BE THE CHANGE

AUGUST 2010

Himalayan Dams

Waste Special

Delhi Slums

How one man changed the desert

CHALLENGE OF BALANCE SPECIAL

Editors
Emily Sexton
Dan Smith

Copy-Editors
Mirona Agachi
Simon Blower
Ilana Cohen
Leo Isaac-Dognin
Sachi Findlater
Rajiv Panda

Reporting Team
Sangita Bista
David Burgess
Anthony Chan
Urmila Dongol
Pratibha Duwal
Theo Gibbons
Penny Gilg
Ida Helgegren
Shirijana Joshi
James Lewis?
Ranjeeta Maharjan
Siobhan McGrath
Arushi Mittal
Akshit Sangomla
Hok Lam Tang
Clare Taylor

Design Team
Katie Goode
Joe Miller
Emily Nix

Editorial

Everyday we sit in a log jam of traffic, staring at the construction spilling out across the road to melt into the relentless press of humanity and the endless mounds of waste. As the flies buzz around us, change is a question that is never far from our minds.

People have spoken of change for generations. Originally a concept that moved by word of mouth, accelerated by the printing press and now accessible to millions through the digital revolution, change has been on the lips of billions.

Though many speak of change, whether it be climatic, political or societal, few ever challenge the status quo. The exacerbated lament of injustices rarely materialises into determined action. It is this lethargic indifference that overshadows the pragmatic minority who fight to shape real change in our world.

Many use the excuse that they are just one person in a world of corporations, but Messer's Negi and Negi would rebuff this through example of their actions. Whether they are taking the dam corporation to the High Court or reaping a fruitful harvest from the barren deserts of the Himalayas, these men are a shining example of what individuals can achieve with strong hearts and ingenious minds.

Whilst the achievements of such individuals are undeniable, it is Governments that hold the greatest capacity for change. But, development is not a wrecking ball. One cannot destroy what has gone before whilst constructing what one dreams of for the future. Public cooperation must be sort on projects as diverse as run-of-river hydroelectric plants to municipal waste collection, otherwise lives and the environment will be irrevocably damaged.

Legislation with teeth is required to prosecute environmentally degrading practices whilst allowing prosperous development which is integrated with nature. But where proper legislation does not exist public bodies must come forwards, as demonstrated by the CSE through their campaigns for clean air and appropriate water management.

Our generation is unique in having the technology to access unprecedented amounts of information and the capacity to communicate with incomprehensible numbers of people. Never before has so much opportunity been combined with the plethora of inspirational figures such as Anil Agarwal and E.F. Schumacher - people that match scientific rigor with sustainable ideology to create alternative theories for our common future. This puts our generation at a turning point in world history. But will we rise to the challenge?

If twenty seven individuals from across the world can produce one publication with a unified cause, why can't we build larger and more complex collaborations to improve our world? Rather than staring at the problems and waiting for the change, can we not be the change that we are waiting for?

— Emily Sexton and Dan Smith

Contents

Harvesting the Desert

With just a shovel in his hand, what can one man do to change a desert?

by Hok Lam Tang

ARNAND Dwaj Negi was told that the Thang Karma desert could not be farmed. As a government auditor, he watched as the Desert Development Programme failed to quench the ravenous thirst of the high desert with artificial irrigation systems and other technologies. Having taken early retirement, he has spent a decade proving the pessimists wrong through hard work and an incessant belief in traditional methods over modern technology.

With only his savings to support his project, and seeking no government funds, Mr Negi has successfully cultivated an area of land that faces some of the harshest environmental conditions in the country. For a single individual to achieve as much as he has in the fertile lands of the Indogangetic plains would be an achievement. But to do it in the isolation of the Himalayas, whilst battling extremes of heat, harsh winds and a near absence of rainfall, is nothing short of a miracle.

If you care to glance past the oasis that Mr Negi has created you will find a barren desert devoid of substantial vegetation. The ground is sandy loam that sucks away moisture as it falls and cold winds scour the hillsides of any remaining moisture.

However, in the midst of such inhospitable conditions grow abundant crops of willow, sweet peas, beans, cauliflower and mushrooms. In ten years Mr Negi has managed to nurture 40,000 trees, such as apple and the rare chilgoza, from sapling to full maturity and a combined value of forty million rupees. Among the roots of the Rubinia trees grow the most valuable crop of all, Indian Gucchi truffles – a crop that fetches over 10,000 rupees a kilo. His apples are reputed to be the sweetest in the area, his clover brings shepherds from 50km away and even the worm-composted manure is valuable enough to bring villagers 5km over the steep hills that surround his farm.

"I made this fortune for my country"

So how has this miracle of horticulture come about? How has one man created an oasis where the finest minds in the agricultural department have failed?

Mr Negi has taken a 'Command Area Approach' after talking to many farm villages about their methods. This is a holistic approach that keeps the delicate balance of the surrounding ecosystem intact. Its central premise is harvesting rainwater and glacial run-off from the surrounding hillsides to irrigate the land through drainage channels, recharge the ground water and humidify the air through zings. He noticed that the government's efforts with concrete irrigation channels were bound to fail in -40˚C temperatures,

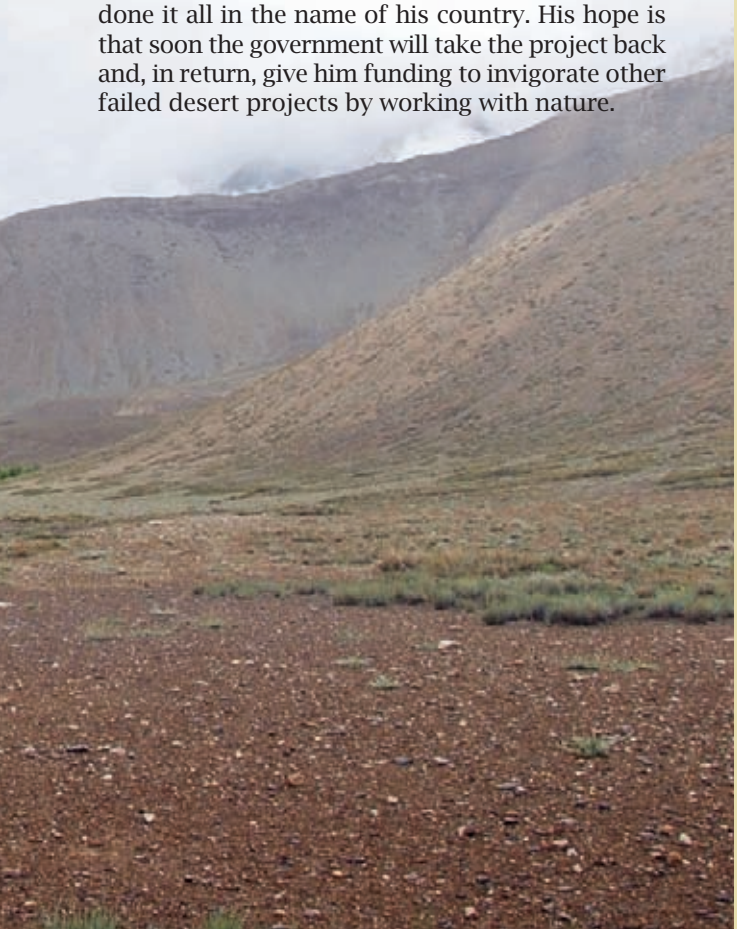
"Sandy loamy soil requires water to flow quickly in channels," he explained, "So we've made the channels narrow and dug them on steeper inclines than usual." This feeds a drip irrigation system which Mr Negi claims is the only viable system in these conditions.

Both his volunteers and visiting scientists have extolled the virtues of chemical fertilizer, even going as far as to claim agriculture is impossible without them. But Mr Negi has only ever used natural manure whilst growing beans to fix the nitrogen in the soil and the results speak for themselves.

But every farm has problems and the most prevalent problems for Thang Karma are wild rabbits and the beating winds. First he grew clover on the contours around the land to distract the ravenous rabbits. Then he grew the saplings in pits to protect them from the wind and protected the growing trunks with scrap wood. Finally he found that the wind was still troubling the mature plants, so consequently he has planted conifers to serve as a wind break.

This is environmental engineering at its best, using only techniques that he developed by spending time onsite. It is this that he attributes to the success of his project, whereas previous government projects failed because, "Bureaucrats and scientists never spent time on site. So when the CAG (Comptroller Auditor General) asked why the project had failed they would blame technology."

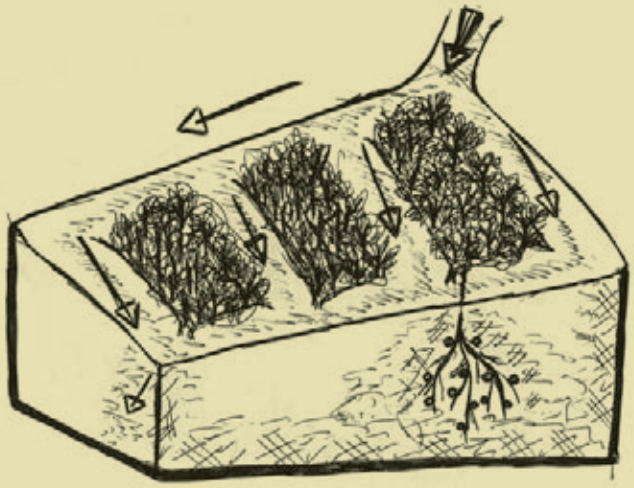
Mr Negi has proved that traditional wisdom is all that is needed to develop an ecosystem and has done it all in the name of his country. His hope is that soon the government will take the project back and, in return, give him funding to invigorate other failed desert projects by working with nature.



How did Arnand Dwaj Negi achieve the miracle?

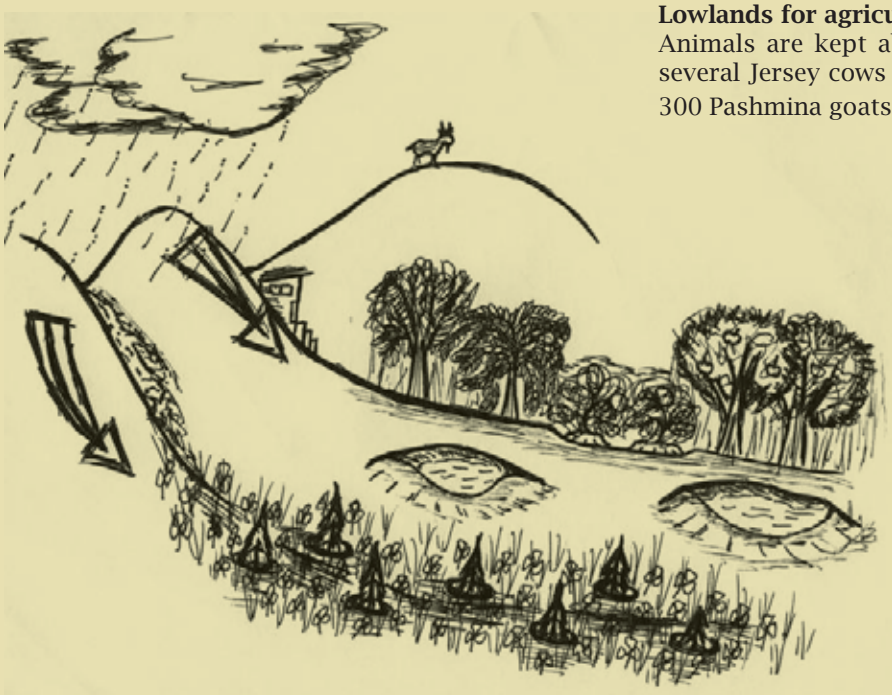
Command area approach:
Channels are used to divert run-off into strategic locations within the farmland.

The water requirements of the entire region must be considered to ensure its stability whilst providing enough water for agriculture.



