ANNIVERSARY SPECIAL

1-15 MAY, 2021

Down To Earth

FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH

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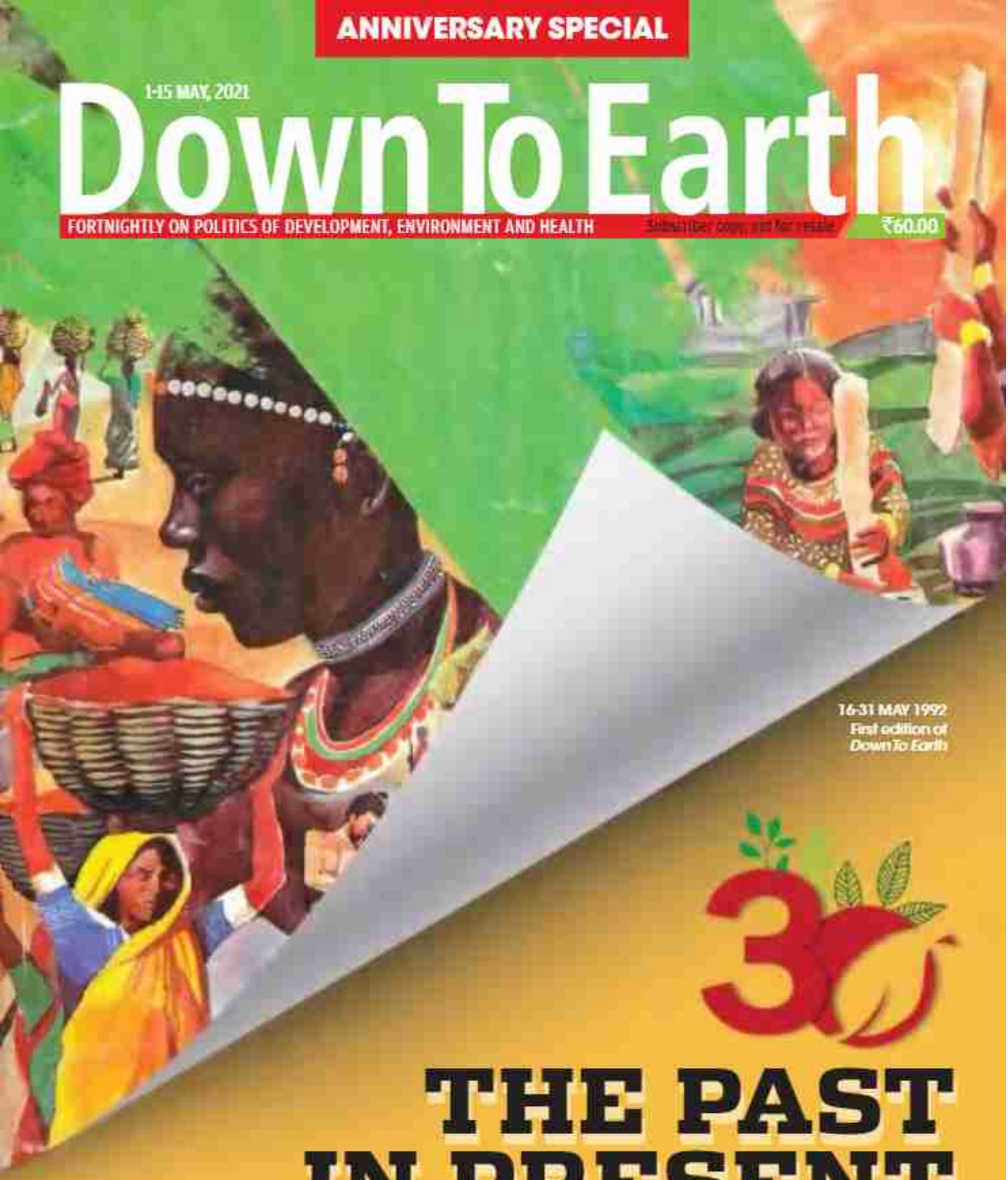

16-31 MAY 1992
First edition of
Down To Earth

30

THE PAST IN PRESENT CONTINUOUS

SCHOOL OF HABITAT
AAETI

ONLINE CERTIFICATE TRAINING PROGRAMME

'NEW VAASTU': DESIGNING SUSTAINABLE HABITATS IN A POST-PANDEMIC WORLD

DATES
May 17th – June 12th, 2021 (Self-paced weekly modules)

LAST DATE FOR APPLYING
May 12th

LANGUAGE OF INSTRUCTION
English

PLATFORMS
Moodle and Zoom

TOTAL STUDY HOURS
20 hours (5–6 hours per week)

Partial sponsorships, early bird and group discounts available.

COVID-19 has scarred the world, there is a realization that the world cannot function in a 'business-as-usual' manner any longer. There is a clear need now for rethinking how we live, including the way we approach our built environment. Thermal comfort in buildings is crucial parameter that needs to be considered – temperature, humidity and natural ventilation are key characteristics that define thermal comfort and have a direct relationship with the spread of infection and ill-health inside dwellings.

The School of Habitat under Anil Agarwal Environment Training Institute, a Centre for Science and Environment (CSE) initiative, is announcing a new online training programme on the practices of what it refers to as the 'New Vaastu' – a concept that is designed to reduce resource footprint (energy, water and waste) in the built environment, and to enhance thermal comfort.

The training programme will enable participants to understand the functioning of all natural elements as they come together to create a sustainable habitat. It will emphasise on the need to keep in mind site layouts, building design and choice of materials for mainstreaming thermal comfort not only as an enabler of liveability, but also as a catalyst to reduce disease burden in our buildings.

What will the training programme cover:

- Sustainability Development Goals & environmental governance for built sector
- Exploring sustainability through traditional principles
- Planning and design amidst the new normal of COVID-19
- Energy Conservation Building Codes (Commercial & Residential)
- India Cooling Action Plan, Urban Heat Island Effect and Thermal Comfort
- Building envelope, daylighting components, fenestration design, material properties and their market penetration.
- Resource prudent designing for circularity (water, waste, energy efficiency, renewable)
- Introduction to building simulation & low-energy mechanical cooling techniques

Who can apply?

Students pursuing architecture, planning and engineering, architects, academicians, professionals from the building industry and anyone enthusiastic to learn about sustainable built environment.

How will the training be imparted?

Conducted online on Moodle and Zoom platforms through recorded video lectures, live lectures, exercises, reading materials and other resources.

What is the programme fee?

Rs. 2,500 per participant (For applicants from India)
Partial sponsorships, early bird (Registrations before April 30) and group discounts available.

USD 50 (For applicants from countries other than India)

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Promises to keep

AS I write this in *Down To Earth*'s 30th anniversary year, I am in lockdown. The COVID-19 pandemic is raging in India. We are seeing the worst of the crisis, with the healthcare system stretched, hospitals running out of life-saving oxygen and people losing loved ones. It is tragic and devastating. It feels like the end of our world as we know it. When I write this, *Down To Earth* is also not untouched from the pandemic—many of my colleagues are down with the virus and many have lost their loved ones. It is personal. It is really difficult—and I have to say this to you—to keep our work going, to research, to travel, to write and to report on what is happening around us. It is even harder today to speak truth to power, but we must, more than we ever did over the past 30 years.

When our colleague Anil Agarwal founded *Down To Earth* in 1992, it was his passion and foresight about the need for a medium to inform about things as they were. He said science was about our everyday life—not just about what happened in the laboratory, but how it affected us every day through the policies framed by the government or in the choices we made in our lives. It is all about the science of life and the impact it has on economy and the environment, he said, but these links are often missed. So is the fact that in our knowledge-based societies—with an overload of information—we are increasingly becoming knowledge-proof.

Since the 1990s, when he prophetically wrote this, expert knowledge has not only become more marginalised, but is even scorned and rejected as being elitist or out of touch. The social media storm has taken over the airwaves, and it seems the louder one's voice is, the more powerful is its impact on our lives.

Till now.

The tiny RNA that brought the world to its knees in 2020 has shown us the power of nature. It has underlined our need to understand the virus and its journey from animal or laboratory to humans. It has shown us the fragility of our knowledge systems, which did not plan for this pandemic; not to mention our economic systems, that did not function to meet our healthcare and livelihood needs. It has highlighted all the cracks and lesions in our world. But most importantly, COVID-19 has forced us to look for information that matters.

Down To Earth must continue to play its role of providing credible information about issues that really matter

Even if we let the cacophony drown out reality—massive congregations at election rallies, at Kumbh and at other religious and social events happened because we ignored the science of the contagion—it will catch up with us. It is, indeed, catching up with us today, as we run out of hospital beds and cremation grounds, fighting with our backs against the wall. It is also evident in the global fight over vaccines—the same vaccines that the human enterprise of science created at breakneck speed. All this at a time when the next calamity in the form of the collapse of people's livelihoods is unfolding and the new danger posed by changing weather due to climate change is showing up. It makes the poor, poorer. It makes our world more insecure. This is how science and its politics impact our everyday lives—from being told how to make a face mask effective against a virus to being told how to survive an economic collapse.

This is where *Down To Earth* must continue to play its role of providing credible information about issues that really matter. Over these past 30 years, we have been told that we must make our magazine more popular. This means we dumb down our news to make it loud and readable.

But we have resisted this for good reason. We said, maybe we will not have millions of readers or make millions in profit. But we will be relevant and purposeful. We will inform people, who will inform others, and so on. The whisper will become a shout—because it matters to us all.

So, we will tell the story as it happens in the village or in the laboratory. We will explore the connections between science and our lives, between development and livelihoods, between the environment and the future of our world. We will stay the course. I have said this before and I will repeat it today—with promise and certainty—that we will not let you down as you look for knowledge that can change our world for the better, much better. In this COVID-19 period, when we are staring death in its face, our promise is that we will do more, not less, to make our world a better place.

We hope we will continue to have your trust and support. The virus has shown us the danger of human arrogance—we will remember this in our journey going forward. Stay with us. Please. @sunitanar

Down To Earth

Founded in 1992 to arm you with knowledge critical to shaping a better world

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Vol 29, No 24; Total No of Pages: 76

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Gateway

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Cover design: Ajit Bajaj

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THE PAST IN PRESENT CONTINUOUS

IN ITS 30TH ANNIVERSARY YEAR, *DOWN TO EARTH* RECAPTURES 30 STORIES FROM ITS ARCHIVES THAT FIND RESONANCE EVEN TODAY

"WILL YOU HAVE enough material for the magazine every fortnight?" This was the question that followed almost every congratulatory message when *Down To Earth* was launched in 1992. After 720 editions, a monthly sibling in Hindi and 13 million online readers savouring 40,000 stories a year, we have the answer: as a chronicler of environmental, health and development-related issues, being a fortnightly is only a constraint.

The 1990s were momentous. Arrival of a new economic regime in the country, with globalisation as key mantra, had polarised experts either on the side of the economy or the environment. At that time, climate change had yet not been mainstreamed. Scientists would talk about it in academic discussions and a stray encounter with the term would happen at environmental conferences, which were quite rare. A chimney billowing smoke was considered mark of a town galloping towards development. The problem itself was not acknowledged, let alone our culpability in it.

Gathering, processing and disseminating information was also much more difficult and time-consuming three decades ago. The Web was still not worldwide, while mobile telephony and public use of Internet in India were three years away. In such times, an environmental fortnightly was a crazy idea that our founders dared to have.

As the magazine begins its 30th year, we flipped through the past editions to realise that the issues the country faced then are pretty similar to the problems we have now. Our stories, too, therefore, not only remain relevant, but in certain cases have become even more important. The past just seems to have continued to the present, which is the theme of this edition: 30 stories from the past 30 years that still find resonance. Together, they offer the first draft of the history of India's environmental consciousness.

JULY 1-15, 1992 | EARTH SUMMIT, RIO

OFF TO THE NEXT ROUND

The rise of global environmentalism has left the South with very few choices

ANIL AGARWAL

CARTOON: SUSTAIN VANI / CSE

THE WORLDWIDE consciousness about environment is now demanding action. And Rio conference was an important staging post in this global effort to set up a framework for future action. (The United Nations Conference on Environment and Development, also known as the Earth Summit, was held at Rio de Janeiro, Brazil in June 3-14, 1992, "to reconcile worldwide economic development with protection of the environment". By then, this was largest gathering of world leaders, attended by 117 heads of state and representatives of 178 nations.) In many ways, the framework set up in Rio is extremely inimical to the long-term interests of the South (developing countries) and goes counter to the norms of equity and social justice.

If the South won or saved anything in Rio, it is only because the poor leadership of USA forced the country into an unprecedented state of isolation. With even its European allies in a fix to support it publicly, the South could easily occupy the high moral ground and carry it through the length of the conference. But if USA had seized any of that moral ground, by giving in to carbon dioxide emission stabilisation or signing the biodiversity treaty, the South would have had to give up much more.

It is interesting to note that there was no focus in Rio on the Bushmen of Australia or on the victims of Bhopal gas tragedy, suffering at the hands of a US multinational. Numerous southern NGOs noted this hypocrisy of northern NGOs, especially the large NGOs like Greenpeace, Sierra Club, Environment Defence Fund, Natural Resources Defence Council and the Audobon Society, many of which today set the terms of the worldwide NGO debate on environment. But when the northern (of developed countries) NGOs or media focus attention mainly on the

Brazilian or Malaysian mistreatment of their forest-dwelling peoples, southerners can only shout hypocrisy, they cannot deny the fact. And, given the way the world's media is structured, even their shouts of hypocrisy are not heard anywhere. The South is therefore caught in a bind.

Western economic interests can make use of this situation to their advantage. Western transnational hardly got a mention during the entire proceedings in Rio for their role in environmental degradation in the South. There was no mention of the adverse environmental impact of debts or current trading patterns.

The South must expose how the international economic system today consistently devalues its resources and environment. Most developing countries are now being forced to restructure their economies under the dictates of the International Monetary Fund. It is the devaluation of the entire natural resource base of a country.

JANUARY 16-31, 1993 | FARMERS' AGITATION

FARMERS TAKE ON MULTINATIONALS

Small farmers protesting the monopoly of multinationals over the world's largest food resources take to the streets

N CHETAN

THE RECENT attack (December 29, 1992) on the Cargill Seeds India Pvt Ltd office in Bangalore (renamed Bengaluru) by members of the Karnataka Rajya Raitha Sangha (KRRS) is evidence of the growing awareness among Indian farmers about "gene thefts" by multinational corporations (MNCs) of the genetic resources of the Third World.

More such attacks can be expected if a proposal by Arthur Dunkel, secretary general of the General Agreement on Tariffs and Trade (GATT), seeking to patent the world's genetic resources, is passed. As developing countries form the richest source of plant and animal genetic material in the world, such patenting would give seed MNCs a monopoly over the world's food resources.

The Cargill attack was triggered by a publicity blitz initiated by a non-government organisation called Gene Campaign, which contends that hybridisation and patenting of plants and animals would lead to further enslavement of the farmers in the developing world and to the erosion of biodiversity. The NGO activists said the farmers would be reduced to dependency on private companies for their seed requirements. As a consequence they may be even "forced to sell their land" if the government accepts the Dunkel recommendations and allows foreign patenting of India's plants and animals.

The central question now is who should benefit from a particular kind of seed: the farmer who has cultivated crops from the seed or the MNC that has modified the seed into a high-yielding one?

MNCs stand to gain tremendously if they can monopolise genetic resources. Most of them already produce pesticides and fertilisers in addition to high-yielding varieties (HYV) of seeds, and if the full potential of HYV seeds is to be realised, all three must be used together. For example, Hoescht, a German MNC that manufactures pesticides in several developing countries, has a seed division, which gathers different kinds of seeds from various developing countries and converts them into HYVs. These are then resold to the countries of origin along with pesticides and fertilisers. Once India signs the Dunkel draft, the MNCs will get a stranglehold on India's crop patterns and agriculture.

Large farmers in India have already taken to this method of crop production. KRRS, however, draws most of its support from the small farmers who will be the worst-affected if the MNCs move in. The lack of support from the large farmers has not deterred KRRS president

Demonstrators throw down files and other official papers from the office of Cargill Seeds India Pvt Ltd

M D Nanjundaswamy from drawing up a statewide agitation plan against Cargill. "We give the Cargill company one month to close its plant in Bellary," says Nanjundaswamy, who is also a member of the state legislative assembly.

Cargill has just set up a ₹7-crore plant near Bellary in Karnataka, which will develop hybrid seeds of sunflower, maize, sorghum and pearl millet. The company hopes to meet a quarter of India's demands for sunflower seeds through the Bellary plant. Senior Cargill personnel are perplexed by the farmers' attack, contending the company has teamed up with 3,000 farmers in Karnataka for the production of sunflower seeds. Cargill managing director John Hamilton says, "We do not know why we were singled out for attack."

DECEMBER 16-31, 1994 | BHOPAL GAS TRAGEDY

THE LIVING DEAD

The world's biggest industrial disaster is now rendered trivial

ANUMITA ROYCHOWDHURY

AN INDIFFERENT legislature and an impotent administration have forced the onus of defining the cost of lives and damages to the environment caused by industrial "development" onto the courts. The justice meted out by the Indian courts to the victims of the Bhopal disaster is a tale of an opportunity squandered to legally establish liabilities for damages and define a just compensation for the virtual genocide of human life and environment. Since Bhopal, 22 industrial disasters that cost between 25 to 200 lives have been listed by the Crisis Management Group of the Union Ministry of Environment and Forests. But not a single verdict on how to evaluate damages to people and environment has been

The Bhopal disaster case is an opportunity squandered to compensate for the loss of human life and the environment

forthcoming from the hallowed halls.

The Bhopal experience has radically altered the notion of occupational hazards confined to a work place and has spilled over to include the communities living around an industrial unit. While there are industrial and insurance laws to compensate damages caused to an individual worker, there are no laws to evaluate damages caused to the community and environment and to establish clear liability for those damages.

The urgency for relief and the manoeuvring of the managements to lower compensation costs have resulted in an increasing incidence of out-of-court settlements. Compensation continues to be an instrument to enable recovery of the victim, but not to deter the polluter from ignoring risks and seek commensurable insurance. Instead, industrial accidents and occupational diseases continue to be tried within the conventional framework of industrial laws in which criteria for settling compensation are very narrow and limited to income foregone, age, degree of injury of an individual and event of death.

