CUSP OF CHANGE
Stories of lives, lessons, legends from Mewar

Manual cross pollination of Bt cotton
ABOUT THE COURSE

**Challenge of the Balance:** a course on Policies, Politics & Practices of Environmental Management in the Developing World

**Objective**
This interdisciplinary month-long structured course on environment/development issues is for about 25 participants from various international institutions of learning. For this summer school, CSE has collaborated with Engineers Without Borders (EWB) United Kingdom, and EWB chapters in South Asia.

**Programme design**
Challenge of the Balance is an orientation programme to give international participants a first-hand experience of Southern perspectives concerning the environment-development debate.

It includes classroom lectures, seminars, local field excursions, together with challenging individual and/or group project work. Participants will be given an intense briefing on issues that are of concern to India and other developing countries. Field trips will serve to illustrate innovations and eco-restoration efforts that communities make to enable them to face the challenges of managing their natural resources base.

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Challenge of the Balance August 2012: Participants from the UK, Scotland, Italy, Japan, China, Nepal, Bangladesh and India
Hello, please make yourselves at home.

This the thread where we post accounts of the state of the environment as we see it. A network of complex, interconnected issues does not begin to describe it. Threading together stories of lives, livelihoods, water, waste meant endless hours of brain racking and lots of coffee and conversations. This is our thread, where we post interactions with the people we met and how we're all just trying to wrap our minds around it all.

I don’t know how many of us were surprised by what we saw. Water brings communities together, while easy money tears them apart. The polluters never end up paying, while the people who live with the pollution are left without options. Livelihoods, or the lack thereof, take people on surreal journeys. Farmers make choices they shouldn’t have to for reasons they don’t know themselves. Grassroots organisations fill in the gaping abyss left by a lax administrative machinery. It’s inspirational to travel with grassroots organisations and the enthusiasm of each member is palpable and contagious.

The environment, to us, does not mean just trees and hills and natural resources, it’s also about how waste becomes a survival tactic for some, or about people in crowded city villages who cannot challenge the change around them.

It’s not about man versus environment anymore. Built or natural, manmade or pre-made, forest or cityscape, they are all central to the existence of the human race. When we say environment we mean this world as an indivisible whole.

Keep it conscious.

Anjali Nambissan & Yash Maniar

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Enrico Prunotto

We have lost our memories; the philosopher Umberto Eco defines us as an alien generation, arguing that we are no longer used to living in nature. We only know cities and we live in unreal spaces, trained by the media, which tells us about problems no longer seen in our everyday life, such as chronic poverty or lack of food and water supply. However, we live in a world where pressures and tensions of change require global awareness. To drive this process, a lot of institutes offer programs on eco-development issues based in developing countries for students to interact with local communities.

The course Challenge of the Balance is a good example, as its main pillar is a one-week-long field trip to rural India. The course program officer Sharmila Sinha considers this practical learning model extremely effective to “inform the students, who probably have never been on a farm before, to try and see what it is like.”

When we arrived in village Dhingavarikala, villagers stopped their activities to look at this group of “developed people” with good clothes and white faces, an unusual sight for them. Soon however it was our turn to to be surprised: an open-air toilet, a Bt cotton plant and grazing goats. For many of us this was a first-time experience. It didn’t take much time for us to start grabbing farming tools and pretending to be farmers, at least until a good Facebook photo was acquired. We interacted with the villagers and then we left with smiling faces. All was over; we were in our safe and comfortable bus, back to our lives. Is that all? Is it just a quick look that the students wanted when they applied to these eco-courses? We don’t believe so.

However, this will be the result if the learning is not managed properly after these visits. The first reaction could easily seem superficial when you don’t really know how to behave. However, this is just the surface of the experience and only after connecting all the dots will we get true value.

From the knowledge obtained by this course we can now understand the backwards value-chain and what we are paying for when buying a cotton T-shirt. No one can force us to change our lifestyles; however, after these experiences, making a conscious choice should become our duty. We need to remember it.

Our generation already lost many memories and we are here to learn back what was probably the basis for most of our grand-parents.

Benjamin Ruaridh McIntosh-Michaelis

Newspapers, magazines and television news relay these stories every day. If you’re a reasonably informed ‘global’ citizen you know that of the poorest in India 94 per cent do not have toilets and that, as agriculture increasingly becomes less profitable, sowing cash crops becomes the trend, often leading to debt, alcoholism and suicide among farmers.

But real life has to be seen to be believed. A month-long experience at Challenge of the Balance in August 2012 reaffirms that. Not only is the field trip a reality check like no other; through the lectures you come to know and continue to be inspired by people who have devoted their lives and used their education towards making sense of this crazy world.

A field trip like this teaches you not only about the world around you, but also about your own limitations. There’s you with your air-conditioned tour of a tribal village, but there’s also little Emiya you meet on that tour. She has to till the weeds to feed her goats and doesn’t get to go to school like the rest of the children of her village.

You have to get over the fact that there are no black and white solutions in a world full of grey human beings. Complex, interconnected issues make up this reality. It’s not just the awareness you have but what you do with it that counts. Virtue is nothing but words till it is acted upon.

You face up to that challenge and realise that there’s really not one thing you can change about this world. There are many things and there is nothing. It is how you face up to this challenge and alter your life. If you think making conscious choices well within your comfort zone is enough, so be it.

For me, it’s about challenging limitations to know what I’m made of and alter my sense of virtue.

The views expressed by the authors are their own
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PHOTOS: YOUSOF KHAN
Small Village in the Big City

Peculiar to Delhi, these urban villages are tiny bits of rural life, seemingly exempt from big city influence

• ANJALI NAMBISSAN

Crowded and narrow lanes thread together a cowshed, some haveli-style houses, a Panchayat, a baraat ghar and many multi-story apartment buildings leaning on one another. What’s increasingly becoming common in Delhi’s urban pinds, or villages, are high-fashion designer boutiques, multi-cuisine restaurants and exotic patisseries and curio stores by the dozen.

Strict land use rules in areas controlled by municipal authorities, low rents for commercial properties and practically no licenses required to operate businesses explains their popularity. “There’s a certain urban osmosis. They absorb the activities that would otherwise not be allowed in urban areas,” explains KT Ravindran, professor and head of urban design at the School of Planning and Architecture, New Delhi. Ravindran also served as chair of the Delhi Urban Art Commission.

Known variously as lal dora or shehrikrit gaon, there are 135 villages within the national capital region of Delhi, with a population of 2.9 million.

The Delhi Masterplan, 1961, declared these villages, about 20 at the time, as Urbanised Villages. In 1979-80, the Delhi Development Authority (DDA) was handed the responsibility to improve civic services in urban villages; the Municipal Corporation of Delhi (MCD) took over their administration in 1988. According to the Economic Survey of Delhi 2008-09, DDA and MCD were allocated a total of Rs 366.09 crore from 1980 to 2009 as development funds for Delhi’s urban villages.

Zamrudpur in south Delhi, a village of about 3000 families, has a predominantly Jat population. Chatar Singh, the village pradhan, or chief, feigns ignorance about these development funds. “Apart from the Aadhar (unique identification card) people, no one from the administration has ever come here. Except, of course, during election campaigns,” he quips.