Nitrogen fixing:
Natural manure and drip irrigation is used to grow nitrogen fixing plants such as sweet peas and beans.

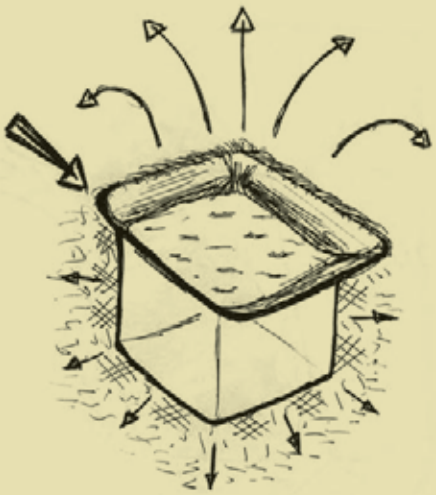
Underground plantation:
Holes dug along the contour plantations provide the right conditions for pine saplings to grow. Being planted below ground level protects the sapling from the harsh desert environment. The surrounding clover provides shade and retains moisture.



Contour plantation:
Clover and conifers are planted along the contours of the surrounding hills to protect the inner farmland.
Clover retains water and deters rabbits from the main crop whilst conifers provide a wind break and reduce soil erosion.

Lowlands for agriculture, highlands for animal husbandry:
Animals are kept above the plateau to graze. Mr Negi keeps several Jersey cows for milk, donkeys for labour and a herd of 300 Pashmina goats from Tibet.

Zings
These are rainwater harvesting systems which provide some recharge for the groundwater during the dry season and increase humidity in the surrounding area. This improves crop health and reduces dehydration.



Soil Woes

by Siobhan McGrath

In Himachal Pradesh the monsoons are a double edged sword. The farmers pray for them to come yet are helpless to stop them washing away the precious soils that their livelihood depends on. The mountainous terrain means that terrace cultivation is the only suitable system of farming. But the sloped nature of the this increases soil erosion, leaving it an unpopular yet irreplaceable option.

The low lying hills, with little or no green cover, are battered by rain and hail storms. This is only exacerbated by shorter more intense monsoon seasons that many believe are due to Climate Change. This leaves the fragile soil exposed to deep moisture penetration, making it weak and prone to slipping.

The pounding rains are not all that the hills have to contend with. Deforestation due to expansion of agriculture and an increasing number of forest fires has made the area even more susceptible to erosion. Over the past three years, 3,000 fires have broken out in state-owned forests, burning biomass, destroying fauna, and hardening the ground, leading to flash floods. This causes sedimentation of rivers and streams, which affects the livelihoods of communities downstream.

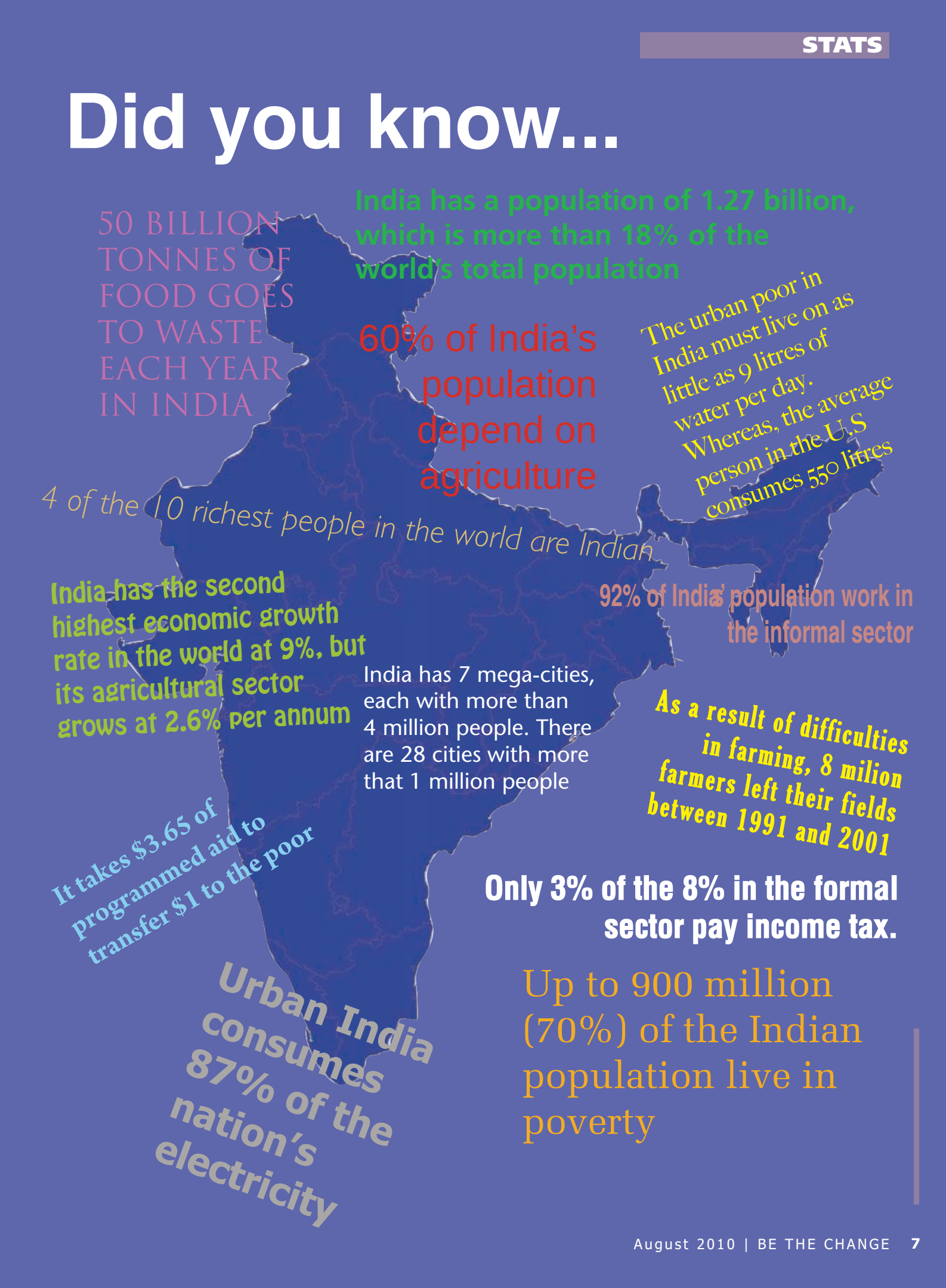
Working in the hilly area of Solan District, Himachal Pradesh, Dharamvir Singh, Director of the NGO RUCHI, has identified ecology promotion and prevention of soil erosion as critical needs. In this District, 96% of the people are solely dependant on agriculture, yet it barely provides enough food for each family. However, only one quarter of the land is suitable for farming, while 64% is either wasteland or lying fallow. Dharamvir says that it is possible to use most of this fallow land as forest area, for horticulture, agroforestry and pasture lands.

The villages have common lands, *ghasnis*, of poor quality which anyone in the community can use to graze their animals. In the summer, when grazing is allowed, the disruption of the soils by animals further contributes to soil erosion. The state government has established a permit system which limits the number of animals allowed to graze to 105,000 but has not established any system to check the grazing of unauthorised animals, which is estimated to be over five million.

The Indian government has stated that soil erosion is occurring at an 'unacceptable rate', reaching up to 80 tons of soil per hectare each year in the state of Himachal Pradesh. Accelerated erosion is the single largest threat to the physiography of this hilly state.

Good quality soil is key to ensuring a sufficient nutrient and water cycle. With all the other difficulties Indian farmers are facing today, will the next generation want to follow in their parents footsteps or try their luck in India's mega cities? With one million years needed to regenerate topsoil, will they have a choice?

Did you know...



50 BILLION TONNES OF FOOD GOES TO WASTE EACH YEAR IN INDIA

India has a population of 1.27 billion, which is more than 18% of the world's total population

60% of India's population depend on agriculture

The urban poor in India must live on as little as 9 litres of water per day. Whereas, the average person in the U.S consumes 550 litres

4 of the 10 richest people in the world are Indian

India has the second highest economic growth rate in the world at 9%, but its agricultural sector grows at 2.6% per annum

92% of India's population work in the informal sector

India has 7 mega-cities, each with more than 4 million people. There are 28 cities with more that 1 million people

As a result of difficulties in farming, 8 milion farmers left their fields between 1991 and 2001

It takes $3.65 of programmed aid to transfer $1 to the poor

Only 3% of the 8% in the formal sector pay income tax.

Urban India consumes 87% of the nation's electricity

Up to 900 million (70%) of the Indian population live in poverty

The power struggle

Rajiv Panda and _Akshit Sangomla_ explore the social realities of hydroelectricity in Himachal Pradesh.

EXPLORING the Kinnaur District of Himachal Pradesh is an incredible adventure. High mountain passes, magnificent landscapes and mighty rivers. The area is arid yet beautiful, with huge rocky mountains rising up around us and the Sutlej River flowing along the base of the valleys. Enclosed by Tibet to the east, Himalayas to the south and Spiti Valley to the north, this truly is a magnificent place.

The rivers here start from the glaciers of the Tibetan plateau, flowing down the Himalayas into the huge northern plains providing resource, livelihood and centuries of spiritual capital to millions of people. In the 21st Century they continue to provide their services in terms of hydro power to fuel the growth of Indian economy. Himachal Pradesh is a perfect example where the maximum potential of hydroelectricity is being realised to benefit the state and the nation at large.

The Sutlej River has always surged through the Kinnaur District and has touched the lives of all Kannaura people. Today it seems to touch them with even more intensity and a promise of enhancing their quality of life, for along it we saw many hydroelectric projects coming up at various sites. Surely a positive sign of renewable power production to strengthen India's urbanised debate on climate change and the low carbon development paradigm.

"Surely a positive sign of renewable power production"

The population of the district is around 78,000 and predominantly consists of tribal communities. It has been declared a Scheduled Area under article 244(1) of the Constitution of India. 42 % of the total land is forest and 58 % is non-cultivated lands. The Kannaura is the main tribal community in the district and the livelihood of these people is highly dependent on natural resources, which they have nurtured over the years and now drive their thriving, apple based, agrarian economy.

But the Sutlej River also has huge potential for hydro power, which is currently estimated at 6000MW using successive run-of-river dams. These dams reduce the need for large reservoirs, supposedly reducing the ecological impact. Though displacement of people is less in such projects, a lot of still families need to be relocated, such as the Karcham Wangtoo project which needed to resettle more than 30 families.

The Himachal Government is giving incentives and administrative support to major private companies to build such projects, but with ineffective legislation to protect the indigenous people. The successive construction along the Sutlej has required water to be diverted from one part of the river to the other through tunnels blasted from solid rock. The interlinking of tunnels is designed in such a manner that the river flow virtually does not exist in some stretches and the tunneling can have a devastating affect on the water table. River flow is not totally stopped but it is reduced to, a mandated, 10-15% which is often heavily silted. Most of the resettlement and compensation are highly inadequate as they don't take into account the indirect impact on water resources, such as streams, which people largely depend on for their daily usage as rain is very scarce in this region.

The Sutlej river flow is essential for the valley as it cools and maintains the moisture which is essential for a good crop. The overexploitation of the river has had adverse effects on the fragile environment of Kinnaur. Without the government incentives we believe that these projects would not be economically viable in the long run and hence will fail to deliver cheap electricity.

The project, the man and the fruit

Rispa is a tiny Kinnauri village a little downstream from the Tidong-I project. The government of India has now given them the right over the forests through the Forest Rights Act, but whether they truly are enjoying these right remains to be seen.

The Tidong-I Hydroelectric project is envisaged as a run-of-river development on the Tidong river. It consists of a diversion dam across the river downstream from the confluence of Lalanti

khad near village Kairbu, a water conductor system and power house near village Lamber in Kinnaur district of Himachal Pradesh.

