It is almost *Desh kaal* (drought in the entire State) for Rajasthan this time according to the State Government.

What has compounded the situation in Rajasthan is the failure of the monsoon in many parts for two to three years in a row. The State has about five lakh tubewells but, as the PHED Minister, Mr. Ram Singh Vishnoi, himself conceded the other day in the State Assembly, about 50,000 of them were defunct.

The drought in Gujarat has made it difficult for the affected people in South and South-West Rajasthan to get jobs there. Migration of people and cattle from Rajasthan during the summer months is an annual feature. This year there has been a virtual exodus from Jodhpur, Barmer, Jaisalmer, Udaipur, Banswara, Dungarpur, Sirohi, Pali and Jalore districts to Maharashtra, Madhya Pradesh and Gujarat.

Official statistics say that a human population of 2.5 crores (almost half the total population in Rajasthan) and over 3.5-crore heads of cattle in 23,406 villages are in the grip of drought. Yet it is not the severest drought in recent times. Old-timers, including the former Chief Minister, Mr. Bhairon Singh Shekhawat, consider the 1987-88 drought as the worst ever.

Yet it is bad times for the Gehlot Government, caught up in a complex situation of paucity of funds coupled with a 65-day-long strike by its employees and a panchayat election thrown in — delaying the relief operations.

Lack of monsoon had led to failure of the kharif crop. Many of the big dams and lakes such as Jawai in Pali district, Mahi in Banswara and Ramgarh lake in Jaipur have dried up. Mount Abu, the only hill resort in Rajasthan, is on the verge of closing to tourists following acute water shortage.

The world has started taking a closer look at the drought through the lens of the TV camera — this perhaps has led to the present panic on the drought situation. At any time of the year, the desert is inhospitable and life is harsh for its inhabitants. Even in the best of the times, rural Rajasthan presents a picture of misery during summer.

The details may be part of the current *realpolitik*. The Rajasthan Government had sought an assistance of Rs. 1,145 crores from the Centre's Calamity Relief Fund in November last. But what the State got was Rs. 102.90 crores. While the ruling Congress(I) blamed the BJP at the Centre for delaying release of funds, the opposition BJP in the State blamed the ruling party for delay in starting relief operations.

The State Government claims it spends Rs. 5 crores daily in providing succour to the affected but the disgruntled leaders in the Congress(I) see the situation as a "godsend" to show up the young Chief Minister.

Poor management and lack of awareness has led to this situation. Warnings about impending water crises in India given by experts since the 1950s have gone unheeded. So far the surplus regions are providing for the scarce regions, but it is doubtful whether this situation can hold for another month before the monsoon sets in. And that is why there is this desperate wait for the rains.

U APR 2000

# Oustees to resist Mahakali dam

STATESMAN NEWS SERVICE

DEHRA DUN, March 5. — Even before the launch of the proposed high dam across the Mahakali at Pacheshwar, a clash of interests is brewing between the project's opponents and protagonists.

Basing their premise on a "Detailed Project Report" of the Mahakali scheme being worked out jointly by the governments of India and Nepal, a group of voluntary workers, backed by Sarvodaya activists based in the Uttarakhand hills, have been drumming up support for their anti-big dam campaign. But the campaign has already run into trouble, following resistance from some traders and representatives of local bodies.

The Mahakali project is understood to be aiming at the highest-ever dam in Asia and

destined to submerge dozens of hamlets in the river valley stretching across the border between the two neighbouring countries. On the Indian side, villages in the Pithoragarh and the recently-formed Champawat districts are likely to be affected once construction activities begin. The height of the dam could be 315 metres, 50 metres higher than the Tehri dam now under construction in the teeth of opposition.

The campaign against the proposed dam and its large reservoir is currently being spearheaded by a NGO called Experiment in Rural Advancement. Led by Mr Pawan Rana, the ERA team of voluntary workers has been holding meetings with the oustees even

before any of the two governments has formally announced the project. A select group of oustees was also taken on a tour of the Tehri and Narmada valleys for a foretaste of the supposed fate awaiting them.

But after months of patient campaigning, the dam opponents have now encountered stiff resistance from those who think the dam will help their business and employment opportunities grow. The first direct confrontation between the opponents and the protagonists took place on Mahatma Gandhi's death anniversary. ERA activists staged a day-long fast at Pacheshwar but had to beat a hasty retreat when they were accosted by some local traders and politicians.

The latter were suspicious of the NGO's real intentions and questioned its sources of funding, while the former sought to start a debate on the justification behind erecting a high dam on such a seismically-sensitive range of the middle Himalayas. Among those who have joined the issue are campaigners from across the border, where successive governments have been facing criticism for surrendering the country's interests by sharing the benefits accruing from rivers flowing into India after originating in Nepal.

Traders and shopkeepers from Loha Ghat market have opposed the anti-dam campaign on the grounds that the project would spur commercial

activities in the remote region. Mr Girish Upreti, block pramukh of Loha Ghat, questioned the right of outsiders to raise a hue and cry over the issue. But when asked about the prospects for oustees, he said the project would be welcomed only after guaranteeing proper rehabilitation.

The ERA campaign has forged links with the remnants of Gandhian social workers active in the hills for several decades. As a fallout of this coordinated opposition, there were protests last month in some district headquarters in Uttarakhand.

Without a star campaigner like Ms Medha Patkar or Mr Sunderlal Bahuguna, their campaign is yet to gather steam. No political party of significance has committed itself to either side of the issue so far.

MOVEMENT 'HIT' BY ABSENCE OF STARS

# Govt to counter anti-dam 'propaganda'

Evenement

Hemendra Singh Bartwal  
New Delhi, March 9

CONCERNED AT the adverse international publicity it has attracted on the issue of Sardar Sarovar Project (SSP), the Government is now planning to go on the offensive to counter the anti-dam activists' "propaganda" at world fora and highlight its own stand on the matter.

Accordingly, a high-profile delegation of the Indian Government, led by Water Resources Minister C P Thakur himself, will head for The Hague in the Netherlands next week where it will put up a strong defence of its position at the prestigious World Water Forum meet. Narmada Bachao Andolan (NBA) leader Medha Patkar is slated to present the anti-dam viewpoint.

"We are going to fight it out. Point by point, we will reply to the objections raised by Ms Patkar and her supporters against the SSP and explain to the world where they are

wrong in their perceptions. The Minister has decided to take an aggressive stand as he feels that this Ministry has so far never been able to convey the actual position on the dam issue to the people at large," said a senior official of the Water Resources Ministry.

Several top officials of the Ministry will be accompanying Mr Thakur to the meet and the team has made elaborate preparations to present a strong case in support of the project which has been long delayed due to staunch opposition from the NBA and other environmental activists.