Legends and lineage are kept alive by village folk. In Shahpur Jat, a 700-year-old village also in south Delhi, villagers claim descent from Indri in present-day Haryana. “We were all farmers who grew tobacco and cauliflower. The tobacco grown here was exported.
to Arab countries. Some people had cows and even horses," remembers 80-year-old Bhim Singh, former patwari (keeper of records) of Shahpur Jat. Today, given its central location, properties here command steep rents. By rough estimates, close to 80 per cent of landowners live off the rental income alone.

Planning deficit
The Delhi Master Plan 2021, released in April this year, lists bold steps to develop urban neighbourhoods. In the draft plan, urban villages are recognised for their mixed land use, for commercial, residential and industrial purposes. It recognises the reality of narrow lanes and high-density living areas, and stresses their important economic role.

These ambitious plans are only worth the paper they are written on, says Sanjay Singh, a resident of Shahpur Jat since 1975. “I have been trying to get an overbridge built on the Ring Road near Panchsheel Enclave for close to eight years. It’s the only way to go to the closest market in Malviya Nagar. Through a Right To Information application, we found that between 2007-2011, there have been 19 accidents and seven deaths on that road alone. There are no street lights on the roads in the village. We’ve brought all these things up many times with the municipal councillor and the member of legislative assembly (MLA), but little has changed on the ground.”

Delhi’s urban villages are vestiges of rurality enveloped by the growing city. “What the residents of the Asiad Games Village use as a playground used to be our burial ground,” Sanjay points out.

“These villages were once surrounded by pastures or grazing land, agricultural land, ponds, streams and other natural resources. These were acquired by the state and the villages were left to fend for themselves. The land was then distributed to different parties under various schemes. Some of the land was acquired by private developers through deals with the villagers,” says Ravindran, pointing out the same transpired in the case of the upscale colonies of Munirka, and Gautam Nagar extension. “Posh ‘New Friend’s Colony’ used to be a part of Khizarabad. It was colonised when the numberdar (keeper of land records) sold the land to a private builder. The plotted apartments in Nizammudin came up on land sold from the basti (squatter settlement) around the time of India’s partition in 1947”, he points out.

The 2021 masterplan calls for big changes to these villages to better integrate them with the city. “Integration – physical, social, environmental and economic – is something that they’ve been trying to bring about since the 1960s. I don’t know whether this has happened anywhere so far,” says Ravindran.

Some are sceptical about the proposed plans, such as extending village boundaries. “Where do they plan to extend the village to? How?,” asks 56-year-old Dhan Singh, a retired postmaster and resident of Zamrudpur. “Thick green forests used to surround this village, from Amar Colony on one side to Nehru Place on the other. It’s all gone now and there is no space around us. Some families have gone on to establish another Zamrudpur along the Haryana border.”

The plan identifies villages of historic and tourism significance, and emphasises environmental concerns for their development.

Likewise, the plan’s proposal to pool individual properties to make space for common areas does not go down well with many Shahpur Jat residents. “How are you supposed to reorganise your property when you have very little space in the first place,” said Bhim Singh.

World within a world
Boxed in on all sides by tony colonies, clubs, and apartments, these semi-rural villages signify Delhi’s strange balancing act, where the rich jostle for space with cowherds and farmers. Multi-crore, planned and systematically developed properties are juxtaposed against haphazard, unplanned construction and tight, garbage strewn lanes. This strange meeting of two opposite worlds is not without friction.

Within this world there are sometimes integration problems as cheap rent attracts tenants who may not be conducive to community living.

Plans and masterplans aside, the real challenge for Delhi’s administrators is how to achieve some semblance of a balance between these rural worlds nested within a growing cosmopolitan city.
Man Behind the Bears

The dancing bears are almost entirely off the streets of north India, in large part due to the efforts of KARTICK SATYANARAYAN, co-founder of Wildlife SOS. In a conversation with MAHJABEEN, he points out the importance of roping in traditional hunting and poaching communities in conservation efforts in India and Asia.

Was there anyone in your family whose love for animals had an impact on your personality?
Affection towards nature has always remained an innate part of my character. I often emptied my school bags to rescue snakes or injured birds since I was a kid. However, I credit my parent’s upbringing for what I am today because they were always patient despite my eccentricities.

Also, I am thankful to all my friends, including Ravi Kumar, Bhupen Talukdar and Geeta Seshamani, the co-founder of Wildlife SOS, for the inspirational roles they played to help me achieve my goals.

Does being known as ‘The Bear Man’ and getting critical acclaim for your work put extra pressure on you?
When we started working on bear rescue with the Kalandar community, it was censored heavily. However, we astutely pointed out that it was an historic issue which was backed by environmental law and wildlife protection.

Dealing with government and legal issues requires strategic thinking and immense pressure and it often disturbs the balance between my personal and social life, but over time you grow a thick skin.

Since people expect me to solve almost every problem thrown at me, I am always prepared for bigger challenges and believe in going with the flow and moving forward optimistically.

Could you describe one particular experience that has had a deep impact on you while you were rescuing bears from the Kalandars?
Once in a village called Eidgah, we were chased with axes and knives when we tried to point out possibilities to pursue alternative livelihoods. We literally rushed out of the place in top gear!

However, we didn’t relent and came back stronger after two months and
succeeded in convincing the villagers to an extent that they themselves drove away bear poachers bootlegging cubs from Nepal to Uttar Pradesh.

In another case in Karnataka, a Kalandar boy got admission to pursue an engineering degree in a state college. He was the first-ever engineer in the village and the first in the entire Kalandar community. And of course, there’s this one time when I was trying to rescue a leopard in Delhi and it left me physically scarred.

**There’s one Kartick who passionately loves animals. What is the other side of him?**
The other side of me includes my love for music, dancing, video controlled cars, gadgets, driving and of course, the outdoors. I guess I am a bit of a human being!

**Seeing the bears slowly returning to their natural condition, how does it feel?**
Nature is forgiving, adaptive and willing to change and mould. The minute you give them the freedom and give them the option to reduce imprinting; it has a deep impact on them. Initially, we didn’t even think that it would be possible, that these bears could be rehabilitated, seeing that they were too deeply scarred and imprinted to have them reverse their behaviour. But thankfully all bears have now been rehabilitated to their natural wild behaviour and it is incredibly encouraging and pleasant to see them changing their biological clock, turning into a nocturnal animal, returning to their natural ways.

**If you weren’t doing this, what would you be doing today?**
Maybe an environmental terrorist, killing illegal loggers or even be a mafioso! I cannot actually think of anything else other than doing what I am doing. I guess, I would have been an utter failure or even a social reject in our society.

**What is your plan regarding the future of Wildlife SOS?**
My plan for the future of Wildlife SOS is that it shouldn’t end with an individual, and thus have already sorted out a succession strategy within the employees in the organisation to move forward in case Kartick is killed.

In the long term, Wildlife SOS will try and work in India as much as possible and also in South East Asia, as we would like to set up an established connection, a good network with neighbouring countries and continue to work with like-minded people and organisations.