We reached Rispa in the morning to meet Mr. R. S. Negi, a retired IAS officer who is currently leading the protests against the construction of the Tidong-I project. Mr. Negi is very firm in his steps and his voice, "We are just demanding our fundamental rights."

R. S. Negi

He believes that the project will always come up and they can never stop it, even if it endangers their very existence. But what he has been fighting for is the rights of his people, guaranteed by the constitution of India.

We met them in their beautiful village temple which has been renovated using the village community's funds. When you talk to them about the need for change in the authorities' perspective on the project and the environment you can see the desperation in their eyes.

"The forest has a bald patch," Mr. Major Singh exclaims because it had been cleared for the dumping site, but has now been abandoned, with the chilgoza (*Pinus Gerardiana*) trees gone forever. "They have not been able to grow chilgoza artificially but are destroying the ones naturally occurring."

Mr. Singh is a farmer in the community who had to leave his education and come back to take care of his family's remaining farms which now face complete destruction in view of the Tidong-I project. He showed us a patch of chilgoza forest, a very rare fruit tree only found in Kabul, Afghanistan, and the Kinnaur District in Himachal Pradesh. The forest department and universities have been trying to grow the tree in these areas but they have not been successful. Mr. Singh says the department is now beautifying existing saplings and claiming rights over them.

As he pointed out a half burned log lying in the clearing, he explained that they are burning the logs to destroy every shred of evidence of the existence of a forest. The forest department had to clear 1,261 trees for the entire project completion, but the people of Rispa claim that 5,000 - 7,000 chilgoza and deodar trees have already been felled and they fear that many more would be felled before the completion of the project.

"We are just demanding our fundamental righs"

We were shown where the mountain was crumbling as they had blasted for tunnels at Murang where the Hydro-electric station is planned. Mr. Singh explained that the blasting was started from the top of the mountain instead of the zero point. This has devastated the forest that lay under these sites, yet many of the invaluable trees could have been saved if the project managers would have given it some thought.

"The forest department is now growing other aesthetically pleasing and easily growing trees in some places which are of no use to us as livelihood," adds Mr. Singh shaking his head despondently.

The choking dust rising from these sites is also affecting farming. There are a lot of herbs of medicinal and religious importance which are not growing because of the ecological pressure on the entire area. The perennial streams have started drying up in many places due to the construction of the interlinking tunnels and the regular blasting at the dam sites.

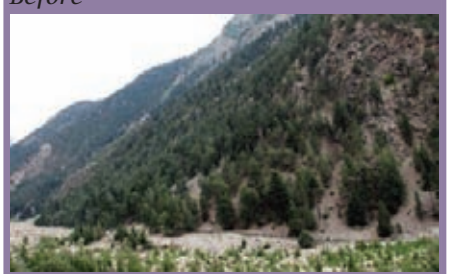
The women folk in these areas are in many ways more closely connected to the forests than the men. They say that it is becoming increasingly unsafe for them to collect fodder from the forests due to fear of the migrant labourers hired by dam companies. They are also afraid that this influx of people will swamp their traditional identity.

Mr. Singh explained that leaders like Mr. Negi are rare and praised his expert leadership. He has organised them and led from the front to push through the whole administrative system to claim justice for his people. Mr. Negi points out the inefficiency of the administration to guarantee their rights, is angry at the slow response that they get from the authorities and the ping-pong of responsibility that is played among the officiating agents. He says that these people see short term benefits against the long term ecological impacts which are immense.

Our journey took us through beauty untouched by man but also through places where one man challenges the authorities. The question to be asked is, can the nation develop in a way that is economically viable whilst listening to and meeting the needs of local people?

Deforestation due to construction:

Before



After

Fiction or Reality?

Avatar and the plight of threatened peoples.

by David Burgess

'WHERE will us children go? How will we survive? No we will not give up our mountain'- says a young child of the Dongria Khond with passionate eyes close to tears as he waves an axe in his hand. Those that have seen Avatar will know the horrific story of the Na'vi whose life is threatened by mining, what probably less people realise is that this story is a reality today for the Dongria and many other threatened peoples across the world. Whilst there is a limit to drawing comparisons with a fictional blue alien species and the very real situations faced by tribal groups across the world, the publicity is nonetheless welcomed by activists and NGOs. One such organisation 'Survival International' released a short video called 'Mine: Story of a Sacred Mountain' highlighting the plight of the Dongria. The Dongria live in the Niyamgiri Hills of Orissa, their hills which they believe are the seat of their god *Niyam Raja* are threatened to be destroyed by Vedanta — a British mining company.

The success of Avatar is what might be expected given the huge budget and time spent developing the language and culture of the Na'vi and the use of the 3D technology. The viewer is brought into an exciting world of forests and floating mountains, where a deep connection with all creatures is possible and flying is a reality by forming a bond with a Mountain Banshee. Yet when we take off the 3D glasses and remember our real world what will be the legacy of Avatar? It is after all just a movie. Will the world listen to the cries of threatened peoples as put so aptly by the child of the Dongria Khond?

Much like the RDA who are determined to mine Unobtanium from the forests of Pandora, the British mining company Vedanta are pushing forward in their attempts to clear forest and mine the hills for Bauxite ore used for Aluminium production. The Dongria call themselves the *Jharnia* which means 'protector of streams'. They are a people who have a deep respect for nature, they depend on the mountain and forests for food, medicinal plants and clean water. They are hunter gatherers and subsistence farmers who employ very sustainable methods which work with the balance of nature. This approach of taking only what is necessary and protecting the ecosystem is paralleled by the Na'vi on Pandora who take from nature with gratitude believing that energy is just borrowed and not owned.

Dongria Facts

Clan: *Dongria* (meaning 'hill people') part of the Khond tribal groups of Orissa

Home: Nyamgiri Hills, Orrissa

Deity: *Niyam Raja* (chief figure) whose seat is the Niyam Dongar Hill *Dharani Penu* (earth deity)

Threatened by: Vedanta mining company

Resource sought by mining company: Bauxite ore used for Aluminium production

The RDA company on Pandora employ a Security Operations force (SecOps) to ensure that the mining work can continue, protected from the dangers on Pandora. Since negotiations to get the Omaticaya to move failed, the inevitable result was a big battle between the heavily armed humans and Na'vi tribes from across Pandora. In this case there was some ignorance in the RDA and especially in the SecOps. Even though there was a moment of hesitation, the greed of wealth overcame any moral senses and the company would stop at nothing to achieve their goals. The British company Vedanta have been fighting legal battles for years to obtain forest clearance and permissions. They are not ignorant of the damage which will be inflicted upon the Dongria but the lure of wealth generating Bauxite has overcome any moral sentiment.

The State government and Vedanta may attempt some justification by showing how the Bauxite mining will generate income for the local area and in turn allow compensation to be given to the Dongria. Perhaps cash handouts, schools and jobs with Vedanta will be given, but can this really be considered satisfactory compensation? After all, what good is cash when there is no land or clean water to grow crops? Their entire way of life will be changed, as is evident in Lanjigarh a town on the plains where Vedanta have set up their refinery. The people of Lanjigarh initially accepted Vedanta but now live like dogs, as described by a man of the Dongria.

The whole environment will be changed. The Bauxite cap retains monsoon rain water which it releases gradually, inducing intricate biodiversity and providing water for two major rivers. If this is removed the fertility of the land will disappear. The incredible

Omaticaya Facts

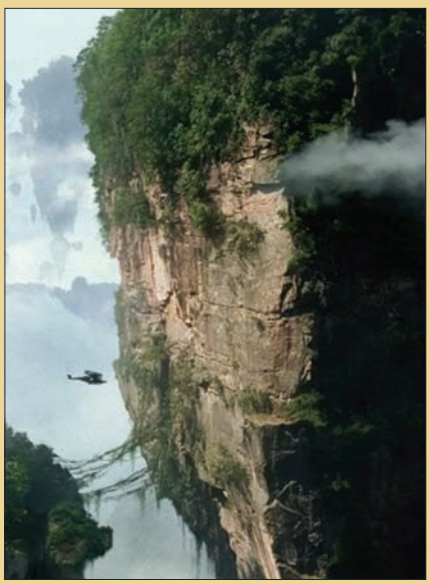
Clan: Omaticaya, a Na'vi tribe living in the forest

Home: Hometree of the Omaticaya, Pandora

Deity: Eywa

Threatened by: Resources Development Administration (RDA) mining company

Resource sought by mining company: Unobtanium ore used to produce a superconductor for use in an International Maglev train network



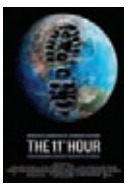
effect on the water system will be noticed not just in the local area but by thousands who depend on the rivers and streams; who have little need of the technology for which the Aluminium is used.

Cameron's previous films, The Terminator and Alien trilogies, could be seen to have a fascination with technology and this impression continues with the *psionic* link with the avatar body which is the pinnacle of virtual reality. But, as with Avatar, these previous films extol the evils of overreliance on all conquering technology. Ironically, this film is a milestone in cinematic technology; perhaps we are just a few steps closer to a cinema experience in which we could smell or touch objects and feel the wind. Increasingly, virtual reality, computer games and TV have become a large part of many people's lives. These things can have benefits, but too much can divert our attention away from the important things in life. Can virtual reality really replace the complexity and beauty of the world? We must make sure we care for our natural environment so that our children can play in real forests and rivers.

The tree of souls allows the Na'vi to connect to nature and hear the thoughts of their ancestors through an electro-chemical network. The internet allows people to connect from all over the world and to look up information through Google or Wikipedia, so in some ways this can be compared to the organic network on Pandora. Soon after the release of the Avatar film one blogging site discussed 'Ways to cope with the depression of the dream of Pandora being intangible'. After seeing a film like Avatar it is understandable that some would feel this way, yet should we wallow with despair or take action with hope? The internet is a powerful tool and we can use it to communicate and campaign, the voices of the Dongria Khond and others can be heard throughout the world.

The RDA were eventually prevented from continuing operations on Pandora and Vedanta can also be stopped. The Na'vi peoples were united by Jake Sully, with the help of Eywa and all her creatures they were able to defend their land. In this case it seems that both a messiah figure and the help of mother earth was needed. Whatever world view we have, most would agree that we have a personal responsibility to care for and protect our natural environment and fellow human beings. Will we stand with the Dongria Khond and other peoples across the world who are threatened and persecuted? As a man of the Dongria humbly requests 'Listen to me dear brothers and sisters, did you hear everything? We need people outside to stand with us, then we have to fight. Then we can survive, we can save our land'.

