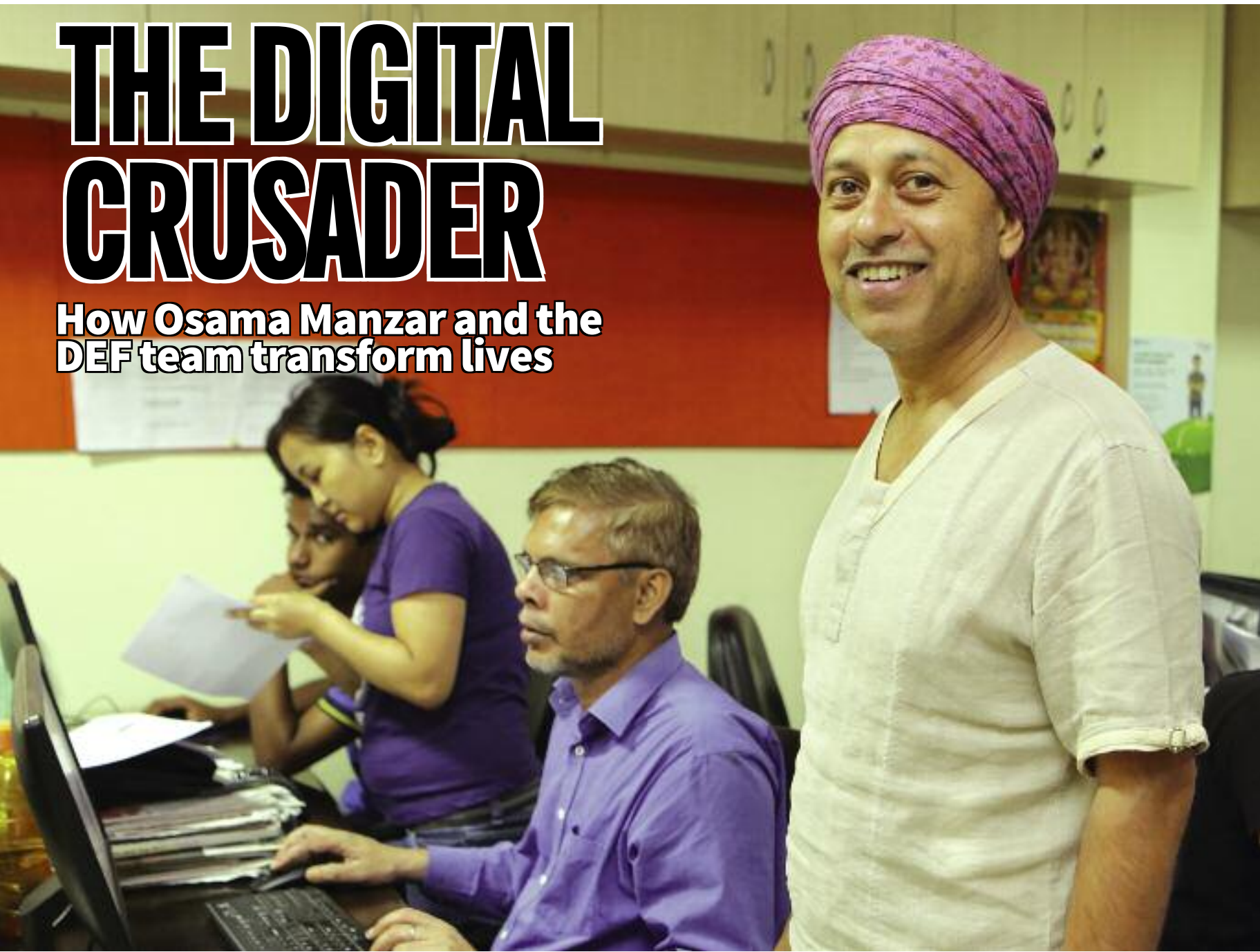


Civil Society

THE DIGITAL CRUSADER

How Osama Manzar and the DEF team transform lives



‘MEDICAL TESTS ARE BEING OVER-DONE’

Dr Balram Bhargava on SLIM, a new move to set standards

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Civil Society

READ US. WE READ YOU.

Doctors, hospitals

A prosperous and strong economy needs, above all, healthy people. India's healthcare system is in a shambles and any claim that we may lay to being a significant power will be tested by what we do to fix the healthcare system. Rampant privatisation, with all its gloss and smooth talking entrepreneurs, has only served to worsen things. The disparities in healthcare now, because of privatisation, are huge in much the same way as Indians are denied equal opportunities in other aspects of life.

Privatisation has taken the spirit of public service out of the profession of medicine and reduced it to a hunt for money. Secondly, it has robbed us of standards: doctors don't subject themselves to regulation because they have stopped aspiring to higher values. Thirdly, drug and machine manufacturers call the shots because everything is done within the framework of a business. Fourthly, since the nation does not invest in them the medical colleges we used to be so proud of are fading away. Private colleges are replacing them but their standards are questionable.

Hospital chains drive turnover and look for stock market valuations – as indeed they should because they are primarily businesses. So, X-rays, endoscopies, blood tests, echo cardiograms, days spent in ICUs are all part of number crunching. It is exactly how photocopier machines are sold.