Another project that is very dear to my heart and which is very valuable for the future of wildlife conservation in Asia is to rope in local hunting communities in conservation efforts. There are dozens of local hunting communities across Asian countries with invaluable knowledge of wildlife behaviour and hunting.

If we could rehabilitate them and utilise their services in a way that will not be harmful to wildlife, but will assist conservation, then I think we would be doing a great service both to wildlife conservation and to these communities.

They would be rehabilitated, their skills harnessed and used in a good way. I’d say that I will certainly continue fighting till my very last breath to protect Indian wildlife and of course, work with communities because I think we can learn so much from them.

For more information, log on to www.wildlifesos.org

For Under the watchful gaze of Jasmine, a rescued female sloth bear
Every year, droves of people migrate from far-flung states of Uttar Pradesh, Orissa, Bengal and Jharkhand to Delhi with a dream to eke out a living by driving rickshaws, doing manual labour or collecting recyclable waste from the streets, landfills and households. People such as Kazim, a 62-year old social worker with Safai Sena residing in the Ghazipur slums who came down from West Bengal to Delhi in search of work in 1976.

Commonly referred to as “ragpickers”, Kazim is one among the roughly half a million ‘cleaning agents’ in Delhi who make rubbish disappear from the city streets. They collect waste from households, segregate the solid waste from the recyclable waste, and browse mounds of trash for recyclable waste in toxin-laden landfills.

Kazim’s hut in Ghazipur lies at the end of a narrow winding mud path, lined on either side by tarpaulin and bamboo huts. Ghazipur, Delhi’s largest landfill, is spread over 80 acres, and is surrounded by a huge slum and dairies. Living less than 60 feet away from the incineration plant, slum residents are worried about their health and occupation. “It’s a fight for survival,” said Kazim.

While India is known for recycling almost everything, from glass bottles, newspaper, plastic and rubber tyres to computer and electronic components, it has typically undervalued the contribution of the people involved in this important unorganised trade.

Delhi alone generates about 2.5 million tonnes of solid waste each year. Most of the city’s ‘landfills’ – a misnomer, as most are really dumping grounds for waste – are struggling to cope with the enormous amounts of waste. No government wants to grapple with waste dumped on prime land, polluting the groundwater and the air. However this threat is increasing. The government seems to have finally found a solution in 2012 to this menace – burn the waste using incinerators. Originally called the destructor, incinerators have been known to spew dangerous dioxins. They may also make Delhi’s ragpickers obsolete.

For more than a decade now, there has been a steady push by the Delhi government to privatise all aspects of the trash trade – from its door-to-door collection from households to segregation, transportation and eventual disposal, including incineration, placing the livelihoods of ragpickers and junk dealers at risk.
than 400 ragpickers stand to lose their only source of income.

Likewise, more than 300,000 ragpickers stand to lose their only income source from the Delhi government’s move to privatise the door-to-door trash collection. Their earnings have already been reduced to as low as Rs 100 a day from Rs 250-300 that they used to earn earlier.

“The young ragpickers ask me what will happen next? I keep giving them hope that all will be good. But there are a few who are not ready to understand that we won’t be allowed on these landfills anymore,” says Kazim. They aggressively mention “Hum ko ghusne nahin denge toh hum jabardasti ghusenge (if they don’t allow us, we will force our way in). Bacha paisa nahi kamayenge, toh khane ke liye chori karenge, daka dalenge, khun karenge (The kids will rob, fight and kill others for money)”.

At repeated meetings with IL & FS, officials have promised jobs to ragpickers as per their qualifications. But most ragpickers are illiterate. At present, the segregation is done manually. Mechanisation will make the manual efforts of ragpickers redundant. Also, incineration does not differentiate between what is recyclable and what is not.

Shashi Pandit, the secretary of All India Kabadi Mazdoor Mahasangh, says it is clear the government’s policy for privatisation has not taken account of the livelihoods of ragpickers. “Are we citizens responsible for executing the laws”, he asks. He points out 78 per cent people live with less than Rs 20 a day, and in Delhi alone, close to 70 per cent of the city lives in illegal settlements. He said in this context, the focus should instead be on empowering ragpickers to continue to recycle in this resource-crunch world.

Despite filing a number of ‘right to information’ applications regarding waste management in the city, Pandit says he is yet to get legitimate answers from government agencies. He points out the gaps in the system – for instance how the 3 MW Okhla plant’s ‘environment impact assessment’ was conducted at Saket, some 16 km away from the site, which is clearly against the rules. “The plant wasn’t able to generate a single MW of electricity,” he adds. The waste contains too high a value of wet to dried waste, which makes the plant less efficient, resulting in low energy generation.

The government has planned three plants – one each in Okhla, Ghazipur (construction phase) and Bawana (planning phase) to promote renewable energy. Companies get subsidies, easy access to land and other tax policies. Reports suggest subsidies of up to Rs 2 crore for each MW. Companies have invested large amounts already – Rs 200 crore for the Okhla incineration facility, for instance. However, the 62.2 MW combined capacity of all three plants is only a drop in the ocean for Delhi’s electricity requirement of 4,800 MW.

“The sole objective of the company is to earn carbon credits. Ragpickers deserve the carbon credits more than the companies do,” says Pandit. Analysts say that this is mostly fuelled by the incentives offered by the ministry of new and renewable energy, municipal corporations and the prospects to access Clean Development Mechanism funds.

Some in the administration are sympathetic to the plight of Delhi’s ragpickers, says Pandit. Following his meeting with Delhi’s chief minister Sheila Dikshit, some recommendations were forwarded to the labour minister, the most important being to issue identity cards to ragpickers to protect their rights. A simple act that has the potential to end constant harassment by the police and other officials, and lend some dignity to their efforts.

Segregated plastic bottles
In the midst of the controversies surrounding Ghazipur and with Kazim’s life still fresh in our minds, our next stop was Kachpura, a regenerated village-slum in Agra. Once a small village that faces the Taj Mahal across the Yamuna River, Kachpura comprises 437 homes housing close to 4,000 people.

As we walked through the monsoon-greened farmland towards the village led by Radha Mohan, a man working with CURE (Centre for Urban and Regional Excellence), we thought to ourselves: can a former slum dwelling, clustered in an area with five other slums change so much six years since the installation of household toilets?

We entered the village in search of a woman named Meera Devi, who heads a women’s organisation working on water security for slum residents. She was among the first people CURE contacted, due to her extensive knowledge about the area.

We walked the clean brick-laid streets of the village, passing excited kids and young men making shoes. As we turned a corner, we saw a petite woman standing in the courtyard of her house wearing a blue sari. It was Meera Devi.

Meera, being a woman of very few words, however of a precise and calm nature, started to talk to us about the history of Kachpura as being not too dissimilar to other slums. Poor hygiene and sanitation due to open-air defecation led to most health problems, mostly among pregnant women and children.

Since the intervention of CURE in 2006 with a student-led design initiative to implement domestic toilets and a septic tank in the community, health and hygiene have steadily improved. Meera said there are now 65 homes with toilets in the slum.