Such is the significance being attached to the event that a separate official delegation is being sent to it by the Government of Gujarat, where the Sardar Sarovar dam is located. This will be headed by state Irrigation Minister Jainarain Vyas. The government delegations will

strive to clear 'misconcepts' and wrong notions about the project. It will emphasise before the gathering of international experts the fact that beside the developmental benefits accruing from it by way of irrigation and power generation, its early completion was also vital for supply of drinking water to drought-hit areas of Rajasthan and Saurashtra and Kutch in Gujarat.

## Sardar Sarovar Project

During the four-day deliberations at the meet which begins from March 16, presentations will be made by eminent experts, environmentalists, non-governmental

organisations (NGOs) and officials from various countries on different issues related to water resources management, including its social and environmental impact.

Their recommendations will be further discussed at a high-level inter-ministerial meet on March 21 and 22, an official said. During this, Dr Thakur will raise the SSP dam issue and its ramifications.

Among the prominent members of the Indian delegation will be Minister of State for Water Resources Bijoya Chakravarty, Water Resources Secretary Z. Hasan and the chairman of the National Water Development Authority P. Lau.

# Narmada needs a

BY JAI SEN

# historic judgement

**T**HE SUPREME Court's final hearing on the Sardar Sarovar case, which began on February 29, constitutes a historic moment. For, the case has a long civil and political history, and the issues it has raised are fundamental in nature and have universal relevance.

The Narmada Bachao Andolan (NBA) filed the Sardar Sarovar case in 1994. Since 1985, the NBA movement has received widespread support from those affected by the project. This includes both the adivasis or tribals, who live primarily in the hills bounding the river immediately behind the dam, and the prosperous Patidar farmers and traders, who constitute the majority of the population in the Nimar valley further upstream. Also, the movement has received fairly extensive support from other Indian movements and from the intelligentsia in cities.

Outside India, the NBA consciously built links in those countries which are the major shareholders in the World Bank. The NBA's supporters abroad mounted sustained pressure on their governments to force the Bank into pushing the Central and state governments in India to meet social and environmental standards they had agreed upon. It was because of this pressure that the Bank ultimately withdrew from the project.

The NBA has been at the crest of a wave of independent civil movements incorporating environmental, developmental, social, and human rights issues that have risen in India and abroad. And precisely because of its success in mobilising this kind of support, the issues the NBA has raised have become symbolic of a much wider universe of concerns.

The NBA has played a key role in precipitating policy reforms in institutions such as the World Bank. Public access to information on Bank-related matters, and the rights of project-affected peoples to appeal to a semi-independent 'Inspections Panel', for instance, were accepted. The campaign also played a central role in triggering the formation in 1998 of WCOLD (World Commission on Large Dams), a collaboration of the IUCN (International Union for the Conservation of Nature), an international civil body based in Geneva, and the World Bank, to look at the very future of large dams.

Large dams such as the SSP affect the lives of millions worldwide. They are also, however, major money-spinners. The stakes involved in the final hearing consequently have both financial and social implications.

Gujarat proposed the SSP immediately after it was carved out from the larger Bombay state and made into a separate entity in May 1960. The project was expected to lay the foundation for development in agriculture and industry, and help Gujarat assert its identity. In the late Sixties, farmers of south Gujarat launched an important but short-lived movement in favour of the project.

Then, the Madhya Pradesh government had strongly opposed the project, demanding that the height of the proposed dam should be lowered in Gujarat, and increased in Madhya Pradesh. This contentious issue was referred in 1969 to an inter-states disputes tribunal — the Narmada Waters Disputes Tribunal — which arrived at its award in 1979. The

early Nineties saw the state government demand a reduction in the height of the dam, willing as it was now to forgo its gains from the project in exchange for attenuating its harsh impact.

It is erroneously believed that the formation of the NBA sparked off the popular movement against the dam. In fact, the first protest dates back to 1961, when Adivasi farmers protested for a more just compensation package than what they had received in lieu of their villages being demolished and cleared for the dam and the project's township, Kevadia.

Landowners in the Nimar valley, Madhya Pradesh, which is located on the wrong side of the dam, too began protesting against their possible displacement in the late Sixties, and organised themselves into the Narmada Bachao, Nimar Bachao Samiti. Mobilised by Rameshwar Patidar, till recently a BJP MP, the Samiti even approached the Prime Minister. The late Seventies saw another protest against the dam's height in Madhya Pradesh, and this time the farmers came together under the banner of the Nimar Bachao Andolan, which the Congress had floated.

The issues associated with the Narmada were first articulated by a civil organisation in Gujarat, ARCH Vahini, which began working in 1980 in the 19 Adivasi villages in Gujarat affected by the dam. Some years later, SETU, an Ahmedabad-based civil organisation that included Medha Patkar, started providing relief to affected villages in Maharashtra — and this organisation later became the now famous Narmada Bachao Andolan.

Both the NBA and ARCH Vahini initially wanted just rehabilitation for all; the NBA, though, also demanded the right of affected people to information about the project that threatened to change their lives forever.

In the course of their sustained campaign, the NBA also exposed environmental devastation, displacement, and extensive violation of human rights in the implementation of the project. They argued that full and adequate resettlement of those displaced was not feasi-

ble, nor was the project economically viable.

And they also accused the project authorities and the World Bank of mismanagement and deception, which the Independent Review (or Morse Commission) found to be true. Arguing that the project could only be completed 'by unacceptable means', the Commission recommended that the World Bank step back from it.

The NBA, obviously, faced intense opposition from the project's proponents, and were subjected to severe repression from time to time. But all this has contributed to the democratisation of project planning and implementation, at local, national, and international levels. Underlying this was the recognition of the notion that society and civil actors have a crucial role to play in planning and governance.

The Sardar Sarovar's long history makes one hope that the verdict of the judges would contribute to the ongoing global dialogue on the kind of development we need, and who should decide its parameters.

The main actors in this case are the marginalised Adivasi communities and the middle and large farmers and traders; those supporting the project are contractors, politicians, and industrialists. The victims and beneficiaries are more or less the same in other such projects worldwide. The case, therefore, has global implications.

True, the judgement would have no legal bearing in other countries. But what must not be forgotten is that development issues in India have been of tremendous interest to people and governments outside the country, especially in the context of decolonisation in the Fifties and then the Non-Aligned Movement. For all our other weaknesses, India remains, as Professor Ignacy Sachs says, one of the 'whales' in the developing world.

This is also true of the civil world. The Narmada movement has now become a global symbol of the struggle for sustainable development. My own research in other countries has shown that the Narmada movement is widely known among activists and politicians alike. The judgement in the Narmada case could become historic. Just as the courts in India periodically cite cases from the House of Lords in Britain, or from the US Supreme Court, it is quite likely that this particular case too could achieve that status.

Obviously, this can happen only if the judgement addresses the fundamental issues and the universal concerns that the Narmada agitation has raised.

# NBA slams crackdown on dam oustees

## STATESMAN NEWS SERVICE

BHOPAL, March 13. — The Narmada Bachao Andolan has blasted the Digvijay Singh government for "ruthlessly" thwarting the "peaceful and democratic" satyagraha of the Maheshwar dam oustees and NBA activists in Khargone district.