Meanwhile, government hospitals where the majority of Indians need to go are in disrepair. The doctors are dispirited. The facilities associated with a hospital are all but missing. What should seriously worry us is that this is the situation as much in Delhi as it is in Bihar.

In this edition we bring you two medical stories. The first is an interview with Dr Balram Bhargava, a well-known cardiologist who has stayed on in the All India Institute of Medical Sciences (AIIMS). Dr Bhargava has decided to lead an initiative to rationalise the tests that patients are put through. What he is aspiring to create are standards achieved through self-regulation exercised by doctors who share his concern for what is going on. The initiative is called SLIM or the Society for Less Investigative Medicine. You will be hearing much more about it from us in *Civil Society* in months to come so stay tuned. But in the meantime check out Dr Bhargava's interview in this issue.

At the opposite end of Dr Bhargava's noble and lofty mission we chose to spend a full day in the Danapur Sub-divisional Hospital just outside Patna. The full page of pictures we carry speak for themselves. The hospital is the only one where Caesarian section deliveries can be done in the entire Patna sub-division. Yet its operation theatre does not have OT lights and instead a 200-watt bulb is used. There is no OT table and instead steel tables are used. Catheters are washed under a tap and used more than once. The bathrooms are filthy.

We aren't shocked because as journalists we have been around and you could find such a government hospital in Delhi as well. No need to go to Danapur. But each time we are dismayed. After all, what does it take to fix the problems of a hospital? Shouldn't an economy with our aspirations be addressing this question?

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IN THE LIGHT

by SAMITA RATHOR



LETTERS



5 ministries

Your cover story, 'What to do with 5 ministries', was a useful exercise. It highlighted several noteworthy suggestions by many eminent persons who have a lot of experience in handling development work. I think this issue of your magazine should be distributed to people in government.

Shamli Rajawat

Since I am concerned with health, I would like to add that the health min-

istry must give priority to building rural health infrastructure. It must nudge the states to act. If primary health centres, health workers and district hospitals are properly equipped, then our infant and maternal mortality rates will come down. Currently, women approach district hospitals for delivery but these are in a complete mess.

Shefali Bhardwaj

I would agree with Dileep Ranjekar that training of teachers is critical for improving the quality of education in government schools. Also, as he pointed out, early childhood education is a must. It really helps the child grasp formal education. So every government school must have a bright, happy kindergarten section.

Jaswant Sinha

Shankar Ghose

Thanks very much for the wonderful obituary and tribute to Shankar Ghose of Charkha. It was well-written and summed him up so well.

Asmita Das

Your obit was a warm and wonderful tribute to Shankar Ghose. It captured the man, his persona and charm per-

fectly. You will live on in so many hearts and minds, Shanks.

Lalita Ramdas

Kalparasa

I read Shree Padre's article, 'New coconut health drink', with interest. Kalparasa sounds interesting but, as pointed out, requires hard work and skill. It is about time agriculturists came together to market and sell these products themselves. The healthy features of Kalparasa should make it a forerunner in this segment. Thanks to the magazine and the author for the informative and useful article.

M.S. Rao

Good attempt. Depending on the output of sap, Augustine Joseph could also produce coconut sugar and other value-added products on a commercial scale.

P.K. Thampan

This is a very positive story of an innovative entrepreneur for fellow coconut farmers. Farmers should be able to demarcate some of their palms suited for Kalparasa extraction and rotate their turn so that the palms don't need to be tapped throughout the year. Congratulations to CPCRI

scientists for this simple yet potential technology.

Anitha Kumari

I have passed by this shack several times. I think, the next time, I shall stop to taste the new drink.

Soumya

Films

I'd like to thank Saibal Chatterjee for his film reviews. The recent one, 'Films that lingered', was amazing. I got to know about all the great films being made all over the world. I am looking forward to seeing them. We don't get this kind of information anywhere else except in *Civil Society*.

Atanu Mishra

Thanks for the review of the Cannes film festival. It was a delightful read. I am a film buff and I read your magazine to know about new and interesting films and lesser-known filmmakers. I hope I will be able to see *White God*, *Force Majeure* and *Winter Sleep*, which won the Palme d'Or.

Shelley Somers

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'Too many medical tests do more harm than good'

INTERVIEW

Dr Balram Bhargava

Umesh Anand
New Delhi

HOW often should you be evaluated for cholesterol and blood sugar? Do annual treadmill tests really serve any purpose? Was that multislice CT scan of your heart essential? Did you need to put yourself through that nerve-wracking MRI?

Indians have long grown accustomed to being subjected to a befuddling number of medical investigations by doctors who seem dependent on machines. For patients it's impossible to say no. In the absence of standards set by the medical fraternity, just about anything goes.

Dr Balram Bhargava, a senior cardiologist at the All India Institute of Medical Sciences (AIIMS), has made the first serious move to have self-regulation and to benchmark India with the best in the world.

Dr Bhargava, joined by other concerned doctors, has founded SLIM or the Society for Less Investigative Medicine to define what is needed. SLIM will begin with cardiology and go on to other specialisations. *Civil Society* spoke to Dr Bhargava at his office in AIIMS.