The village has a decentralised wastewater treatment system, which was installed in 2010, something that the people are extremely proud of. The treated wastewater is used to irrigate the vegetable plots of carrots, onions, potatoes, greens and mangoes. The village uses groundwater to meet its drinking water needs. Today, Kachpura has become a tourist attraction for visiting foreigners and Indians.

As we said our goodbyes, it struck us that the lives of Kazim in Ghazipur (see preceding story) and Meera were not too dissimilar.

But Kachpura had Meera and the determined support of a development organisation to bring in change.
REPORT

Conflict of Interests

The Mathura IOC refinery uses the lake at a bird sanctuary as a water source for its activities

• ANJALI NAMBISSAN • MAHIABEEN

The Soor Sarovar Bird Sanctuary (SSBS) spanning an area of 7.97 square metres is home to over 165 species of birds. The sarovar or lake with an area of 2.25 square metres and with a depth ranging from 4 to 8 metres is dotted with wader bird nests along the periphery. It houses thousands of bird nests and roosting sites in the tiny islands within it. Located just off National Highway No. 2, SSBS is listed as an ‘important bird area’. We meet Sujoy Banerjee, the deputy conservator of forests. “The area was declared a sanctuary in 1991,” he begins. “This is a peculiarly carved out sanctuary. There are some private areas that have been included in the sanctuary, including two engineering colleges. Where there’s a natural resource, there are conflicts. He recalls the times when villagers cut trees for firewood.

A new conflict may well be brewing, with the Mathura refinery of the Indian Oil Corporation (IOC) drawing out about a foot of water a month from this protected lake. Banerjee explains that there are associated impacts of this operation. “The refinery leaves such a huge ecological footprint, yet they do not support the management of the sanctuary in any way.”

The 6 MMTPA refinery was commissioned in 1982, and is located 154 km from Delhi and less than 50 km away from the Taj Mahal. Banerjee says the lake was originally created to supply water to the refinery. However, as more water birds took to their new habitat, the area was declared a protected area under the 1972 Wildlife Protection Act. Section 28 of the Act specifically prohibits destroying, damaging or diverting the habitat of any wild animal; or diverting, stopping or enhancing the flow of water into or outside the sanctuary except as per a permit by the chief wildlife warden.

The refinery’s water requirements from the lake are more than what the lake can provide; the refinery authorities in collusion with the irrigation department have constructed an inlet which pumps in water into the lake from nearby sources.

“It doesn’t matter what kind of water it is, what time of year or day they will pump it in – there’s absolutely no predictability about that,” says Banerjee. “It has nothing to do with the amount of water in the lake.”

The drastic rise in the water level is detrimental to the birds and other species dependant on the lake’s low lying islands. The water level can rise up to 3 feet in 10 to 12 hours, says Banerjee, which disturbs the habitat of the birds and turtles. “The nests, eggs and young ones – everything gets affected,” he says, adding that the water is sometimes polluted or carry invasive species, a problem causing further damage.

Operating in the fringes of the notorious Chambal region infamous for its dacoits comes with its fair share of risks. Banerjee has survived two attacks and the forest guards and officials are sometimes required to carry weapons. “We’re a very small staff of seven people here. They have to manage the tourists during day time and at night, they have to patrol the lake and the forest areas.”

Banerjee is realistic of the battles that are still to be won. “There are a lot of issues here. If you sit in the office from morning to evening trying to sort out issues you’d still run out of time.”

For more information, log on to www.soorsarovarbirdsanctuary.in
THREAD went looking for, and found complex interconnected issues in the driest state of the country, Rajasthan.

Located in the south western part of Udaipur district, Kotra is one of the poorest blocks in the country, where 90% of the population are tribal. Agriculture serves as the primary source of income, though just a small section of the total land is devoted to it due to recurring drought, limited irrigation capacities and lack of labour. Every patch of land has multiple issues – choice of crops, absence of legal system, migration and exploitation.

Seva Mandir, a grass root organisation, has been working in Kotra since 1966, supporting ownership for self development at the community level.

Udaipur district is a classic example of the development versus conservation debate. Jheel Sanrakshan Samiti (Udaipur Lake Conservation Society) has been working on conservation of lakes in Udaipur suffering under the onslaught of hotels constructed on the embankments, and dumping of industrial and domestic waste.

Read on to find out more about the concerns expressed by the resident.
Pipad village is stuck in a conflict between soapstone miners and local people. Soapstone is valuable to the miners as a carving material and so is the work it provides for some local people. On the other hand mining is ruining the pasture land which acts as the villages watershed.

Seva Mandir’s pastureland in the above photo shows how the landscape used to look on the left, whilst the miners land on the right seems to show utter devastation.

Dry stone wall separates mining area and protected pasture land. Still, mining waste is dumped over the other side of the wall.
The cost of development is often high, but it is an inevitable process and since the Udaipur economy blossoms under Hindustan Zinc Limited (HZL) stewardship, extraditing HZL from Udaipur is beyond speculation. The city of Udaipur now flounders in a strange quandary where it benefits from land and water tax, but pollution and violation of water rights are damaging the lakes which the people of Udaipur have relied on since the founding of the city.

Regarded as one of the largest zinc producers of the world, HZL employs 6,742 workers and has annual revenue of Rs 10,891 crores, providing the government with a significant amount of tax. Since the company started zinc mining in Dariba in 1982 it has always been searching for cheap water source for zinc refining and has found it in Udai Sagar Lake, one of the major sources of water in Udaipur. Constructed between 1559-1565, with a capacity of 23.4 million m³, this lake was built to ensure adequate water supply to the people. However, HZL’s activity of harnessing beyond their allocated 180 million m³ is diminishing the lake and water availability of 571,178 residents. HZL claims to produce 8,79,000 tons of zinc per year and one tonne of zinc requires 60 tonnes of water. According to local sources who’ve been involved in conserving the lake from pollution, HZL has been illegally extracting 14 million litres water every year. Also, HZL have been pumping sulfuric acid rich effluents into the ground as part of their waste disposal program, which in future will increase the pollution as the acid corrodes its way into the lake.

A closer look at the elements involved into the damaging of Udai Sagar Lake reveals there are more culprits involved: Udai Sagar’s grievance is not limited to HZL but the lake is also being marred by pollutants from marble processing and hotel businesses. The marble processing industry deposits its waste slurry in a small artificial pond, part of Udai Sagar’s catchment area, which will then feed into to the lake. During the dry seasons, the slurry turns to dust and is swept by wind to the residents below causing respiratory problems. Likewise, pollutants from other industries in the industrial area in Udaipur city pollute the lake. Recently, Varda Enterprise, a Mumbai based hotel investor, was prevented from continuing construction of a luxurious hotel in the middle of the lake. The whole scheme was exposed after 2 years of building and later a petition was filed by the locals under flagships of Jheel Sanrakshan Samiti (JSS), an organisation working for conservation of lakes of Udaipur to avert the damage. Despite the government pouring funds worth Rs 142 crores as an effort to bulwark the lake administration, the input seems to disappear in rat holes existing within the system, further aggravating the situation. A survey by ministry of water resources in 2010 revealed that 4 surface wells, 83 bore wells, 38 dug wells and 1,716 hand pumps were being used at the time and Udai Sagar contributed a significant amount to these water sources: suggesting that any activity that threatens the lake will not only affect the lake, but also the water system of Udaipur city.