Police made a lathi-charge and held about 350 oustees and NBA activists from a place near the Maheshwar Dam on Wednesday, it alleged. At least 10 people, including women, were injured in the crackdown, Mr. Alok Agarwal, an NBA activist, said.

The oustees and NBA activists had been staging an indefinite satyagraha near the site of the 400 MW Shree Maheshwar Hydro-electric pro-

ject since 24 February as part of its ongoing campaign against construction of the dam on the Narmada. On Tuesday night, the Khargone district administration issued prohibitory orders under Section 144 and followed it up with a police crackdown on protesters who were put in various jails in Maheshwar, Khargone and Badwani on Wednesday afternoon.

The NBA has termed the police action as "murder of democracy and constitutional rights".

Two oustees — Sushila Bai, 50, of Mardana village, and Kamla Behan, 45, of Pathrar village — said they would continue their "struggle" against the government-sponsored "reign of terror". "We would prefer to drown in the

Narmada, but will never let them uproot us from our homes and lands", they said.

Mr Alok Agarwal said the satyagraha had been launched to drive home the fact that the Maheshwar project would be "completely disastrous" for people as well as the state.

He said neither the state government nor S Kumars, the promoters of the dam, had been able to establish that the project would not be against public interest.

Mr Agarwal asserted that the police assault on the protesters would not deter the oustees and the NBA from stepping up their campaign against the dam. The NBA would spread its agitation across the state in the coming days, he said.

The NBA repeated its demand that the Madhya

Pradesh government implement recommendations of the task force it constituted in early 1998, which said construction on the dam should wait until the government had carried out a comprehensive review of the project.

Mr Agarwal said the reports of the Central government team, the Tata Institute of Social Sciences and the MP government task force had reinforced the NBA's stand that country's first private hydel project would be "catastrophic" on all fronts.

He said the project should be scrapped also because it violated the conditional clearance and techno-economic clearance given respectively by the Union Environment and Forests Ministry and the Central Electricity Authority.



# World water forum witnesses a verbal duel over Narmada

By Parul Chandra  
The Times of India News Service

THE HAGUE: The protest may not have been as dramatic as when two streakers disrupted the inaugural proceedings of the Second World Water Forum meeting here on Friday to protest against the construction of the Itoiz dam in Spain. But, noted author Arundhati Roy and 'Narmada Bachao Andolan' leader Medha Patkar made themselves heard during a session that saw Gujarat's minister for Narmada project, Jay Narayan Vyas, hold forth on the need for the dam.

While the two sides tried to counter each other's facts, at times the arguments seemed to degenerate into a battle of verbal one-upmanship.

So much so that Roy and Patkar accused Vyas of lying and he responded in equal measure. While the two maintained that Vyas had once called the SSP project a "death noose," a visibly irritated Vyas dismissed the accusation as "nothing but utter lies." At another point, Vyas told Roy, "You write novels and say houses are scattered like peanuts. It is a one-sided story." He asked Roy, "Why don't you

have one tribal representative?" To which Roy retorted, "You're the minister, not I. You should have brought them."

Ms Patkar hadn't planned to participate in the deliberations of the six-day forum meeting and ministerial conference which has scores of water specialists, experts, politicians and bureaucrats participating. But she did when she learnt about the Indian government's plans to put up a forceful pro-dam presentation. As for Roy, she said she came "to counter the pro-dam propaganda and hear what they had to say." Also to "see what power smells like", adding, "it stinks."

Setting the tone for the combative discussion was Mr Vyas himself who, armed with a detailed slide presentation, drew attention to the acute drought conditions in Gujarat, the lack of surface water availability (but for the Narmada) and the sinking water table level which in turn was causing fluorosis. Lending strength to Mr Vyas was Union water resources secretary, Z Hasan, who said the rehabilitation package of the government was being improved and would be implemented properly.

THE TIMES OF INDIA

19 MAR 2000

# Gujarat-NBA battle continues abroad

By Kalpana Sharma

**THE HAGUE, MARCH 18.** The opposition to dams and privatisation of water resources, which triggered the theatrics that disrupted the opening ceremony of the World Water Forum on Friday, inevitably emerged in a session on Water and Energy as the Gujarat Minister for Narmada, Mr. Jai Narain Vyas, and those opposed to the dams on the Narmada river got into a heated debate. The differences of perspective, already well-known to Indian audiences, and the extent of hostility between the two sides surprised many in the international audience.

Through a slick power-point presentation, the Minister argued that there was no alternative to harnessing surface water to deal with the acute water shortages faced by 80 per cent of Gujarat. He said energy, an expensive component of development, was being squandered as farmers used diesel pumps to extract water from receding water tables in much of the State. As a result, in some parts of the State, water levels had dropped to 800 feet, resulting in fluoride contamination and saline ingress into underground aquifers. The impact of this was being felt on people's health with increasing incidence of kidney stones and other problems.

Mr. Vyas said Gujarat had no option but to tap the enormous resources of surface water represented by the Narmada which were presently being wasted. He gave the instance of just four days in September last year, when the river was in spate, when an estimated 24,700 million cubic metres flowed into the sea. Though rainwater conservation was a possible alternative, it was not dependable because there was insufficient rainfall in several parts of the State.

Perhaps expecting criticism on the issue of resettlement of communities displaced by the Sardar Sarovar dam, the Minister emphasised that the tribals actually benefited from the dam. He showed slides of tribals employed in road construction because forests had receded, leaving them with no option. The dam, he suggested, left them better off as they got concrete houses as part of the compensation. "Don't be misguided by the word tribal. These people are not aborigines. They are as much a part of our democracy as anyone else. Tribals are not those incapable of defending themselves," he said.

Most points made by Mr. Vyas were countered by Ms. Medha Patkar of the Narmada Bachao Andolan. She pointed out, for instance, that benchmark studies had established that the tribal populations in the Narmada-

valley actually migrated out much less than other similar populations because they were able to survive on the forests and the river.

She also questioned the Minister's assertion about the financial soundness of the Sardar Sarovar Project. She pointed out that the drinking water supply part of the project did not figure in the financial plan and that costs had escalated not just because of the case still pending in the Supreme Court but due to a number of other reasons.

Ms. Patkar also quoted from a report of the Gujarat Water Supply and Sewerage Board which had found that the quantity of utilisable water in Kutch, the most parched part of the State, which could be harnessed at a low cost through participative methods, was equivalent to the total amount the State would get from the Narmada award. Under the present arrangement, even if the SSP is completed, Kutch has been allocated just two per cent of Gujarat's share of nine million acre feet.

The debate illustrates the on-going differences of perspective that are already beginning to emerge at this meeting on a whole range of water issues. While the engineers and bureaucrats discuss technical details about solving water problems, the civil society groups continue to emphasise issues of equity, distribution, and people's rights.