PHOTOGRAPH: ASHOK CHAKRA

JANUARY 1-15, 1995 | DISEASE RESURGENCE

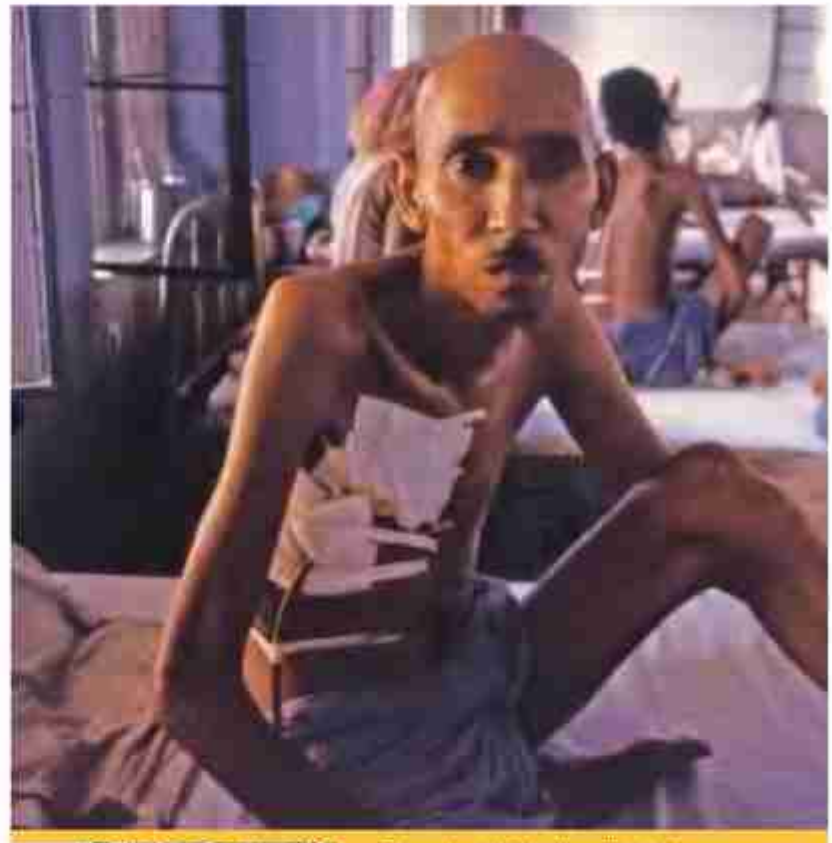
THE MICROBES STRIKE BACK

Diseases that were cheerfully believed to have been eradicated are inexplicably cropping up again in India

MAX MARTIN AND AMBIKA SHARMA

SUDDENLY, DISEASES that were ostensibly banished are now on the warpath. At the recent outbreak (August 26-October 18, 1994 in central and western India; mainly in Surat, Gujarat) of what was supposed to be the plague, which showed up in India after 30 years of oblivion, former director general of the Indian Council of Medical Research (ICMR), V Ramalingaswami, made an ominous observation, "Infectious diseases are waiting in the wings to exhibit their re-emergence or enhanced virulence."

Like a doomsaying coming true, just a few weeks later (between the end of August and mid-October 1994), a virulent form of malaria hit 60,000 people in Rajasthan, killing many in an area that has never witnessed the disease. A look at the country's health data reveals that the disease graph is running wild. There are many reasons behind this phenomenon: the first is "eco-biological" changes—like the drug resistance of pathogens, the insecticide resistance of vectors (germ carriers), the emergence of new pathogen strains, environmental changes, and HIV-caused decreasing immunity in people. The second reason, according to experts, is the human factor—infrastructural inadequacies,



Tuberculosis kills half a million Indians every year and microbial resistance has complicated the battle against the disease

PHOTOGRAPH: ARNAB BANERJEE / CSE

administrative apathy, and policies that neglect the poor, who suffer the most. Shoestring budgets and lack of human power in rural public health centres compound the problem.

International agencies like the WHO foresee a rising occurrence of cholera, malaria, kala-azar and TB. According to Ramalingaswami, these diseases will piggyback along with Japanese encephalitis and dengue haemorrhagic fever, both spread by mosquitos and now sprouting up in various parts of India.

A major, but often overlooked, eco-biological factor in disease resurgence is human-engineered environmental changes. For instance, the Indira Gandhi Canal in Rajasthan, and the waterlogging and flood irrigation it led to, has been blamed by field workers for the rise in malaria vector anopheles mosquitos in the area. Also, in development projects, migrant construction workers often play the role of disease carriers. The Bradford Morse Committee Review report of the Sardar Sarovar Project (SSP) for the World Bank noted analogically, "The ignition wire of construction-related stagnant water and the gunpowder of immigrant labour creates an explosion of malaria."

A major hurdle in fighting diseases is the growing drug resistance among microbes; it is, in fact, a stumbling block in the worldwide battle against TB and malaria. In India, it has begun to block kala-azar treatment as well.

JULY 1-15, 1996 | VIRTUAL ACTIVISM

CAUGHT IN A NET

A recent coup on the Internet throws light on what is being referred to as Internet activism

THE AGENCY that has ushered in the era of Internet activism is a bureau called Jansen and Janssen, named after Thomson and Thompson, the two detectives who feature in the Tintin comics. Jansen and Janssen is a spin off from the powerful squatter movement which occurred in Amsterdam in the 1980s. Activists from the bureau who were involved in the movement had to interact a great deal with the police and secret services.

Jansen and Janssen, founded in 1985, soon developed an archive on police tactics, focusing particularly on how the force dealt with its more critical powers. The organisation published its research on how the secret service tried to infiltrate activist movements and on how they black-mailed asylum-seekers to work for them. In 1994, the group revealed how private detectives collected information about lobby groups and sold it to the multinationals concerned. The bureau's other areas of interest have been the change in police tactics in fighting organised crime over the years, the influence of foreign agencies on the seizure of drugs and the shift towards more intelligence gathering on the part of the police. Earlier, although the Dutch took the organisation seriously they did so only to a certain extent.

This was the situation until two years back, when a public prosecutor in Amsterdam found that a special squad team, the Inter-regional Research Team was de facto exploiting a drug trafficking line. The police worked with an informant, who was allowed to grow into someone really important in order to infiltrate a big gang and looked the other way when containers full of drugs arrived from abroad. Ultimately, the police were involved in organising the import and

KARNATAKA RURAL SANITATION POLICY, STRATEGY AND BYE-LAWS FOR WASTE RESOURCE MANAGEMENT

"Sanitation is more important than independence" quoted by Mahatma Gandhi, this implies that proper sanitation and hygiene are essential for personal well-being and socio-economic development of the country. The demand for fundamental services such as drinking water and sanitation has become a significant challenge, especially providing eco-friendly sanitation services to millions of people. It is even tougher in the country where the introduction of new technologies and laws may call into question the traditions and convictions of the people.

State and non-state organisations across the country have realised that existing sanitation management systems cannot help to achieve the intended results. To aid the effective implementation of sanitation schemes in the country with such challenges, it is necessary for the governing bodies to have structured regulations, defined roles & responsibilities, clearly defined waste management process, financial viability and monitoring of systems.

Rural Drinking Water and Sanitation Department (RDWSD), Government of Karnataka is striving to achieve SDG 6 "Ensure access to water and sanitation for all" and SDG 12 "Ensure sustainable consumption and production patterns". As a part of implementation SBM (G), RDWSD has notified "Karnataka State Rural Sanitation and Waste Management Policy, Strategy and Model Bye-laws for SLWM-2020". This is prepared based on SBM-G guidelines, Karnataka Gram Swaraj and Panchayat Raj Act-1993, Environment Protection Act-1986, SWM Rules-2016 and PWM Rules-2016. This was drafted after due consultations with water and sanitation experts, general public, and various government departments.

The policy is strategic vision document to drive systematic implementation of rural sanitation programme. Strategy is a set of technical approaches and processes. Bye-law is a regulatory part for effective execution with special focus on solid & liquid waste management.

Karnataka is the first state to come up with such an endeavour in the country.

Based on the extensive consultations with water and sanitation experts, general public and various stakeholders including various government departments RDWSD has been able to draft "Karnataka State Rural Sanitation and Waste Management Policy, Strategy and Model Bye-laws for SLWM-2020".

Further, Government order was issued for implementation of Policy and Strategy in all the 6022 GPs on 12th March, 2020 and Bye-laws were published in Gazetteer as per provision of section 316 of Karnataka Panchayath Raj Act on 29th May, 2020.

The Karnataka State Policy on Sanitation and Waste Management drives the objective which includes guiding principles and approach, long term vision, goals and timelines to achieve the goals.

The Karnataka State Rural Sanitation Strategy describes the holistic approach for attaining the objective and includes guidance on technologies for retrofitting of toilets, solid and liquid waste management, financial resource planning, roles and responsibilities of different functionaries, information education and communication (IEC) and behaviour change communication (BCC), capacity building, monitoring and evaluation etc.

RDWSD is working towards ODF sustainability and ODF plus. 49,05,635 IHHLs and 2,111 Community Sanitation Complexes were constructed under SBM-G. In addition with intent of innovation in improving access to and use of safe sanitation services the department has constructed 11,894 toilets in schools and anganwadies using special grants from the World Bank.

The department has achieved significant progress in constructing and operationalizing of 1,359 SWM units at GP level. To irradiate the mind-set of the people regarding the SLWM units, they are branded as "Swaccha Sankeerna". These units are modernised with sanitary pad incinerators with a special aid from World Bank. RDWSD is taking up model 'Material Recovery Facilities (MRF)' in four geo locations to complete the loop in sanitation value chain.

In the LWM, grey water management is taken up in all the GPs under SBM (G), additional works are being mobilised through MGNREGS grants. Black water is being managed through promotion of twin pits which also helps to eliminate human intervention in FSM. For the safe treatment of faecal sludge, sixteen FSSM plants are being built as models in different geo locations.

SHGs have been extensively trained to operate and maintain the infrastructure and system at the Swachha Sankeerna as revenue generating model. To aid to the implementation of bye-laws in the field and address the sanitation and water related issues, the department has set up a Call Center (PARIHARA) with a dedicated phone number 9480985555. Citizens can register their queries and get it redressed within set timeframe.

The document can be downloaded from https://english.swachhamevajayate.org/documents/

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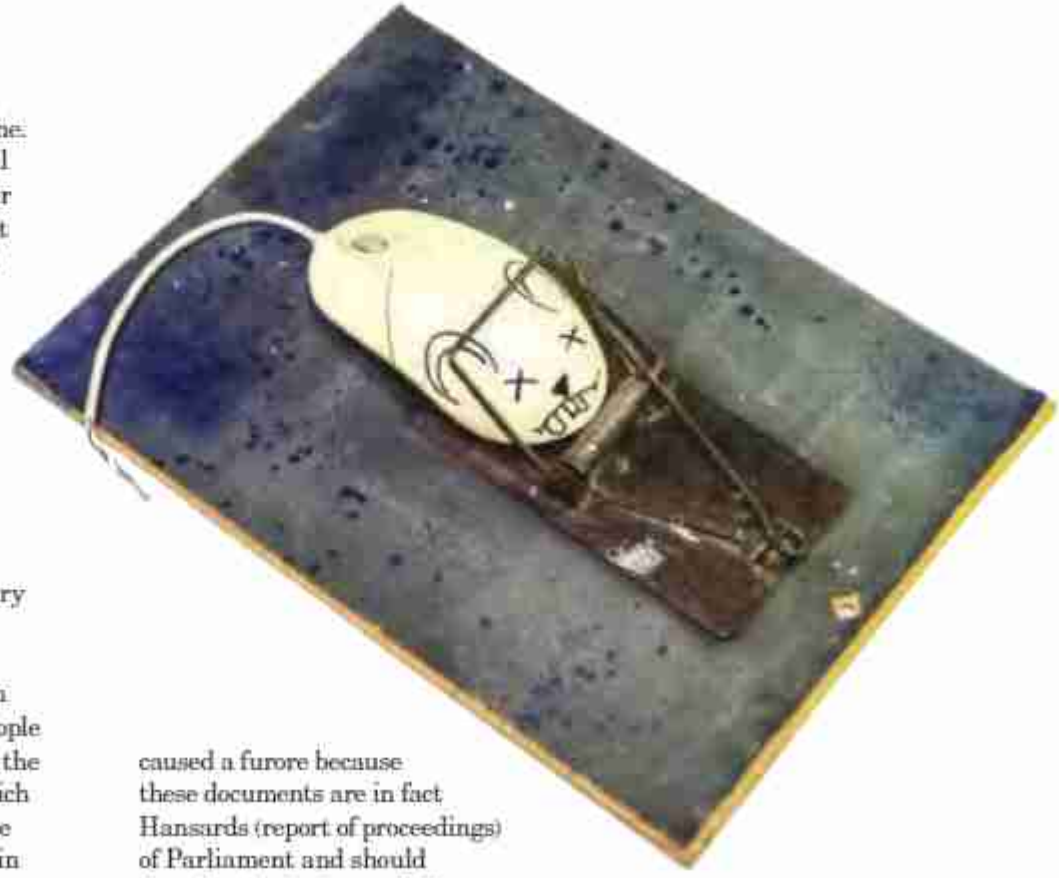

export of all kinds of drugs, including ecstasy and cocaine.

Although the first official investigation into the matter did not really elucidate what was going on, the crisis was nevertheless taken seriously. Matters became serious enough for both the ministers of internal affairs and justice to submit their resignations.

Further investigation seemed necessary and an official parliamentary inquiry commission, the Van Traa Commission, was set up. Members of the Commission interviewed a number of people involved in the scandal and the portions of the hearings which were to be made public, were broadcast live on television in October, 1995. People were shocked to hear about what had been happening and how little the higher-ups had known about it.

The results of the Van Traa Commission's findings were published in 13 volumes (more than 5,000 pages) and sold for US $397. A compact disk read-only memory (CD-ROM) with the same information (accessed through an impressive search engine and hyperlinked keywords and notes) was available for another US $361.

Since the textual version had no index, people were forced to buy the entire package for over US $571. The publishers of the report were the SDU—the former State Publishing House which was recently privatised. The steep price tag attached to the report caused a furore because these documents are in fact Hansards (report of proceedings) of Parliament and should therefore be freely available to the public. The Hansards of Parliament are free of copyright laws as an exception is made for the sake of democracy.

After a plea printed in the columns of the daily, *NRC Handelsblad*—to put the Van Traa report on the Internet—went unheeded, the bureau decided it was time to act. It took up the challenge and completed the task within a week. The CD-ROM was hacked and the stripped texts were freed from the processed version.

The only thing lost were the hyperlinks and the notes. The SDU could lay claims on the edited version but not on the texts as such. Jansen and Janssen spotted the loophole and jumped right in to it! The stripped texts were turned into hyper text mark up language (HTML)-pages, divided into neat paragraphs and made accessible by a search engine. The monopoly of the SDU had been broken and the Van Traa report was splashed on the Internet.

Having achieved this the bureau received many congratulatory messages including those from the managing director of the SDU and the Dutch secretary of state for home affairs.

The latter stressed the importance of the accessibility of government information and announced a pilot project for using teletext on the local cable because the masses did not own computers. The Jansen and Janssen home page received overwhelmingly enthusiastic responses too. The bureau had suddenly catapulted to fame,

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been accepted by the Dutch Parliament, and got recognised throughout the country.

The monopoly of the SDU had been a thorn in many people's flesh at various levels. Two weeks after the launch of the Van Traa home page, the SDU announced that it would put all Hansards of Parliament on line from May 1, 1996.

But the story did not end there because a month later, the Rijksrecherche (an internal affairs agency, a kind of police of the police), completed their probe into the affairs of the criminal investigation department which had employed the two drug-dealing officers. The reports brought out by this department are usually secret. But the results of their investigation were handed over to the Parliament, which changed their status. As the politicians were under great pressure, they had to disclose this report within a week. Two copies of the 500-page report—full of shocking details—were made available to each party.

Putting it on the Net was far more difficult this time as the entire text had to be scanned by hand and had to be achieved within the course of a weekend. But the bureau successfully completed this mission too. It made available a composite package of the Van Traa site, the internal affairs report and a selection of other works by Jansen and Janssen for the price of US $28.

The breaking of the monopoly enjoyed by a privatised state organ is an achievement in itself, but for the same to happen on the Internet is indeed a novel development. The bureau's site on the Internet signifies a big step forward in talks between authorities on different levels. It has also meant a lot to the public who can now access information—that was in any case meant to be public through the electronic media.

OCTOBER 1-15, 1997 | BANDIT VEERAPPAN

CATCH ME A COLOSSUS

What gives rise to people like Veerappan who openly flout the law? Is it the result of a policy which increasingly alienates people from what should be theirs and encourages them to support outlaws? Is something rotten in the State machinery?

RAJAT BANERJI

CALL HIM what you will—poacher, smuggler, murderer—Veerappan is a phenomenon that has vexed two state governments (Kerala and Karnataka) for close to a decade. But how does a 'brigand' like Veerappan evade "the strong arm of the law"? Is there a ghost in the law-and-order machinery that trips the keepers of the law just as they are close to nabbing him? What sustains him and others like him? Are Veerappans, as it were, born from the alienation of the people from what is theirs?

An elephant poacher-turned-sandalwood smuggler,

Veerappan has used his intimate knowledge of the territory and his influence and terror among the locals to avoid capture.

Seen as a sort of hero by villagers and tribals of the area, he hasn't spared even them when he thought it was necessary. Suspected police informers and competitors have been ruthlessly eliminated, as have police parties.

Ironically, Veerappan's presence in the forests has saved it to a certain extent from the consequences of mining. In Kollegal *taluka*, Mysore district (renamed Mysuru district), the government has suspended granite mining, after Veerappan's gang attacked one mine depot and took away the explosives. These he used against the STF, and with deadly effect. Granite from this area is considered to be of an extremely high quality.

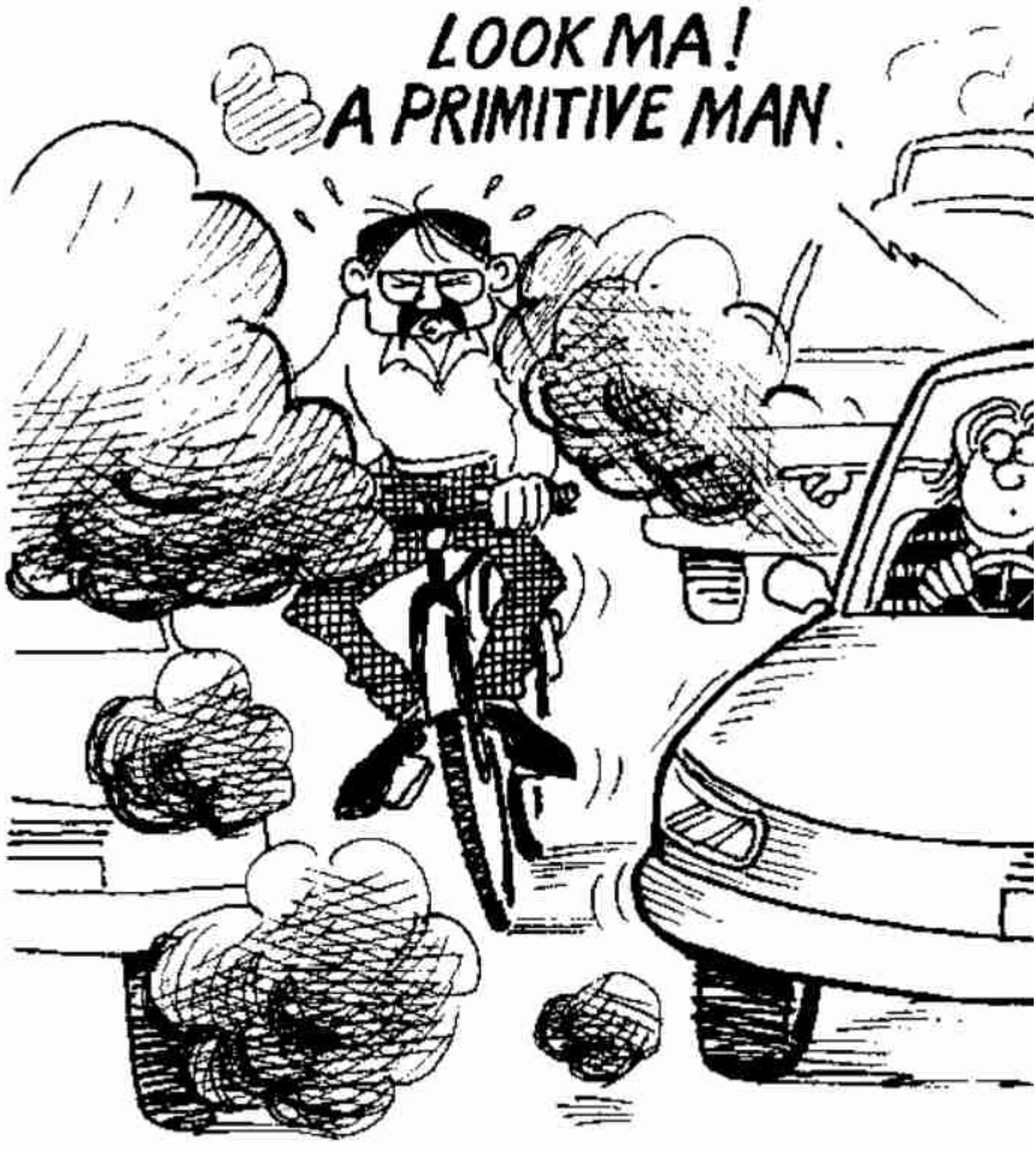
While it took sustained pressure from government agencies for some people to become disenchanted with Veerappan, it was a flawed policy on sandalwood that accounts for their supporting him in the first place. The law makes sandalwood an exclusive property of the government. This translates into a situation where every tree—be it on forest, revenue or on *patta* land—belongs to the State.