You have raised the issue of diagnostic tests people are put through not being necessary. How much of a problem is this really? Can you sum it up for us?

I think the problem is big. First, let me clearly tell you what the problem is. The problem is that people feel if they are being tested they are being certified fine and will remain fine. That is not true for the human body.

A car can be serviced and we can say that the car is fine. But a machine is different from the human body. A car cannot heal itself. The body can heal itself. That is a big difference.

I am interested in less investigative medicine. I have nothing against technology, but there are certain techno-centric people who feel that if you investigate you can prevent certain diseases. Now, it is very clear from data from the US, UK and most of Europe that this is not true.

You can test for risk factors and I think that should be done and should be mandatory. Testing for various risk factors for cardio-vascular diseases like diabetes, blood pressure, cholesterol – that should be done. But having said that, routine testing every year – doing a treadmill test or a coronary CT – has not shown to be beneficial at all, though they may reassure you that your arteries are fine.

Earlier it was thought that three diseases could be prevented by screening – cervical cancer in women, breast cancer in women and oral cancer in men and women. But more recently, there is data that screening is of no value. So screening should not be done as a routine. The disadvantage with screening is that it can be harmful rather than beneficial.



Dr Balram Bhargava: 'I am a strong believer in less investigative medicine and in less testing'

How does that happen? Give us an example.

Take the example of coronary artery disease or heart attack. Basically, the heart is like this room. It is a hollow chamber. It is pumping blood out to the entire body through the door. But before it pumps the blood out, there are three pipes that supply blood to the walls of the room itself. These are the coronary arteries, which can have some amount of cholesterol deposition – 40-60 per cent blockage. The prevailing wisdom so far has been that when the obstruction is more than 70 per cent you need to treat it for symptomatic relief. But more and more data is now emerging that if there are no symptoms then you do not have to do anything even in 70-80 per cent obstruction. You do not have to treat that blockage. It's a perfectly working system. Because there are other collateral pipes which may be supplying blood. If the patient has symptoms, he will come to you.

So, there are people with 80 per cent blockage who can live normally. Absolutely.

Are we being put through tests that we just don't need and with a regularity that is not required? For example, let's take a cholesterol test. There are people who are doing it every year or every six

months. How do we compare with what is being done in the rest of the world?

More and more data has emerged. In fact, the new guidelines from the US state that if you have high cholesterol, you start the treatment and forget about it. No need to test it.

And in terms of a completely fit person, how often, in other countries, are people tested? How often should there be testing for risk factors?

There are guidelines published in the *Journal of American Medical Association* (JAMA). They have said that everyone should be tested once for cholesterol, diabetes and high blood pressure before the age of 25-30 years.

The second thing that they have said is that you have to calculate the 10-year risk factor, in which family history is included, and if it is more than 7.5 per cent, then you may have to start high cholesterol treatment.

Before that, a good clinical examination by a physician is mandatory because that will catch anything that is further required. You have to see the patient, talk to him, touch him, evaluate him and clinically examine him. And then if you find anything go in for further tests. If there is a soft murmur in the heart, which many times can be benign, you may go for an ultrasound of the heart. But,

before examination, to go through an ultrasound or a treadmill test ... I don't agree with that. That is what bothers me the most.

But what happens in other societies, the US, for instance?

I do not know why our medicine is becoming US-centric. It has the worst medicine system – I don't want to fall sick in the US. The best medicine system is in the United Kingdom. We traditionally have had and been trained by that system of medicine based on the National Health Service.

At the time of Independence, it was clearly recommended what should be the primary healthcare centre, secondary healthcare centre, community health centre, which is how the structure of the healthcare system of the country should be. It did well initially, but somewhere we started looking at the US system, where research is phenomenal. I think the US is the best in research. But its medicine is not the best.

In the case of testing, what should we be aspiring to? Globally, what are the bad examples and what are the good ones?

The best example is the UK system of medicine, where the general practitioner will talk to the patient, will examine him, evaluate him and, if need

be, request a test. It is an important thing. Request a test and then, if need be, refer the patient to a secondary care physician.

So, the role of a general physician or a general practitioner is very vital and that is where the UK system has scored over the entire world. They have done phenomenally well.

We should emulate the UK. They have NICE (the National Institute for Health and Care Excellence) which gives guidelines for every single disease – what should be done, what should not be done, what is economically suitable, not suitable for a country like the UK. We should have similar guidelines for India. Not like the US, where everyone wants a Ferrari – you can't have a Ferrari for everyone. If you want to go from point A to B, a (simple) car will take you there.

So, is it that the tests we do here are not done according to parameters relevant to Indians?

Well, in terms of testing parameters, in terms of labs, they are accredited and are perfectly fine. But whether the tests are required is the question.

'You have to see the patient, talk to him, touch him, evaluate him and clinically examine him. And then if you find anything go in for further tests.'

So, why is it that we are ordering so many tests?

We never used to. This is clearly a recent phenomenon. We have gone the American way and insurance has crept in. Earlier, we used to think about the cost of every test to be done, whether it is required or not. If an X-ray was to be done, how much radiation would be given to the patient was thought about. Now, physicians have stopped thinking.