# 'Paradigm shift in handling water issues needed'

H19-19  
2003

Environment

By G. Venkataramani

**THE HAGUE, MARCH 19.** "The business as usual approach is not going to solve the water problems of the future. What we need is a drastic change in the ways we handle water issues if we have to conserve this precious resource for the benefit of the generations to come." This is the clear message of the World Water Commission at the Second World Water Forum being held here since Friday.

Dr. Ismail Serageldin, Chairman of the Commission, stressing this point said that the role of Governments should be re-defined to act as enablers of community action and regulators of private sector involvement in managing and ensuring an equitable distribution of water. "It should be an active participatory process that should focus on protecting the natural resources for future generations," he said.

The World Water Council, an international water policy think-tank established in 1996, has identified the world water challenges in the 21st century. Dr. Mahmoud Abu Zeid, President of the council, dwelling on the key water issues said that without full public participation, it was impossible to envisage or implement sustainable solutions. Raising public awareness was essential to ensuring public involvement. "Such awareness can be achieved through changes in the education system, greater funds into research and development, and enlisting the support of the civil societies", he said.

The impacts of water quality deterioration on human health, devastation of natural habitat and biodiversity have resulted in the volume reduction of usable water, now evident in every corner of the globe. The projected mega-cities and rapid industrialisation worldwide have only accelerated problems such as inadequate waste treatment, according to the council.

Discussing the water scarcity, the council has pointed out that the finite supply of water can be augmented by reducing consumption and recycling and re-using wastewater. Filling the gap from non-conventional sources will also address the other side of the equation. However, there are technological, economic and environmental

limits to these solution strategies. Present day infrastructures are also inadequate in addressing future problems.

Sound policies and effective implementation will become an enormous challenge to present and future generations in addressing the issue of providing access to clean drinking water and adequate sanitation facilities around the world. The vulnerable segments of the populations — the poor, women and children, suffer the most when affordability, adequacy and accessibility to clean water become critical. Special care should be taken to address this.

The linkages between global peace and security, environmental degradation and water problems are all too evident in many parts of the world, with particular focus in developing countries. Collective knowledge resulting in a collective action on a global scale is needed to prevent persistent water shortage that is threatening all, according to the council.

A steady decline in financial outlay to water development in the late 1980s and 1990s, and marked decline in international development assistance resulted in severe slowdown in water development. Right now, funds for operation and maintenance are in limited supply with existing schemes in dire need of repair and replacement. The creation of an enabling environment to reverse the trend is needed.

The council has pointed out that it was both essential and mandatory that institutional policies, strategies and legal frameworks be harmonised and coordinated at some kind of centralized level, between regions, nations and at the global level. This unified water management approach will help in reducing the wastage of resources and improving usage efficiency.

The non-governmental organisations (NGOs) attending the conference, however, have expressed serious concerns about privatisation of water.

Several time-honoured eco-friendly technologies for harnessing rainwater and equitable sharing of the precious natural resource were brought to light during the discussions.

VENKATARAMANI

THE HINDU

20 MAR 2003

# 'Water management needs new approaches'

HD-17  
2/13

By G. Venkataramani

**THE HAGUE, MARCH 20.** "Those who use the lion's share of world's water must share with those who have less, their resources, expertise and the understanding that the challenges faced in other parts of the world must be recognised as their own challenges as well," said Queen Noor of Jordan.

In her opening presentation at the session on "Vision for Water and Nature" run by the IUCN, the World Conservation Union, here at the Second World Water Forum on Sunday, the Queen said that it was unfair to place the bulk of the burden of ecological preservation on those very countries already staggering under supreme shortage of resources, education, infrastructure and money. "We have to assure the preservation of ecosystems and biological diversity. We must also help secure the livelihoods of communities around the world," she said.

"Keeping ecosystems alive should be a guiding principle in the decisions we make. This is of course no easy task. Different parts of the world have their own reasons for ignoring environmental needs. Wealth breeds indifference while poverty breeds desperation," she said.

In the developed North, abundance in both money and natural resources insulates inhabitants from the consequence of water wastage. In the developing South, where the worst natural shortages occur, poverty makes survival the priority and pushes environmental concerns to the fringes.

To effect the changes special efforts are needed. The awareness among individuals and communities to equip them with the practical tools to use water wisely should figure on the top of the list. "They require the development of knowledge and know-how to experiment with new approaches in water management and apply them to other regions. They require resources to be allocated to support such experiments and keep improved management practices in place," she said.

People have to be enabled to participate in making the decisions that affect their most fundamental needs. When the people partic-



Queen Noor

ularly women, who are absolutely pivotal in this regard - are given a stake in their own future, they will take responsibility and do what needs to be done, making changes that would be impossible if imposed by some higher authority, according to the Queen.

She briefly touched on the six goals proposed by the Vision for Water and Nature of the IUCN that would lead the humanity to a sustainable water world. Caring for the planet's ecosystem, adopting an eco-system-based approach within river basins, empowering people for equitable sharing of water, creating a political will and good governance, raising awareness and strengthening capacity to change human behaviour to reduce water waste and protect ecosystems, and developing and sharing knowledge and technology to improve water resources management were the key ingredients of the Vision.

"The Vision for Water and Nature is a not a rule book, but a recipe for change meant to inspire, not proscribe. Actions have to be adapted to local needs, abilities and opportunities. Different nations, cultures, people".

THE HINDU  
21 MAR 2000

# Japan shows the way in pollution control

By Gaurav Vivek Bhatnagar

**TOKYO, MARCH 29.** Through a number of laws and their strict enforcement, Japan has set an example for developing nations on overcoming problems arising due to air pollution, caused by rapid industrialisation and growth in the number of vehicles.

Incidentally, it was a local association of women in Kitakyushu city which first raised the issue of air pollution. They forced the enactment of the Tokyo Prefecture Soot and Smoke Control Ordinance in 1955 when cases of asthma grew and dark smoke made it difficult to even see the sun.

According to Ms Meguri Ikemada of the Committee for Environmental Journalists, these pollution-related problems made the Japanese people realise that while economic growth was important, environment conservation was also necessary. "So even after the bursting of the bubble economy and the country going into recession, the country did not lose track of the environmental issues."

Today, such efforts have borne fruit and industries have installed anti-pollution devices. And so, in this, the Land of the Rising Sun, there is little which hinders the view of the sun.

Yet, all's not well. The emission of nitrogen oxides and suspended particulate matter (SPM) by diesel vehicles still remains an area of concern. But here again, the situation is expected to improve with the imposition of stricter norms. The Governor of Tokyo, Mr. Shintaro Ishihara, had gone to the extent of saying that equipment be attached to diesel cars to prevent emission of fumes rich in nitrogen oxides and SPM. In the autumn of 1999, Mr. Ishihara called upon all people to refrain from travelling in, buying and selling diesel-powered cars.