Review: The 11th Hour



by Simon Blower

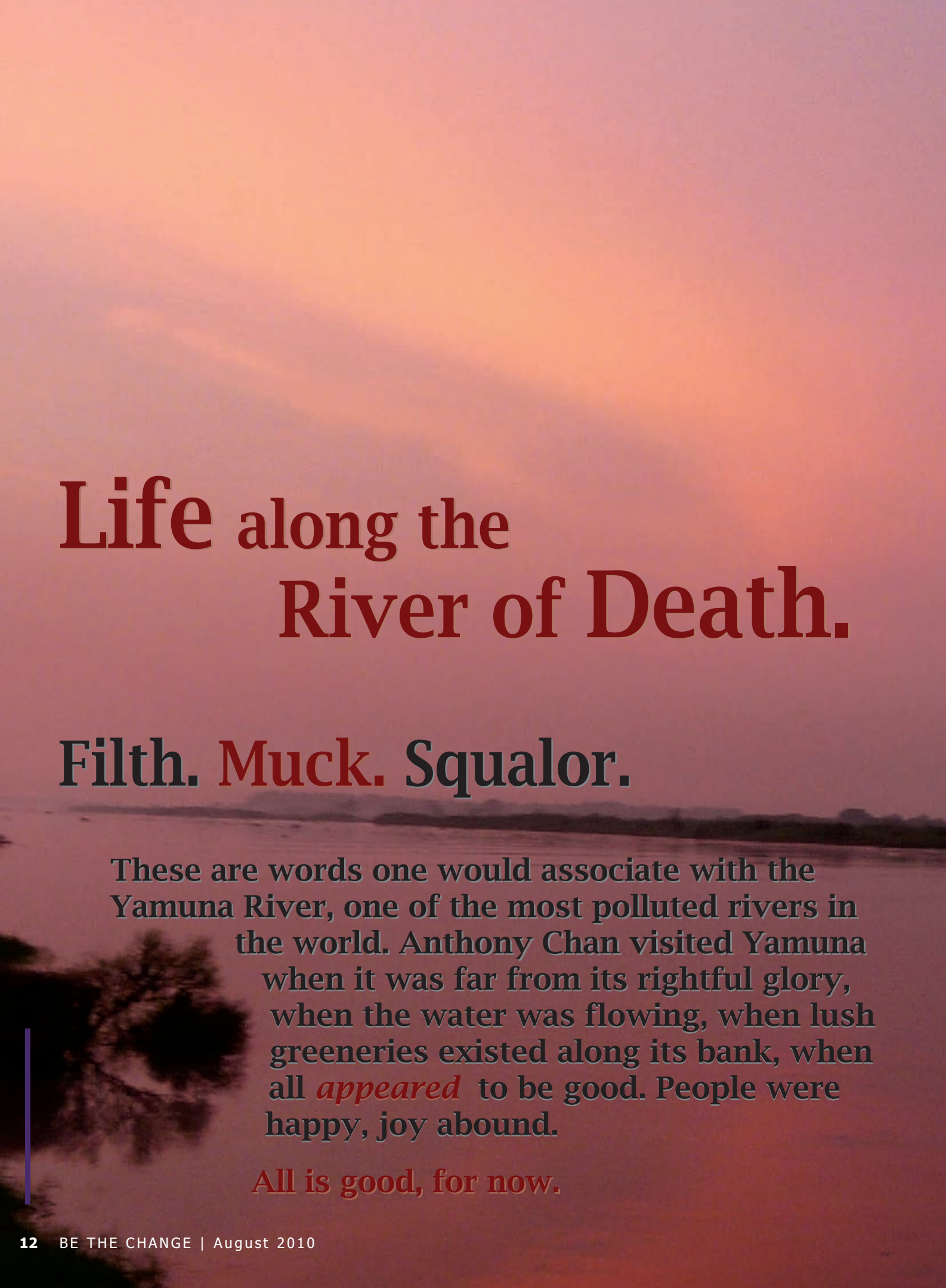
NARRATED by Leonardo DiCaprio, this film portrays a harrowing account of earth's ailments, an exploration into their causes and a view towards what can be done to heal the damage. Although DiCaprio acts as a celebrity guide to the topics, posing questions and introducing themes, the film stands independently as a powerhouse of authoritative figures in their respective fields. This collection of leading experts acts as a political, environmental and economic lens through which the viewer can more fully understand the issues the Earth faces.

In order to convey the unnatural state of the Earth, the sibling directors contrast imagery from the very beautiful to man-made disaster. Politicians, scientists, activists, and academics furnish the topics which far exceed global warming as a benchmark with which to examine the scale of the boot-print human society has left on the world.

It is unashamedly a film of opinions, with some of the most recognizable voices being those of Mikhail Gorbachev, Stephen Hawking and even an ex-director of the CIA. The array of voices is coherently edited, and DiCaprio, a longtime advocate of environmental action, delivers a sincere and passionate narrative.

A terrifying start to the film sees the earth acting like an infected organism, with interviewees attributing this to our disconnect from nature; a disposition which has lead to a convergence of crises. As can be seen in India and around the world today, humans are a victim of their own intelligence; where once traditional knowledge was crucial to our existence, we now innovate ways to accelarate our own demise. It continues on to ask why these things are happening and attributes some of the blame to government indifference, corporate led economy and a culture infatuated with consumption.

However, fret not, the 11th Hour has light at the end of it's tunnel. Perhaps the most exhilarating part of film, the final section explores various solutions to our woes, presenting them as invigorating and attainable goals on which we can set our sights. There is hope for the world; but only in the change that lies within us.



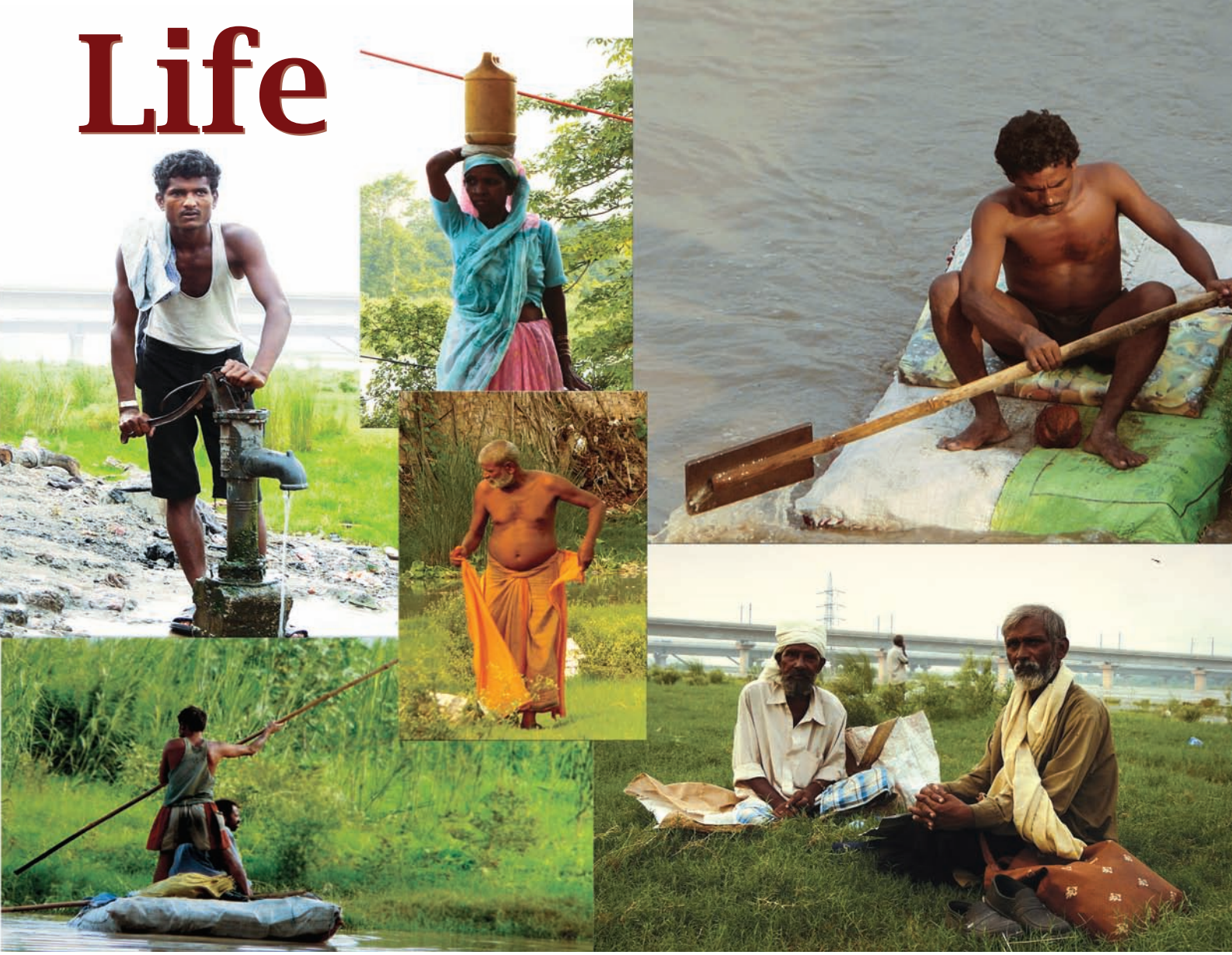
Life along the River of Death.

Filth. Muck. Squalor.

These are words one would associate with the Yamuna River, one of the most polluted rivers in the world. Anthony Chan visited Yamuna when it was far from its rightful glory, when the water was flowing, when lush greeneries existed along its bank, when all *appeared* to be good. People were happy, joy abound.

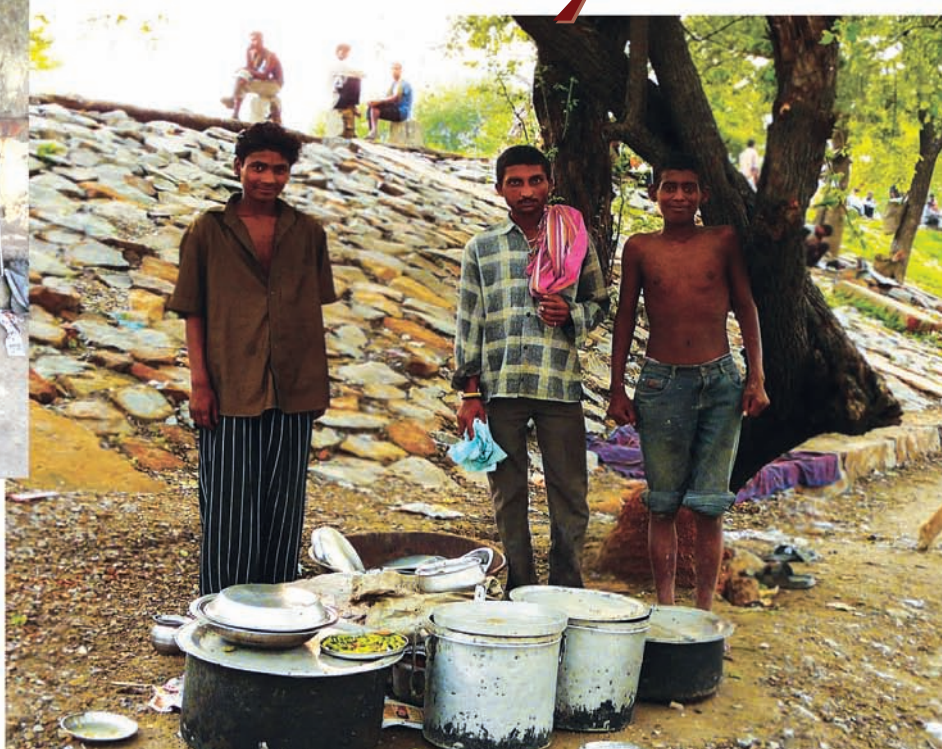
All is good, for now.

Life



Top: People going about their daily lives along the Yamuna River

Family



This family prepares dinner for the 90-odd dwellers along the river near Kashmiri Gate, Delhi. Dinner is served at 7.30pm daily at minimal prices for the people, most of which are living without shelter or in squatters.

Howkers plying their trade, selling goods such as fresh produce, ice cream and even tobacco.

Work

Laundry-man washing clothes near Wazirabad

2 men dismantling motor parts before selling them to scrap metal dealers.

Community

A farming community beside Nizammudin Bridge, Delhi. Ornamental plants were being grown for the upcoming Commonwealth Games.

Faith

Top: A simple shrine by the river

Father and son performing a religious act, where an infant's hair is thrown into the Yamuna River. Hindus perform the Chudakarana, where a child's hair is shaved for the first time. An infant's hair is associated with undesirable traits from past lives and the shaven hair is symbolically offered to the river, which Hindus believe originated from the tears of Goddess Yami.

Joy

Scenes of innocent Joy…

yet, in reality...