Is it sheer professional laziness, or is it all being driven by the larger medical industry?

I don't want to comment on that. I don't know. I am here in AIIMS where I am protected from all those sorts of things. I only request the test that I need and I only get those done. But, having said that, I get a lot of patients for second or third opinion carrying fat files of tests done. I wonder why all those have been done. Many times, the patient himself does not come. He just sends the files for an opinion, which is ridiculous. I don't treat files, I treat patients.

How much of all this is the result of poor regulation? What kind of regulation should there be?

I think, first of all, there should be self-regulation within the profession. The General Medical Council (GMC) has played a major role in the UK in regulation and the Medical Council of India (MCI) has to

reach that standard.

What is the kind of MCI you would like to see?

Just like the GMC, exactly like the GMC.

Doesn't the kind of investment pumped into setting up private sector healthcare in this country take away from public healthcare?

Absolutely. I think these private hospitals are doing very good professional work and there are capable and brilliant doctors. Having said that, they have taken away from the public health system. In the public health system people are demotivated. Look at the salary disparity anywhere in the world. You go to a university system in the UK and you go to a private system in the UK, the salary disparity is in the ratio of 1:2. You go to the US, it is 1:3. In India, it is 1:10. I mean, that is the difference. That is the problem.

Isn't this commercialisation something that the profession must deal with?

I agree with you. I am a strong believer in less investigative medicine and in less testing. I am also a strong believer in paternalistic medicine, where a patient comes, having full faith in the doctor. The doctor should have the calibre to look into the patient's eye, talk to him, examine him carefully and give the right opinion. If the doctor is not able to do this, he has failed as a physician. He may get tests done, X-rays done...but if he hasn't touched the patient, I think he has a serious problem.

SLIM is healthy doctor activism happening. Tell us how it is going to work.

SLIM is the Society for Less Investigative Medicine and we are still strategising for it. We have a team in every field. We are starting with cardiology. Ultimately it is going to be in nephrology, gastroenterology, gynaecology, etc. In about eight or 10 fields we have some sort of direction, wherein fewer tests are to be done.

For example, cardiology is my field. So, I can talk about the unnecessary usage of multi-slice CT scan or not doing an exercise test where it is not required, or not doing it every year when it is not required. So it will start with cardiology, go into other fields and then boil down to something along the lines of NICE guidelines.

How comprehensive is this? How many minds will be joining you across the country?

It is going to be in AIIMS. It is going to be an AIIMS effort to start with. I have received emails and text messages from several people including doctors and lawyers. I am a firm believer in starting small, starting simple and demonstrating your principles.

How many doctors are there?

I think we have enough doctors.

What time-frame do you give yourself for this?

That is a tough one. We are going to start with cardiology and if it goes well we will go into the other fields. ■

Will a sacred forest fall to NCR builders?

Mangar Bani struggles to protect itself

Ravleen Kaur
Gurgaon

THE Gurgaon-Faridabad road is a delightful drive with hills and forests on both sides. But a ribbon of yellow sand, the kind you see in Jaisalmer's desert, accumulates along the middle of the road – a gentle reminder that the desert is creeping up.

The Aravali hills stand in its way. And somewhere on this road is Mangar Bani, the last patch of forest that still stands tall, protecting Gurgaon, Faridabad and Delhi from being swallowed by the burning sands of the Thar desert.

Finally, a yellow board appears. The writing on it says that Mangar Bani, a sacred grove, is a protected forest under the Punjab Land Preservation Act (PLPA). A few monkeys and peacocks around testify to that.

As you go down into the valley, the scene changes dramatically. Mangar village continues to be quintessentially rural. Goats and cattle roam about but they are not allowed to go to the Bani – Mangar's sacred grove.

The local belief is that anybody harming the Bani or grazing goats there will invite the wrath of the 'wise ones' – the ancient trees of the sacred grove.

The dhau (*Anogeissus pendula*), native to the Delhi ridge, survives here in such profusion that the invasive *Prosopis juliflora* has mostly been kept at bay. The ghost tree or the kulu, the pisangian, the kala siris and the salai are some of the trees found only in Mangar Bani now, says Pradip Krishen, author of *Trees of Delhi*.

"Mangar Bani is the remnant of a much richer flora that existed in the Aravalis. If such a forest so close to a city existed anywhere else in the world, the government there would do everything to protect it but here they don't even know about it," says Krishen.

Krishen describes dhau as a 'habitat specialist', a hardy tree that can survive on its own even on steep slopes and rocky terrain.

"The dhau has created a clonal forest in the Bani, not by seeds but by shoots which grow out of the tree and implant themselves back in the ground. This looks like many small trees but actually it is one large tree. None of the plants will survive here if the dhau is cut off. So if hoteliers think they will replace the dhau with other beautiful-looking species, they are wrong as the trees will never grow in this kind of terrain," he warns.

AIR AND WATER: According to the World Health Organisation (WHO), Delhi has among the highest levels of air pollution in the world. And this year's summer was one of the hottest ever. "This is exactly why places like Mangar Bani are so important. Such forests are the lungs of cities. They prevent dust and rise in temperature," says Sunil, secretary of the Gram Vikas Samiti, Mangar.