Launching a "say no to diesel-powered vehicles" campaign, he urged the owners of such vehicles to substitute them with gasoline-powered ones. He also urged automakers to speed up development of high performance equipment to purify auto exhausts. In a controversial announcement,

he also called for a reversal of the lower tax on diesel to prod a shift in use of such vehicles. This when imposition of taxes is a matter which comes under the jurisdiction of the national Government.

Mr. Ishihara's argument was that the largest cause of Tokyo's air pollution was exhausts from 65,000-odd diesel vehicles which while accounting for only 20 per cent of the total travel of all vehicles were found responsible for about 70 per cent of nitrogen oxide emission and almost 100 per cent of SPM emissions.

Stating that environmental concerns and the health of the citizens came before commercial interests, the Tokyo administration has also threatened to ban the entry of diesel vehicles into the city.

According to Mr. Hiroko Yamada, in-charge of Planning and Adjustment in the Air Pollution wing of the Tokyo Metropolitan Government Office, the Tokyo Metropolitan Environment Pollution Control Ordinance is being reviewed which aims at checking

emission of asthma-causing nitrogen oxides and carcinogenic SPMs. Mr. Yamada says already a lot has been done in the field of pollution control. The nitrogen oxide level is down 92 per cent from the time the counter-measures on gasoline vehicles came into force in 1978. And since norms were established on diesel vehicles three years ago, the pollution levels have fallen by 84 per cent. A major problem for Japan is that it imports 99.6 per cent of oil it consumes. And since this oil comes primarily from West Asia and is rich in sulphur — at 50 parts per million — the automobile manufacturers are unable to install filters, which need oil with less sulphur content.

Now, the Japanese Federation of Oil Distributors has asked oil companies in West Asia to reduce the sulphur content below 50 ppm. The Japanese Government is also considering making mandatory the installation of air filters in diesel vehicles. While 2007 had been determined as the year for implementing the plan, there are now plans to advance the date.

# Central aid needed for arsenic projects

STATESMAN NEWS SERVICE

CALCUTTA, Jan. 3. — The Rajiv Gandhi Technology Mission provided a 100 per cent grant for removal of guineaworms, fluorite and excess saline from drinking water all over the country but for rectification of arsenic-contaminated water found in West Bengal during the mid-80s, the union government offered only 75 per cent funds.

The Public Health Engineering Department of the state government has lodged a formal protest against the Mission, the minister for housing and public health engineer-

ing, Mr Goutam Deb, said today.

There are three schemes for the treatment of arsenic-contaminated drinking water, Mr Deb said.

Under the Malda scheme to be inaugurated by Mr Jyoti Basu in the first week of February, 4,00,000 people will be able to get arsenic-free water.

"The South-24 Parganas scheme is the country's largest rural scheme with a budget of Rs 232 crore. Around 26 lakh people will have access to safe drinking water," Mr Deb said. The government hopes to complete the project by December

2000.

The North-24 Parganas scheme is yet to be sanctioned by the union government. Repeated discussions with the Centre have not been fruitful, said Mr Deb. The estimated cost is Rs 230 crores and the Centre's support is essential, he said.

Malda and some parts of Murshidabad are problem areas because they have only one layer of water and that is contaminated, the minister said.

The only option is to treat the water in plants. Water from tubewells will be declared "unfit for drinking" in these

areas.

"The treatment plants at Malda should be 96 per cent successful but the problem of disposing the slush will remain," he said.

Eighteen countries including USA, UK, Japan, China, Germany, Pakistan and Bangladesh will participate in a seminar on arsenic contamination in Calcutta from 5th to 7th January.

Besides the state and central government, representatives of organisations like UNICEF and WHO will be present at the seminar where issues like the occurrence of arsenic in water.

THE STATESMAN

- 4 JAN 2000

# State seeks the easy way out to tackle arsenic menace

ROMITA DATTA  
STATESMAN NEWS SERVICE

CALCUTTA, Jan. 4. — Tomorrow, 70 scientists from abroad and 50 from home will "exchange their experiences and views on arsenic" while sipping tea or coffee at Taj Bengal Hotel's conference room.

The two-day jamboree on arsenic, part of Biswa Banga Sampelan, will cost more than Rs 10.5 lakh.

Experts working in this field say the money could have helped them build 40 water-treatment plants in arsenic-affected areas and given a fresh lease of life to at least 40,000 victims.

Noorjima Khatoon is one of them. She is just 11 years old but instead of having the verve associated with her age-group she is a bundle of ailments. She gasps while breathing and her little body is full of flecks of scabs, called keratosis in medical parlance. Drinking arsenic-contaminated water has reduced her to this state.

The tube-well at her home in Malda gives out arsenic at the dangerous concentration of 0.3 parts per million — the World Health

Organisation's maximum permissible limit is 0.05 ppm.

For the seminar, money has been pooled in by sponsors like the state public health engineering department, Unicef, UNDP, Central Ground Water Board and Rajiv Gandhi Drinking Water Mission. The PHE department has contributed Rs 3 lakh.

Experts say the time to "exchange views" is over. The government should now swing into action in the arsenic-affected villages, and not five-star hotels, for more than 4 million people are prone to arsenic contamination.

The government's move is "misdirected", asserts Dr Dipankar Chakraborty, director of School of Environmental Studies, Jadavpur University.

"When the need of the hour is to reach out to the arsenic victims and feel the pulse of the problem on the field, the organisers have chosen to confine the menace within the cool comforts of a plush hotel."

Doubts have been raised over whether the experts will ever venture out of the hotels to

ing arsenic.

Four of the 39 tube-wells found somewhat safe will be marked green — in other words, will be declared fit for use. This will give rise to another serious problem: how will the 2,000-odd villagers manage with four tube-wells, some of which are 20 km away.

The public health engineering minister, Mr Goutam Deb's newly installed water treatment plant, worth crores of rupees, is of course there, but people living even within the 20-km radius are unable to avail of it.

Noorjima's house is 30-odd km away from Shujapur, where the plant has been installed. Hence, they will be forced to use contaminated water.

Moreover, the plant has the capacity to supply purified water to 4,000 people, a very nominal volume compared to the seriousness of the problem.

After surveying one-tenth of Malda district, Dr Chakraborty found more than 50,000 people drinking arsenic-contaminated water, and most of them were oblivious to the fact.

The problem has been compounded because even some medical experts have failed to identify the menace.

## EXPERTS TO SHARE VIEWS AT A FIVE-STAR SEMINAR

visit some of the arsenic-contaminated districts. "They might visit the nearest stop-over in North 24-Parganas, if they are interested," says an organiser of the seminar.

Back to the grind and into the problem — more than 2,000 people at Mahadipur village of Kaliachak block I are drinking arsenic-contaminated water much above the WHO's limits. Thirty-five of the 39 samples collected from the area and tested by the School of Environmental Studies were found to contain arsenic much higher than the permissible limit. In one case the content was almost 150 times higher. Yet nobody is bothered.