The scenes of life and joy mask the true reality. The Yamuna River, as it flows past Delhi is unclean, needs to be cleaned, but has yet to be cleaned. The Yamuna Action Plan (YAP), a bilateral plan between the government of India and Japan launched in 1993 to restore the river has thus far failed in its objectives, if not making the river even more polluted. For close to 9 months in a year, the stretch of river within Delhi ceases to flow, as it receives untreated industrial and domestic effluents. What is left is an open sewage canal. Levels of Biochemical Oxygen Demand (BOD) and faecal coliform far exceed safe levels for human use and the water is merely fit for industrial cooling.

Yet the river dwellers remain oblivious to the danger that lurks within, as the government continues to dump thousands of crores of rupees into saving the river, to little avail. Industries continue to release waste into the river, sanitation facilites for people remain too filthy to be used, innocent slum dwellers continue to be removed and new sprawling sewage treatment plants (STPs) continue to fail.

Evidently, the policies adpoted in the YAP need to be re-thought. What the Yamuna needs are not just huge monetary investments, but a clear, actionable plan that answers the contextual reality of Delhi and other cities that it serves. A clean up of the Yamuna calls for remedies on multiple fronts. It is city planning, not saving an environmental emergency. STPs need to be built in tandem with improving the capacity of the drainage system - building new STPs within a failing drainage system will not work. If slum dwellers are deemed to pollute, then a long-term resettlement plan needs to be in place. Else, a way must be found to manage the sewage from these 'unauthorised colonies', rather than letting them flow uninterrupted into the river. In short, a long-term strategy rather than stopgap measures.

Tough it certainly is, but the Yamuna problem presents a great opportunity to do things right.

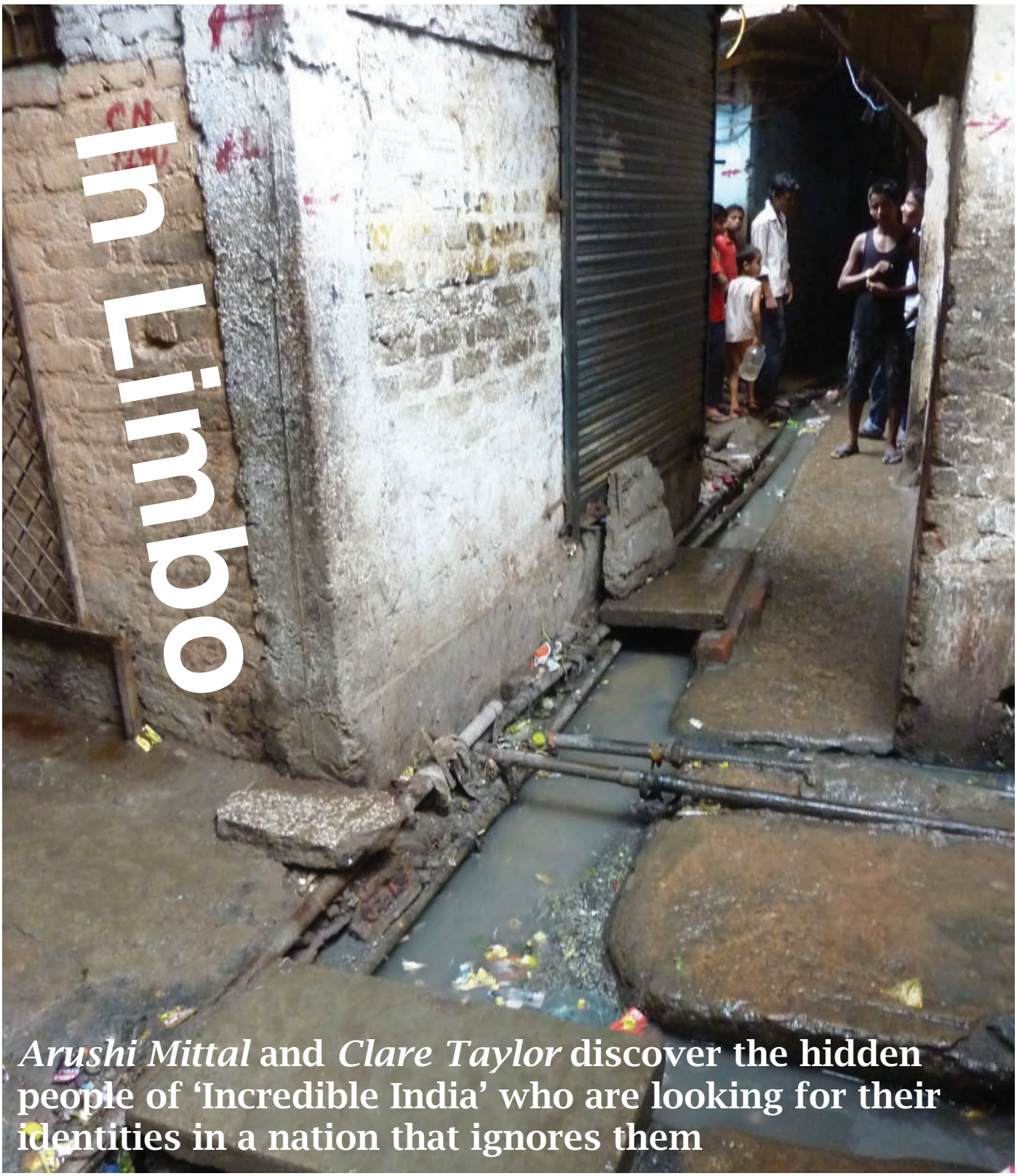
They need to act fast, for while life continues to flow, the river is dying. Until that happens,

quietly flows the murky Yamuna...






For more information on pollution in the Yamuna River, visit the India Environment Portal at http://www.indiaenvironmentportal.org.in/



In Limbo

Arushi Mittal and _Clare Taylor_ discover the hidden people of 'Incredible India' who are looking for their identities in a nation that ignores them

SITTING on a small woven '*charpai*' bed, squeezed down a small side street in the Navjeevan camp, Delhi, we felt utterly helpless amidst a haze of unfamiliar but persuasive voices. These voices were desperate to be taken seriously, to be heard by the world outside the government partition wall.

Whilst our expectations about conditions in the slums were not high, nothing had prepared us for the cruel reality we listened to, leaving us with questions to ponder, facts to ascertain and solutions to find. We had begun our slum exploration with naive and basic enquiries regarding their drinking water situation, but were involuntarily drawn into a matrix world of politics, power and people.

Navjeevan, Bhumiheen and Jawaharlal Nehru camps are in Govindpuri, South Delhi and were established in 1979. Collectively these form one of the


Arushi interacting with the slum community

largest Jhuggi Jhopris (unauthorized clusters) in Delhi, with more than twenty-five thousand residents living in just three thousand houses. Growing from flimsy tin and cardboard shacks to three story ramshackle brick houses with electricity, time has seen progression but only in limited capacity.

Since April 2010, the Delhi Development Authority (DDA) has been conducting surveys to determine the number of people residing in these areas, with the aim of resettling these people under the In-situ Resettlement Program, started in February 2009. When we arrived at the slum, we bumped into a well dressed government official who was conducting such a survey there. We were pleased to learn that a step forward is being taken to improve people's harsh realities. Or so we thought.


Residents of Navjeevan camp

Detailing a history of unfulfilled promises, the people of the slums told us a despondent tale. They explained how new houses were first proposed by Choudhary Prem Singh in Badapur, followed by a similar false promise by V.P. Singh in Tughlakabad. In the most recent proposal, sample homes were actually constructed but later unashamedly doled out for private use. These people have been victims of dashed hopes for too long. It is not difficult to understand their reservations about the current in-situ resettlement program that pledges better flats in the same area.

Poonam Dey, 26, has lived in Navjeevan camp since childhood and dejectedly spoke of the lack of change in their situation; "Three generations are living here, but none has seen any reform." We then bore witness to the worm-ridden drinking water she had obtained from the community stand pumps installed by the government. Her situation is not an exception. Similar conditions prevail even in resettled colonies like the Bawana Resettlement Colony, situated 40 km away from the original clusters. The Colony remains a far cry from the promised concrete houses for all. Even after 5 years of resettlement, thousands of people still live without a roof over their heads waiting for their allocation of a plot in the colony or the basic promised amenities i.e. electricity, water, ration, education etc.

Even if we were to blindly believe in the government plans, getting a name on the resettlement survey rolls often ends as little more than a dream. The procedure requires submission of the following five documents: a ration card, 1980 token card from the Delhi government, Voter ID, two photographs of the head of the family and finally one family photograph. Furthermore, whilst the DDA has conducted a regular count to determine the number of dwellers, no schedule has been prepared to inform the people about when each house will be surveyed. Also, each resident is required to be present in person on the day their house is surveyed. This is difficult to achieve given the necessity for people to earn their daily wage.

Such procedural requirements are demanding and cause frustration for the residents. Amina, in her fifties, identified the insensitivity of the scheme to individual needs saying, "The officials demand to see the faces of the females of the house. They demand to call them from their village, their work or their graves. Moreover, they do not have any respect for the norms of naqab [traditional Muslim head cover] which leads to embarrassment for the ladies."

"They demand to call them from their village, their work or their graves"

The issue of presence is not as compelling as is the identity crisis in such areas. Though people have been residing in these camps for several years, proving this requires obtaining documents which has turned out to be impossible for some. Rajnath Singh, 72 had to apply five times to get a ration card and on finally obtaining it, it belonged to 'Rajan' Singh. The game of getting a ration card issued is plagued with organisational loopholes, corrupt

Organisational loopholes: The impoverished slum dwellers, that shuttle between government offices providing ration cards in Govindpuri and Madangiri, are given excuses of broken machines and have to wait for months to get their cards issued. This has both a direct travel cost and an indirect loss from lost working hours.

Corrupt middlemen: However, if you can afford to pay Rs.1000-1500 to middlemen, your application can be fast tracked through to officials in a few days. We found a door sealed by the police in the government office area and were informed about the theft of more than 2000 ration card in May this year. The stolen cards are often resold on the black market.

Clerical mistakes: Shabana, 32, showed us her ration card with the names of her husband and father in law interchanged. Rajkali, 60 is a widow and shares a similar story. Such mistakes in names, addresses and relations are common in the cards issued. To get any details changed, an affidavit from the court or a report by a police officer is required which is difficult to get, even for literate people.

middlemen and clerical mistakes, creating trouble for none but the illiterate residents.

A more shocking facet of the story was revealed when we met Jai Ram Maurya, a resident himself and working with the Social Development Welfare Service of India in the camp area. We startlingly listened of revelations concerning the threatening corpus of middlemen operating in the slums that resemble a 'mafia' situation. Jai Ram stated, "It's a group of people from the camp itself, who will stab anyone who discloses their identities." Despite a personal threat in disclosing such information, Mr Maurya was determined to speak out against such injustice. This was followed by Rajnath Singh's detailed description of two dangerous middlemen living in the Bhumiheen camp, his courage exemplified in his statement: "You can use my name, my face and reveal their identities. I am not afraid of being killed for this cause." But our intuition or perhaps our fear for their safety made us decide against revealing his real identity.

Why are these voices unheard? Why are these people exploited? Why is their existence so hard to accept? Why does the Great Indian Constitution that guarantees its citizens freedom, democracy and secularism, fail to give them the most basic right: the right to identity?