While the citizen doesn't have any responsibility for the tree that is on government land, he is responsible for the protection of the tree when it is on his land. The government expects him to declare the presence of a sandal tree on his property. In case of theft of wood, the individual must report the incident.

There are two opinions in the forest department on sandalwood policy. One is for opening it up and encouraging common farmers to plant and grow sandal trees. The proponents of this policy feel that when the tree is made accessible to the people, sandalwood smugglers like Veerappan would be marginalised. The other view, epitomised by the principal chief conservator of forests, Karnataka, B S Adappa, is against liberalisation. "When there are no controls, anyone can exploit the situation," he says. Under the present policy, when a seller brings sandal wood to a government depot, which has the exclusive selling rights, he has to bring along documentary evidence that the sandal belongs to him. Any change in policy, Adappa argues, would do away with this check, and anyone could sell sandal wood to the depots. He does have a point.

ILLUSTRATION: NEETU VIJAYAN

THE NEED TO REDUCE CARBON EMISSIONS WAS IMPORTANT YESTERDAY; TODAY, IT IS A GLOBAL IMPERATIVE



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AUGUST 1-15, 1998 | POLLINATORS

WHO WILL PLAY CUPID?

Pollinators are declining rapidly. If they die out, so will the plants that depend on them

THERE ARE some quarter million flowering plant species on our planet. More than 80 per cent of them undergo pollination to produce seeds or bear fruit. Fertilisation is impossible without pollination. And though plants on the lower rungs of the evolutionary ladder, such as mosses and lichens, can propagate on their own, one in every three kinds of food crop needs help.

There are an estimated 120,000-200,000 invertebrate and vertebrate species that act as pollinators. Invertebrates such as honey bees, for instance, are credited for the pollination of some 100-150 major crops grown in the US, while vertebrates such as bats, hummingbirds, monkeys and many other animals and bird species are known for their roles as pollinators in different regions of the world. Together, they are crucial for maintaining plant biodiversity and boosting crop production.

So when, during the last few years, biologists and plant experts noticed a marked decline in the number of pollinators across the globe, there was cause for concern. Pollinator losses have not only affected the quantity of the harvest, but its quality as well. Eradicate the pollinators, says one botanist, and "the trees become living fossils". Unless this decline is checked soon, there will be severe implications on agriculture causing frequent crop failures worldwide, leading to famines in the not-so-distant future.

Despite their importance to agriculture, pollinator management is virtually unheard of in India. It is the Khadi and Village Industries Commission and not the

A hummingbird pollinates while drawing nectar from flowers. The population of the bird is declining

PHOTOGRAPH COURTESY PLANET EARTH PICTURES

ministry of agriculture that has a research institute—the only one of its kind—in the nation. Other developing countries such as China, Argentina and Mexico, for instance, are far ahead with more bee colonies and increased profits from apiary products.

Economics of such losses can shock any government. The value of the wild pollinators alone, to a nation such as the US has been estimated at an astronomical US $4 billion. Economist Lawrence Southwick and his brother insect psychologist Edward, calculate that if pollinators such as honeybees were to decline at the current rate, they would drop by 50 per cent in the US and by 100 per cent in the Latin America. The consequential economic impact on more than 60 US crops would reach billions of dollars annually. And if no replacement pollinators are found, the country would likely be losing anywhere between US $5.7 and US $8.3 billion every year.

In the 1960s, the eminent Indian cytogeneticist and bee expert, late G B Deodikar said that bee keeping has the potential to raise resources equal to the revenues of the Indian Railways. Back then, he was only referring to the benefits arising from pollinator roles of the bees, and left out profits earned from honey and other apiary products. Between 1970 and 1976, the National Commission of Agriculture (NCA) recommended that every Indian agricultural university—there are 33 of them right now, including the recognised Indian universities —should develop a section on apiculture under their entomology division for research, education and training. This, if implemented, would have had greatly accelerated apicultural development and led to agricultural prosperity. More than two decades later, nothing has been done along the lines of the NCA recommendations.

NOVEMBER 15-30, 1999 | FLOODS IN BIHAR

BREACH OF TRUST

This is not a story about floods in Bihar. This is a story about how an entire society has been corrupted by money meant to build embankments for flood control

MANISH TIWARI

IN 1954, Bihar embarked upon a spree of building embankments along its major rivers. But this policy has backfired miserably. The floods that were once the harbingers of prosperity today bring disaster in their wake. A silent, suffering majority has been trapped between the embankments built by the government and the bureaucrat who is supposed to govern. The embankments have failed those who reposed trust in them as incidents of rivers breaching their embankments are reported from all over the state. Perhaps, the bureaucrat and the engineer have failed as well. The Report of the Comptroller and Auditor General of India, 1997, blames the state government squarely for this by stating that monitoring of flood protection works is inadequate. This year was no exception. It seemed almost as if everyone was waiting for a breach or disaster to take place before taking any action.

And, as if to oblige them, a disaster did take place. At 11 pm on September 4, 1999, the river Kosi devoured the E-2 spur of a retired eastern embankment in Paharpur *basti* in Saharsa district, rendering

The embankments along the Kosi have led to drainage congestion and imparted, at some places, a false sense of security

20 families homeless out of the 1,800 living on the embankment. The spur was a part of an older embankment, which was retired after the river had breached it in 1984.

According to the Barh Mukti Abhiyan (BMA), an organisation fighting for flood victims in Bihar, between 1952 and 1998 the state government spent around ₹801 crore on flood control—most of which was spent on construction of embankments. This does not include establishment costs. The length of embankments also increased almost 22 times, from 160 kilometres (km) in 1952 to 3,465 km in 1999, no doubt a laudable effort, but the flood prone area shot up almost three times from 2.5 million hectare (MHA) to 6.88 MHA. The embankments were failing to deliver.

Out of the ₹801 crore, the government had spent nearly ₹530 crore by 1989-90 on construction and maintenance of embankments. After 1990-91, the government only constructed 11 km of embankments between 1990-91 and 1998-99, but it spent around ₹270 crore on the maintenance of the embankments alone.

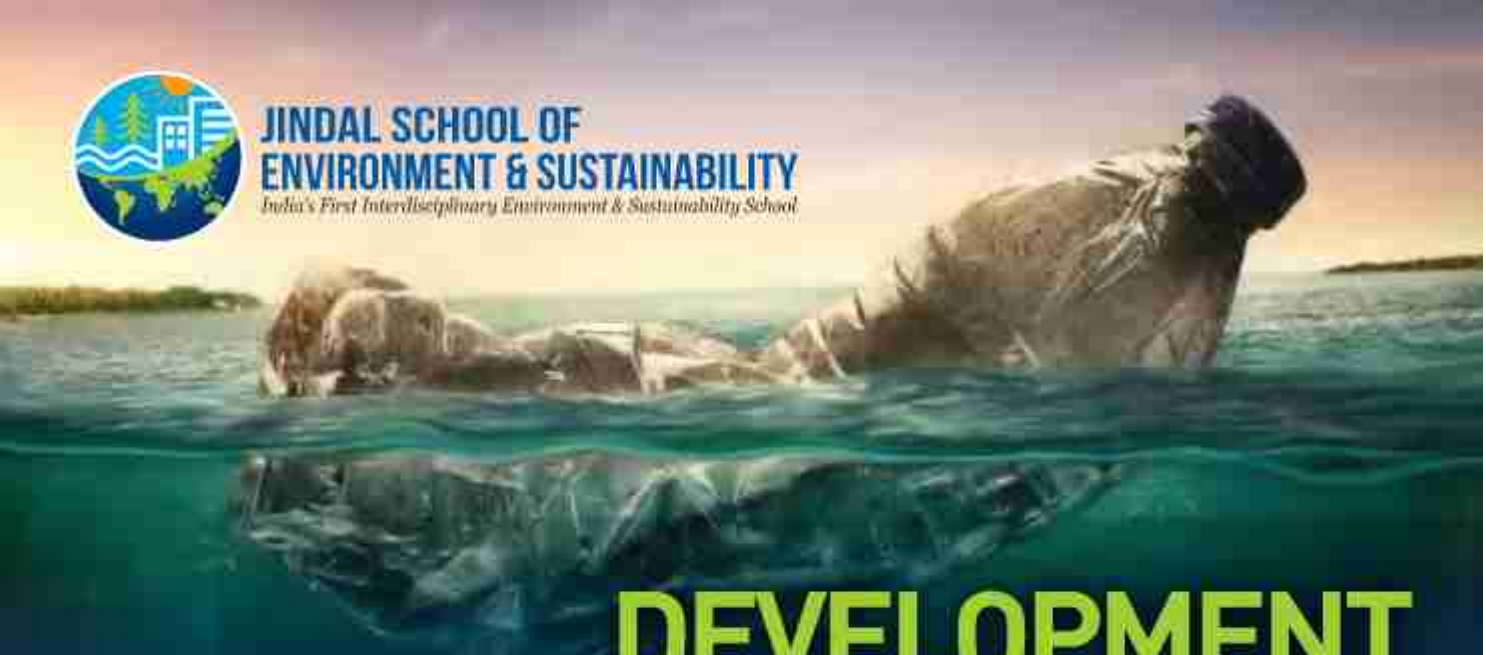
The embankments have led to drainage congestion and imparted—in some cases—a false sense of security. Due to this people have encroached upon the flood plains. Their fields and homes are now in the area the river once flooded. When a breach takes place, a tidal wave of water is unleashed. Then the waterlogging begins. Floodwaters that normally receded after a few days now stay for weeks. The embankments now add to the misery of the people by preventing the waters from retreating.

By now it is well known that embankments exacerbate the intensity of floods. However, the multiplying costs of construction and repair have built up a politician-engineer-contractor nexus. These people share a strong vested interest in "development" projects, particularly since embankments can get washed away in the floods. In this scenario it is impossible to even hope that alternative flood control policies will be seriously discussed.

It is well-known that it is very easy to siphon off funds from earthwork projects, says D K Mishra (founder of BMA). Perhaps this was the reason why politicians in the 1950s pushed hard for embankments to be built along rivers in Bihar. Embankment projects are so lucrative that it even force politicians from the same parties to raise their voice against each other, says Ranjeev, a resident of Patna.

"Building embankments is a safe way to be corrupt," says Vishwa Ranjan, chief of Intelligence Bureau, Patna, Bihar.

PHOTOGRAPH: VANISH TIWARI



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THE WORLD REMAINS BESET BY LEADERSHIP THAT FAVOURS NATIONALISM OVER GLOBAL SUSTAINABLE DEVELOPMENT

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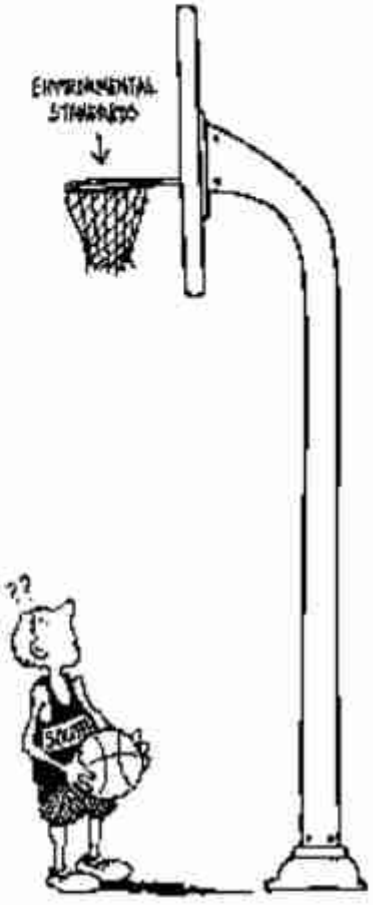
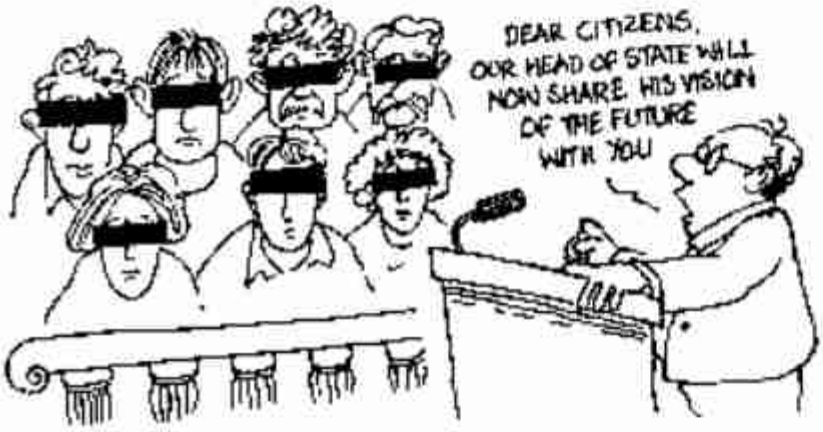
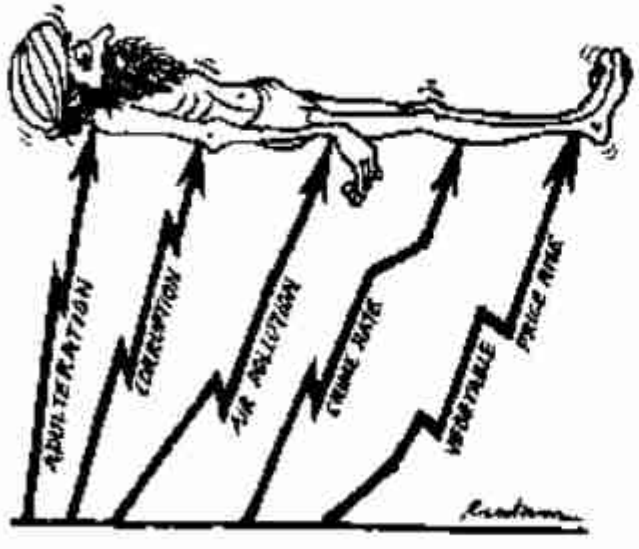
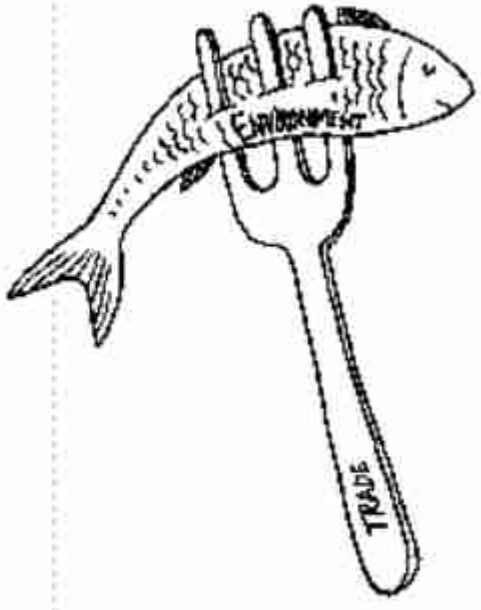






AN INDIAN PENANCE



MAY 16-31, 2000 | DROUGHT

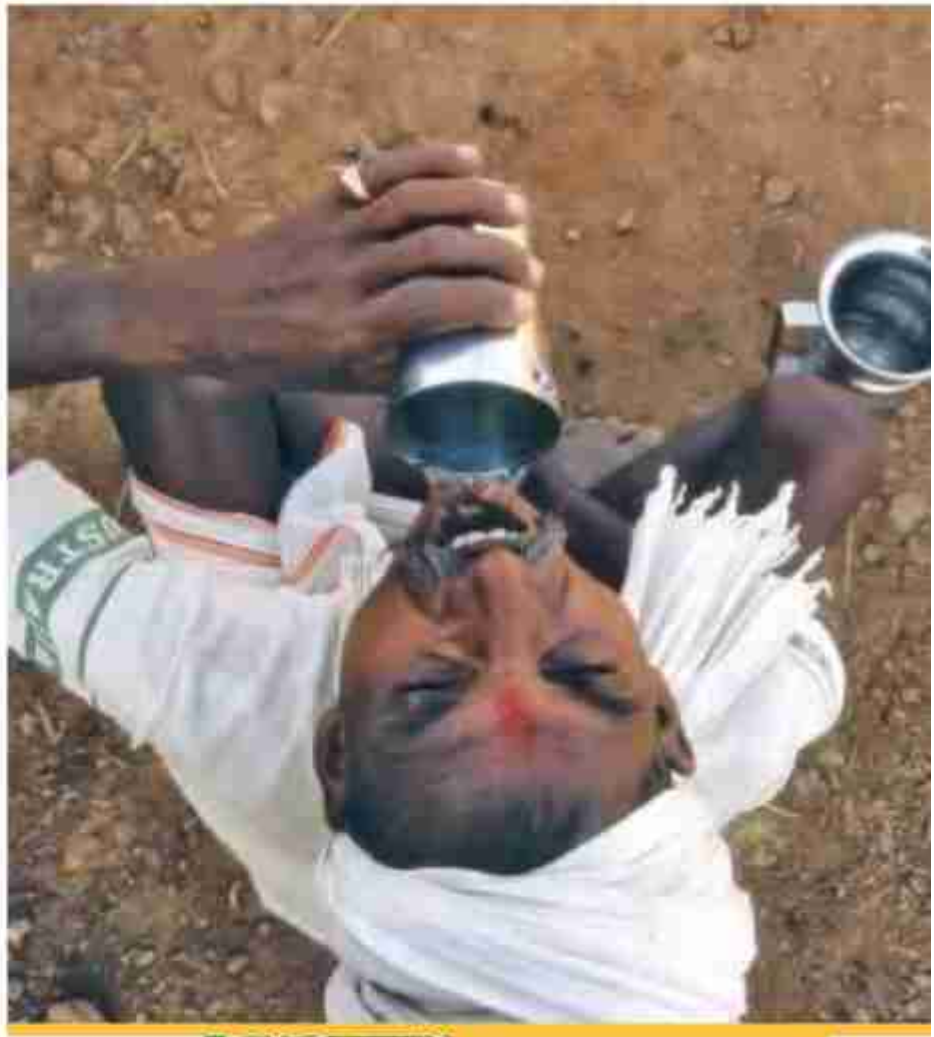
A POLITICAL DROUGHT

Drought in India is a human-perpetuated crisis

ANIL AGARWAL

DURING ONE of the meetings of the World Water Commission, which recently submitted its report in The Hague to a bevy of water ministers, a member had strongly emphasised the need for educating politicians about the importance of water. I, however, found that argument incorrect because I have rarely met a politician, especially in India, who will not emphasise the importance of water. The real problem is that hardly any of them know how to solve the water problem. Teaching them is difficult.