Noorjima's family has spent more than Rs 30,000 during the past four years just to know why she has difficulty in breathing and has "boils" on the sole of her feet. Her brother, Abdus Salam Sheikh, accompanying her to the city, said they had been shuttling between health centres and hospitals for the past four years just to know the cause of the ailment. Their ordeal continued till the SOES branded and sealed their tube-well for spew-

## *U.S. admits that radiation sickened N-plant workers*

NEW YORK: In an about-face, U.S. officials now say that nuclear weapons workers exposed to radiation and chemicals experienced higher-than-expected rates of cancers, the New York Times has reported.

The admission, contained in a draft report by the energy department and the White House, comes after the government spent years minimising the dangers of radiation and defending itself against charges that nuclear bomb plants had sickened workers, the Times said on Saturday.

The draft report says workers exposed to radiation and chemicals at 14 U.S. nuclear weapons plants had elevated rates of 22 categories of cancer ranging from leukemia to lung cancer, according to the Times.

A nuclear weapons expert cited by the paper said hundreds of people may have been sickened since production began during World War II.

That number could rise to thousands if radiation-linked diseases other than cancer are counted.

The Times said compensation for the group could add up to tens of millions of dollars.

U.S. president Bill Clinton ordered the report last year after the energy department said some plant workers who had helped supply beryllium — a toxic metal — to the government had been stricken with beryllium disease, an untreatable lung condition.

Work on a policy compensation is not yet complete, the Times said.

The facilities listed in the report include nuclear weapons operations at Oak Ridge in Tennessee, Savannah river in South Carolina, Hanford in eastern Washington state, Rocky Flats near Denver, Fernald Feed Materials Centre near Cincinnati-Ohio, the Lawrence Livermore National Laboratory in California and the Los Alamos National Laboratory in New Mexico.

The report does not list a federal plant in Kentucky where thousands of workers allegedly were exposed to plutonium for more than two decades. (Reuters)

THE TIMES OF INDIA

31 JAN 2000



# Bio-diversity Bill mooted

By J. Venkatesan

**NEW DELHI, FEB. 4.** The 15th Law Commission has recommended a new legislation to ensure conservation and sustainable utilisation of India's bio-diversity and to provide safeguards against theft of traditional knowledge of the local communities.

The proposed Biological Diversity Bill, 2000 is based on the 1993 United Nations Convention on Biological Diversity to which India is one of the 176 countries. The new bill will extend to the whole of India, including its maritime exclusive economic zone and apply to all varieties of life forms including plants and animals.

The proposed legislation, which will have an overriding effect on other laws, envisages recognition of the well-known principle of proportionality in environmental law making it imperative to take precautionary steps for the conservation of bio-diversity in anticipation of threat of significant reduction or loss of biological diversity or threat of serious or irreversible environmental damage.

The Commission's 171st report follows the recom-

mendations of the Parliamentary Standing Committee on Home Affairs over the demands for grants (1998-99) by the Law Ministry that the Law Commission should undertake study in the field of intellectual property rights, laws relating to trade and investment and other matters relating to the World Trade Organisation (WTO) regime.

Under the bill, a National Bio-diversity Authority and State/Union territory Bio-diversity Boards will be set up. The Authority will take appropriate steps and issue necessary orders for the protection of the bio-diversity of India and its sustainable use.

The Authority will identify processes and activities which are likely to have an adverse effect on the conservation and sustainable use of biological diversity and will monitor their effects through sampling and other techniques.

The Authority will undertake measures for environmental impact assessment of proposed projects. It will be required to frame guidelines for the benefit of sharing of biological resources consistent with the objectives of the legislation.

THE HINDU  
5 FEB 2000

# Bio Bill to preserve local rights

FROM R. VENKATARAMAN

**New Delhi, Feb. 4:** The draft of the bio-diversity Bill, set to be tabled in the budget session, proposes several measures to protect the knowledge and cultural rights of local communities.

The Bill stipulates that the National Bio-diversity Authority "shall" protect the traditional resources and rights of local people and communities "through measures such as registration of such knowledge in such manner as may be prescribed at local, state and national levels".

On the protection and promotion of cultural rights, the Bill directs the authority to "take steps to ensure that local communities develop their own productive and cultural initiatives for the use and conservation of biological diversity and related matters".

The legislation makes it mandatory for the national authority to take steps to prevent bio-piracy and protect local knowledge.

The Bill virtually bars NRIs, even Indian firms with foreign equity, from entering into joint ventures. "No person who is not a permanent resident or a citizen of India or any body corporate association or organisation which is

not registered in India or which is registered in India but has foreign citizen participation in equity or management shall obtain or be granted access to any biological resource occurring in India."

Likewise, even 100 per cent Indian firms or organisations cannot share the result of research without obtaining prior approval of the national authority.

For access to bio-diversity areas, a formal application will have to be submitted to the authority.

Violation of the law could invite a rigorous imprisonment sentence from one year to five years along with a fine. If a person supplies information to foreign firms, the punishment will be three years' imprisonment plus fine.

All offences will be tried by the "assistant sessions judge". But courts can take cognisance of cases only if a complaint has been lodged by the Centre or by the officer authorised by the government. In case of private complaints, action will be initiated 10 days after a notice has been delivered to the alleged offender.

THE TELEGRAPH

5 FEB 2000

## Managing wastes 47-13

YET ANOTHER deadline set by the Supreme Court has been ignored by all concerned largely because the regulatory authority — the Central Pollution Control Board — lacks the powers and the wherewithal to initiate action against defaulters. In this case, the order concerning the disposal of bio-medical wastes goes back to 1998 when the court had asked the CPCB to ensure that all medical establishments installed facilities for the eco-friendly disposal of their wastes by December 31, 1999. This was done primarily to protect hospital workers, including nurses, ward boys and incinerator operators against infections and prick injuries. Almost 30 per cent of nurses routinely get needle prick injuries. It was also done to protect rag pickers and municipal workers who handle such wastes without gloves as also communities living in the vicinity of hospitals because 35 per cent of their wastes find their way into community bins.

Delhi has 40,000 hospital beds of which 20,000 are in the government sector. Together they generate about 60 tonnes of waste per day, which, given the infrastructure, is manageable. Unfortunately, there are only 30 incinerators in the city and most of them are decrepit or non-functional. Moreover, they lack trained staff and segregation systems; thus, all types of wastes — bandages, syringes, plastic bottles, glass items and human organs — are put into incinerators resulting in high levels of air pollution. Yet, no one has ever been censured or prosecuted.

Obviously, this is a serious problem. But if other nations are able to manage their wastes why can't India? All it requires is coordinated action by municipal authorities, pollution boards and hospitals. It costs Rs 4 per kg to segregate, disinfect and dispose off such wastes. Many hospitals, especially small clinics that have neither the space nor finances to install incinerators, have said that they would pay for the disposal of the waste they generate. Hence, to begin with, existing incinerators should be made functional and collection and disposal could be centralised. At the same time, it must be made mandatory for hospitals to set up segregation systems and train their staff. Much of the problem is due to inept handling by untrained personnel. Industry must be encouraged to manufacture low-cost infrastructure. Above all, the authorities should take stern action against defaulters.