Mangar Bani and its nearby scrub forest is also a vast groundwater recharge zone. It is Gurgaon's only



Mangar Bani: Its ancient forest faces an uncertain future

'The Dhauj lake would expand to the edge of our farm. Waterfalls would emerge from cracks in the rocky Aravalis.'



Ila Lumba

hope. The city's groundwater table is depleting at an alarming rate.

Mangar Bani is the catchment area of the Damdama lake, the Surajkund lake and the Badhkal lake. It is close to the dried-up Dhauj lake. All these water bodies now have water only during the monsoon.

In a 2008 report to the Supreme Court, the Central Groundwater Board said that this area with its rocky hills is a natural recharge zone for downstream areas. Groundwater recharge in Mangar Bani is estimated to be two million litres per hectare per year (one-third of the average rainfall here).

Ila Lumba, a hotelier, and her husband, Shakti, a retired pilot, bought a farm in Mangar Bani in 1996. They run a rural retreat for city-dwellers, along with providing tutorial classes and handicraft work for the people of Mangar and nearby villages.

"When we were looking for land, people tried to scare us away by saying that this place remains under water for six months of the year. Indeed, this was true. The Dhauj lake would expand to the edge of our farm. It seemed we were staying on an island.

Waterfalls would emerge from cracks in the rocky Aravalis during the monsoon," recalls Ila.

"The local administration would dole out fishing contracts and people earned a handsome income from fishing. Now it has all become dry land," says Shakti.

Baba Dayaram, a Mangar elder and property dealer, confirms this. "Mangar, being a valley, was submerged most of the time. We had to use boats to reach some parts of the village. People only built houses on the cliffs to avoid flooding. But now we have houses right in the valley. Agriculture could only take place in the non-monsoon months," he says.

The Dhauj lake dried up in 2009. The government killed it by digging two deep borewells to supply water to a stone crusher unit in Pali and by constructing check dams on *nullahs* draining into the lake. Construction in the catchment area also stopped the flow of monsoon discharge into the lake.

VANISHING FORESTS: This stretch of the Aravali hills acts as a wildlife corridor between the Asola Sanctuary in Delhi and the Sariska National Park in Rajasthan. But its strategic location, between Gurgaon and Faridabad, is its doom. Yet, the people of Mangar Bani have tried to protect their ecological heritage.

"The Bani is one of those rare places protected by the local community who could have easily been the cause of its destruction for personal gain," says Krishen.

According to Sunil, the problem began in the 1970s. A few outsiders encouraged villagers to sell them hilly land, which was common land meant for grazing and forest produce. The villagers asked the government to give them their share of common land on the hill. The panchayat did not object.

The state government measured the hilly forested land. It came to around 3,500-4,000 acres. It gave the villagers 12 parts of hill land for one part of private agricultural land that they owned.

Between 1982-1986, the villagers sold off their share of hill land to private realtors and builders without any demarcation or survey of the land being carried out. "It was a very well-orchestrated plan which involved the nexus of builders and the government," says Sunil.

In 1986, the government sent a team to conduct *chakbandi* (consolidation of land) and demarcate areas. The land was divided into four categories: *chahi* (irrigated land), *magadha* (rainfed land), *gair mumkin nallah* (common land under water) and *gair mumkin pahar* (common hilly area).

When the survey team arrived, people realised that all their land, including the Bani, and about 70 per cent of their agricultural land, had been sold off.

was over. So all the cases filed by the villagers were of no use," says Sunil.

A new tribe of property dealers now cropped up who specialised in 'kabza'. They took money from people who had bought the land and facilitated its handover from the local person. This business continues today.

However, the status of this land disallows open sale. One-third of *gair mumkin pahar* is notified under the PLPA. In the 1990s, the Aravali reforestation project, sponsored by the European Union, raised a plantation of 1,132 acres on one side of Mangar village. The

'When they needed signatures from the villagers, they bribed a few and took them to their office to sign the papers.'



Sunil



Traditionally, no felling of trees or grazing was allowed in the Bani

They had thought all along that they had only sold their hill land.

"For many families, this meant that they had virtually nothing left. So they never allowed the survey to take place and sent the team back. We got to know that all this was being pushed by a major builder company that opened an office for the survey team and got them to demarcate land, sitting in their office. And when they needed signatures from the villagers, they bribed a few and took them to their office to sign the survey papers," alleges Sunil.

Activists say that the price at which the land was sold then was below the market price. "It was sold at about ₹500-5,000 per acre. For the villagers, who were mainly pastoralists, this was big money," points out a property dealer.

In 1996, people who had bought the land on paper began to arrive to take possession. "It was then that we realised that the survey had actually happened and that the time limit to appeal against it

plantation was under Sections 4 and 5 of the PLPA where no change in land use is allowed.

Apart from this, there is the densely forested Bani (about 400 acres) where again no construction is allowed. There is a third type of land that comes under General Section 4 of the PLPA where tree-felling is prohibited without permission but has often been subjected to change of land use and construction. If done, it attracts a penalty.

"To begin with, these hills were common land. And, as per a Supreme Court judgment of January 2012, all the common land which has been privatised should be reversed to its original status and no construction should be allowed anywhere," says Chetan Agarwal, an independent analyst working on Mangar Bani.