Since independence, tribals, slum dwellers and other marginalised groups throughout the country have been striving hard to prove their right over their land and resources but have generally failed due to the absence of documents. They become unwanted and illegal refugees in their own country; the very same country in which


Ration card office; closed by the police

"You can use my name, my face and reveal their identities. I am not afraid of being killed for this cause"

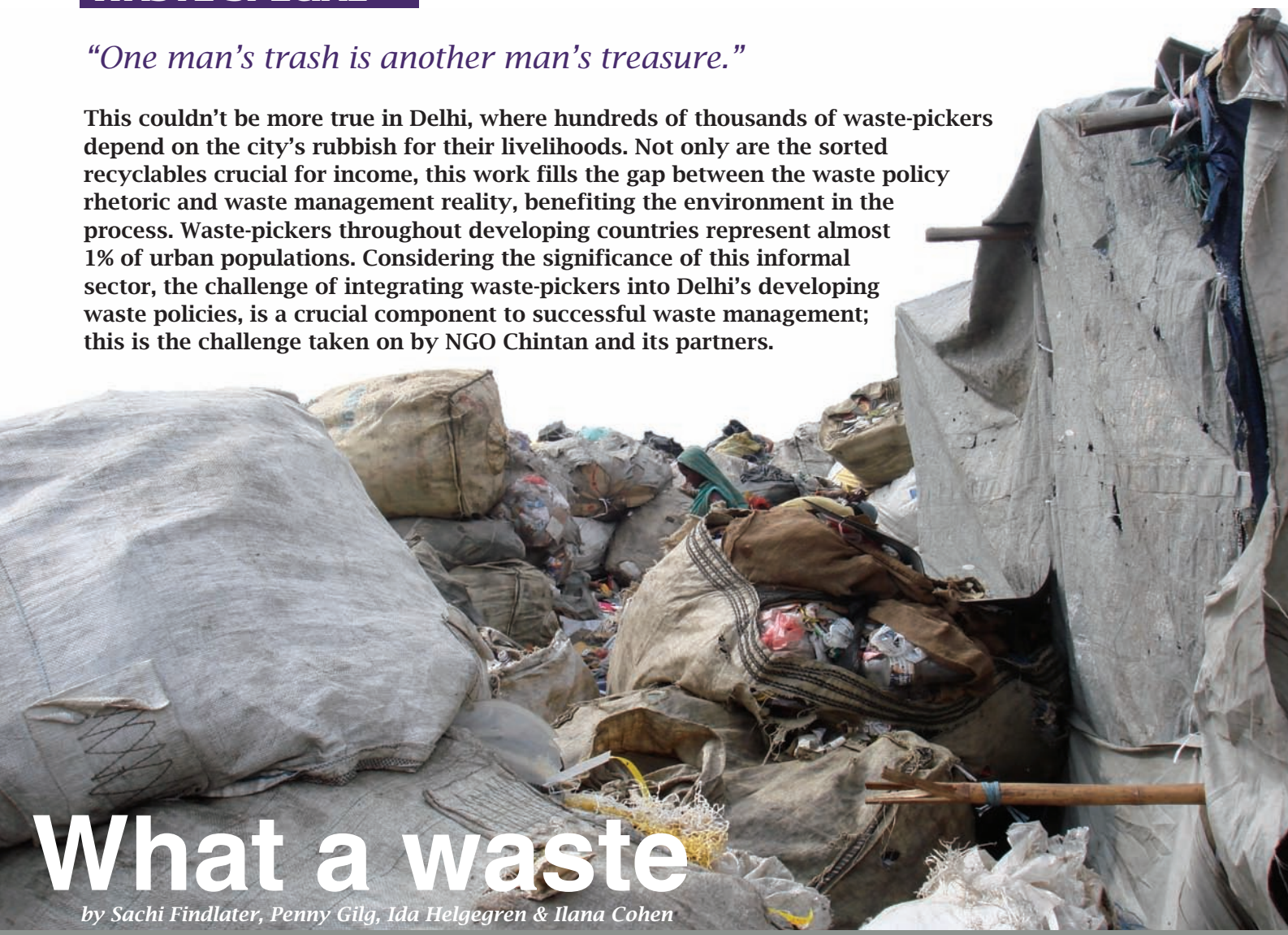
their ancestors have toiled. They are trapped in the vicious cycle of birth certificates, voter ID and ration cards. Inability to secure one leads to denial of another, ultimately depriving them of education, health facilities and housing provided by the government. The proper use of government funding requires a proper system of identification to be in place.

The proposal to issue Universal Identification Cards (UID) to all the citizens based on biometric identification is a positive spark in such a dismal situation. This card would eliminate many of the current problems in accessing social services. However, issuing over one billion identity cards is no menial task to a nation of illiterate but rightful citizens. It is huge for the government not only in terms of infrastructure but also in terms of devising a mechanism to differentiate between the legitimate candidates who have the right to Indian citizenship and millions of illegal immigrants.

It is possible that the UID program will act as a tool for people to establish their identity and hence carve their place in the society. We can pin our hopes to this. But what could we say to the people who looked at us with hopeful eyes and immediate concerns? They asked if we were going to do something to change their situation or just forget them after we leave like all the others did. It was heartbreaking to disappoint them yet again with our reply that we are just students and cannot promise anything other than voice their issues in front of a small group of readers. The government is not going to read what we write. They are too busy with their 'Incredible India'.

"One man's trash is another man's treasure."

This couldn't be more true in Delhi, where hundreds of thousands of waste-pickers depend on the city's rubbish for their livelihoods. Not only are the sorted recyclables crucial for income, this work fills the gap between the waste policy rhetoric and waste management reality, benefiting the environment in the process. Waste-pickers throughout developing countries represent almost 1% of urban populations. Considering the significance of this informal sector, the challenge of integrating waste-pickers into Delhi's developing waste policies, is a crucial component to successful waste management; this is the challenge taken on by NGO Chintan and its partners.



What a waste

by Sachi Findlater, Penny Gilg, Ida Helgegren & Ilana Cohen

It has been said that India has both the best and the worst of everything. If that's the case then its policy on the handling of municipal waste is certainly among the best in the world, and the implementation of it among the worst. At a glance, the **Law on The Municipal Solid Wastes Management and Handling Rules, 2000** would lead one to believe that India is a country with litter-free streets, landfill sites so well managed that solid waste was virtually never visible to the human eye, and an entire society well educated in the importance of waste management and recycling.

The reality is in fact somewhat different. The policy on waste is barely implemented – streets where littering is prohibited are full of rubbish and waste is dumped, not landfilled, as little as one-hundred feet from the homes of India's citizens. Dumping grounds are open to the elements and uncontained, allowing stray animals to roam freely across the surface. What's worse is that these areas allow the leaching of toxins and pollutants from the solid waste into the surrounding soil and ground water. These are a far cry from the technologically and ecologically sound landfill sites mandated by law. It seems incredible that seven years after the implementation of the policy, Delhi, with a population of 14 million people, has only three landfill sites, 15 less than the city of London which has a population of only half the size.

Municipal authorities tasked with managing India's non-hazardous waste do little to fulfil their legal obligations. They employ a handful of private waste collection and disposal companies who, according to some, do a worse job than the informal group of waste-pickers who base their livelihoods on the collection, sorting and sale of waste.

With the help of Chintan, an NGO focused on environmental justice, we met with two waste-pickers to find out more about the reality of their role in India's waste management.

Saveda and her son-in-law, Shahalam, live in Seemapuri, Delhi. Every day they collect and sort waste from almost seven hundred households. Each morning they go from door to door and collect rubbish bags containing everything from valuable plastics and metals, to organic kitchen waste. They are referred to as waste-pickers and are a part of the thriving informal waste economy in Delhi. There are almost 150,000 waste-pickers in Delhi alone and without them the waste situation would be unmanageable. Each waste-picker is responsible for collecting waste from a set area consisting on average, of 400 to 500 households. Between them they collect and sort 15 to 20 percent of Delhi's waste. Despite their vital input to Delhi's waste management, waste-pickers receive neither formal recognition nor any municipal

wages. Their work inherently implies a huge health risk - they have no protective clothing or equipment to use during the manual sorting of waste in the slums where they live.

Saveda and Shahalam said that two of the biggest risks to them are broken glass and syringes. The informal nature of the waste-picking economy means that they get no medical support or compensation in case of resulting injuries. Any medical care has to be paid out of pocket and the only remuneration they get is what they earn from selling the recyclable and reusable materials from the waste they collect and sort.

"Despite their vital input to Delhi's waste management, waste-pickers receive neither formal recognition nor any municipal wages"

Theoretically, Saveda and Shahalam should receive money from two sources - the households from which rubbish is collected and the sale of the materials they sort. To have waste collected daily from the home costs between Rs. 30 -100 paid to an 'agent' monthly. The agent is a government assigned street sweeper who is also responsible for keeping the street clean. The agents often over-exert their power and while they designate homes to waste-pickers they often do not pass on the fee. Luckily, the waste-pickers may receive a seemingly reasonable price for the materials they sell and those like Saveda and Shahalam can earn up to Rs 6000 per month this way. However, this does not go far when supporting a large family and attempting to provide children with the opportunity to get an education. A recent report produced by Chintan also detailed the financial losses experienced by many waste-pickers due to the economic downturn and reduction in the price of materials. In order to break out of the cycle and to create a better future for their children, waste-pickers need to be paid based on the service they provide as well as the materials they sell.

The power of the street sweeper over the waste-pickers is often compared to a mafia style and fear-based culture. Chintan told us of how, knowing of the injustices faced by their office's waste-picker, they tried to pay her directly and not her agent. The waste-picker refused the wage saying she would be beaten-up if she accepted it.

One family we heard of were forced to use the proceeds from the sale of the waste they sorted to pay for the privilege of living in the slums they had erected on their "landlord's" land. Unbeknown to them it was illegal for anyone to claim rights on this land – the man they feared would throw them out of their homes had no greater rights than they did.

Saveda and Shahalam also live in an illegal slum where everyone earns their living through the informal waste economy. Living in close confines means that there is a level of cooperation between the waste-pickers who can offer support to each other and organise themselves. However, there are occasional cases of power struggles over collection and sorting areas which can lead to deadly violence as recently occurred in their slum.

Waste-pickers are typically from the lower castes and regarded as 'untouchables', ostracised from the rest of society. Some people don't even allow waste-pickers to touch their front door when they come to collect the waste. Saveda and Shahalam avoid knocking on people's doors; they shout "*kurra*", which means garbage, in the stairways and get an unsorted bag of waste in exchange. The caste system means that the waste-pickers are not only exploited in their work, but also face discrimination. The police in the Seemapuri area will first look to blame the "illegal" waste-pickers when seeking the culprit of theft related crime. It is for this reason that Saveda has spent the day in prison on five separate occasions and many people who work with waste are often, for no reason, beaten by the police.

Working for a private company could provide Saveda and Shahalam with the legitimacy so badly needed to ward off at least some of the discrimination and violence they face; however, they say that they don't want to work for a privatised, and potentially corrupt system because they believe that it will cheat its illiterate workers out of their rightful wages.

It is unsurprising that the waste-pickers do not trust the private companies given the effect that they are already having on their lives. Private companies used to be contracted to take only non-recyclable waste left behind by the waste-pickers, but lately they have been contracted to collect all waste. This is where further problems begin to arise. When the companies are contracted to

Waste pickers Saveda & Shahalam

collect waste and transport it to landfill or waste-to-energy projects, segregation becomes their last priority - companies are paid by weight, the more waste the better! Private firms will hire guards to prevent the waste-pickers from accessing bins and waste storage sites to increase their own income. Aside from detracting from the livelihoods of the waste-pickers, the detrimental environmental effect of reducing the amount of Delhi's waste that is recycled is untold. Whilst attempting to run waste-to-energy projects may seem like a laudable effort, the calorific value of Delhi's waste is, in reality, too low for this and expensive projects have already been shut down as a result.

"The police in the Seemapuri area will first look to blame the "illegal" waste-pickers when seeking the culprit of theft related crime"

The future?

The situation is complex and it's clear that India needs to do something, and quickly, about its growing waste and poverty problems. Population growth coupled with increasing urbanisation will only exacerbate the existing problem in the coming decades.

The Municipal Corporation of Delhi (MCD) has already attempted to meet this challenge once, starting with the fundamental task of improving working conditions for waste-pickers. Rubber gloves and work boots seemed useful safety measures from the closed offices of policy makers, yet these misguided actions lacked input from the waste-pickers. The result was gloves which fell apart, adding to the waste piles, and boots available in only a few limited sizes.