Brutality of development coupled with corrupt administration has lead to a perplexing situation. A strange hypothesis could be such that the polluter themselves lead to a solution as hotel investors, marble businessmen and HZL all require water, but are mismanaging it. HZL needs cheap water of certain quality and since marble processing units and hotels are actually reducing the availability and polluting the water, a mammoth organisation like HZL might express some resentment against the minnow adversaries in the future. If groups, such as JSS could capitalise on such contentions, with support of HZL, they might be able to fend off the damages from marble slurry and hotel businesses. In recent years, HZL has also made efforts to rectify its image and claims to have influenced 500,000 lives with its Corporate Social Responsibility (CSR) schemes. HZL is concerned over Cloud Seeding in Udaipur apparently as a part of their CSR scheme, but their ulterior motive could be to replenish water in Udaipur for their own use.
In order to protect the environment, particularly prevent lake water pollution, concerned citizens and organisations have taken a number of legal initiatives by way of PIL (Public Interest Litigation) in Rajasthan High Court. In 1982, Balwant Singh Mehta filed a PIL in the High Court of Rajasthan to seek measures to control lake pollution. In 1997, Praveen Khandelwal, representing the Jheel Sanrakshan Samiti (JSS) filed a PIL in the Supreme Court, seeking urgent judicial intervention to clean up the lakes in Udaipur, and to check the flow of pollutants into these water bodies. JSS filed another Writ Petition in 1999 to speed up the case. Two more petitions were filed in the High Court. Accordingly judgment came up, which did not see the light of the day.

Abdul Rahaman vs State of Rajasthan, 2003, was filed in the Rajasthan High Court emphasising the need to protect tanks and ponds to enable the people to enjoy a quality life guaranteed under the Constitution of India. Because of these legal efforts Rajasthan High Court pronounced a land mark judgment for the prevention of pollution of Udaipur’s water bodies. According to the court order, several measures have also been taken, but the situation remains unchanged.

Above mentioned PILs have been filed for seeking government intervention and appropriate measures. It is notable that new hotels and private homes are built too close to, and in some cases inside, the lake. These constructions were built on community land and government owned land. The legality of the constructions have not been challenged.

How and under what authorities did marble processing unit owners get permission to process marble in the rain water catchments area? Government and other respective authorities provide licenses to the marble processing and hotel owners apparently in a space where such kinds of constructions and activities are supposed to be illegal as per national and state law. The legality of these licenses was not challenged. According to the law of the land, in case of a government lease of land, neighbours priority comes first. In the case of Udaipur it is rare that a piece of land has been leased out by the government to the neighbours. Therefore, dispute between locals and strangers is a common scenario in Udaipur. However, this leasing procedure of the government has also not been challenged by way of PIL.

As per the PIL filed in 1982, Rajasthan High Court ordered the authority to implement a ‘no-construction zone’, on Udaipur Lake. Court orders have not been fully implemented. Neither government nor business entrepreneurs are willing to fulfill the court order. “What is the solution if government doesn’t obey the court order?” asks Dr. Anil Mehta of JSS, “we have filed a contempt petition before the court”. But illegal construction and pollution analogously continue in Udaipur’s lakes.

Enforcing decisions, arising out of PIL, should be the responsibility of all stakeholders concerned. Only a transparent, accountable government, political parties and civil society can solve this ambiguity. Accountability of the state and check and balance between these organs may be the best solution. Pro-people movement involvement of political parties and other stakeholders is of urgent need for a long term solution. Several environmental groups have been working for environment protection in Udaipur but unfortunately it is not a concern of the local political parties yet. In a democratic country, it is theoretically believed that, politics is the ultimate solution, because political parties represent the people. Consequently, this issue of environment and involvement of political parties should be prioritised. It would become everybody’s concern and as such, success of PIL depends mostly on that.

Despite its utility, PIL is sometimes misused, abused or overused in some cases. Therefore, development process in some cases is disturbed. In many cases sustainable development process for the interest of the public is also hampered by abuse of PIL. In these circumstances, there must be a check and balance which can prevent the use of PIL to oppose development projects.
Historically, it has been proved that the development of the human civilisation has inherent connections with water management and harvesting techniques; our ancestors used trenches and dug out ponds, while today dams have become the primary way of managing lakes and watersheds. It’s possible to consider water as one of the basic drivers for development. Unequal and unmanaged consumption of water resources are becoming central in the environment-development debate.

Kotra is situated in an area prone to conflicts, social imbalances between the higher castes and tribal communities. It is also marked by high poverty levels, poor health status, illiteracy, and in-fighting within the community.

Villagers mainly sustain themselves with maize crop cultivation; however due to environmental constraints this is possible only during the monsoons, leading to food scarcity for the rest of the year.

To improve the water supply throughout the year, communities used to construct earthen dams on streams, but ironically due to isolated extreme rainfall events, they were soon rendered dysfunctional. In 2000, NGOs such as Seva Mandir got involved in the village to bring people together to help solve their common water issue.

As discussions within the community members progressed, people found a singular cause to unite behind, water scarcity, and also discovered a unique solution—anicuts (small dams). A first step was to create a strong committee, which was followed by raising funds and interacting with relevant agencies.

Before 2000, there were a few water harvesting dams, but none were directly managed by communities. Today, there are more than 20 community-constructed anicuts there. Even the ones built by the government are managed by local people.

The anicuts heralded significant changes: multiple crops could now be cultivated; water could be used for community owned forest and pasture land conservation; while the stored water helped recharge groundwater aquifers.

Anicuts also brought in a level of awareness and care for natural resource management among communities.

A lot more however remains to be accomplished. Of all anicuts in Kotra block, four to five are in need of urgent repair and maintenance to plug leakages and in need of catchment maintenance. Efforts are on to plant trees across the catchment area and creating protected pastures on village commonlands. Growing biomass and constructing trenches to better channel water flow will only help improve the catchment. Future plans include desilting the anicut reservoir and extending the water channels, a task that will demand the joint efforts of the entire community.
River Reborn
Eco-friendly technologies that brought back to life a highly polluted river

With the lack of effective sewage treatment plan, enormous amounts of sewage from the city of Udaipur found its way into river Ahar. The river runs almost through the centre of Udaipur. A total of 150 million liters per day (MLD) sewage water drains into Ahar river every day and foam up to 14 feet high would rise from the river due to domestic as well as industrial discharge. The river had become dead by 2010 with destructive consequences due to its groundwater and hydrological connections with Udai Sagar Lake.

In 2009, the micro and macro-organisms present in the water were tested to underline the state of the water system. The Biological Oxygen Demand (BOD) was very high and Dissolved Oxygen (DO) was very low. This evidence provides for the pressing need to conserve both Udai Sagar Lake and the Ganges from the pollution.

Sanrakshan Samiti coordinated with government, urban local bodies, community based organisations like Maharana Mewar Charitable Foundation, Dr Mohan Sinha Mehta Memorial Trust, and Udaipur Chamber of Commerce and Industry to restore the river under Public Private Partnership.