Many will term the severe drought in Gujarat and Rajasthan a "natural disaster". But this is far from the truth. It is a "government-made" disaster. Over the last one hundred years or so, we have seen two paradigmatic shifts in water management. One is that individuals and communities have steadily given over their role almost completely to the state. The second is that the simple technology of using rainwater has declined. Instead exploitation of rivers and



PHOTOGRAPH: SUJAYA SEN / CSE

Villages in India can meet their basic drinking and cooking needs through rainwater harvesting

groundwater through dams and tubewells has become the key source of water. As water in rivers and aquifers is only a small portion of the total rainwater availability, there is an inevitable growing and, in many cases, unbearable stress on these sources.

This dependence on the state has meant cost recovery being poor the financial sustainability of water schemes has run aground; and, repairs and maintenance is abysmal. With people having no interest in using water carefully, the sustainability of water resources has itself become a question mark. As a result, there are serious problems with government drinking water supply schemes.

Community-based rainwater harvesting—the paradigm of the past—has in it as much strength today as it ever did before. A survey conducted by the Centre for Science and Environment of several villages facing drought in Gujarat and western Madhya Pradesh last December found that all those villages that had undertaken rainwater harvesting or watershed development in earlier years had no drinking water problem and even had some water to irrigate their crops. On the other hand, neighbouring villages were desperate for water. This revealed that rainwater harvesting can meet even the acid test of a bad drought.

I have consistently argued that there is no village in India that cannot meet its basic drinking and cooking needs through rainwater harvesting. Figures speak for themselves. The average population of an Indian village today is about 1,200. India's average annual rainfall is about 1,100 mm. If even only half this water can be captured, an average Indian village needs 1.2 hectares of land to capture 6.57 million litres of water it will use in a year for cooking and drinking. If there is a drought and rainfall levels dip to half the normal, the land required would rise to a mere 2.4 hectare. And, of course, any more water the villagers catch can go for irrigation.

To provide lasting relief against drought the government will need to go beyond promises. It should heed the president's advice and prepare a concrete plan of action to develop a mass movement for water harvesting.

MAY 1-15, 2001 | PUBLIC DISTRIBUTION SYSTEM

GRAIN OF TRUTH

An analysis of how the government sponsors malnutrition and scarcity of food and water

RANA VIKRAM SINGH

INDIA'S FOOD security as well as the nutritional security of its population precariously depends on rice and wheat. Self sufficiency in food fails to cover the concerns of large populations in concentrated pockets—people living in harsh and difficult terrain, in arid, semiarid and hilly areas without enough water to cultivate rice and wheat. Particularly vulnerable are tribal people. Coarse grains have played a crucial role in providing sustenance in these areas. The shift to rice/wheat-based food has abandoned them to chronic food and nutrition insecurity.

"Nutritional security is in a very bad shape in our country. Every third child is under weight. There are two types of hunger in our country. You can see open hunger, but hidden hunger, which is due to micro nutrient deficiency, is not visible from the outside. Both are serious in our country,"

says M S Swaminathan, eminent agricultural scientist and the force behind India's Green Revolution. "In the past hundreds of crops were responsible for the food and health security of Indians. Their classification as millets and coarse grains during the British Raj proved disastrous. These are highly nutritious grains, which are rich in iron, calcium and other vitamins. I believe the government should change the nomenclature of these grains to nutritious grains," suggests Swaminathan. It is clear that Indian administration has taken over from where the British left, nursing this 'caste system' among foodgrains.

India has the fifth largest area under coarse grains after the US, China, Brazil and the Russian federation. But the trend in growth rate is against coarse grains. For every further increase of 100 tonnes in India's foodgrain production, rice and wheat make up for 91 tonnes, coarse cereals for 5.5 tonnes, and pulses chip in with 3.5 tonnes. The cropped area, total production and per hectare yield of coarse grains increased gradually during the 1950s and 1960s, peaked in 1966-71, and declined.

Slow productivity growth and low prices have reduced the competitiveness of coarse cereals in the market, resulting in crop substitution. Successive governments have allowed the area under coarse grains to shrink through the agricultural financing policies. Neither crop loans nor crop insurance are available for these crops. These can't benefit from government subsidies on inputs. Second, the promised minimum support price of coarse grains was more often than not denied to farmers due to government non-intervention. Third, government doesn't come to the rescue of the coarse grain farmer when the crop is badly damaged by unfavourable weather or when there is a glut in production, while crops like rice, wheat, cotton and tobacco are provided this protection.

It is time rice and wheat compete with coarse grains in a level-playing field. The winners of this competition will be India's poor and vulnerable millions, who have been forced to forsake their pride in their traditional grains. The byproducts will be adequate food for the stomach, adequate nutrition for the body, better management of natural resources and real food security.

India's shift to rice- and wheat-based foods has abandoned large parts of its population to chronic food and nutrition insecurity

PHOTOGRAPH: BAVANTONI PRADHAN / CSE

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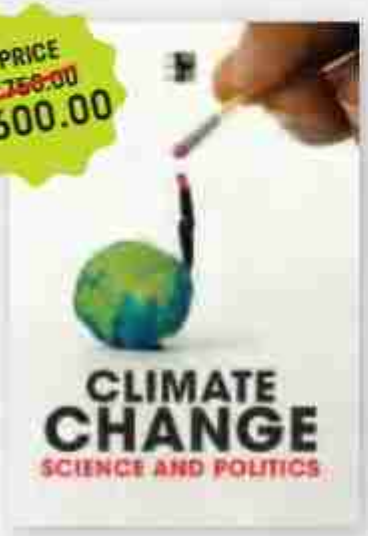

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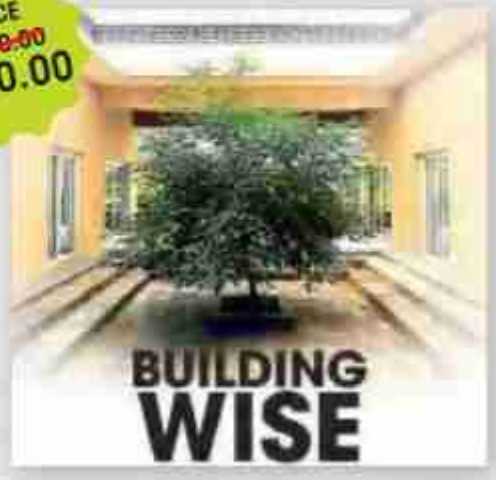

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DECEMBER 16-31, 2002 | LANGUAGES

WORDS ARE BIOTIC

Is it a coincidence that areas of linguistic and ethnic plurality are also areas of biodiversity?

NITIN SETHI

EXACTLY WHAT is lost when a language dies? Do we also lose what can be called a biotic world-view, the local knowledge and wisdom of which a language is a repository? Most linguists agree that about 6,000 languages are spoken today. Not all languages spoken in the world have been "discovered".

The world's languages are highly unevenly distributed. Four per cent of the 6,000 odd languages are spoken in Europe; about 15 per cent in the Americas, 31 per cent in Africa and 50 per cent in the Pacific and Asia. Just two countries put together, Papua New Guinea and Indonesia, account for 25 per cent of all languages worldwide (about 1,500). India is home to about 380 languages. It's clear that the current geographical spread of languages surviving today is skewed. But so is the number of people that speak each respective language.

There are two great belts of high density of languages. One belt runs from the West African coast through the Congo basin to East Africa, and the other runs from India and peninsular Southeast Asia into the islands of Indonesia, Papua New Guinea, and the Pacific. The seventeen major countries of these two belts (including India) contain about 60 per cent of the world's languages and only nine per cent of the geographical land area.

Just two countries, Papua New Guinea and Indonesia, account for 25 per cent or 1,500 of all languages spoken worldwide

Noticeably, quite a few of these countries are some of the poorest in the world.

Terralingua (a Washington-based non governmental organisation that campaigns for linguistic rights) along with WWF carried out a cross mapping of indigenous peoples' locations onto a map of the globally two hundred most fragile and important biological regions. WWF mapped out nearly 900 ecoregions of the world and found 238 of them to be of the utmost importance for biological diversity. These were

PHOTOGRAPH: REUTERS

termed the "global 200 ecoregions". They then used the concept of "ethnolinguistic groups", used to define a social unit that shares the same language and culture and uses the same criteria to differentiate itself from other social groups. In the mapping 4,635 distinct ethnolinguistic groups were found to inhabit 225 ecoregions, representing 67 per cent of an approximate world total of 6,867 ethnolinguistic groups.

Tropical rainforests, the world's most biodiversity-rich areas, covering just seven per cent of the planet's land surface, are home to at least 50 per cent, and perhaps as many as 90 per cent, of the world's species. These ecosystems were also found to be the most culturally diverse regions, harbouring at least 1,400 distinct indigenous and traditional peoples.

Says the renowned Alaska Native Languages Centre-based linguist Michael Krauss, "It is a plausible calculation that—at the rate things are going—the coming century will witness the death of 90 per cent of the human languages." Others put it at 50 per cent. Krauss estimates that in the US and Canada 80 per cent of the native Indian languages (149 out of the 187) are no longer taught to children. Sixty languages were spoken in Canada. Now only four remain stable. But the real Armageddon is turning out to be Australia. Ninety per cent of the 250 aboriginal languages are near extinction. Daniel Nettle, co-author of the book *Vanishing Voices*, believes only one or two of these will survive the end of the century. Africa isn't far behind. A recent survey has shown that virtually all African nations are affected to some degree. The survey showed 54 documented languages were extinct and another 116 were on the verge of extinction.

In *India's Living Languages*, Sumi Krishnan points out that the 1961 census recorded 165 mother tongues in India, only 200 being spoken by more than 10,000 or more speakers. More than a fourth of all languages recorded had five or fewer speakers each. One-third of the Kurukhs (Oraons) of central India had abandoned their language by 1979, the rate of decline being about 30 to 40 per cent every decade; it is the same for the Gonds of central India whose language is also slowly tumbling into oblivion.

Such loss of valuable knowledge is not only the indigenous people's loss but that of the entire humankind.

JANUARY 1-15, 2003 | FOREST RIGHTS

DEEP IN THE WOODS

A murky battle rages inside India's forests and court rooms. Are the recent eviction drives misdirected at forest dwellers?

NAVA THAKURIA, SOPAN JOSHI, SATYASUNDAR BARIK

WRIT PETITION number 202 of 1995; *Godavarman v the Union of India and others*. This is the "forest case" being heard in Supreme Court for the past seven years. With more than 800 interlocutory applications (IAs) filed, the case will dictate the fate of India's forests and an estimated 10 million indigenous tribal people who live in and off the forest. It has already produced several dramatic interim orders, the latest being in May 2002, when some state governments—Assam and Maharashtra, in particular—

PHOTOGRAPH: CSE ARCHIVE

Tribal communities are the largest tenants of India's biggest landlord: the government

launched eviction drives against encroachers on forestland. The eviction drive was in response to a circular sent by the Union ministry of environment and forests (MoEF), dated May 3, 2002, to all states and Union Territories (forest is on the concurrent list, and hence both the Centre and the state governments have a say). The five-member Central Empowered Committee (CEC) set up by the court recommended measures several times stronger than those in the MoEF circular. The response was quixotic. Assam went on an eviction drive in the first week of May. The state's forest department used elephants to raze down hutments and homesteads on land recorded as forest. The second wave began in Maharashtra, where tribal families faced evictions from farms with standing crops. Scores of houses were destroyed, hundreds rendered homeless.

So when did encroachment become an issue? The developments began in August 1999 from a problem facing the indigenous people and their forests in islands of the Bay of the Bengal. Concerned at the sad state of the Onge tribe, indigenous to the Little Andamans, and the destruction of the rich forests they depend on by the administration, three non-governmental organisations approached the circuit bench of the Calcutta High Court at Port Blair in the Andaman and Nicobar Islands. The organisations were the Society for Andaman & Nicobar Ecology (SANE) in Port Blair, the Bombay Natural History Society in Mumbai, and Kalpvriksh in Pune. Two years later, in October 2001, the court passed an interim order prohibited cutting of any naturally grown trees. On November 23, 2001 Harish Salve, the *amicus curiae* ("friend of the court", a lawyer appointed by the court in public interest) filed intervention petition number 703 in the Andamans application number 502. Based on the recommendations of the CEC report, he said "one of the major reasons for decimation of the forests is the growing extent of encroachments".

Within one month and two days, MoEF issued directions in the May 3 (2002) circular to all chief secretaries, forest secretaries and principal chief

conservators of forests of all states and Union Territories. It asked them to summarily evict all encroachers of forests "not eligible for regularisation" by September 30, when the court was to hear the case. There were several reports of eviction notices to people who had been cultivating what forest department called forestland since before 1980, and were hence eligible for regularisation.

Questions were raised in Parliament about the process of clearing requests of regularising encroachments. MoEF felt the pressure from political leaders from tribal belts. All this resulted in MoEF issuing a clarification on October 30, 2002 to all who were sent the May 3 circular. This made it clear that there was no change in the ministry's stand on pre-1980 encroachments that are eligible for regularisation.

The greatest criticism of the CEC has been its composition. It has three officials from MoEF and two NGO representatives with a pronounced inclination towards wildlife protection. The *amicus curiae* Harish Salve proposed the names of the committee members. The CEC's recommendations on the encroachment issue, dated July 25, 2002, have attracted a lot of flak.

In particular, the committee's insistence that the date of encroachment (whether it is pre-1980, and hence eligible for regularisation) should be determined by the preliminary offence report (POR), the first record of the violation of the local forest laws, has drawn a lot of flak. The committee's recommendation of imposing a fine of ₹ 1,000 per hectare of encroached land on state governments also seems impossible, given the sordid financial state of most state governments.

In fact, the forest case is touching on the issue of Centre-state relations as the implementation of the court orders is the responsibility of the state government. MoEF is categorical in stating that encroachment and repeated regularisation of forestland is because of politicians' populism at the state level.

MAY 1-15, 2004 | OBESITY AND SUGAR

FAT CHANCE

Reducing obesity—the leading cause of non-communicable diseases in the world—has become a political game

VIBHA VARSHNEY

OBESITY HAS become a worldwide concern because people in each and every nation are falling prey to it. Around one billion adults in the world are overweight and around 300 million of them are obese.

Diabetes, hypertension, cardiovascular diseases, gallbladder ailments, cancer, psycho-social problems, breathlessness, sleep disorders, asthma, arthritis, weak bones and reproductive hormone abnormalities are just some of the NCDs (non-communicable diseases) which are more likely to affect obese and overweight people. The governments of several developing countries like India claim that obesity and NCDs aren't their problems. But the fact is NCDs are increasing even in developing countries. Of the 16.6 million people who died of cardiovascular diseases (CVDs) all around the world in 2001, around 80 per cent were from low- and middle-income countries. It's feared that by 2010, CVDs would be the leading cause of death in developing counties.

There is a link between food

and obesity—research has proved. The trouble is the food industry does not accept that their products are causing harm.

Struggling with NCDs, WHO and Food and Agriculture Organisation (FAO) set up a study group in January 2002 to discuss the problem with health and agriculture experts. The result was TRS 916, a technical report. It says that calories from sugar should form 10 per cent of the daily diet; and high intake of energy-rich and micronutrient-poor foods, sugar-sweetened drinks and fruit juices, large portion sizes of food in restaurants and extensive marketing of such foods are some of the causes for obesity.

With TRS 916 in hand, the WHO team started meeting other UN organisations, non-governmental organisations, consumer groups and industries in order to have a global strategy to prevent obesity. The strategy came out in November 2003, and said changing agriculture, fiscal and regulatory policies, strengthening surveillance systems and consumer education can prevent NCDs. Growing more fruits and vegetables, subsiding healthy food and educating people about food were some of the options countries can use to fight obesity, the strategy said.

These suggestions irked several countries and the food and sugar industries. They realised that what they had presumed would be a harmless health policy went much further and hurt their interests. The 192 member countries of WHO were first given time till January 2004 to comment on the strategy and then the deadline was extended till February 2004 because governments wanted more time to study the suggestions. A total of 68 countries including India have now sent their comments on the strategy, which will become a policy if it's endorsed at the World Health Assembly (WHA).

The strategy's draft, which will be presented at the WHA, was issued on April 19, 2004, but consumer groups allege that it has been diluted. They say a passage urging states to offer incentives for producing, marketing and transporting fruit, vegetables and other healthy food has been deleted and other changes have been made, weakening the policy.

ILLUSTRATION: TYAGI

This strategy isn't going to become an international treaty, but big businesses however fear that if they don't act soon the strategy will become a success like the Framework Convention on Tobacco Control. WHO has repeatedly said that food is not tobacco and it wants to cooperate with the industries. But the industries don't want any restriction on intake of sugar and high-energy food.

The US sugar industry is one of the most pampered and powerful in the world. Domestic sugar price in the US has remained three times that of world prices in the last decade. The US' Sugar Act of 1934 restricts imports and ensures that the government stores excess domestic production. Americans pay US $2 billion annually in inflated sugar prices because of this policy. Using its massive profits, the sugar lobby since 1990 has donated more than US $18 million to Democrats and Republicans. Sharing the same boat with sugar is the fast food industry. Since 2000, several studies have warned the fast food business to get rid of its obese image.

Helping these two industries is the confusion and division among WHO's member countries over the strategy. At the WHO executive board meeting of member countries on January 21, 2004, a debate on the strategy proved inconclusive. Of the 34 nations who commented on the strategy, only UK, Canada, New Zealand, Spain and South Africa accepted it. India asked for more time to study the strategy. Pakistan asked for more scientific evidence. The US wanted more focus on personal responsibility, and India and 12 other countries said they "agree with the US".

The US government is framing a new food pyramid which will suggest to its citizens that their daily diet should have 8 per cent sugar. WHO's strategy says it should be less than 10 per cent sugar. The US says fat should form 20-35 per cent of daily diet; WHO says 15-30 per cent. Why won't then the US government let WHO recommend similar strategies?

The reason, consumer groups allege, is that the US wants to keep its people healthy, but ensure that its industries can sell their junk food to developing nations. Developing countries is where the money is —Coca-Cola earns over 70 per cent of its profits outside the US. The value of Coke's brands increased from US $68.95 billion in 2001 to US $69.64 billion in 2002 because of growing sales in developing countries. By the end of 1993, one third of McDonald's stores were overseas and accounted for half of its profits. Four out of every five new McDonald's restaurants are now opening abroad rather than in the US. The world has lot to gain if it switches to a healthy diet.

MARCH 1-15, 2005 | TIGER

MANEATEN

When tigers vanished from the Sariska reserve...

RITU GUPTA

IN SEPTEMBER 2004, a group of students from the Wildlife Institute of India (WII), Dehradun, went to the Sariska Tiger Reserve of Rajasthan for training. Excited about their work, they painstakingly trekked through the hilly 866 square kilometres (sq km) reserve. They couldn't spot a single tiger. Alarmed, they informed A J T Johnsingh, dean, department of animal ecology and conservation biology, WII. The wildlife network galvanised itself and soon the national media was howling out a question: where were the tigers?