In 2005, Haryana's Regional Plan-2021 declared Mangar a Natural Conservation Zone with a 0.5 per cent limit on any construction. "The limit is useless because 0.5 per cent of individual holdings is a lot of

land. This will definitely lead to fragmentation of the habitat," points out Sunil.

In 2012, the National Capital Region Planning Board (NCRPB) came up with its Mangar Development Plan-2031. It designated the entire area as an agricultural zone open to change on land use. It did not mention Mangar Bani's sacred grove.

Conservationists were outraged. "This was the first clear violation of the Forest Conservation Act (FCA), 1980, where a deemed forest was being classified as an agricultural zone to facilitate construction," says Agarwal. Change in land use of a deemed forest requires prior clearance from the Environment Ministry under the FCA.

Activists also demanded that Mangar Bani be included in the Aravali notification of 1992 which restricted industry, mining, construction, roads and electrification in the Aravali hills of Gurgaon and Alwar district in Rajasthan. "This notification has helped control rampant colonisation in the Gurgaon Aravalis. However, the Aravali hills of Faridabad district were left out for some unknown reason," says Agarwal.

The revised Regional Plan-2021 was approved in principle in January this year. It allowed tourism in natural conservation zones and the term 'forest' was replaced with 'green cover', allowing developers to bypass the FCA.

Activists, the Union Environment Ministry and the Delhi Government objected. So the NCRPB said Mangar Bani would have a buffer zone of 500 metres and the sub-regional plan of Haryana should comply with this decision.

But in May, the Haryana government notified its sub-regional plan and reduced the buffer zone to 60 metres. "There is no clear demarcation of the sacred grove still on the maps of the regional plan so there is no clarity on how they will demarcate the buffer," says Agarwal.

Some NGOs have filed cases against individuals who have changed the land use in their plots acquired around Mangar Bani before the National Green Tribunal (NGT).

The land categorised as *gair mumkin nallah* is no longer under water and therefore available for agriculture. This has raised its monetary value. "Six months ago, the price of land was ₹1.5-2 crore per acre. The rate goes down when the NGT issues a new order and goes up when the Haryana Government announces something in its Master Plan. Almost everybody, ranging from big politicians and big builders to mediapersons, own land here, so all they are interested in is development and not its forest," says Shakti.

"The administration says that they want to protect the forest but it can't be done in isolation. The kind of population surrounding the forest, the traffic, noise...all that will impact the forest if land use is changed," said Gautam Vohra, social activist and journalist who has an organic farm in Mangar Bani.

The 2,000 villagers of the Mangar Bani area who have lost their livelihood of subsistence agriculture and pastoralism, now go to Gurgaon and Faridabad to work.

"We are that middle class which is stuck between aspirations for a modern lifestyle and our traditional roots. We are a village stuck between cities. We want to save the forest but we also want big cars. And have you ever heard of the middle class achieving anything great? They are only meant to suffer," comments Sunil. ■

CONFLICT ZONE

Doda's living dead

Gulzar Bhat
Jammu

ON the night of 9 October 1999, when Wali Mohammad Khan and his family finally slipped into a fearful slumber, putting aside the dreadful thought of a militant attack, four masked, armed men entered their house. They abducted Khan, the sole breadwinner of the family, as punishment for owing allegiance to his country.

"They took me to a nearby forest and tortured



The hapless people of Doda live in miserable conditions

me for four days. They pulled out my fingernails and burnt my back with cigarette stubs. On the fourth day, a patrolling party of CRPF personnel happened to pass by the forest and freed me after a brief shootout with the militants," recalled Khan, his eyes still full of fear.

Khan and his family now live in a two-room shanty in Beli Charana in Jammu district. Water seeps continuously through the ceiling when it rains. It is a far cry from the peaceful life they once led in the picturesque village of Chili Sanwara, nestled among the majestic mountains of Doda district until that militant attack.

That was the time when Doda, located 185 km from Jammu, witnessed scores of gory scenes, forcing thousands of families to leave their home and hearth and migrate to Jammu – already home to more than 19 lakh displaced persons. Khan lost his niece and sister to the bullets of the militants.

Now working as a labourer, he hardly manages to feed his family, comprising three physically challenged sons and a wife.

Hundreds of families in the district have undergone a similar ordeal. According to the Zilla Doda

Welfare Committee, over 2,400 families left their homes and land, and migrated to Jammu in the 1990s. That was the time when militancy was at its zenith.

On arrival, these families first lived in makeshift camps near the railway station for three years. As the camps were breeding grounds for deadly diseases, particularly during the sweltering summers, around 250 families shifted to Beli Charana Camp while the rest live in ghettos in Nagrota, Udampur, Kathua and Jagti where they continue to survive in sub-human conditions with hardly any source of livelihood.

"Some 250 families had shifted here to Beli Charana in 1999 under my supervision as the camps near the railway station had become a breeding ground for disease. The government had left us to die in squalor without any human dignity," said Kaushal Sharma, Chairman, Doda Welfare Committee.

These displaced families were not provided any relief by the state government but after some of them moved a writ petition in the High Court, the state government was directed to grant them relief on a par with Kashmiri migrants.