The team decides to follow Integrated Water Resource Management (IWRM) and Integrated Lake Base Management (ILBM) systems using a technology known as Green Bridge Technology (GBT). GBT is a decentralised treatment system that acts as a catalyst in the natural process of river purification. It has proved to be superior to conventional Sewage Treatment Plants as it is based on logic of nature, without requiring chemicals, machinery, electricity and hazardous waste generation. Other advantages are the limited payback period for the investment and the low maintenance which doesn’t require specialised skills.

With the GBT system, the JSS team tried to reactivate the natural mechanism which was disabled due to excessive tampering with the ecosystem. The locals or the real stakeholders were brought into the discussion forum from August 2009 and in 63 days the eco-technological Green Bridge system was developed. The restoration efforts started in January 2010, when the government helped to make a road to approach the project site. The local villagers contributed to the initiative by removing all the invasive water hyacinth manually. The polythene removed from the river created a heap 7 feet tall. An iron sieve was laid to trap floating waste, while loose stone structures of 1 meter height were made with consortia of ecofert (coconut fiber), gravel, sand, rubbles, bacterial culture, plants and shrubs.

In May 2010, river dwelling organisms started to show up like moina, nitzschia, oscillatoria and zooplanktons. Fishes, water snakes and other aquatic life regenerated from the river and birds started to come around the river. The gases trapped in the river bottom were released and oxygen took their place. The DO level went up to 8 ppm from 0.

The dead river finally came to life. Carbon dioxide started coming up instead of methane and hydrogen sulphide gas which could aggravate the climate change process. The plantations of local terrestrial trees done around Ahar river also helps in carbon sequestration and take the metals and other excess nutrients from the river. Now, there are organisms present in the river regulating the river ecosystem; there is no foul odor and the foam that used to come from tube wells has lowered.

This successful restoration shows how an eco-friendly technology could be used to transform a polluted drain into a river. The GBT can be imitated by other countries or other parts of India who have similar problems of river pollution as it has no side-effects and imposes no harm on the local ecosystem.
Turning Waste into Want

Compact, hygienic and eco-friendly toilets that generate compost and fertilizer from human waste

DENEY CHU  RORY RICHARDSON

Toilets in Kotra, one of the poorest blocks in Rajasthan, are basic: a small hole dug in a nearby field and no washing facilities. Open defecation in the close vicinity of houses is vitiating and poses serious health risks. Then there are the risks faced daily by villagers, with snake bites and scorpion stings reportedly common occurrences.

To help end the scourge of unsafe, unhygienic open defecation, Seva Mandir, a prominent area NGO, has launched initiatives to install eco-sanitation (eco-san) toilets in several households.

Villagers were initially sceptical of having toilets close to living areas. Villagers also had to be taught how to use and maintain eco-san toilets; for many, it was the first toilet they had used. A challenge was to help change behaviour through appropriate communication tools, including posters. Villagers were also worried about the potential smell from having a toilet so close to home and the cost of eco-san toilets.

An eco-san toilet installed in Patharpadi village (see photo) is being shared by a family of 11. The toilet has three sections each with a specific use. The front tray is used for urine only, which is collected and diverted to a large container outside. The hole in the centre is for fecal matter, while the rear section is to collect the wastewaster generated.

Solid and liquid waste is a good source of safe fertiliser. Urine collected and stored for a month is a good source of urea, a fertiliser. The anti-bacterial properties of urine-based fertiliser makes it a natural pesticide. Although this toilet with 11 users will never fulfil the nutritional needs of the farm, it will at least reduce the amount of fertiliser that the family would otherwise need to be purchase.

Likewise, solid fecal waste is collected for use as manure. Each time solid waste enters the chamber, it is covered with a thin layer of ash, which helps absorb any liquid, reduce odour and aerobically decompose the solid waste. Once the chamber has been filled, charcoal is added, which further helps decompose feaces.

This decomposition process takes about six months, which is why the eco-san toilet has two chambers; the other chamber is used when one is full. Although subsidised by Seva Mandir, these toilets are not free for the villagers. Cost is clearly a main consideration when installing the toilet, given the low incomes of villagers in Kotra.

A basic eco-san toilet costs about Rs 17,500 to install, of which Rs 5,800 must be paid for by the household. Seva Mandir chips in with a contribution of Rs 5,500 for building materials such as aggregates, bricks and concrete, in addition to specialised labour, such as trained masons. Household members chip in with unskilled labour to construct the toilets. Funds are also sourced from the Gram Vikas Kosh (GVK), a contributory community village fund in which household contributes Rs 300 each year.

The cost of maintaining the eco-san toilet is covered by the household in which it has been installed, which can be a big cost for families. Also, eco-san toilets cannot be shared between multiple households, as they would have to share responsibility to maintain the toilet, a potential source of disputes between households.

This has happened in Kotra over another community asset – the community water well. When the well needed maintenance, no one came forward to take responsibility, and this vital community source remained unusable for a while.

Sharing toilets could create additional problems among households – unequal use of the toilet, maintainece and even fights over where the toilet is to be located.

The introduction of eco-san toilets in Kotra has been a moderate success, which could hopefully spread to other rural villages. Families that install eco-san toilets benefit from cleaner surroundings, turning waste into want and improve personal hygiene. A family who owns an eco-san toilet said that amongst the villagers, they had gained some popularity by owning this strange device.
Farmers in Kotra routinely face a dilemma: whether to choose genetically engineered (GM) Bt cotton, a 'wonder crop' with high yields and high input costs and high risks, or to sow the more reliable maize, which guarantees food but little or no income. Many have switched to Bt cotton from subsistence varieties.

The differences – cost of seed, agrochemicals and labour between the two is startling. Bt cotton seeds for instance cost 125 times the price of corn – the going rate for Bt cotton in Kotra is Rs 4,500 per kg, while maize costs a paltry Rs 20, and is locally available.

Likewise, while a Bt cotton farmer with one bigha of land (roughly a quarter of a hectare) needs to spend about Rs 3,850 for agrochemical inputs such as DAP fertilizer, urea and pesticides, a farmer cultivating maize on the same amount of land is likely to spend a mere Rs 360 on agrochemical inputs.

At point of sale, the difference of the proceeds between the two is more marked. Maize farmers spend approximately Rs 2,500 to 2,600 and earn Rs 5,000 in one season, netting a profit of Rs 2,400 to 2,500.

By contrast, Bt cotton farmers earn handsomely, by some estimates up to Rs 100,000, while they spend about Rs 35,000 in one season (6 months), leaving them with a profit of Rs 65,000. Simple math shows the Bt cotton farmer earns about 14 times more than the traditional subsistence farmer.

Simple input-output calculations however are misleading. Bt cotton tends to be much more labour-intensive than maize cultivation. Many farmers hire labour from outside the state. Also, in dry Rajasthan, irrigation for agriculture is overwhelmingly dependent on groundwater – up to 70 per cent, as compared to the India average of 55 per cent. Bt cotton farmers pay up to Rs 1,000 in electricity charges alone to irrigate their land. These costs are set to rise with the plunging groundwater table that will increase energy costs for pumping groundwater from greater depths. Maize cultivation on the other hand is mainly rain-fed, which is also put at risk if the annual monsoon fails.