The last census the Sariska field directorate conducted was

in May 2004. The census revealed 16-18 tigers, plummeting from 25-28 tigers in 2003. The big cats couldn't have been decimated by disease, for no carcasses were found. The Union ministry of environment and forests — which spearheads Project Tiger, spread over 27 reserves in the country, including Sariska, in 2003 — has ordered an intensive combing exercise from February 1-15, 2005. *Down To Earth*, too, wanted answers.

So we visited Sariska, to meet villagers living there: what did these insiders think had happened? In most places, villagers endorsed what everyone feared: there aren't any tigers left in Sariska. It was a bleak chorus: "Lax attitude killed the *naars* (tigers)." Said Kajori Mai of Mandalwas village, "*Naar kha se meeloge. Naar to afsar ke peta mei hai.*" (How can tigers be spotted? They were killed, to satiate officers' greed). Shravan, a youngster from Umri village, had another opinion: "God knows why the forest department is making a hullabaloo, when they know that the tiger population has been very low since the past few years. *Ek naar ko panch naar bana dete hai*! (they turn one tiger into 5!)".

This correspondent was fortunate to land up at an informal meeting of 35 people at a house in village Ramji ka guwada. When questioned, people were sure. "No point talking about missing tigers; they have been poached." According to them, the forest department conducts a census for the heck of it. "They even assume the pugmark of an old panther—similar to a tiger's—as a tiger's," said Govind Ram of Googli ka guara village.

The Sariska scam reveals the tiger census is a lie. It is a lie because the method it is based on—counting by tracking pugmarks—is inadequate. The Union government has no role in the tiger census, despite

IMAGINE WILD / CSE

being the main funding body. More appallingly, state forest departments do not keep records of a drop in tiger population. "How do you expect us to conduct research about missing tigers, when we have others things—such as tourism—to take care of?" declares Arun Sen, chief wildlife warden, Rajasthan.

For the past 30 years, India's wildlife officials have used only the pugmark method to monitor tiger populations. Invented in 1966 by Indian forester S R Choudhury, the method requires thousands of people to fan out across jungles for a 1-2 week period every year, searching for tiger tracks. Once located, plaster casts (or tracings) are taken of the left hind paw. Pugmarks so collected are then compared to identify individual tigers. Cross-comparisons among census blocks and reserves refine the identifications.

And so comes about what is called a reliable estimate of tiger numbers in India. The method presupposes the following: in a given area, adult male and female tigers do not belong to the same species; tigers live in pairs; transient (non-breeding) tigers reside in marginal habitats, away from core breeding areas; and, tiger populations at higher densities have a relatively lower proportion of transient tigers. On this basis, it is assumed that the probability of the tracks of the same tiger being found in different counting units is negligible, so avoiding multiple counts.

But this inference is wrong, shows a 2003 review paper, "Science deficiency in conservation practice: the monitoring of tiger populations in India", published in the journal *Animal Conservation* by the Zoological Society of London. Researchers from India, Nepal and the US marshalled the review. After analysing scientific data on tiger ecology, they found tigers are polygynous and do not form pair bonds. Although breeding tigers may occupy exclusive ranges in some high-density areas, neighbours intensively use the same travel routes. In other areas, overlap between individuals is considerable. In low tiger density areas, even breeder ranges show large overlaps.

More importantly, adult male ranges spatially overlap two-six breeding territories. Thus, the pugmark census is not scientific.

MARCH 16-31, 2006 | FARMERS' SUICIDE

LONG YARN

The enigma of the cotton trade and farmers' suicide

SAURAV MISHRA

THE COTTON story is a tangled tale. The number of suicides by cotton farmers in Vidarbha has risen alarmingly this cotton season. This is not just a consequence of increasing input costs, water scarcity and the high interest charged by *sahukars* (moneylenders). The Maharashtra government's decision to bring down its msp (minimum support price) by withdrawing a 20 per cent premium over the national msp it used to pay and abolishing a ₹500 advance bonus it used to dole out at the beginning of the season to buy seeds has played a major role.

Students of Indian agriculture are brainwashed to believe that Indian cotton is of inferior quality. They are never told that "Indian cotton" is not really Indian. It is actually American cotton used in mismatched Indian conditions. Originally the British rulers promoted this cotton in India because their machines in Lancashire were unsuitable for Indian cotton but failed.

As the cotton growers' profitability goes down, the textile and garment industry throws up new millionaires every year

But the agricultural establishment in independent India succeeded in what the colonial rulers failed. American cotton now constitutes 70 per cent of the cotton crop from a mere 3 per cent at the time of independence. As a result, Indian cotton farmers have to live with low levels of productivity—500 kg per hectare (ha), compared to 1,100 kg per ha that Chinese farmers get from their indigenous Chinese variety. This low productivity, coupled with rising input costs, force many farmers to take their own lives.

As the cotton growers' profitability goes down, the textile and garment industry throw up a few new millionaires every year, at the cost of the farmer. The favours doled out to these industries are understandable, they are potential forex earners. The situation becomes bleaker because 20,000 US cotton farmers armed with US $4 billion in subsidy can offer raw cotton at a price that is 40 per cent lower than Indian production cost.

The cotton farmers' problems are too complex to be solved simply by announcing more credit. Following our colonial rulers, we discarded indigenous seed to match available technology. Not much institutional work has been done to create technology that can match indigenous raw cotton. The time has come to create technology and work on seed varieties more friendly to Indian conditions. Farmers in Gujarat and Rajasthan have developed seeds that suit Indian conditions. The search for suitable local hybrids gains more importance because American cotton is a real water guzzler. A quick look at the balance of the virtual water trade through cotton, clearly shows that China and the US end up receiving more virtual water than they give. But India is a big loser of water in this regard.

Gandhi's *charkha* was not a mere symbol for *swadeshi*. It took care of local cotton varieties, provided more decentralised employment possibilities, and above all good quality of cotton. We may have deviated far away from the spirit of *swadeshi*.

PHOTOGRAPH: SANJIT DEBNUKA / CSE

JANUARY 1-15, 2007 | SEA LEVEL RISE

VANISHING ISLANDS

A trip to the Sunderbans, in the Bay of Bengal, shows how devastating it can be in tandem with insidious tidal erosion

MAUREEN NANDINI MITRA

FOR THE past 15 years or so, Rabindranath Das has been watching the ground slip away from beneath his feet. Back in the 1990s, his family had about 3.5 hectares (ha) of paddy fields along Ghoramara island's northwestern shores. But every year, especially during the monsoons, the Hooghly's strong undercurrents would erode a bit more of the riverbank's slopes, triggering sudden collapses of large sections of the bank. Every year, either the river or advancing embankments would swallow a fresh swathe of his family's land. Now, less than a quarter of a hectare and the thatched mud house they live in, remain. "Next monsoon, when they build the boundary wall around the island afresh, we will probably lose the last bit of our land. It will fall outside the embanked area. Like most of the people here, we too will become *bhumiheen* (landless)," Das says.

Researchers at Jadavpur University's School of Oceanographic Studies (JUSOS) in Kolkata say Ghoramara has been reduced in size by 41 per cent since 1969, displacing 7,000 islanders over the past 30 years. They predict the 3 km by 3 km piece of land that still offers shelter and sustenance to some 5,400 largely marginal farmers, fishermen and daily labourers, might not last beyond 2020. In fact, they say in another 15 years the sea will lay claim to a dozen islands in the Sunderbans, six of which are populated, rendering about 70,000 people homeless.

The 54 inhabited islands have no forest cover left. However, about 10,000 sq km of the Sunderbans are still covered by swampy mangrove forests (40 per cent of these lie in India and the rest in Bangladesh), much of which vanish under water for several hours a day during high tide. These dense, almost impenetrable estuarine forests have an amazing biodiversity. The Sunderbans, however, is best known for being the largest remaining natural habitat of the Royal Bengal tiger.

In the past 20 years, the sea has claimed two islands, Lohachara and Suparibhanga, the latter uninhabited. If scientists can be believed, Ghoramara and Sagar are following suit.

An annual 3.14 mm rise in sea level due to climate change is partly responsible for eating away these islands on the southern fringes of the Sunderbans. The higher than average rise in sea level (which is about 2.0 mm annually worldwide) is because of land subsidence (the caving in or sinking of an area of land through tidal erosion) which is typical of deltaic regions.

Refugees from Lohachara and the lost bits of Ghoramara currently add up to over 6,000. The local government, namely the Sagar block administration, has, since the 1980s, been resettling them on

Thousands of people are displaced with the sinking of the islands

PHOTOGRAPH: ANJANA

vested state land in Sagar, the largest island in the Sunderbans. In the remaining 18 blocks of the Sunderbans, refugees haven't yet become a pressing problem.

That islands are losing landmass and creating thousands of environmental refugees is not really breaking news. It's been happening for years now. Yet, the state has no such thing as a disaster management plan for the Sunderbans. All measures to rehabilitate environmental refugees so far have been ad hoc. This negligence stems from the perception among most state leaders and officials that the Sunderbans is a natural environment that people have infringed upon in the first place, says anthropologist Amites Mukhopadhyay. "Because this place has been assigned to tigers and crocodiles, people and their claims are somewhat secondary here," says Mukhopadhyay, who has spent five years researching the impact erosion of bunds and embankments is having on the people of the Sunderbans. "If you simply go through the budget speeches of the state assembly you find a lot of importance being given to land erosion by the Ganga in Malda and rehabilitation of people there, but little mention is made of the same problem in the Sunderbans."

SEPTEMBER 1-15, 2008 | HYDROPOWER

MYTH OF POWER

Nourisher of an ancient civilisation, the Ganga could be gasping for its survival

RAVLEEN KAUR AND TOM KENDALL

WHILE GOING up the meandering road from Tehri to the holy town Gangotri during the thick of monsoon, the Bhagirathi appeared to get uneasily quieter with each hairpin bend; until Chinyali Sor village near Dharasu, 45 km from new Tehri town. The Tehri reservoir ends in the village. The river thereafter springs back to life and the roar of the gushing waters fills up the valleys. But the landscape gradually changes. Some of the mountains are bare and dotted along the road, every 500 metres, are graffiti, posters and signboards, giving out ominous messages. "Blasting Site" in bold, "*Bandh Ganga ki hatya hai*" (dams will kill the Ganga) and "*Ganga ko aviral behne do*" (let the Ganga flow unobstructed) are most common along this main stretch of pilgrim route where devotees go to pay their respects to Goddess Ganga, believed to be the daughter of heaven who came down on Earth through the matter locks of lord Shiva.

That apart, the river is fast becoming a favourite destination for hydroelectric projects, several of which are coming up on the Bhagirathi and Alaknanda basins, tributaries of the Ganga river. The highest of them, Bhairon Ghati, is 27 km from the Gangotri glacier. The Uttarakhand government claims it needs the projects. Fifty five hydropower projects are in different phases of construction and planning. The 162 km stretch of the river from Gangotri to Devprayag will have 11 big dams while the 145 km stretch of Alaknanda from Badrinath to Devprayag will have more than nine big dams apart from several other small projects.

But things came to a head in June this year when G D Agarwal, former member secretary of the Central Pollution Control Board, sat on a nine-day fast. His demand was that no hydropower projects should come up on the 125-km stretch between Uttarkashi and Gangotri. He contended that it would affect the flow of the river and impact its purity. "Run of the river dams are the ones where water will be stored and released periodically through tunnels at locations on which the powerhouse will be built. If this goes on in a series, over long stretches there will be no flow in the channel," says Agarwal. Following the protest, the state stalled two projects, Pala Maneri and Bhairon Ghati. The Union Ministry of Power has set up a committee to look into the questions raised by Agarwal. In response, B C Khanduri, chief minister of Uttarakhand, is reported to have said that "the state respects Agarwal's sentiments and that he should also understand the state's energy requirements".

The Union Ministry of Environment and Forests (MoEF) says there is no use of having a designated minimum flow for all rivers. "It is different for different rivers and depends on how much flow is needed for ecological sustenance in that area. Earlier, the exact amount of flow needed was not mentioned in the environmental impact assessment (EIA) reports but now we do give a specific figure in the clearance," said

Several hydropower plants are planned on the tributaries of the Ganga

S Bhowmik, additional director, Impact Assessment, MoEF. In the clearance letters to the recent hydroelectric projects on the river basins, the ministry has said that the projects should maintain a minimum flow of 30 cusecs (<1 cumec) in the lean season. "No one knows the basis of this 30 cusecs," says Ritwick Dutta, the lawyer fighting cases against some of the hydroelectric projects in Uttarakhand.

JULY 1-15, 2009 | VACCINE SHORTAGE

GET YOUR OWN VACCINE

How a plan to promote private vaccine makers boomeranged

VIBHA VARSHNEY

PHOTOGRAPH: TOM KENDALL / CSE

SHUVAM KUMAR lay on an iron cot in the tetanus ward of the Nalanda Medical College and Hospital in Patna, Bihar. After four days in the hospital, with stiff jaws and high fever, the two-year-old was too weak to cry when the nurse gave him an injection. There is little hope left of his survival, the family had been informed. His father, a labourer in Galurghat village in Gaya, regrets not getting Shuvam to Patna for the tetanus vaccine immediately after he stepped on a nail in the village. Shuvam was not administered the vaccine after birth either. The vaccine is not available in the village.

The private industry says its vaccines are costlier because it invests a lot in its products

Back at the ward, a resident doctor said they expect more such patients. The health ministry had shut its public sector vaccine-manufacturing units.

It was a move to protect business. The three units that got suspension letters (on January 15, 2008) were: Central Research Institute (CRI) in Kasauli, Himachal Pradesh; BCG Vaccine Laboratory (BCGVL) in Chennai and Pasteur Institute of India (PII), Coonoor, both in Tamil Nadu. An inspection, by a team comprising WHO and health ministry officials, found the units did not meet the good manufacturing practices of the WHO and pointedness sense for India. WHO certification helps procurement agencies like the UNICEF assess the quality of vaccines for immunization programmes the world over. About 60 per cent of the world's vaccine supplies are from India.

Allowing the units to continue could lead to disqualification for export of vaccines to the tune of ₹1,500 crore, said Naresh Dayal, secretary, ministry of health and family welfare, at a press meet. Disqualification would have serious impact on export of other drugs as well. It could mean losses of around ₹24,000 crore annually, Dayal added.

A parliamentary standing committee on health and family welfare, formed in July 2008, looked into the suspension decision. It said there were gaps in the ministry's logic of shutting down the units and recommended the units should be restarted. Its report, submitted in February this year, raised questions on the procurement in 2008-09.

The vaccine cost for diphtheria, pertussis, tetanus (DPT) and BCG for 2008-09 turned out to be ₹64.29 crore, compared to ₹32.20 crore the previous year, revealed a confidential ministry document. This was despite the lesser quantity of vaccines procured in 2008-09. The total procurement of DPT vaccines from private units in 2008-09 was 144 million doses compared to 168 million in 2007-08 from both the public and private sectors. For BCG, the

government ordered 60 million doses in 2008-09, compared to 80 million the previous year. The private industry says its rates are higher because it invests a lot in its products. The government had of course not factored this in while suspending the licences. It reduced the procurement budget for vaccines from ₹140 crore in 2007-08 to ₹138 crore in 2008-09.

On December 23, 2008, the prime minister's office (PMO) had questioned the ministry. Left leader T K Rangarajan had sent the questions to the PMO. He raised the issue of additional costs of the vaccine procured from private players and impact of the closure on the Universal Immunization Programme. He also wanted to know if any effort was made to revive and make the public sector compliant with WHO's good manufacturing practices.

The PMO asked the ministry for a reply by December 29, but hasn't got any response yet. But answers are difficult to come by. *Down To Earth* filed the RTI application for clarity on reasons and implications of the suspension; WHO's assessment reports; details of vaccine procurement; and all communications with the PMO.

The health ministry did not give answers to most questions and diverted them to different departments. The two pages of response it sent, however, revealed the extent of the crisis: it had (illegally) procured 11.7 million doses of DPT, 3.7 million doses of DT and 12 million doses of TT from CRI in 2008-09.

Despite the crisis now, the ministry only has long-term plans. It has commissioned HLL Lifecare Limited a ₹900 crore Integrated Vaccine Complex in Chengalpattu, near Chennai. HLL is a public sector unit with no experience in vaccine manufacture. The ministry plans to make the complex compliant to WHO's good manufacturing practices. "HLL would own the facility, manufacture and supply high quality vaccines at affordable prices to the government," said K R S Krishnan, executive director of the company.

The question public health experts are asking is if the vaccine complex can meet the good manufacturing practices, why can't the same be done for the existing public sector facilities in India.

FEBRUARY 1-15, 2010 | ELECTRIC VEHICLES

eDRIVEN

Electric and hybrid vehicles are gaining a foothold because they are cheap and clean

VIVEK CHATTOPADHYAY

SUDDENLY, E-VEHICLES have trudged up the popularity chart and become part of the business model of major automakers—both local and global. Some of them have finally looked beyond the conventional internal combustion engines and to a completely new genre of technology.

The biggest explosion is expected in the two-wheeler segment. Around 1,30,000 electric two wheelers were sold in 2007-08. Bulk of these are low-powered and low-speed electric two wheelers. Another 110,000 electric two wheelers were sold last year.

Globally though, hybrids might enter markets sooner and more easily than e-vehicles because hybrids do not require new refuelling infrastructure.

Toyota was the first company to introduce hybrid vehicles in 1997. Its hybrid Prius drew crowds at the expo. The third generation of Prius was recently launched in India.

Mahindra & Mahindra and

Tata Motors have shown interest in developing hybrids. Hybrids, however, increase cost, weight and complexity. Experts say hybridisation makes sense in bigger vehicles due to fuel economy benefits.

The bus industry too has innovated to make hybrid CNG (compressed natural gas) buses. Ashok Leyland put on display Hybus—India's first plug-in CNG hybrid bus. What is driving the e-market?

In the late 1960s and early 1970s, concerns about air pollution and more important, the OPEC oil embargo (in 1973, the 12 member nations of the Organization of Petroleum Exporting Countries or OPEC stopped exports to the US as retaliation against the latter's support to Israel against its war with Egypt), kindled interest in e-cars. This got further impetus in California's Zero Emission Vehicle Mandate (adopted in 1990) that demanded 2 per cent of California's vehicles to be zero emission by 1998 and 10 per cent by 2003. But the mandate waned due to technical and cost barriers. Sales plummeted and global carmakers such as Toyota rolled back their plans.

Concern over high oil prices and stringency in pollution and climate regulations have once again spurred new interest in e-vehicles. These are fuel efficient, as, technically the conversion of electrical energy into motive power is more efficient than burning fuel in an internal combustion engine.

Several international organisations including the International Energy Agency forecast modest growth of electrification of the vehicle market by 2020 in a conservative scenario. This could increase to a quarter of the new vehicle sales by 2050.

High prices, limited range, slow investment in technology improvement and lack of charging infrastructure have significantly slowed the commercialisation of e-vehicles.

The battery is a major chunk of the cost of e-vehicles. It costs nearly 30 per cent of an e-bike's price. And it has to be replaced every two to three years. For an e-car, a battery costs ₹60,000 to ₹70,000.

The other advantage of an e-vehicle is there are no oil filters, air filters, spark plugs or radiators, which otherwise need maintenance. According to YObyke officials, the running cost of the e-bike is about 10 paise per km and after battery replacement about 50 paise per km. This is half the running cost of a petrol bike.