In violation of that directive, only 183 families are getting this relief at present. Of them, only 83 families are entitled to a monthly cash grant of ₹4,000 per family besides two kg of rice and nine kg of flour per

CHARKHA

person. The remaining 100 families receive ₹1,600 besides rations. Unfortunately, the remaining 2,000 families who also bore the brunt of the insurgency at its worst get either rations or only free water and electricity.

Bashir Ahmad Khatana, a resident of Batala Doda, who migrated in 1999, does not get any assistance from the government. Living with his wife and two children in a single-room tenement, Khatana left his home as militants were forcing him to join their ranks. "I did not join their cadre and, instead of getting support from my government, I have been

left on my own. Back in the village, I abandoned my two-storied house and five kanals of land. Today, I am doing menial jobs for the survival of my family as I do not get any compensation from the government," he said.

The Doda migrants feel like children of a lesser God when they see their families surviving in the filthiest of conditions. Such a situation compels them to compare themselves with the Kashmiri migrants.

"The nature of our migration is the same. We too left our homes because of militancy but why does the government use a different yardstick when it comes to Doda migrants? It's a question that haunts us," said Kaushal Sharma.

Now, with the graph of militancy declining, some of the migrant families are willing to return to their homes. A middle-aged woman of Doda whose husband was killed brutally by militants after abduction, says on condition of anonymity that the situation is relatively congenial now and she would go back if the government came up with a concrete rehabilitation policy. ■

Charkha Features



Solar panels electrify office spaces



External wall insulation reduces the cost of cooling and heating

PICTURES BY LAKSHMAN ANAND

SWEDISH EMBASSY GOES GREEN

Eco-friendly technologies make it a role model

Kavita Charanji
New Delhi

THE Swedish Embassy wears the appearance of just another sprawling, plush diplomatic mission in Chanakyapuri, New Delhi. But go behind its high walls and a fascinating story unfolds of how the embassy has taken on the challenge of greening its environment – through water harvesting, use of solar energy, waste management and cutting-edge technologies – and thereby emerging as a sustainable blueprint for diplomatic missions.

The embassy's greening is apparent on entering the premises. Karl Edberg, Counsellor (Environment, Climate Change and Energy), and Sanjay Kapoor, chief engineer of the embassy, first show us a film on Sweden's 16 ambitious environmental objectives that have had their impact on its Delhi mission.

Says Edberg, "Since the 1950s and 1960s, Sweden has been committed to building a sound and environmentally sustainable society. That includes private persons, families, leaders, other actors in society, public and private companies and Swedish government agencies. In our embassy in Delhi we would like to extend that commitment to the preservation of our environment."

Seeing is believing. We set off on our walk with Edberg and Kapoor around the 40,000-sq m



Left: Rainwater harvesting has replenished dry borewells. Above: Sanjay Kapoor and Karl Edberg

embassy grounds, viewing one of its four rainwater harvesting filtration structures where rainwater is channelled through internal piping and filtered through layers of sand with activated charcoal. "This is a standard design stipulated by the Central Ground Water Authority, but we have also included our own designs and it works fine," says Kapoor, who points out that rainwater is tapped at strategic points in the storm water drain and returned to the ground through four recharge wells.

All the underground rainwater harvesting structures are designed depending on the different sites and filtration capacity. The additional activated charcoal filtration layer incorporated in the design of the filtration process aids the absorption of a wide range of water impurities and contaminants, including chlorine, odour and pigments.

Rainwater harvesting was an obvious solution to meet the embassy's water requirement. Earlier, borewells on the campus would run dry during peak summer every year. Water tankers had to be called in at steep cost. Kapoor estimates that the embassy would spend ₹15-20 lakh on private and government water supply. Moreover, the mission was located in an overexploited area where the

water table was depleting by almost a metre a year.

With rainwater harvesting structures in place at a total cost of around ₹9 lakh, says Kapoor, the embassy harvests 10.5 million litres of water annually. The two borewells do not run dry and water for gardening and flushing is extracted from the ground through borewells. Earlier, the runoff from the premises used to flow into the city drains. Today, every drop of water that falls on the embassy grounds is recharged.

We next go up winding steps through the ambassador's spacious home to see some of the solar panels installed in February 2011. So far, 600 sq m of solar panels have been installed over the chancery office, producing 75 kWp and 200 megawatt. Moreover 93,500 kg of CO₂ have been saved.

While the office areas have been electrified with solar power, the second phase of the project involves installing solar panels for the homes at the embassy. The investment is a steep 3.5 million krona for the solar power projects, but, says Edberg, "One should look at the long-term benefits." Kapoor adds, "We may have put a huge amount into our solar power project but the breakeven period is nine years. And if the cost of electricity continues to

spiral, we will break even within seven years."

Comprehensive waste management is the other prong in building an eco-friendly embassy. While segregation of degradable and nonbiodegradable waste is fairly well established in Delhi, the embassy has bins for glass, cans, paper, cellulose and e-waste as well. Moreover, food waste is turned into compost for plants, and there is a move towards the use of composite wood, agrifiber and recycled products.