MCD's further attempt to improve waste collection through privatisation also failed the waste-pickers and the city. In response, Chintan and the waste-pickers have been pushing for a solution that will both meet the city's waste management needs and integrate the successes of the informal waste-picking, such that their work will be legitimised and secure. Legitimisation of this approach first came about with the 2006 National Environmental Policy that sought to "give legal recognition to and strengthen the informal sector systems of collection and recycling of various materials. In particular enhance their access to institutional finance and relevant technologies". Accordingly, the New Delhi Municipal Council has been working in partnership with Chintan and its waste-pickers for the last six years. In many cases, this has allowed for improved waste-picking conditions, formal contracts and less harassment from police. Yet problems still persist.

As Chintan and the waste-pickers continue to combat environmental injustice and unsustainable consumption, their battle is focused on three policy components. Firstly, the waste-pickers must be guaranteed 'access to livelihoods,' which includes access to the recyclable materials, ability to transport the waste, the space for sorting, and the opportunity to benefit from the recycling process. The second initiative, Extended Producer Responsibility (EPR), aims to cut off some of the problem at its origin by holding manufacturers responsible for the product throughout its lifecycle. This strategy is not only aimed at waste reduction, but at health improvement, through a reduction in the amount of hazardous waste that reaches the waste-pickers' domain. Finally, Chintan and the waste-pickers continue to push for the informal sector's access to social security. This need is widespread through India, beyond the waste-picking community; in 1995 the informal sector made up 92.5% of the economy, and this figure has continued to rise. As a result, a number of social security bills are under debate, though

Legal Requirements for Municipal Authority:		What is Actually Happening:
COLLECTION	• House to house or community bin collections • Manual handling is prohibited, but if unavoidable proper safety precautions should be in place	• Some private agencies have recently been contracted to also collect waste • Informal waste-pickers manually collect rubbish from most houses
STORAGE	• Temporary waste containers (eg bins or transient dumping sites) should not be unsanitary, unhygienic, open to the atmosphere or unattractive	• Open aired sites, where waste pickers segregate the waste
SEGREGATION	• Colour coordinated bins should be available throughout the state • Awareness programmes will promote segregation, recycling and reuse of waste	• Some coloured bins have been put in, but with very little advertisement of what each colour represents • The government has published newspaper articles to encourage household segregation, with minimal uptake. • NGO initiatives, which are more successful • Waste-pickers segregate the waste extremely efficiently • Private agencies don't sort the waste
TRANSPORTATION	• Vehicles transporting waste should be covered	• Open-top cycle rickshaws driven by waste-pickers • Trucks used by private agencies
DISPOSAL	• ALL biodegradable waste shall be processed • Recyclable waste shall be reused or recycled or in some cases incinerated • Only non-biodegradable and non-recyclable wastes shall be sent to landfill	• All waste collected by the private companies is either burnt for energy (ie Refuse Derived Fuel) or taken to dumping sites • Waste collected and sorted by the informal sector, which can't be reused or recycled, consists of organic and un-recyclables and is taken to existing dumping sites

none for the informal sector have been passed to date.

At the moment, despite undeniable improvements in waste picking, India's waste-pickers still face massive health risks, low wages and job insecurity. Yet there is a culture around waste-picking and recycling in India which lends itself to unique opportunities in waste management. Greenhouse gas reductions resulting from Delhi's waste-picking are quantified at three times the reduction of any other waste project receiving carbon reduction credits in India. Furthermore, while the waste picking conditions demand improvement (and arguably these people would be better served by higher education) this informal sector employs a significant portion of the population.

At this juncture, India is on the precipice of either being able to learn from and replicate the small successes already achieved, or it could continue to marginalise a growing proportion of its own population and find itself buried in its waste problem.

Chintan, which roughly translates as "take another look" has empowered waste-pickers in the battle for environmental justice since their founding in December 1999. In view of India's rapid urbanisation and high poverty rate, the organisation set out to focus on the massive waste problem in Delhi, and the invisible workforce collecting and recycling the refuse. These workers face health risks, disregard and harassment from the general public, and minimal wage. Yet, the organisation's mission is not to re-settle these urban poor into other safer, cleaner jobs, rather to empower them in what has become a crucial "municipal service;" one that saves the cities' money, creates employment and reduces the burden on landfills.

Their approach to empowerment is through capacity building, research, advocacy and education. Through these approaches, Chintan's operational team of 17 develops and executes an impressive set of campaigns and research. These initiatives, paired with the organisation's consulting work, have won the organisation respected seats at local and national policy tables. For example, its' work on the National Environmental Plan of 2006, which insists on the inclusion of the informal sector's role in waste management.

Much of Chintan's work has been centered in Delhi, yet their initiatives have far broader implications for India and other developing countries facing similar issues of environmental justice and sustainable consumption. Chintan wisely capitalises on this potential by linking their mission with other global environment and development initiatives (e.g. Millennium Development Goals, the Stockholm Convention, and the Kyoto Protocol). In the organisation's eleven years of operation, the status of waste-pickers has improved, and their role in Delhi's waste management has been made clear. Yet, the policy challenge to fully integrate this sector continues. To learn more about Chintan, visit www.chintan-indian.org.

CHINTAN
Environmental Research and Action Group

With special thanks to Saveda and Shalem, Burati and Suraj (Chintan), Ravleen and Ruhi (CSE) and Rajesh Malih for their support in the writing of this article.

Wasting lives

by Pratibha Duwal & Shirijana Joshi

CHAMERU, 13, started working as a waste-picker at the mere age of 10. His father died when he was young, leaving Chameru to adopt an economic burden of someone more senior than his years. He now lives below the poverty line with his two younger siblings and mother. With every sunrise, Chameru tirelessly begins his work, going from door to door collecting waste in Faridabad's residential area. He initially began life as a waste-picker with his childhood friend but has since begun working with his brother, Milan, under the municipal Eco-friendly waste management system. From each household at which the collect waste, the young boys receive Rs30 a month for their efforts but shockingly, are forced to give half of this unjust wage to the municipality. They give the remaining of their income to their mother.

For Chameru, going to school is no more than a dream but he has high hopes for his youngest brother (5) to achieve what he could not. Chameru may be a boy in age, but he displays a maturity equal most men. The responsibilities bared upon him at such a young age are similar to that of the head of any family. Whilst happy in being able to support his family, he spoke of the sadness he felt seeing other children of the same age walk past him each morning on their way to school.

Formerly, Milan used to accompany his mother, a longtime waste-picker, though the rubbish-laden streets of Faridabad. Now that his mother is ill, he works everyday alongside Chameru.

Chameru & Milan

The younger brother seemed nothing but acceptant of his work explaining that he didn't mind going from house to house collecting waste, having known no different from childhood.

We asked the boys whether it is good to involve children in the waste-picking economy; on which Chameru had compelling ideas. He urged the government to make arrangements for poor and underprivileged people like him to have access to fundamental human rights, like food and education. Furthermore, he said that if the situation continues, it would not be good for the future of the nation, recognising that children deprived of education will have fewer opportunities in life. Despite no formal education, Chameru lacked no intelligence.

This is just one of the myriad of small tales of child labour from the megacity of Delhi. These life stories, rarely seen in the news, are widely prevalent. These children, the future pillar of the Indian nation, work endlessly to ensure that our environment is not a complete pile of trash. It is time to ask ourselves, what we now must do for them.

The grass isn't always greener

by Ranjeeta Mahrajam and Urmila Dongol

MIGRATION is an abundant aspect of livelihoods in developing countries. With a decade of Maoist conflict, combined availability of passports, emigration of Nepali labourers to foreign lands has dramatically increased.

The rapid growth of the Indian economy has created an irresistible draw to farmers and low income groups, who yearn for a better way of life. Labour contractors in Nepal send large volumes of people to work abroad; but all too often, this is illegal. Nepali workers often find themselves trapped, being exploited by vindictive employers who withhold their passports. They are forced to work long hours, often for less than was guaranteed. In the most extreme cases workers are killed abroad, but their bodies are rarely returned or compensation given. With such reported instances, it is not hard to see why the safety of Nepalese labourers abroad has become of paramount concern.

It was hoped that money sent home from immigrant Nepali labourers would reduce poverty, and reduce further migration for work. But the reality of the situation is very different. Migration out of rural areas, despite remittances, continues at unprecedented rates leaving behind a population of elderly. A spiral of decline has taken hold in many villages, leaving them ruined. The uncultivated farm lands exemplify the problems of labour shortages in Nepal.

Perhaps contributing to the immigration of the younger generations, is the arduous nature of hillside farming in Nepal. Patience is a virtue that young people rarely possess and are not encouraged to pursue by the forces of globalization.

Farmers are trapped in a system where they depend on irregular water supplies and fertilizer multinationals. The work is hard and mechanisation near impossible, so the lure of selling out to developers is high. In the face of climate change, the threats to farming are set to increase with intense rainfall likely to induce flooding and landslides.

Is there a viable alternative to reduce further migration? If traditional methods of rainwater harvesting and farming could be enacted, and appropriate technology used it is possible that these farming communities can adapt to be fruitful, even in the face of a changing climate. If matched by effective governance, the high rates of emigration have potential to be reversed.

"JUST DUMP IT!"

by Mirona Agachi and Leo Isaac-Dognin

When we asked how waste is managed in India, the one and only resounding answer was "just dump it!" Initially shocked, the European instincts sought clarification – "there must be something done with waste" – but were left unsatisfied. In fact, India has almost no formal system taking care of waste, when a increasing industrialisation and the globalisation, copied from the West, have accordingly triggered the production of tons of it. But, to say that the dumped waste remains on the streets would be an unfair conclusion: treatment exists, but its informal nature proves the inadequacy of India's "copy-paste of the West" mentality, and demands rethinking.

As explained by Mr. Srinivas Joshi, former civil servant in Himachal Pradesh, waste exists in numerous types: electronic, biomedical, nuclear, construction, industrial, domestic hazardous and recyclable waste. The upsurge of waste took place with the birth of manufactured goods, producing high volumes of non-biodegradable material, and enhanced by excessive packaging.

The obvious and direct impact of dumping all this waste in rivers or streets is a degradation of the natural environment. The worst can be expected from the loose regulations applied to industries and, above all, the fact that the treatment of nuclear waste remains under confidential government information. The end effect is injustice and further marginalisation of the poor, for they are the ones living in India's effluence. Environmental degradation exacerbates poverty, not the other way around. Poor communities living amongst waste are those affected by health issues, infections, child mortality, disease and shortage of resources. Yet, they are also the ones blamed for the pollution of rivers and evicted from "unauthorised colonies", whilst their consumption of packaged goods or discharge of filthy water is incomparably low.

However, the bulk of domestic waste is treated in a similar way to the West, going through the three steps of "segregation, collection, and transportation to the adequate treatment site". Indeed, individual "waste-pickers" collect and segregate rubbish, earning money by reselling valuable extracts, while animals are fed the food scraps. In this way, a lot of what can be recycled goes through an efficient eco-management activity by these waste-pickers which virtually carbon neutral (see report page 20).

The informal waste-picker system shows how classical economics works to soothe environmental problems. But unlike what many stipulate, classical economics will not work by itself, for the inefficiencies remain enormous. The government is the only one capable of integrating such a large system as waste management without creating a privatised monopoly whose prices and practices would exclude the poor and destroy livelihoods. Looking at waste stemming from industries, the country urgently needs stricter regulation and above all, rigorous, transparent and accountable implementation, which is the stage where Indian environmental protection plunges into the abyss. Sunita Narain, head of CSE, explains that this would require "a rebirth of confidence in the government", which has declined in the past decades. A cleaner India is foreseeable. Shimla, for instance, has banned the use of polythene in all of Himachal Pradesh and maintains a clean 'tourist' area but is failing in other respects.