An electric boom is expected in the two-wheeler segment

PHOTOGRAPH: SAYANTAN BERA / CSE

BATTLE FOR THE INTERNET

As the Internet becomes the public square and marketplace of our world, it is becoming a contested terrain

LATHA JISHNU AND ARNAB PRATIM DUTTA

IDEAS AND ideologies, images and reports of events, both minor and cataclysmic, fly on the Internet, swirling through cyberspace, gathering resonance, metamorphosing and touching millions of lives in different ways. It is about the power and reach of connection, unprecedented since people first began communicating with each other. The Internet, therefore, is turning into a conflict zone with everyone seeking control of it: governments, corporations and social networking sites, all of whom have different agendas. While most governments are seeking to filter and block specific content, in extreme cases, as in Egypt, the Net has been blacked out (on January 25, 2011, Egypt's four largest Internet service providers shut off their networks to curb the mass public protests against then President Hosni Mubarak) using what some experts say is the "kill switch". This could emerge as the biggest threat to the Internet since other regimes could be tempted to go the Egyptian way. Most

The general surmise is that Amazon stopped hosting WikiLeaks because of pressure from the US government

PHOTOGRAPH: REUTERS

governments, however, prefer not to use it, not even the censorship-obsessed Chinese and Saudi regimes because the Internet is also about business—commerce of increasing significance is being routed through its sinews.

But the world has a long way to go before the Internet becomes ubiquitous or an all-encompassing global commons. Currently, just two billion people are linked to the system, which is less than a third of the world's population. China, however, is the undisputed leviathan with 420 million users in 2010—some estimates put the figure closer to 500 million now—who account for more than a fifth of the world's Internet users. This is one reason Washington frequently raises the issue of China's policing of the Internet in different fora. The most recent was on February 15 when secretary of state Hillary Clinton made the second of her rousing speeches on safeguarding the Internet from all kinds of government interference.

Even as the secretary of state was speaking, the Department of Justice was seeking to enforce a court order to direct Twitter Inc, to provide the US government records of three individuals, including Birgitta Jonsdottir, a member of Iceland's Parliament, who had been in touch with others about WikiLeaks and its founder Julian Assange last year when WikiLeaks released its huge cache of US diplomatic cables.

The Assange case more than anything else has exposed how vulnerable the Net is to political meddling and control. In December last year, Amazon said it stopped hosting the WikiLeaks website because it "violated its terms of service" and not because the office of the Senate Homeland Security Committee chaired by Joe Lieberman had questioned Amazon about its relationship with WikiLeaks.

In India, in the wake of the terrorist attacks in Mumbai in November 2008, Parliament hastily passed amendments to the Information Technology Act, 2000, without any discussion in either House. Section 69A permits the Centre to "issue directions for blocking of public access to any information through any computer resource", which means that the government can block any website.

MAY 16-31, 2012 | MELTING OF ARCTIC

IS ARCTIC RUSH WORTH IT?

Rising temperature and melting Arctic ice are changing global geopolitics

RICHARD MAHAPATRA

THE 80,000-odd tourists heading for the North Pole this summer are likely to witness a changing topography: icebergs crumbling into the sea, ice shelves floating away and freely navigable sea lanes that remained icebound just five years ago. Rising global temperature is melting Arctic sea ice, making a piece of the planet accessible for the first time in living memory. On their way the tourists would often encounter cargo liners on exploration missions—each clearing the way for future routes to exploit the frozen pole. Recent scientific studies confirm that the Arctic is warming twice as fast as the

Newfound resources and routes have spurred hectic global geopolitics, especially among the Arctic nations

rest of the globe. The period between 2005 and 2010 was the warmest since record keeping began in 1840. In September 2011, at the height of its summertime shrinkage, ice caps covered 4.33 million square kilometres of the Arctic Ocean. This, according to the US National Snow and Ice Data Center (NSIDC), was a 50 per cent drop from the average sea ice cover between 1979 and 2000.

The Intergovernmental Panel on Climate Change (IPCC) in 2007 estimated that the Arctic will have an ice-free summer by the end of this century. A few recent studies predict that this may happen as early as 2030-2040.

The Arctic's vast reservoirs of fossil fuel, fish and minerals, including rare earth materials, are now accessible for a longer period. But unlike Antarctica, which is protected from exploitation by the Antarctic Treaty framed during the Cold War and is not subject to territorial claims by any country, there is no legal regime protecting the Arctic from industrialisation, especially at a time when the world craves for more and more resources. Of the eight Arctic nations—Russia, Sweden, Norway, Iceland, Denmark (Greenland), Finland, Canada and the US—several have explored the Arctic waters and found over 400 oilfields with proven reserves of around 240 billion barrels of crude oil and natural gas.

New reserves will be available with further melting of the polar sea ice. As a bonus, the vanishing ice also opens up two new faster shipping routes that sharply reduce the distance between Western countries and Asia by connecting the Pacific and Atlantic oceans. These are the Northwest Passage along the northern coast of North America and the Northeast Passage along the Siberia coast.

The newfound resources and routes have spurred hectic global geopolitics, especially among the Arctic nations.

In March this year, in an unexpected strategic move, Norway and Russia agreed to improve military relations and expand cooperation in their Arctic territories. Both have created special army units for the Arctic in the past year. Russia built iceclass vessels designed to ferry military hardware and sent extra brigades to its northernmost bases recently. Norway plans to buy 48 F-35 fighter planes to bolster its Arctic defences.

In a demonstration of strength, the US, Canada and Denmark staged military manoeuvres in their Arctic

territories in February this year.

Russia, one-third of which lies within the Arctic Circle, has been the most aggressive in establishing itself as the superpower of the emerging region.

About two-thirds of the resources of the state-owned oil behemoth Rosneft are in the Arctic offshore. But much of it is icebound with no existing infrastructure. To attract investment and technology, in February Russian president Vladimir Putin declared a new policy, allowing foreign oil companies to explore Arctic resources on their own. Within a couple of months, he declared another policy, offering tax cuts on hydrocarbons and minerals produced in the country's Arctic territory.

The US has also indicated that it would auction the exploration blocks in the Arctic by 2015. The Chukchi and Beaufort Seas off the coast of Alaska hold around 26 billion barrels of oil. Energy major Shell has obtained conditional approval to drill exploratory wells in the region from 2013.

The latest phase of the Arctic rush is being played out in the Arctic Council, an intergovernmental forum formed by the Arctic nations and representatives of the indigenous people of the pole like the Eskimo.

Six non-Arctic nations—the UK, France, Spain, Germany, Poland and the Netherlands — sit in the council as observers.

More countries, including China, India, Brazil, Japan, South Korea, the EU and several individual European states, are now seeking observer status in the council. Being member of the British Commonwealth, India has rights to carry out commercial activities in the Svalbard region of Norway under the Svalbard Treaty the Great Britain signed in 1920. The new sea routes also give China immense military advantage. Until now, it was thought that in a war with India, its largest Asian rival, the maritime action would centre on an Indian attempt to blockade the Indian Ocean.

India has also managed to reach the Arctic for its resources. A consortium led by the public sector unit, Oil and Natural Gas Corporation, has recently acquired 15 per cent stake, worth US $3.4 billion, in an Arctic project. The project is by Russia's largest independent natural gas producer Novatek.

JULY 1-15, 2013 | UTTARAKHAND FLASH FLOODS

HEAVEN'S RAGE

Survivors of the Uttarakhand flash floods share hair-raising tales of their ordeal

SOMA BASU

AT 7.18 pm on June 16, 2013 Ram Singh heard the loudest crack in 45 years of his life. It was the deafening roar of a disaster. "I felt as if the sky had been torn asunder. Within seconds, a massive wall of water gushed towards Kedarnath Temple. Huge boulders flung into the sky like an explosion. In less than 15 minutes, thousands of people were swept away," he recalls lying at the Rudraprayag district hospital. Singh was on the Char Dham Yatra with 17 people from his hometown Ujjain in Madhya Pradesh. He is returning with only five. The rest are missing.

The group had gone to see *aarti* at the temple. Singh says his daughter, brother, sister-in-law and 70-year-old uncle must have been ambling around the market after the

Army creates a footbridge on the Pindar to rescue people in the aftermath of the Uttarakhand flash floods

PHOTOGRAPH: CSE ARCHIVE

aarti when disaster struck. "My son wanted to see the hills, so I took him along. My wife followed us," he says. "That is how we survived. I have no clue where the rest are."

Six kilometres below, Rambara village is a resting point for devotees going to Kedarnath Temple. Its 43-year-old resident Sankar Gosai shudders to recount the sight of the enormous amount of water gushing down the mountain. In no time, long stretches of a road and houses were swept away. "It had been raining nonstop since June 14. Fearing flood, we had climbed up the hill. But we never imagined that such a huge amount of water could swoop down all so suddenly," he says. Gosai walked down the precarious mountain for two full days till he reached Rudraprayag town.

It all started at Chorabari glacier, say people who have managed to return. The glacier lies on the slope of the 6,940-metre Kedarnath peak of the Himalaya. The glacier is 7 km in length, its basin area is 38 sq km and the ice cover is 5.9 sq km. It has two snouts—one is the source of the Mandakini (at 3,865 metres) and the other becomes the Chorabari Lake (at 3,835 metres).

People recall that on June 16 the lake exploded when clouds burst over it. The lake is 6 km from the temple upstream the Alaknanda. Ensuing rains cut off the hilly districts of Uttarkashi, Rudraprayag, Chamoli and Pithoragarh from the mainland and battered the land till it crumbled.

Pithoragarh faced the disaster twice—on June 16 and on June 22, says Naresh Ram, resident of Kholi village. There, the lake of Miliam glacier burst when clouds burst over it leading to overflow of two rivers which emerge from the glacier—the Goriganga and the Kaliganga. The lake still holds a lot of water, so the district may witness a similar disaster soon, he warns.

"I have never seen anything like this. It was as if someone was throwing water from under the ground," says Vivek Rawat, 27, who worked at a hotel in Gaurikund, about 15 km from Kedarnath. Almost everything in Gaurikund is demolished, he says. Eyewitnesses have similar stories from Kedarnath Temple and Hemkunt Sahib. Nobody is yet sure of the reason.

Every year, Uttarakhand's Garhwal region receives pilgrims in thousands for Chhota Char Dham *yatra*—Gangotri, Yamunotri, Kedarnath and Badrinath. It also receives heavy rains and suffers floods. But the loss the region has suffered this time is horrifying.

According to the Char Dham control room records, there were 26,000 people in Kedar Valley on June 16. This is where the temple is located. Records also show that 39,000 people had left the valley that day for Badrinath, Gangotri, Yamunotri and Hemkunt Sahib. The government's figure of about 800 total deaths is too conservative. The number, clearly, is in many thousands.

The raging Bhagirathi, Alaknanda and Mandakini have swollen like never before and swept away whatever came in their way. As many as 2,052 houses have been wiped out, 147 bridges have collapsed and 1,307 roads destroyed, says Rakesh Sharma, state infrastructure development commissioner. The upper reaches of Uttarakhand look as if the region has travelled a hundred years back in time.

"What else does one expect from the mountain if there is heavy tourist rush at vulnerable areas. The Himalaya is a young mountain and you dynamite it to build roads. Landslides are bound to happen," says Anand Sharma, executive director of Dehradun Meteorological Centre.

In the wake of the disaster, Jayanthi Natarajan, minister of environment and forests, issued a statement that the National Ganga River Basin Authority had notified 130 km stretch from Gaumukh to Uttarkashi as an ecosensitive zone on December 18, 2012. The notification, thus, prohibits activities such as setting up of hydroelectric power plants of more than 25 MW, extraction of river water for new industrial purposes, mining except for domestic needs, stone quarrying, deforestation, burning of solid waste. Natarajan, however, did not mention that the area near the Alaknanda and the Mandakini has not been notified. This is where stone quarrying is done most.

"Tell me one place in the Himalaya that is not ecosensitive," says Anil Prakash Joshi, former teacher and founder of non-profit Himalayan Environmental Studies and Conservation Organisation. "Till when will we play with nature?"

Ever since Uttarakhand was created in 2000, the state government, be it of the Congress or the BJP, has been working with one agenda—exploit natural resources of water, forests and minerals to develop infrastructure, without caring for its consequences on nature.

The development is triggered mostly by the deluge of pilgrims who visit the holy places in the state annually. In the past decade, the number of tourists has risen by 155 per cent, the state's tourism department data shows. There is hardly any place to accommodate the visitors. A survey done by the Indian Council for Research on International Economic Relations in 2006 states that there is an average of 102.5 hotels per million tourists in the state. Shortage of dwelling units has led to mushrooming of illegal structures, some right on the riverbanks. The state government's 2000 notification to prohibit construction within 200 metres from the riverbanks was not adhered to. In 2011, Dinesh Bhardwaj, a resident of Roorkee, filed a public interest petition in the Uttarakhand High Court and identified several illegal structures along the banks of the Ganga, Song, Bhagirathi, Alaknanda and the Mandakini. The Bench comprising Chief Justice Barin Ghose and Justice Alok Singh ordered the state government to demolish all structures along the banks. But the state government did not act, says Bhardwaj. Floods have brought down hundreds of small hotels on the riverbanks.

Ecological flow should be mandatory in all stretches of the Ganga

JULY 16-31, 2014 | GANGA

LET GANGA FLOW

Ways to make the river holy again

SUNITA NARAIN

GANGA WAS a major issue for Prime Minister Narendra Modi when he contested elections from Varanasi. By now, three new ghats have been announced for Varanasi; there is a separate ministry for Ganga rejuvenation, headed by firebrand Bharatiya Janata Party leader Uma Bharti. This ministry and three others—environment, tourism and shipping—have been brought together to prepare a grand plan for inland waterways and water

resources. The question is: how different and effective the plan will be given that the emphasis of pollution managers has remained on building more sewage treatment facilities and drainage networks.

Delhi-based non-profit Centre for Science and Environment (CSE) has a different approach for river cleaning. It recommends the following: First, accept that the river needs water to dilute waste. In India, where the cost of pollution control is unaffordable and massive, a cheaper option is to dilute the waste with clean and flowing water. The standards for water quality also provide for a dilution factor of 10, but it is not followed. This is why discharge standards for waterbodies are set at 30 biological oxygen demand (BOD), while bathing water quality standard is 3 BOD. So even after the best treatment, the river needs 10 times the water to bring it to acceptable quality.

CSE recommends that ecological flow should be mandatory in all stretches of the river; funding should be conditional to the state government making available this water in the river. But as this additional flow for the river's sake is going to take away water from other users, it is bound to be contested. So the governments will have to take hard steps—augment water by building storage to collect monsoon water for dilution within its territory, or make efficiency gains in water supply.

Secondly, we need to accept that it is difficult for urban areas to build conventional sewerage networks at the required scale and pace. The conveyance of waste, therefore, must be re-conceptualised and implemented while planning sewage treatment plants (STPs). This will lead to innovative ideas for controlling pollution in drains in situ—treatment of sewage as well as local treatment and reuse. Also, if the plans are premised on the acceptance of non-availability of sewerage networks, discharge of treated effluent will be carefully designed. Treated effluent will not be mixed with the untreated waste in drains. Instead, all treated effluent will either be reused or discharged into the river.

Thirdly, no untreated waste should be disposed of in the river. If there is no water in the river and only waste is discharged, standards should be so stringent that they can meet bathing or drinking water quality. This will be prohibitively expensive and it makes no economic sense to clean wastewater to drinking water quality and then not use it for the purpose. Drain-wise planning is a must so that waste is treated without first building the internal conveyance system. Interception and pumping to STPs need to be planned. Planning for in situ drain treatment will bring down pollution levels of discharge that is not intercepted. The bottom line lies in using open drain for treatment of waste.

If all this cannot be done, the only alternative for cleaning the river is to ask cities to get their water supply downstream of their discharge points. Cities will have to use their wastewater and invest in cleaning it to turn it into drinking water.

Fifth is the key question about funding. CSE says Ganga cleaning programmes need to be publicly funded while also ensuring that states and municipal bodies contribute through funds or through release of water for ecological flow.

Even if the current situation requires Central government's assistance for capital and operational costs, it is untenable in the long run. As long as states do not have the responsibility to build and maintain sewage treatment systems, they have no incentive to plan for affordable solutions. In the current system, the Centre will pay full capital cost for infrastructure and for running the plant.

The bottom line is that we all live downstream. If we don't clean the Ganga we will be the biggest losers—a generation will lose something as valuable and precious as rivers. This, says CSE, is unacceptable. It is time governments understood this and redesigned the programmes for cleaning the Ganga.

DIPLOMATIC IMMUNITY

Vaccinations have banished many dreaded diseases. Only dialogue can win over the sceptics

RAKESH KALSHIAN

IN SEPTEMBER 2015, two children reportedly died of diphtheria in Kerala, which had practically smothered this "strangling angel of children", thanks to a proactive immunisation drive in recent years. Last year, the dreaded bacterium didn't surface at all. By contrast, it choked as many as 60 children to death in Delhi.

This outbreak was alarming for two reasons. One, as the disease is highly contagious, even a few cases could turn into a rash. That is why vaccination programmes aim for at least 90 per cent coverage (called herd immunity in medical parlance). Currently, full immunisation covers only 65 per cent of India's population.

Under the Mission Indradhanush, launched in 2014, the government aims to cover 90 per cent by 2020. Two, and perhaps more worrisome, all the five confirmed cases in the state this year were from the Muslim-majority Malappuram district, where apparently some orthodox clerics have been opposing the idea of vaccination. To pre-empt such outbreaks in the future, the state's medical apparatus swung into a campaign mode combing the district for any lurking cases, as well as immunising anyone who isn't.

Kerala is not alone in its predicament. This June (2015), Spain was caught off guard by its first diphtheria outbreak in 35 years. One child died as he was not vaccinated, apparently because his parents believed the anti-vaccination campaigners. And this June, following a bitter fight between pro and anti camps in California, the state passed a tough law that will bar kids from schools unless they are fully immunised. Opponents, however, failed to garner enough votes in a state-wide referendum on the issue.

There is no doubt that

ILLUSTRATION: TARGET AID / CSE

vaccinations have saved millions of lives. Just three decades ago, diseases like diphtheria, polio, and measles killed no fewer than five million children worldwide. Thanks to universal immunisation, that number dwindled to less than a million by 2001.

With such a fantastic endorsement, why should anyone have any problem with vaccination? The vaccination controversy is often interpreted as an argument between science and religion or culture. But the truth is far more complex and nuanced. It is a curious phenomenon in which the body becomes a political arena where all manner of beliefs, opinions and interests clash and collaborate. For instance, an orthodox Muslim cleric in Malappuram might view vaccination as anti-Islamic but he might also inject geopolitics in it by insinuating it as American propaganda or as subterfuge by the Christian evangelicals. Or, health activists and traditional healers might come together to decry universal immunisation as a ploy by companies to sell their expensive vaccines. Some sceptics like the venerable Debabar Banerji, doyen of community medicine in India, believe that universal immunisation doesn't necessarily translate into a healthy and dignified life, for people continue to be plagued by disease and poverty. Then there are of course those who view compulsory immunisation as an assault on personal freedom.