Before Nandlal, a farmer in Kotra, began cultivating Bt cotton, he grew only maize. Maize also ensured food at the table for his family. Now, as Bt cotton gives higher returns, he is able to cultivate some small plots of wheat and lentils at the end of the six-month cotton season, and have enough left over to purchase a variety of other foodstuffs.

Previously, he, along with his family, was forced to migrate across the nearby border into Gujarat to work as unskilled labour, usually for a month or two at a time. Payment of wages was never guaranteed.

There was some chuckling amongst the farmers when they spoke of working on Bt cotton plantations in Gujarat, and bringing the seeds and knowledge back with them to Rajasthan. In many ways, Bt cotton has empowered them, saving them from having to migrate in search of unskilled manual labour.

The switch to Bt cotton has given Nandlal and several other area farmers more income. Few however seem to be aware of long-term implications of Bt cotton cultivation. Apart from potential health hazards from prolonged exposure to copious amounts of agrochemicals, farmers are oblivious to how the crop leeches nutrients from the soil. It was only after a year’s cultivation of cotton that they attempted to grow maize on the same land, only for it to fail.

Nandlal is unfazed by the crop’s high demand for water. He plans to dig more wells in the surrounding area, but admits that in the stifling summer months the existing wells usually dry up. Somewhat aware of the risks, Nandlal is willing to take the plunge. Cash from cotton trumps subsistence farming, at least for now.
Like any other typical Indian village, people in Kotra survive on agricultural land and livestock. But the geographical setting of this region aggravates the abject condition of people here.

By ensuring 100 days of employment 'on demand' to every rural household, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005, has an ambitious ambit – increase rural wages, reduce distress migration, make tired lands productive, and empower marginalised communities in the bargain. The scheme accounts for 46 per cent of the total budget of the ministry of rural development.

MGNREGA aims to improve rural livelihoods on a sustained basis creating durable assets, improving water security, soil conservation and increase overall land productivity. It tends to be more socially inclusive by involving women, Scheduled Castes and Scheduled Tribes.

However, it also faces serious challenges. Newspaper reports chronicle the uneven implementation of the scheme. In 2010, the national daily Indian Express reported MGNREGA workers were paid Rs 1 a day in Gudlia village in Tonk district in Rajasthan. Following such shocking malpractices, Suchna Evum Rozgar Ka Adhikar Abhiyan was launched by social activists Aruna Roy and Nikhil Dey against this gross violation of the Minimum Wages Act. With the support of several Rajasthan villages, including Khaiwara, Kotra and Jhadole in Udaipur district, the activists pressured the government to look into the scheme’s mismanagement.

“MGNREGA sites run by government are very unorganised. At government sites, a Gram Rojgar Sahayak has to monitor and manage a group of 5 to 6 villages, which breeds inefficiency, while the structures built by them are unsound and there is no time management so wages earned were around Rs 60 per day,” said Himanshu Shekhar of Seva Mandir, a prominent Udaipur-based NGO that is regenerating five pastureland sites as part of the scheme in Kotra block. Ten other sites are being directly developed by the government.

The Seva Mandir sites in Dhingawarikala and Thep villages are spread over 33 hectares of village commonlands; each employs 45 villagers who are paid wages ranging from Rs 100-140 daily. Women comprise 66 per cent of the workforce.

“We first build boundary walls. As this is rocky land and soil is loosely packed so we build small walls and check-dams to hold the water. Then we dig pits and trenches to grow grass and plants. After a few months this land turns green and becomes ready as pastureland,” explains Singha Ram, a 48-year-old village committee head and an MGNREGA worker. “We have now dug 5,500 pits for growing different plants like jamun, neem, kanji and shravan which we get from the forest department, using the

• RADHIKA GOEL
budget approved by *panchayat samiti* (council of villages). Payments are disbursed through the post office, and Seva Mandir helps if we are not paid on time”, he said. Villagers also deposit 10 per cent of their wages in a Gram Vikas Kosh (village development fund), which is used to build a community assets.

“We usually go to other villages like Palanpur, Khed-burma, Shivganj, or Sirohi that are 50-70 km away from our home, leaving our children and wives behind. Being employed in unorganised sector we have no say – we are often exploited and made to do dangerous work with no security of life, against which we couldn’t even protest. As work at MGNREGA sites has become more organised and pays more than what we got in Gujarat, we are able to take better care of our families, animals and fields here,” says Keshav, worker at a MGNREGA site. “Skilled artists still migrate to other villages and are paid Rs 250-300 per day, but unskilled labours prefer working at home under NREGA”.

Laxmi, in-charge of ferrying drinking water to the workers at the Thep site, is paid Rs 119 per day. She told us that she used to only do household work, but now has additional income. Women who used to remain at home or work on their family land now have additional employment - around 66 per cent of workers at Thep site are women.

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**Mautana – Then & Now**

*Meant for protecting women against exploitation, it’s now reduced to a farce*

Once a community-imposed penalty to protect women from abuse and violence, mautana, a customary form of ‘compensation’ prevalent in the tribal Kotra block in Udaipur district in Rajasthan, has transformed into a tool to extract easy money.

Some cases are truly phantasmagorical: A thief is caught and jailed for three years while attempting to burglar the home of a villager that was hosting a police inspector. Upon his release, he demands mautana from his intended victim. The argument? That he was caught by the police inspector being hosted by the villager.

In some cases, the entire village is held liable. In 2001, two men – one from the groom’s side from village Verakatra and the other from the bride’s side from village Saandhmaria – killed each other in a drunken brawl. It was decided that the host village, in this case the bride’s village, was liable, and had to pay a whopping Rs. 900,000. When they refused to pay, their livestock was slaughtered and homes raided. Villagers fled Saandhmaria, and returned after a decade, and only when they had earned enough to pay the mautana.

Mautana is mandated, indeed driven by the *jati* panchayat, or caste council that is locally more powerful than the gram sabha (village council) or the officially elected panchayat.

The *jati* panchayat’s customary rules of fairplay and liability have dissolved, and today even two or three people together can appoint themselves as *jati* panchayats to decide on the amount and severity of the terms under which mautana is to be paid to the ‘victim’ in any situation.

The practice is so widespread, and institutionalised, that it has many worried. Of the mautana payouts, 10 per cent is reserved for *jati* panchayat members, up to 15 per cent finds its way to the local police. *Jati* panchayat members reportedly sit around all day scouting for mautana cases to earn an easy buck. Local police want locals to settle cases by themselves. Sewa Mandir, a prominent NGO active in the region, has intervened, even if gingerly, and was able to negotiate and reach settlement in few cases without mautana.
Rajasthan, the largest state of India and the driest, of which the Thar Desert makes up 40% of land area, mainly thrives on forest produce, animal husbandry and agriculture. With the arrival of piped water directly to homes, people have almost forgotten the traditional art of water harvesting. Suffering over 40 droughts in the past 60 years has increased dependency on groundwater. As the groundwater depletes to a critical level, agricultural workers are forced to migrate.