One can learn from others mistakes. India's explosion of waste creation takes place as the West starts to recog-

nise the waste productive economy as a mistake. Rather than blindly replicating the industrialised world, India could seize the opportunity to leap frog the mistakes, and surge ahead. For this to happen development must take an alternative path to classical GDP based economics, where exponential consumption does not equate to success.

One could argue that if India is so desperate to imitate the West, it should copy Europe's waste treatment system. Western practices are not simply to be excluded because they are wrong, even where they are right, they are not designed for India. Any new urban waste-management system must surface as an integration of the current informal system's knowledge and skills, or the poor will suffer further. Similarly, the current ineffectiveness of building sewage plants overly isolated from sewage, drainage and electricity or of protecting ecosystems without clear understandings of their uniqueness, clearly shows how India's need for adaptive technologies and techniques.

The jewel in the crown

by Theo Gibbons

The livelihoods of India's rural poor are at risk, threatened by the degradation and curtailment of Common Property Resources (CPR's) on which they depend so heavily for fodder and fuel. The predicament that local communities in India find themselves in is not unprecedented; rather, it constitutes the continued expression of a challenge in existence since the birth of the 'modern' age, as the macro-economic imperatives of the political centre impose themselves on the periphery. Despite India's potential to deviate from this norm, it is questionable whether the inexorable nature of market forces and top-down political structures can be attenuated in the long run by the attempts to develop participatory politics.

The Industrial Revolution, which turned Britain into the powerhouse of the world, had arguably been premised on the so called Agricultural Revolution. Characterised by the infamous "enclosures of the commons", the use of communal lands was rationalised under the aegis of the nascent bourgeois political class. The modern capitalist age was incapable of remaining contained within national boundaries; the pace of industrialisation required the creation of new peripheries to find ever more outlets for excess capital and sources of raw material to sustain its forward momentum. India, the "jewel in the crown" of the British Empire fulfilled both these requirements, so that from an early stage it was submitted to the vagaries of modernisation. It is in this colonial past, and not solely in reference to the consequences of contemporary poverty and demographic growth, that one must understand the issues which India faces today; especially given that India's ruling class have committed themselves to emulate and extend the monopoly of the state as proprietor and regulator of forest cover.

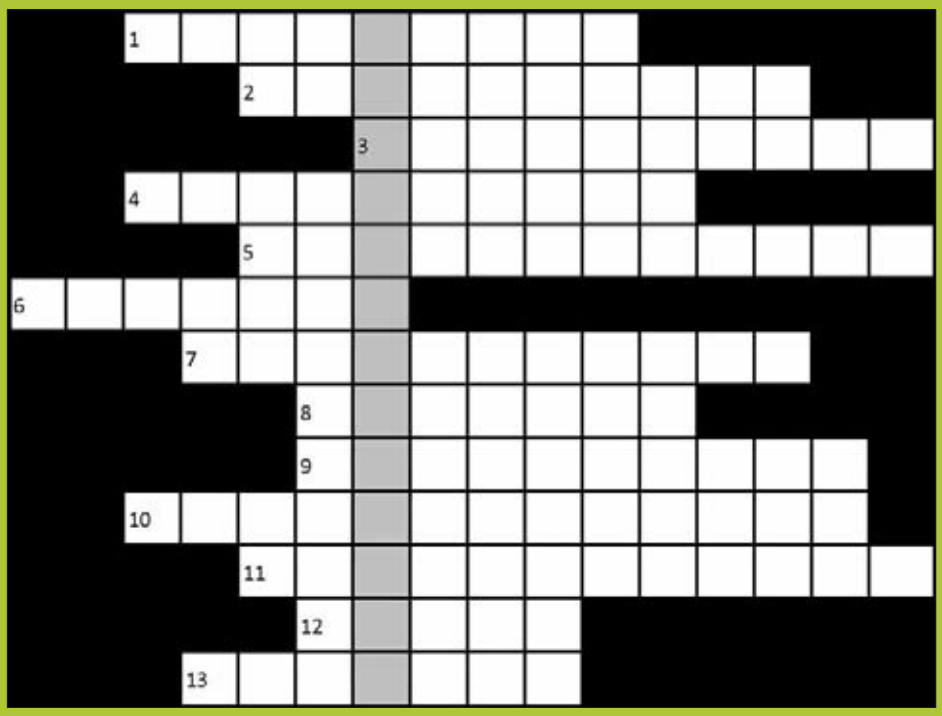
Indeed, the degradation of CPR's has often been explained in terms of a "tragedy of the commons" paradigm, whereby the inherent incapacity to effectively regulate sustainable use because of present imperatives, leads to an open access regime. It was not always so. Prior to the British colonial presence, community organisations premised on traditional sources of religious and social authority effectively managed communal resources. These customary rights and social structures could not be accommodated by the colonial administration, who perceived standing forests as potential railway sleepers. From this perspective, the extensive use of local forest by villagers was seen as detrimental, leading to the erosion of their traditional rights and know-how by the Forest Department.

The Legacy of colonialism became clear in post-Independence India. A development model of large scale industrialisation was adopted, which applied similar principles of development on its forest cover. The National Forest Policy of 1952 ascertained state monopoly and a policy of extractive profit maximisation, further compromising CPR's and the social arrangements that used to maintain them. The Chipko movement is an interesting example of responses to this. Pre- and post- Independence eras both exposed the region of Uttarakhand to outside interests, affecting their symbiotic relationship with nature. Meanwhile, population increase and the extension of market forces in Garahwali society made restoring this lost dynamic an lmost impossible goal. The real grassroots Chipko activism, that coalesced around the person of Chandi Prasa Bhatt, wasn't calling for a return to a pre-modern lifestyle, but rather proclaimed the inalienable right of local peoples over the forest for their own small scale, sustainable industry. This is not how the movement was portrayed, and was highjacked by Sunderlal Bahaguna - a politically and media savvy individual who espoused an extreme conservationist model. Bahaguna's success inaugurated a new regime of Forest Department control that came to characterise Indian conservatism in this period, reproducing the worst features of colonialism by undermining the rights of local communities.

Whilst progress has since been made in terms of India's exclusivist conservationism, the status of CPR's is constantly in tension with the general process of development. Industry recommends the sequestration of vast swathes of forest as a source of valuable raw materials, the institution of massive Special Economic Zones and the construction of extensive infrastructure at the expense of "wastelands". Moreover, industry, alike rapid urbanisation, is extremely energy intensive, encouraging India's huge drive to expand its hydro-electric-power capacity (see report page 8). It has been posited that India is currently traversing a transition in a process of development protagonised by Western nations. As the Kuznet graph suggests, this initial phase necessarily implies substantial environmental degradation as a by-product of rising incomes, with the understanding that increasing levels of wealth should have a corresponding rise in capacity to confront the consequences of modernisation.

The legacy of the Chipko movement suggests India's potential to make development more participatory, thereby giving rise to a more sustainable development path. Building on the Gandhian ideal of the "village republic", Chipko, Anil Agarwal and so many other participatory movements, demonstrate the opportunity held by the world's largest democracy.

THE CHAI TIME CROSSWORD

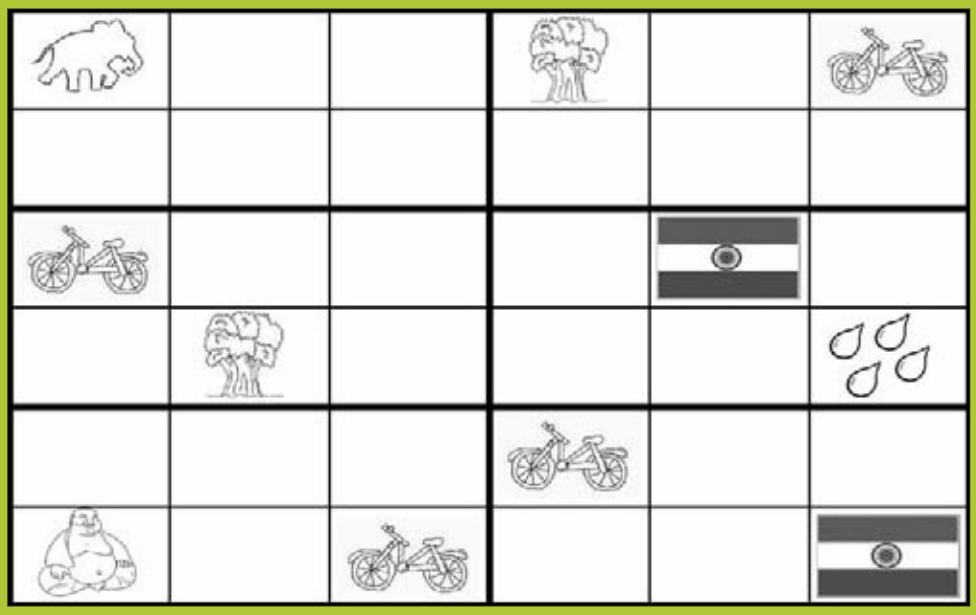


1. Traffic and Industry create this, leading to 1 death every hour in Delhi alone
2. The disposal of sewage and refuse, its absence leads to disease
3. Government of India's mismanagement of food distribution led to this in 2001-2002
4. 4 of the 10 richest people are Indian yet 900 million live below the poverty line
5. Caused by Hydro-electric power projects forcing people from their traditional communities
6. Caused by erratic rain patterns and the mismanagement of available water
7. Gandhi led peaceful protest against the British Rulers campaigning for these (5,6)
8. Caused by inadequate supply of clean drinking water in urban slums
9. These species are left dwindling after human interference e.g. the olive riddle turtle
10. Its effect can be seen in the increased rainfall in the Himalayan deserts
11. By 2050, 70% of the world, and 55% of India will move to cities
12. Inundation of water often due to monsoons of increasing intensity, caused by climate change
13. The Indian Government defines this as living on thirteen rupees per day; about US $0.28

(HINT: Unsustainable)

Sudoku

To complete this Indian Picture Su Duko one must fill each row,column and smaller 3x2 box with one of each of the Indian sights:
An elephant, a tree, a flag, raindrops, a bicycle and Buddha.
GOOD LUCK!



Crossword Solutions: 1. Pollution 2. Sanitation 3. Starvation 4. Inequality 5. Displacement 6. Drought 7. Human rights 8. Disease 9. Endangered 10. Climatechange 11. Urbanization 12. Flood 13. Poverty

The making of the magazine

With special thanks to...

ADITYA BATRA

MR DS BAINS

SHARMILA SINHA

The "Challenge of Balance"

by Ilana Cohen

For five weeks, twenty-seven of us came together from nine different countries to understand the "Challenge of Balance" in India. With academic backgrounds ranging from electrical engineering to history and development studies, our investigation came from every angle as we grappled with the development and environmental issues that pose the biggest threats to India's prosperity and sustainability: How could a country with such a high GDP have 70% of its population in poverty? After the success of the 1970's Green Revolution, how could the country face continued food insecurity? If there are so many floods from the monsoons and 34 river basins, how could there be such severe drought? How will India adapt to the uncertainties of impending climate change? With such culturally and religiously important rivers, how could pollution lead them to resemble open sewers? With so many hydroelectric dams churning in Himachal Pradesh, how could the power go out so frequently in Delhi? And how could these dams cause such deep environmental injustice despite social and environmental protections?

Through discussions with governmental officials, environmental experts and local stakeholders at contentious project sites, we set out to answer these questions, and more importantly to debate the potential solutions. While India's challenges may be at a crucial tipping point for the nation, we found reasons for hope; from the greening of Himalayan deserts, grassroots defeat of exploitative multi-national projects, and massively cleaner air in Delhi, change and "balance" have been achieved. The faint thread of similarity that runs through these initial victories is democracy. The democracy that throughout India's recent history has been her greatest strength, the foundation of which is people.

India is not unique in its challenges. They are echoed throughout the world. Thus, it is the the people of our globalised world that ultimately must be the change.

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