But parents' decision to get their kids immunised or not is influenced by a host of complex factors, such as memory of forced sterilisation in the family, or a culture-specific understanding of the body and its corruptions, or a political understanding of modern medicine, or an unquestioned submission to the teachings of a religious interpreter. As Melissa Leach and James Fairhead write in their 2007 book, *Vaccine Anxieties*, "The great gulfs that often exist between people's senses of themselves... and the stereotypes applied to them by health professionals, policymakers and media commentators."

All things considered, vaccination has improved the general lot. Nonetheless, this doesn't mean it can be thrust down people's throats, which, we must concede, may croak differing views and values. Good politics requires that the State win over sceptics with empathy and dialogue rather than arrogance and force.

FEBRUARY 1-15, 2016 | LIVESTOCK FEED

DROUGHT OF FODDER

India faces an acute fodder shortage that has left farmers in drought-hit regions vulnerable

JITENDRA

INDIA FACES a green fodder shortage of 63.5 per cent, says the vision document of the country's premier research institute Indian Grassland and Fodder Research Institute (IGFRI). The shortage of dry fodder is 23.5 per cent, estimates the national institute that is under the administrative control of the Indian Council of Agricultural Research. If the current situation continues, then India's green fodder shortage will reach 66 per cent and dry fodder will reach 25 per cent by 2030.

The fodder shortage is a result of government apathy and shrinking common land

PHOTO: VIKAS CHOUDHARY / CSE

Traditionally during drought, livestock assumes the role of a shield for farmers, mostly small and marginal. But with the acute fodder shortage, sustaining cattle has become extremely difficult in drought-affected areas. If the situation continues, it will completely derail the rural economy.

Despite several state governments rolling out schemes to address the fodder shortage, Union government agencies maintain there is no fodder problem. They dismiss the shortage on the flimsy ground that no comprehensive data exists on fodder production.

However, private players in the feed industry have a different explanation for the increase in milk production. The huge fodder gap, they say, is being bridged by their industry. "The crisis of green fodder has boosted the feed industry. This explains the consistent rise in India's milk production despite severe fodder scarcity," says Amit Saraogi, chairperson, CLFMA, a consortium of 250 feed companies. According to government data, there are more than 500 feed companies in the country. A report by CLFMA says India's feed industry, which is already worth US $15 billion, is expected to double by 2020.

According to the *Indian Feed Industry-Revitalizing Nutritional Security Knowledge*, a report published by YES Bank in 2015, many companies are eyeing the huge feeds market. "The sector is growing by 8 per cent every year," says Saraogi.

"Today's crisis is a result of decades of negligence. It is a side effect of our development process," says S B Pawar, director, Marathwada Agricultural University, Regional Research Station, Aurangabad. The current shortage is a result of government apathy, coupled with shrinking common land and lack of research work on fodder crop. Pawar says the country has achieved self-sufficiency in food grain at the cost of fodder. The traditional fodder crops have been replaced by cereals and cash crops. Government data clearly shows rice and wheat have reduced the area under cultivation of traditional fodder crops such as barley, millets and other coarse cereals. Maize is the only fodder crop the cultivation area of which has increased in the past 50 years because 60 per cent of maize is used in the feeds industry.

JANUARY 16-31, 2017 | IMMORTALITY

MORTAL COMBAT

There is a renewed vigour among scientists looking for ways and means to cheat death

RAKESH KALSHIAN

SCIENCE'S QUEST to prolong life has a long and chequered history. Many ideas began with a bang but eventually fizzled out. The modern state-of-the-art ageing research came of age in the 1990s when Cynthia Kenyon, then a molecular biologist at the University of California, San Francisco, showed that mutation in a single gene could double the lifespan of a worm called *Caenorhabditis elegans* (*C elegans*). Before long, scientists had unearthed many more such genes in the genomic haystack, and all of them seemed to extend the lifespan of model organisms, such as worms, flies and mice. These early findings seduced venture capitalists into investing in the quest for the elixir of life. They set about first unravelling the hidden circuits controlled by these genes and then eventually manipulating them so as to create drugs that might simulate their life-enhancing magic.

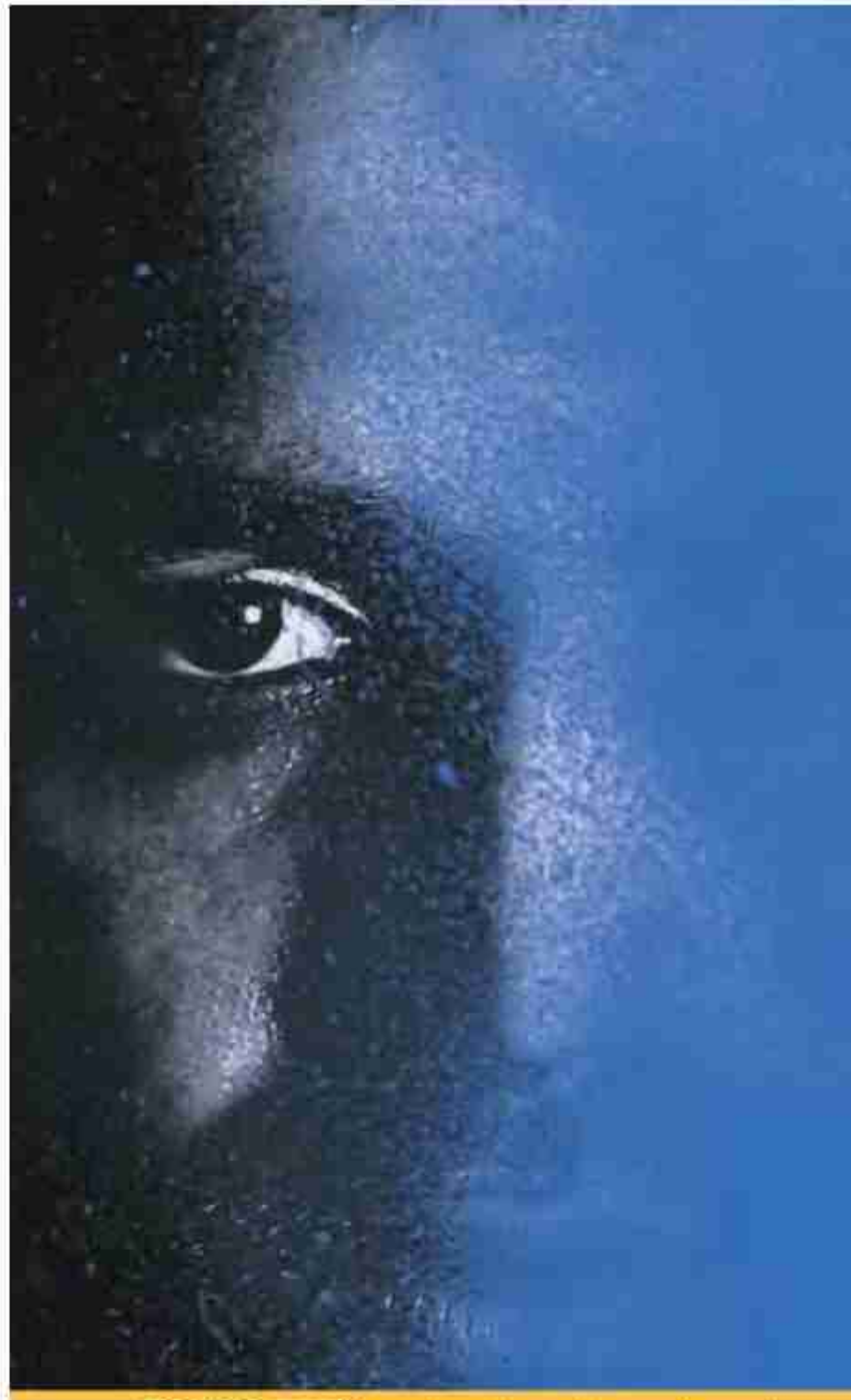
Despite the early disappointments, however, longevity research is enjoying a new lease of life in the last few years, thanks to new insights into the mechanics of ageing. But more importantly, it is being shored up by a bevy of venture capitalists, such as Craig Venter's Human Longevity Inc (HLI) based in San Diego and Google's Calico based in San Francisco. In addition, several large-scale projects are gearing up to collect massive data sets of healthy human populations such as the 100K Wellness Project at the Institute of Systems Biology in Seattle, and the Resilience Project, a joint venture between the Icahn School of Medicine at Mount Sinai, New York, and non-profit Sage Bionetworks in Seattle.

But what is so special about the new insights and approaches that are making venture capitalists gamble their millions when previous attempts to replicate research on animal models in humans have mostly come to naught?

The science of ageing has been revised in recent years. Earlier, it was like the proverbial Indian elephant—it was described and understood differently depending on how each scientist looked at it. Now the approach is a bit like solving a jigsaw puzzle by putting together different pieces representing various approaches such as nutrition, genetics, and the new fashionable analytical tool called big data. The aim is to slow down ageing using an ensemble of tricks and devices so that the torments of old age are packed into a short span at the end of life. The idea is to make people live longer by ridding the autumn of their lives of dreaded afflictions like cancer, heart disease, dementia and diabetes.

But how does one prolong life without having to go through the seemingly unavoidable physical and mental suffering? And any attempt to solve this dilemma will have to necessarily confront the fundamental question of what is ageing. Scientists are all agreed that ageing is much like the Gordian knot. Unravelling it seems like an impossible task. The neatest and time-honoured solution is to cut it with the sharp and lucid knife of death.

But that's of no use to those trying to defy death. The trouble is that unlike the development trajectories of specific organs like the heart or the skin, ageing does not follow a well-scripted plot that unfolds consistently over time.



Longevity research is renewed by new insights into the mechanics of ageing shored up by a bevy of venture capitalists

NOVEMBER 16-30, 2018 | MOBILITY

DUMPED BY THE RICH

Low-income vehicle importing countries of Africa and South Asia are turning into a scrapyard for old, used and close-to-being-scrapped vehicles of rich nations

ANUMITA ROYCHOWDHURY

IMPORTING OLD and polluting vehicles, some of which are unfit for the road, is how the low- and middle-income countries are embracing automobiles. The ill-effects of this thriving international used car trade are overshadowed by the glitz of the new vehicles across the world that is constantly adding to the already inflated global fleet of 2 billion.

The scale of dumping from the rich countries to the poor is overwhelming. Back in 2014, it was estimated that globally about 40 million vehicles a year approach their end-of-life, which is 4 per cent of the total global automobile ownership. A lot of these get traded to low- and middle-income countries. This number is expected to explode as the global automobile fleet is slated to double by 2050 on the back of growing economy and aspirations for four-wheelers, estimates the International Energy Agency.

A 2014 World Bank estimate shows that the vehicle ownership rate in Africa, though much lower than the world average, is rapidly increasing across cities. Sadly, this meteoric increase in car fleets in most African and South Asian cities is fuelled by old imported vehicles. According to the Deloitte Africa Automotive Report 2016, as much as 90 per cent of the new sales in Nigeria in 2015 were second-hand vehicles. In Ethiopia and Kenya, the share of second-hand vehicles in 2015 was 85 and 80 per cent, respectively.

Besides congesting the roads, the old vehicles also emit enormous pollution on roads, posing serious health concerns. Already, the State of Global Air 2018, has shown that North Africa has the highest concentration of population weighted annual average particulate matter; Nigeria is in the lead.

Vehicles are responsible for one of the greatest exposure to toxic emissions. A 2015 study by non-profit International Council on Clean Transportation (ICCT) has projected that the high emitters, which include old cars, can become the largest contributor of particulate matter emissions globally by 2020 especially from Asia, Africa and Latin America. As new vehicles become substantially cleaner the older fleet becomes disproportionately responsible for high emissions. Old vehicles have outdated power train technologies that are high on fuel consumption and carbon dioxide (CO_2) emissions. There are concerns around the safety of old cars. It is a no-brainer that poorer the country higher is the average age of vehicles. The average age of a car is less

than eight years in developed countries, whereas it is 12-17 years in Africa and South Asia. Owing to strict regulations in developed countries, says a 2017 United Nations Environment Programme (UNEP) background paper on used vehicles, second-hand vehicles have poor domestic value in developed countries, and as a result, are exported to countries with lax regulations. For example, in Japan, after a vehicle turns three years old, it must get an inspection every two years under its fitness programme, which is expensive. So, many vehicle owners in Japan sell vehicles after five or seven years of usage and most of these second-hand vehicles find their way into low-income countries.

Disposable fleet of older vehicles will continue to increase as stricter regulations are adopted in high-income countries including end of life regulations, low emissions zone programmes, diesel car bans, and stricter emissions inspection programmes. What makes this dumping easy is the fact that in most African and South Asian countries, emission standards for vehicles and fuel quality are lax. While 11 countries in South and East Africa have adopted cleaner 50 parts per million (PPM) sulphur fuels, the rest are still using from 500 PPM to up to 10,000 PPM sulphur fuel. Without the requisite fuel quality, the region cannot improve emissions standards for import of used vehicles.

PHOTOGRAPH: REUTERS

A second-hand automobile market in Cairo, Egypt, which sells hundreds of used cars every week

OCTOBER 1-15, 2019 | SANITATION

A CONTINUING CHALLENGE

India becomes open defecation free. But...

DEAN SPEARS

IN 2014, Prime Minister Narendra Modi set the goal of ending open defecation within five years. Accelerating the decline of open defecation is a worthy goal. Rural India is so densely settled that open defecation spreads diseases, killing and harming children. But eliminating open defecation so quickly was always an implausible goal.

This raises a question: do overambitious political targets do good, by encouraging action? Or do they do harm, by licensing coercive methods and undermining policymakers' credibility? Or, both?

In a 2017 book, Diane Coffey and I predicted that the Swachh Bharat Mission (SBM) would change little. We were right in some ways and wrong in others. Open defecation still exists, especially in the multiply-disadvantaged, densely-populated villages of rural north India. Such was the pace that India was on in the 2015-16 Demographic and Health Survey. Such was what our team at R.I.C.E (Research Institute for Compassionate Economics) found in a late 2018 survey that visited households from the 2014 survey in four states: Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. Such is what Centre for Policy Research has found, what 3ie (International Initiative for Impact Evaluation) studies have found. Open defecation is an important challenge in these four states.

But SBM did more than what we predicted, and the decline in open defecation did accelerate. Rural latrine ownership increased meaningfully over this period, and more local officials than before now understand the twin-pit latrine model. Importantly, however, the decline in open defecation from 2014 to 2018 in these states was, according to statistical accounting, entirely due to increasing latrine ownership—not to behavioural change.

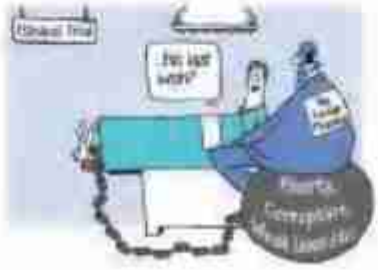
The fraction of latrine owners who defecate in the open did not change over these four years. Unfortunately, some of what SBM did that we did not expect, caused harm. Many survey respondents report that SBM attempted to coerce latrine construction, including by withholding or threatening to withhold government benefits. Adivasi and Dalit households were especially likely to face coercion. Variation in SBM coercion is correlated with variation in sanitation outcomes: in villages where more people report coercive SBM activities, more people also reported switching to latrine use.

These outcomes suggest the need for transparent, fact-based public dialogue about SBM: its costs and benefits, its accomplishments and means. The next rural sanitation policy for the North Indian plains will have its work to do—by focusing on behaviour change, and on the roots of enduring open defecation in the purity and pollution rules entangled with both casteism and sanitation behaviour.

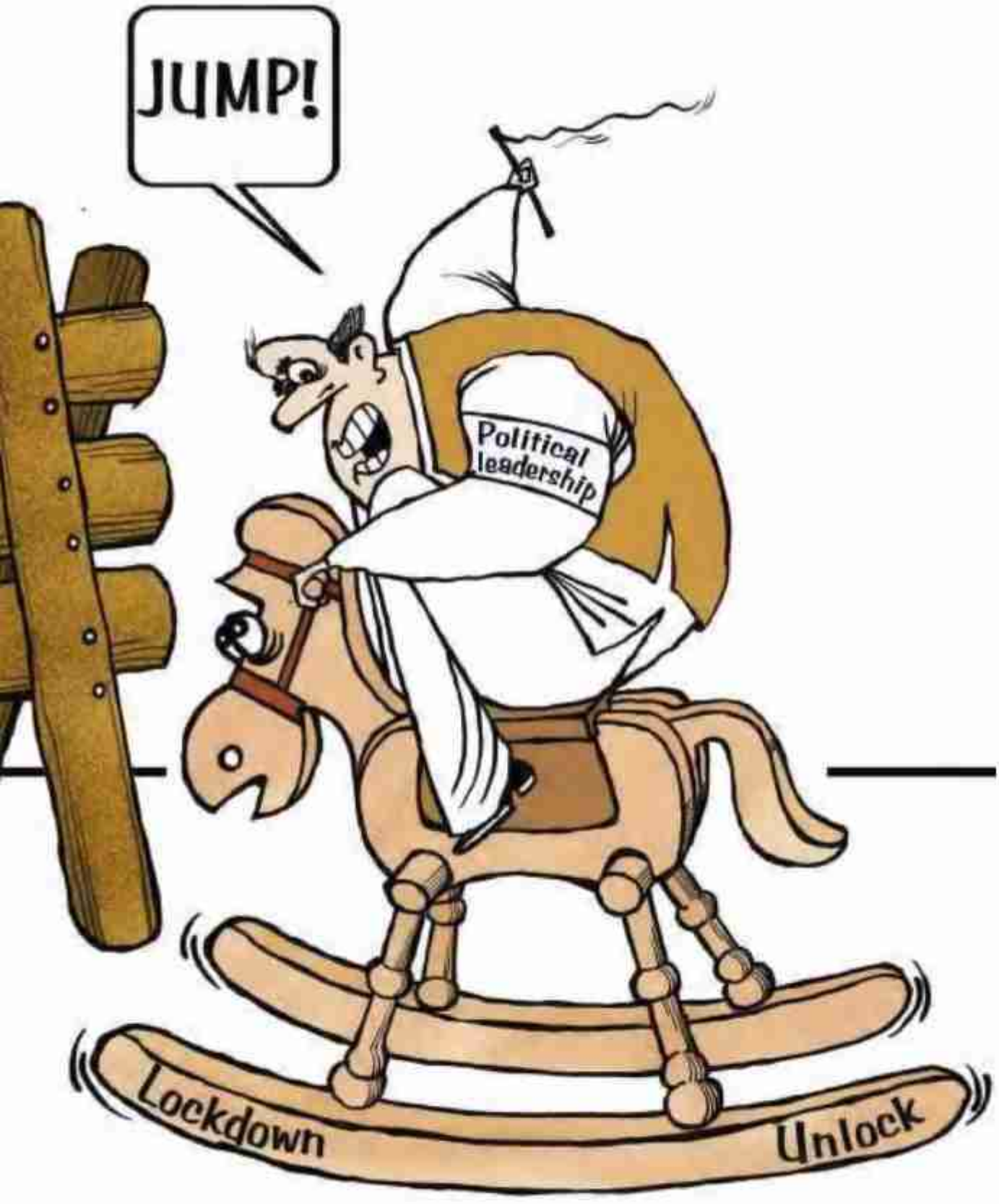
PHOTOGRAPH: VIJAY CHOUDHARY / CSE


इज्जत घर
दरवाज़ा बन्द तो बीमारी बन्द
स्वच्छ भारत मिशन
ग्रामीण
वर्ष 2018-19
पानी की टंकी

PEOPLE CONTINUE TO BEAR THE COST OF POLICY FLIP-FLOPS



CARTOONS: SOVIT / CSE


JUMP!
Political leadership
Lockdown
Unlock

FEBRUARY 16-29, 2020 | COVID-19

CORONAVIRUS PANIC

More than a month after the first case was reported from China, there is little the world knows about the new coronavirus. What's certain is that the virus is highly contagious. Is the world ready to face a pandemic?