Migration is reported as high as 64% in south Rajasthan. As one of the least developed states where tribes dominate, low literacy levels and economic development rate persists, migration is an established coping mechanism for the rural poor to survive. A well known saying in Rajasthan is "pass kare toh zindabad, pass nahi toh Ahmedabad" (if you pass exams, its hurray, if you fail you can always migrate to Ahmedabad – largest city in Gujarat – to work).

The Inter State Workmen Act passed in 1979 aimed to regulate and register employment of inter-state workers, however a data request done by Ajeevika Bureau, an organisation that supports struggling migrants, showed that no one in Rajasthan was registered as a migrant.

Why migrate?
It is common practice for agriculture workers to migrate seasonally during lean periods (April–June and January–March), moving to urban areas either inter- or intra-state in search of labour work.

Kotra, is notorious for being a dangerous area. In an interview with Himanshu Sekhar (member of the Natural Resources Development team at Seva Mandir), he highlighted that better job opportunities and wages as well as tribal conflicts and the Mautana system contribute to migration. (See story on page 23)

Child labour migration is also on the increase; main reasons being poverty, lack of agriculture facilities and uninteresting school atmosphere with arduous exams. According to a Seva Mandir study, over 11 million children under the age of 14 are working in India.

Problems faced by migrants
Prospects faced by migrants looking for work are grim with constant competition for unskilled labour. When there is no immediate work, migrants often live in open fields or near rail tracks and wait for job opportunities. With little to no education the main jobs open to them are usually in agriculture, mining, construction, brick kilns or as loaders and porters – all with associated health risks. As the physical labour takes its toll, migrants involuntarily retire at an early age.

Seen as outsiders, migrants are taken advantage of by employers who pay less than promised or late wages. Unlike the locals, migrants are usually paid for the actual work done, thereby working harder and much longer.

Once they cross state borders migrants and their families lose many entitlements. For Rajasthan, migration is male dominated and the family left behind faces social, cultural and economic problems. In a 2006 study by Ajeevika, women reported loneliness and lack of emotional and psychological support. Women also faced increasing household and farm work, taking care of the children and face difficulties in securing loans, which in turn cause child morbidity as families lack funds to deal with emergencies, such as

WAIMAN TSANG

Many of us walk or drive pass them every day, but the general population are blind to the mass migrants sleeping on the rails tracks and roadside. This ‘invisible workforce’ contributes to 10% of India’s GDP, yet they are poorly treated and their welfare ignored. Why is there such an influx of migrant workers and what is being done to support them?
illnesses.

Identity loss is another issue for children that choose to work, or are brought along during migration. ID cards are not issued to those under 18 and consequently face more scrutiny and penalisation. During the Mumbai terrorist attacks in 2009, countless innocent migrants were detained – without ID cards and not registered as workers, they just couldn’t prove what they were doing there.

What is being done?
In 2001, 30% of India’s population were internal migrants – 37% increase from 1991 figures. Internal migration in India is now recognised as part of the social economic reality which has long been practised in different forms by different classes, but little has been done by the government to improve their livelihoods.

The Indian government is still struggling to provide adequate social protection schemes to its citizens, least of all to the ‘undesirable’ migrant population. The Building and Other Construction Act 1996 was passed to help one of the most vulnerable segments of the unorganised sector to improve working conditions and general welfare. However, a recent article by the Indian Express reported that Gujarat spent only 0.21% of the funds collected and is lagging behind other states in registering workers.

In light of all these distress factors forcing involuntary migration, the National Rural Employment Guarantee Act, 2005 (NREGA) was passed with the aim to arrest the out-migration. It guarantees 100 days of paid employment each year for rural households, which has both positives and negatives. (See story on page 22)

An evaluation of the scheme in 2009 found that in almost all regions migration still took place to a large extent. There were also issues in its implementation such as late payment of wages, work was not allocated within the 15 days stipulated timeframe nor paid unemployment allowance. A significant proportion also expressed that the “the Gram Panchayat did not take any measures to create sustainable assets to generate wage employment within the village”.

To what end
Whilst India has focused on its social and economic development, pouring money and resources for investment into cities, rural regions where 80% of the population resides has been neglected. Distress migration has accelerated the rate of urbanisation, along with the jump in squatters and slums.

Potential for improving land and livestock-based economic activities in rural areas such as Rajasthan remains limited. When agricultural activity is only possible for half the year, the logical option would be development of the rural infrastructure to promote economic prospects.

Whilst organisations such as Ajeevika advocate an easier and better migration journey via various initiatives, the root of economic under-development of poor areas needs to be addressed. Policies and regulations started with good intention need better planning and management, as well as proper implementation and enforcement. At a time when India is seen as the next superpower, the government should begin seriously attacking the issues of poverty of villages and create sustainable employment.■
problem
A family of six live in a house in New Delhi. Each member of the family requires at least 135 L of water per day. The house is not connected to the mains water supply so the family rely on rain water harvesting. The whole year’s supply is stored in the tank.

1. What is the required capacity of this tank in m³?

The average annual rainfall in New Delhi is 714 ml. 50% of the catchment area is rooftop which absorbs 20% of water on it, 40% is grass which absorbs 80% and the remaining 10% is paved which absorbs 30%.

2. What is the required total area of the property to provide sufficient water to the family?

3. What are the areas of each respective catchment area in the property?

4. How much rainfall is absorbed and therefore not collected in the tank?

In New Delhi properties over 223 m² must harvest rain water,

5. Are this family legally obliged to do so?

anagrams
quiet inlay (10)
nicer ration (11)
each camel ting (7,6)
a bad elements vile unstopp (11,11)
a faecal belch length one (9,2,3,7)
crossword
across
1 Reserve of crop varieties (4, 4)
5 local elected governance system (9)
10 International climate change agreement adopted in 1997 (5)
11 Replenishing ground water in the context of RWH (10)
down
2 Environmentally sustainable poo treatment and disposal (3-10)
3 Catchment area of rivers and lakes (9)
4 Genetically modified cash crop grown throughout India (2, 6)
6 ____ water: term used to describe water carrying urine (6)
7 Activity with highest water usage in the countryside (10)
8 ____ water: Term used to describe water carrying solid waste (5)
9 Marble waste product being dumped by processors in Udaipur (6)
Says Who / Say What

“The unfortunate effect of globalisation is that you surrender your identity and adopt an identity that is one. It kills diversity.”

— Richard Mahapatra, Senior Editor, Down To Earth

“We imagine forests to be without governments. There are hardly any forest areas in the world without governments.”

— Shankar Gopalakrishnan, Secretary, Campaign for Survival and Dignity

“Somehow the word variability falls out of use in climate change debates. It’s climate variability that affects people’s food security.”

— Rajeswari Raina, National Institute of Science & Technology

“Obama came, Obama saw, Obama **** ed off.”

— Pratap Pandey, journalist and writer

“If you start to discuss the methodology of how the poverty line came about, you’ll be talking for 3 or 4 days.”

— Dr Sidhartha Agarwal, Executive Director, Urban Health Resource Centre