THE HINDUSTAN TIMES

10 FEB 2000

## AGAINST THE GRAIN

The Union environment ministry has shot India in both feet by supporting clauses in the Cartagena biosafety protocol that will make trade in genetically modified crops and seeds more difficult. There were roughly three schools of opinion at the protocol's final conference in Montreal. The first comprised big food exporting countries like the United States, Canada, Argentina and Chile. The second was the European Union which wanted individual countries to have the maximum discretion in blocking trade in such farm products. The EU was driven by two concerns. One, it has among the most protected farm sectors in the world and looks to find ways to block farm imports. Two, Europe is home to environmental lobbies which have used recent food scares to make their public paranoid about bioengineering. Finally, there were some developing countries led by India which took a halfway position. They leaned towards the EU's position that countries should have the power to decide whether or not to import such crops, irrespective of world trade rules. So trade in genetically modified crops will be largely outside the purview of the World Trade Organization. Now countries can block such imports on environmental grounds even when there is no scientific evidence that a specific genetically modified crop or seed causes harm. As a consequence, protectionist advocates like the EU will use the protocol to arbitrarily block genetically modified farm imports in much the same way it abuses antidumping laws against textiles today. Then, the use of science to evaluate the worth of bioengineering will take a back seat to hysteria.

The environment ministry signs many international treaties, but seems unable to determine the long term consequences of its actions. Agreeing to restrict trade in genetically modified farm goods is one example. India's scientists and agronomists say that the green revolution has run its course, that further increases in yields must come from the widespread use of bioengineering. Indian institutes are producing strains of bioengineered rice and wheat with higher yields, some fortified with vitamins. Almost all Indian soya is already genetically modified. India has become a net exporter of many agricultural products. To ensure farmers receive sufficient profits to keep up the sort of investment agriculture needs, they will need greater freedom to export. If India is to accomplish its goal of food security it will have to become a major exporter of genetically modified farm products. This has now been made infinitely more difficult by the shortsightedness of the environment ministry.

New Delhi needs to be more forthright about the role of biotechnology in its future. Political leaders at the top need to openly declare that the government sees biotechnology as crucial to its future economic and social prosperity. Countries like China and Brazil have done so and are using bioengineered crops. A degree of wariness regarding a new technology is understandable. It is no one's case that any negative environmental or health related consequences of bioengineering should be ignored in the hunt for larger harvests. But this is best determined in the laboratory, not by environmentalists or European farmers. These have their own agendas, ones that only marginally overlap with those of developing countries. Unfortunately, by taking the kind of position it took in Montreal, India helps push the biotechnology debate in a direction that does not further its own interests.

THE TELEGRAPH

11 FEB 2000

# Night ban on loudspeakers

STATESMAN NEWS SERVICE

NEW DELHI, Feb. 18. — The use of loudspeakers at night, except in closed premises, has been banned.

The ban is part of the Noise Pollution (Regulation and Control) Rules 2000 under the Environment Protection Act 1986, notified for prevention and control of noise pollution in the country. The rules have come into force with publication in the gazette, an official release said today.

The notification stipulates that a loudspeaker or a public address system shall not be used except after obtaining written permission. It bans use of loudspeakers and PA systems between 10 p.m. and 6 a.m., except in closed premises like

auditoria, conference rooms, community and banquet halls.

The notification seeks to control noise in public places made by industrial and construction activity, generator sets and other mechanical devices to prevent physical and psychological impact on health.

It bans the use of vehicle horns, musical and other public performances, beating of drums and use of any sound amplifiers in silence zones, i.e. within 100 metres of hospitals, educational institutions and courts.

Stipulating that the noise levels in any area or zone shall not exceed the ambient noise standards, it points out that a complaint could be made to the competent authority in case the level exceeds these standards by 10 decibels or more.

The notification prescribes the ambient air quality standards of noise for different zones during day (6 a.m. to 10 p.m.) and night. The standards during the day will be 75 dB for industrial areas, 65 for commercial areas, 55 for residential areas and 50 for silence zones. During the night, the standards would be 70, 55, 45 and 40 respectively.

City planners will now have to take adequate "abatement measures" for prevention and control of noise pollution by restricting noise, specially due to traffic and construction activity.

According to the notification, states can categorise all areas into industrial, commercial, residential and silence zones to implement the noise standards.

THE STATESMAN

19 FEB 2000

# India must empower grassroots people: UNEP chief <sup>environment</sup>

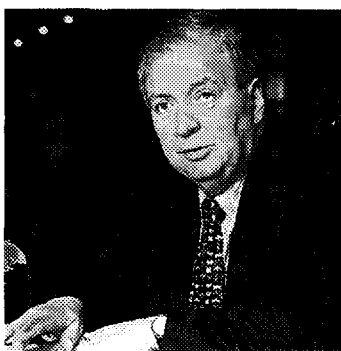
By Soma Basu

**NEW DELHI, FEB. 21.** The Executive Director of the United Nations Environment Programme (UNEP), Mr. Klaus Topfer, gives another "20 to 30 years for the negative situation in global environment to change".

"The dissatisfaction which is generally felt at present all around will actually become a stimulant for urgent action soon and the world will become a better place to live," he said during the course of an interview with *The Hindu* here today.

After taking over as the UNEP chief two years ago, Mr. Topfer set about restructuring the institution and the first thing he did — much to everybody's surprise — was to shift the head office to Nairobi. "It was a way of strengthening the position of developing countries," he justified, adding that the other office in Bangkok also indicates the importance attached to Asia-Pacific nations.

Admitting how difficult it is to rate the global environment problems as each demand equal attention, Mr. Topfer, however, listed pollution control measures and management and conservation of natural resources as the priorities of the Asia-Pacific region. He particularly sounded the alarm bell over the depleting fresh water resources and the overall shortage of water, the world was likely to face in future. Mr. Topfer stressed the need for developing and implementing global and regional environmental accords and strengthening the emergency response capacities of Governments. Having championed a trans-boundary agreement on forest fires between Indonesia, Malaysia, Singapore and other South-East Asian nations, the UNEP chief said that after the experience of recent years these



Mr. Klaus Topfer

countries had appointed "haze (smoke) ministers" to collectively decrease the risk of forest fires and make capacities available for easy burning techniques.

Advocating similar inter-governmental treaties, Mr. Topfer said, the countries of the South should work towards a protocol on air pollution, particularly in the wake of imbalances in atmospheric emissions. Developing countries contribute only one by eighteenth of the green house gases (GHG) emissions, but the poor of these countries will have to bear the brunt of its impact because they do not have means for adaptation, he warned.

Emphasising that "economic development is crucial for environment development", Mr. Topfer said, a "new culture of solidarity was emerging to improve the living conditions of the poor." However, he added that while Governments of the developing world needed assistance, they, in turn, should strengthen their national commitments.