BANJOT KAUR AND ALOK GUPTA

A PANDEMIC is an epidemic occurring worldwide, or over a wide area, crossing international boundaries and usually affecting a large number of people," says a World Health Organization (WHO) bulletin. COVID-19 has already spread to 27 countries and infected over 40,000 people. The past four pandemics were caused by the influenza (flu) virus, therefore the medical discourse has so far been only on flu pandemics. For the past two years, who has been listing pandemic as an important health challenge. "A pandemic of a new, highly infectious, airborne virus—most likely a strain of influenza—to which most people lack immunity, is inevitable. It is not a matter of "if" another pandemic will strike, but "when" it will strike," WHO said this year.

While WHO had warned of an impending flu pandemic, nobody expected a new coronavirus to strike first, and in such magnitude. During the last pandemic in 2009 due to swine flu, the reproduction number (R0)—infected people transferring infection to other affecting others—was 1.3-1.8; for COVID-19, it is 2.6. The fact that the outbreak is assuming pandemic proportions has been established in a research paper published in *medRxiv* by three researchers from health institutes in Glasgow and Lancaster in the UK and Florida in the US. They state that the total number of cases just within Wuhan, the epicentre of the outbreak, would be greater than 190,000.

How many people will be affected in a future pandemic? "The 1918 global influenza pandemic sickened one-third of the world's population and killed as many as 50 million people—2.8 per cent. If a similar contagion occurred today with a population four times larger and travel time anywhere in the world less than 36 hours, 50-80 million people could perish," WHO warned in a 2019 report.

There is no doubt that an outbreak of a large-scale pandemic will rattle the global economy. The World Bank estimates that a global influenza pandemic akin to the scale and virulence of the one in 1918 would cost the world economy US $3 trillion, or up to 4.8 per cent of the world's GDP. The cost would be 2.2 per cent of GDP for even

While WHO had warned of an impending pandemic caused by a flu virus, it did not expect a coronavirus to strike in such magnitude

PHOTOGRAPH: REUTERS

a moderately virulent influenza pandemic.

The shocking thing is that no country has developed precautionary safety protocols as prescribed by WHO—planning and coordination, situation monitoring and assessment, prevention and containment of virus, health systems response and communication for awareness.

"National health security is fundamentally weak around the world. No country is fully prepared for epidemics or pandemics, and every country has important gaps to address," warns the Global Health Security (GHS) Index report prepared by the Johns Hopkins University and Nuclear Threat Initiative. There are certain parameters upon which countries are ranked. On a scale of 100, almost all countries scored only 40.2. Less than 7 per cent countries scored better in terms of prevention of pandemic. Worse, less than 5 per cent countries had a rapid response strategy, says the report.

COVID-19

OUR LONGEST ASSIGNMENT

Down To Earth has been tracking COVID-19 even before it was perceived a global threat. As the pandemic unfolded, we chronicled the lockdowns, the nervous reopening of economies and the vaccination drives, reporting on those hit hard by the virus as well as on the new global health practices

1-15 April 2020

COVID-19 A PANDEMIC

As the novel coronavirus spreads faster than the world can contain it, developed countries' inadequate health infrastructure lies exposed. Their initial lack of foresight and inability to curb the virus got globalised as those infected freely moved to more densely populated developing nations with even worse public health infrastructure. People now hope that COVID-19 will become a seasonal community infection, like influenza; but the rising number of fatalities across most countries indicates that the world will pay heavily in terms of human costs before that can happen.

16-30 April 2020

WHAT WILL BE THE NEW NORMAL

One hundred days into the COVID-19 pandemic, India's poor people have suffered the most. The world's biggest lockdown has taken a massive toll on the rural economy and agriculture, leading to a food crisis-especially for the vulnerable and informal workers that are already dealing with internal displacement. While India's 10.5 million community workers are stepping up to ensure proper treatment and surveillance measures are undertaken, globally, countries like Africa and the US are relying on previous experience to shape their pandemic response. What does the future look like for the world?

1-15 May, 2020

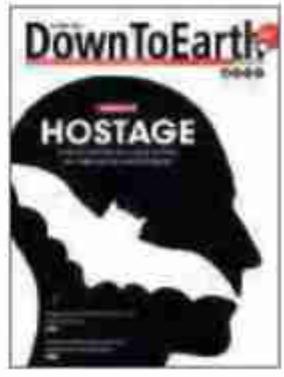
THE BIG PHARMA MESS

The COVID-19 pandemic has revealed huge gaps in the global pharmaceutical supply chain, facilitated by an industry that has always chosen profits over public health. Faced with massive supply shortages, several countries are now scrambling for self-sufficiency to secure life-saving drugs and personal protection equipment for their affected citizens. Meanwhile, the scientific community that is researching COVID-19 treatment therapies faces its own hurdles as it attempts to offer solutions while contending with patent protection on vital drugs.

16-31 May, 2020

HAVE WE GIVEN IN?

Several countries are beginning to accept the fact that we have to learn to live with the novel coronavirus just like we do with other pathogens that cause diseases like HIV, Ebola, cholera and rabies. India, too, attempts to follow suit. But we cannot let our guard down just yet; in fact, the pandemic must serve as a costly wake-up call for the world. Zoonotic diseases such as COVID-19 are reinventing themselves to find new hosts and are fast expanding their realm from animals to humans. We need to be prepared for the unpredictable yet inevitable outcomes.



1-15 June, 2020

TESTING TIME

Around 100 million of India's informal workers trudged home due to job losses amid the lockdown, the government belatedly offered a relief package; it only offered loans that would push them into more debt. The country, like the rest of the world, seems to be more focused on pushing for more tests to curb the spread of infections. Although it is important, governments cannot depend on a ramped up testing strategy alone to provide results good enough to reopen their economies. The health system needs to be more robust to deal with the unknowns of the disease.

16-31 July, 2020

LET THERE BE BLUE SKY

The nationwide lockdown in India has provided an unexpected positive—clean air. Fewer vehicles on the road and closed factories has resulted in a drastic drop in particulate matter in the air of six major cities across the country, unwittingly showing us what our cities can look like if we wean away from polluting vehicles and industries. As lockdown restrictions lift, the government must ensure we act on the build on the momentum by promoting greener modes of public and private transport and incentivising the use of cleaner fuel in industry.

1-15 August, 2020

WHO IS TRACKING INDIA'S HEALTH?

In early 2020, while the world was still struggling to contain COVID-19, the states of Odisha, Assam and Karnataka were fighting another mysterious illness, or illnesses, leading to unexplained fatalities. Unidentified diseases can quickly become epidemics and cause far more damage than COVID-19, a pathogen at least known to scientists. Although India has taken measures to monitor such disease outbreaks, a lack of government focus on public health has rendered the infrastructure in place defunct and left the people vulnerable.

1-15 November, 2020

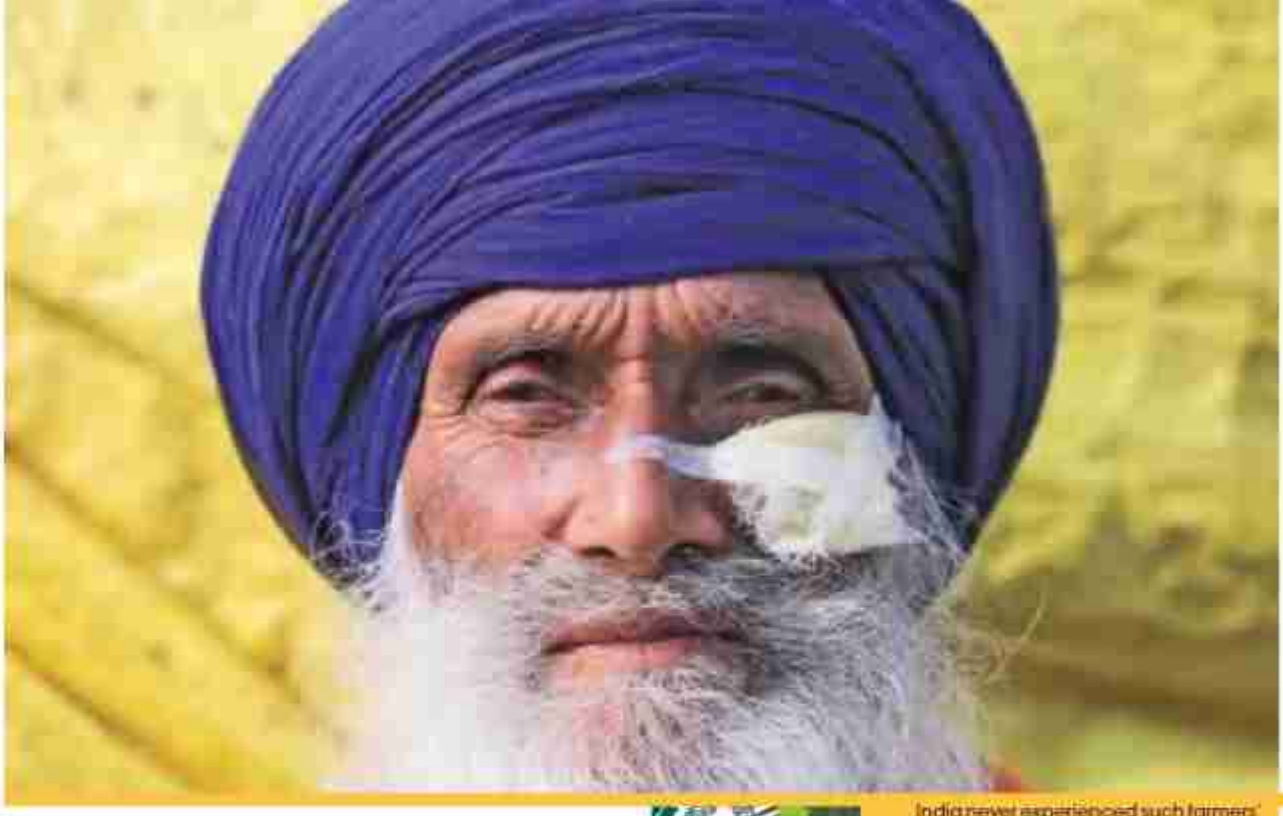
IN SEARCH OF IMMUNITY

The sudden focus on boosting immunity as a measure to fight COVID-19 has led to companies and even governments going on overdrive to recommend food supplements and health medication. Although a robust and functional immune system is essential to fight infectious diseases, the fact is that we know very little about how our body's defence response works to make any plausible scientific assumptions on improving it. A healthy diet and exercise regime is still our best bet at improving our resistance to all kinds of diseases.

16-31 November, 2020

AGE OF VIRUS

COVID-19 and previous pandemics have painted a grim picture on the virus family. But these small, much scorned biological entities are highly misunderstood; we have learnt little about them since the pox virus first caught the world's attention 11,000 years ago. But viruses are being redefined as more than just pathogens; they have proved to be beneficial to boosting the growth of plants and even fighting other diseases-causing viruses. It is a combination of both pathogenic viruses and human activities that leads to outbreaks of diseases like COVID-19.



India never experienced such farmers' agitations, not even during the extreme agrarian crises in the 1960s and the 1990s

PHOTOGRAPH: REUTERS

FEBRUARY 16-28, 2021 | FARMERS' PROTESTS

AGRARIAN BIOPSY

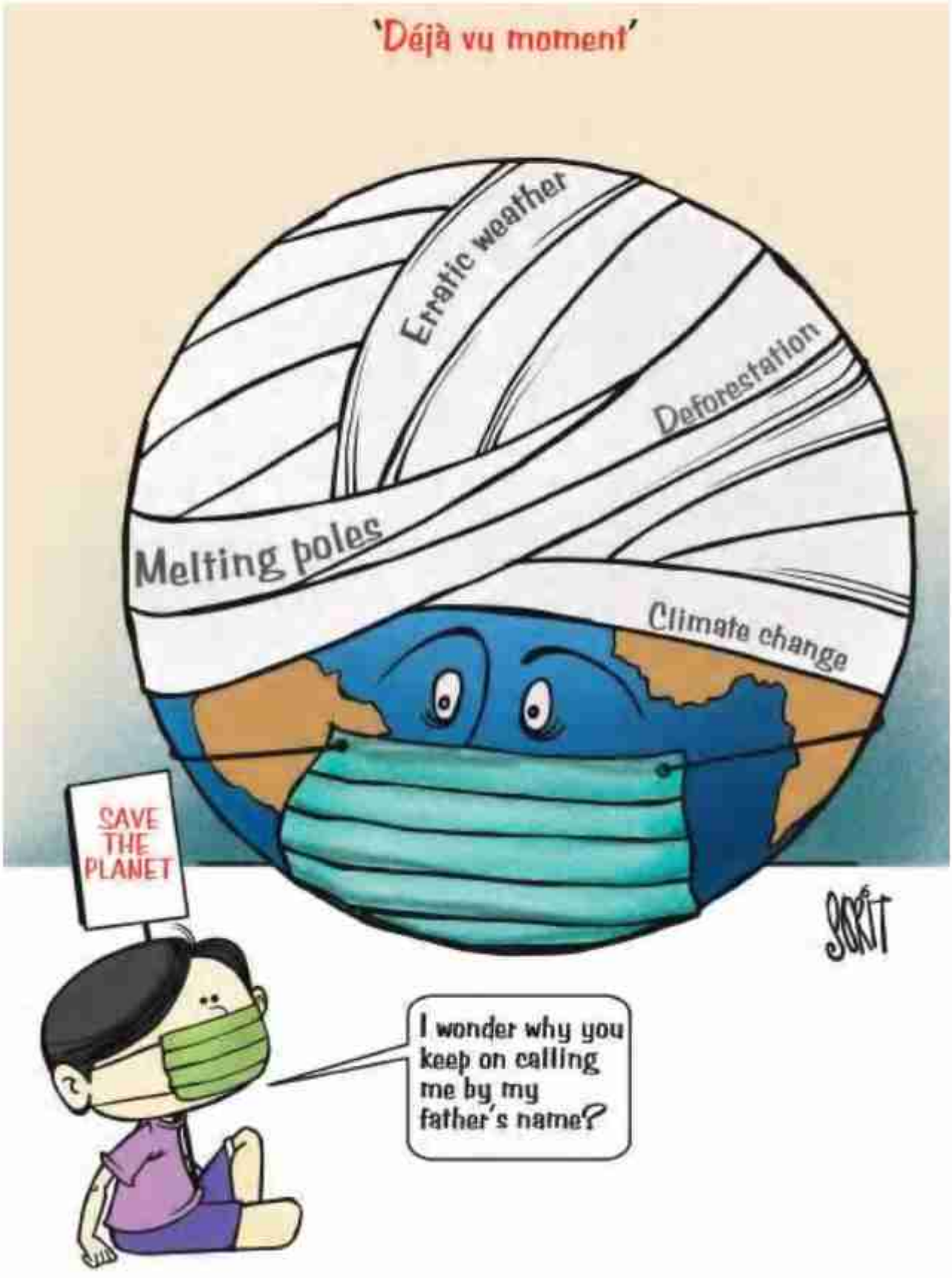
A probe into the fundamentals of the farm economy

RICHARD MAHAPATRA

IT IS a crisis the country needed to experience. Agriculture as an issue had never attracted such attention. Currently, all the pillars of our governance system are engaged in dealing with the fast-spreading farmers' protests across the country—from the legislative to the executive to the judiciary. Farmers are continuing their protests against the recently adopted farm laws.

As more and more people throng the borders of the national capital, there have been over 300 protests from across the country in support of those camping in Delhi. Agriculture is emerging as the axis of polarisation among political parties. Moreover, India never experienced such farmers' agitations; not even during the extreme agrarian crises like the crippling droughts of the 1960s or even in the early 1990s when India joined the World Trade Organization (WTO) regime. These were just episodes of protests; governments declaring reactive policies and programmes; and, periodically waiving off farm loans. But now, the national slogan of "*Jai Jawan, Jai Kisan*" is prickling the conscience of people. The farmer is emerging as the polarising figure. Among political parties, there is a subtle, but swift narrative being scripted: "Are those protesting the real farmers?" This narrative has an unusual spin as well: "rich" *v* "poor" farmers in the ongoing debate over farmers' protests.

Nevertheless, farms and farmers—the theatre and the protagonist of an agrarian country—are defining the current political discourse. It is also time we raise some fundamental questions over this very existential occupation.


'Déjà vu moment'
Erratic weather
Deforestation
Melting poles
Climate change
SAVE THE PLANET
I wonder why you keep on calling me by my father's name?
SUKIT

TRAINING ON SAFE TOILET TECHNOLOGIES AND FAECAL SLUDGE MANAGEMENT IN RURAL AREAS

India has declared itself open defecation free (ODF). The infamous distinction of having the world's largest number of people defecating in the open is history. But does that signal an end to our quest for sanitation? Most certainly not.

The country is beginning to wake up to a fresh challenge: how to treat the massive quantities of faecal sludge generated from the millions of new toilets we have built? How do we prevent all this waste from seeping into our groundwater or our lakes and rivers? What are the safe, adaptable and sustainable technologies for managing toilet waste and for reusing faecal sludge?

We bring you a training programme designed to understand the problem and explore solutions, conducted at our state-of-the-art residential training facility in Nimli, Rajasthan, by renowned experts in the field.

The training is open to Indian participants only. Participants should provide a negative RT-PCR test report conducted within 72 hours before the date of the journey.

KEY TAKEAWAYS

- Information on safe toilet technologies practised in different ecological regions of India
- Understanding of decentralized technologies used for management of grey and black water
- How to retrofit a faulty toilet
- How to treat untreated and partially treated faecal sludge before further disposal
- What are the options to reuse faecal sludge and wastewater
- How to use Information, Education and Communication (IEC) material effectively for making an ODF state sustainable
- How to develop guidelines for making detailed project reports (DPRs) for managing faecal sludge
- Real-time problem analyses

A limited number of partial fellowships are available to Indians who have participated in CSE's online courses on faecal sludge management in rural areas. The fellowships cover boarding and lodging costs, and the cost of training kits as well as training fees. They do do not include travel to and from Delhi.

COURSE FEES

Rs 22,000 per person.
The fees covers training cost, pick-up from and drop off at Delhi, and boarding and lodging at Nimli.

10% early bird discount till May 15, 2021

15% discount for group participation (three and above)

COURSE DURATION

June 8-11, 2021

COURSE VENUE

AAETI Campus, Nimli, Alwar, Rajasthan

LAST DATE FOR APPLYING

May 26, 2021

OPEN FOR

National, state and district-level officials, elected representatives, CSR agencies, students, academics, researchers, consultants, practitioners and non-profits

FOR FURTHER DETAILS PLEASE CONTACT

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R.N.I. NO. 53588/92 POSTAL REGN. NO. DL(S)-17/3109/2021-2023
ISSN 0971-8079. Licensed to Post without Pre-payment U(SE)-44/2021-2023 at Lodhi Road HO,
New Delhi-110003. Published on 1st of every month. POSTED ON: 2-3 of the same fortnight, Total pages: 76