Turning to India-specific problems, the UNEP chief, said population was the main determinant for environmental problems of any country, while poverty was the most "toxic element".

"India with its dense network of non-governmental organi-

sations needs to empower the grassroots people more for dissemination of proper information, in order to secure informed decision-making," he said, adding confidently, "enhance public participation, educate your women and see the changes it brings along."

He identified five major issues for the country: land degradation, biodiversity, air pollution, freshwater resources and hazardous waste management. The emerging issues on international agenda include the creation of markets for renewable energy, use of economic instruments in pollution control, political and financial incentives to adapting climate change and transfer of technology and finance.

Mr. Topfer felt that the Indian society needs stimulants like the Green Peace Movement in Europe for catalysing environmental concerns. Improving the early warning mechanisms, addressing the link between environment and urbanisation (megacities) and strengthening monitoring and assessment capabilities should be the tasks of the future for meeting the challenges.

With the next cycle of climate change negotiations starting next month and subsequently leading to the next Conference of Parties at The Hague in November, Mr. Topfer asserted that with the climate change regime being designed by the international community, neither the North nor the South could afford to waste any more time or opportunity to address the constraints for socio-economic development and the inequities thereof.

"Apart from promoting international consensus, there has to be a further development of international environmental law aiming at sustainable development," Mr. Topfer added.

# Unblocking the Narmada

## People First, Tribunals Later

By PRAFUL BIDWAI

ONE does not have to be an uncritical admirer of the Narmada Bachao Andolan to recognise the powerful popular sentiment behind the struggle against the Sardar Sarovar Project (SSP) or acknowledge the need for a thorough review of the whole scheme. The sheer scale and tenacity of the struggle, highlighted by the recent impressive mass mobilisation in the valley, bear testimony to the first proposition. The second is borne out by numerous alternatives proposed to the SSP, besides changes in the basic parameters in its original design. The approaching Supreme Court hearing of the NBA petition for the "final disposal" is an appropriate occasion to scrutinise the SSP. The litigation has become a litmus test not only for environmental protection, but equally for issues of displacement and development; balancing the larger public interest against sectional gains from irrigation projects, and relevance of the law to people's vital concerns, indeed to the fundamental right to life with dignity and justice.

### Utilitarian Calculus

The SSP raises many questions: Should a project based on 40 or 50 year-old assumptions about water flows and environmental impacts be considered totally unalterable even when those assumptions are demonstrably false? Should the displacement of two lakh people, many of them underprivileged and vulnerable — and half of them Adivasis — be considered a fair price to pay for irrigating land that can get the same quantity of water in other, less destructive, ways? Must the 21-year-old award of a river water tribunal be treated as sacrosanct when the project's cost-benefit ratios have radically changed? What justifies the project authorities' insistence on adding an extra 19 feet to the dam height only for power generation when that spells the submergence of 26,000 hectares (half of it prime-quality forests), and when another riparian state offers an alternative power source?

Besides these practical questions, there are larger issues of ethics and jurisprudence too. How long are we going to follow a crude 19th century utilitarian calculus which justifies sacrificing the vital interests of the underprivileged for the greatest good of the greatest number, and which violates the requirement of modern ethical theory that we must first protect those very interests? How do we take social and legal cognisance of the truth that some 30

million Indians have been uprooted and brutalised since Independence in the name of 'development'? How do we remedy this? Should immutable legal verdicts be reached in this era of democracy without consultation with those liable to be affected by them on a mass scale? What can be done to defend the human rights of project-affected people in independently monitored, verifiable, ways? If the courts prescribe urban vehicular pollution standards to governments in minute detail, where should they stop with rural projects?

The Narmada litigation began with a broad agenda, but has increasingly got narrowed in scope to the issue of resettlement and rehabilitation alone. It is imperative to broaden its scope to reflect the true range of issues at stake. Even on resettlement, the project authorities have a thoroughly unsatisfactory record, marked by repeated non-compliance with stipulated norms at this early stage of displacement. (Some 31,000 of the total of 41,000 families whose lands will be submerged are on the displacement roster). And it is already apparent that there isn't enough land in contiguous areas to resettle those ousted. Maharashtra and Madhya Pradesh (where the maximum displacement will occur) have said as much in official documents. This is confirmed by numerous non-official surveys. These numbers exclude people displaced by canals, drainage creation, colony construction, sanctuaries, etc. Nineteen years after construction began, there is no master plan for rehabilitation.

### Predatory Bureaucrats

To complicate matters, a good chunk of the available land is uncultivable or already encroached upon. So unsurprisingly, over 300 families, which had left their homes for rehabilitation sites, have returned, e.g. in Mokhadi, the first SSP-affected village. Thousands have firmly refused to move out altogether. Hostilities have broken out between Adivasi groups, instigated by predatory bureaucrats and driven by competition for scarce resources. This makes nonsense of any authentic notion of rehabilitation, which must be consensual, not confrontationist, and minimally involve full economic reparation and community rehabilitation, with a degree of cultural and social cohesion, especially for Adivasis. It violates the basic principle that no displaced person should be worse off than before his/her 'rehabilitation'.

It will not do selectively to cite the scrappy reports of the PD Desai committee to counter this reality. Gujarat which appointed the committee is not a neutral actor, but a partisan government which has taken a confrontationist stand on the SSP, refused cooperation with the Centre and co-riparian states and even threatened the tripartite World Commission on Dams, which includes irrigation and construction-industry interests.

### Real Issue

If the rehabilitation side of the SSP balance-sheet is embarrassing, the economic side is no better. The irrigation potential capital cost works out at over Rs 2 lakh per hectare, even assuming a high irrigation efficacy (60 per cent instead of the normal 40). Depreciation and interest on this alone would render downstream agriculture utterly unviable, given that our annual irrigated-land farm output is of the order Rs 20,000/hectare. Besides, the SSP authorities exaggerate the power and drinking water benefits. There are cheaper, environmental- and people-friendly alternatives to the second. SSP water won't reach parched Kutch (for which only two per cent is earmarked) till 2020 or 2025. No financial allocation has been made for this. Kutch and Saurashtra farmers feel cheated and are already agitating over this, and have started cooperative water users' groups to recharge aquifers — an excellent, sustainable, method.

There are numerous alternatives to the SSP as currently designed, including a reduction in dam height. These were adumbrated in two reports of the five-member expert group appointed (1993) by the Centre, and the Morse Review appointed by the World Bank. Engineers and social scientists (Paranjpe and Joy) have drawn up conjunctive groundwater-use schemes to supplement a reduced-height dam which would decrease displacement and submergence by nine-tenths or more. It would be foolhardy to ignore these and push ahead with the SSP. At the end of the day, the real question is not one of technology or law, but of people, rationality and democracy. If rationality and democracy are to have any meaning, and if public interest litigation is to survive — it is already in decline — the SSP must be fully opened up for review and radical revision.