"We are like a small community and everybody does their bit to protect the environment. This participatory approach can be easily replicated in society at large," points out Kapoor.

Cutting-edge technologies that minimise consumption of electricity and enable residents to breathe cleaner air also feature in the embassy's environmental strategy. Among the main technologies in use are indoor optical and motion sensors that are like optical sensors for outdoor use but also detect human activity in a room through infra-red waves. So when someone enters or leaves a room the motion sensor activates or deactivates the electrical circuit, saving electricity in the process.

The embassy's smart buildings have external wall insulation that reduces 20-30 per cent of heating or cooling costs. An air treatment filter in the office ventilation system, introduced in 2013, removes particulate matter small enough to pass through the lungs into the body.

Building management systems are installed to control cooling machines, air handling units, cold storages and office buildings.

In recognition of its green initiatives, the embassy was given the Green Embassy Award for 2012 by the Swedish government. Now, initiatives such as the building management systems, solar power plant, improved indoor air quality and use of geothermal energy are to be replicated at other Swedish missions. Feasibility studies are underway at the ones in Tokyo, Brazil, Cairo and other places. ■

Villagers beam at the sun

Rakesh Agrawal
Dehradun

AN obscure village nestled in the hills of Uttarakhand is emerging as a model for the use of solar energy not just to provide electricity but piped drinking water as well.

Churerdhar village in Tehri Garhwal district is located on a hill. For years, women trudged all the way down to a rivulet to fetch water. "Our hand pumps used to dry up in summer," recalls Rajrajeshwari Devi, a resident of the village. "It would take us at least an hour to fetch one canister of water from the stream. My family consists of six people. So we needed six canisters." That means she spent most of her day walking up and down to fetch water. Now, a solar pump draws water from the rivulet, flowing 180 m below, and supplies it to all 38 households in the village. The 225 villagers are relieved and extremely grateful.

"This village was suffering from an acute scarcity of water since rainfall was scanty and it did not have any perennial source of water. That's why we decided to experiment with new technology to pump water from the stream below and supply it to all households," says Malavika Chauhan, Executive Director, Himmotthan Pariyojana, a non-profit agency that designs, plans and financially supports projects in Uttarakhand and Himachal Pradesh.

Nearly all of Himmotthan Pariyojana's projects are implemented by village-based groups or by NGOs. But they decided to handle the Churerdhar project themselves. "We intervened directly as solar energy was being used for a novel purpose. So it needed constant supervision and maintenance and people's participation," explains Sumitra Chauhan of Himmotthan Pariyojana.

The villagers participated enthusiastically. "We are always here every morning to ensure that the pump works smoothly. It lifts water from the rivulet, fills this 6,000-litre capacity tank and begins supplying water to all households from 4 pm onwards. Every household gets 120 litres daily," says Jagadamba Bailwal, pradhan of Churerdhar village.

Himmotthan Pariyojana bore the entire cost of the solar-powered pump project – around ₹20 lakh. The Himalayan Institute Hospital Trust monitored the project.

The villagers have formed a Village Management Committee (VMC) to oversee operation and maintenance of the solar pump system. "Every household contributes ₹50 per month. The money, meant for maintenance of the pump, is deposited in a bank," says Ramlal Dabral, who operates the pump and is paid ₹1,000 per month by the VMC. The money, now totalling ₹95,000, has been put into a fixed deposit and functions as a reserve fund for



Malavika Chauhan with Chief Secretary Subhash Kumar at the inauguration of the solar pump project



Villagers of Churerdhar finally get clean drinking water operation and maintenance.

The villagers say they are happy to pay ₹50 per month for the water supply. "When this meagre sum saves us so many problems and even ensures us more free time, why shouldn't we pay?" says Guddi Devi, 32, a resident.

Ankit Kudiyaal, a junior engineer with Himmotthan Pariyojana, explains how the water supply system works. "Water is collected in the source collection chamber and, after a three-step filtration process, a 710-metre pipeline carries the pumped water to a height of 186 m at the rate of 38 litres per minute. Two solar off-line grids have 50 solar panels of 77.5 watts each. Together, the panels produce 3,750 watts of power which enables the pump to function and push the water to a Clear Water Reservoir where it is stored and chlorinated and then supplied to people's homes through pipes."

The villagers made an important observation. Dabral starts the pump at dawn and shuts it after the tank fills in about five hours. But, since the sun keeps shining through the day, the solar panels continue charging. This energy goes to waste, they thought. A teacher visiting the village came up with a novel idea. She suggested it be used for street lighting as supplying electricity to homes would be expensive since a lot of wiring would be needed.

Most homes in the village are spaced out.

Streetlights could be erected on the village's main road. The additional expense would be of buying a battery to store the solar energy and convert it into Alternating Current (AC). The streetlights could easily use LED lamps which are energy-saving and mercury-free. "This is a good idea and we will plan for it," assures Bailwal.

The solar pump is likely to bring down the incidence of water-borne diseases. If the villagers had installed a

water pump that used conventional energy, they would have paid around ₹37,000 in electricity bills per annum, on an average.

The scheme got a real boost when it was inaugurated on 7 March this year by Subhash Kumar, Chief Secretary, Uttarakhand. This is the first solar pump scheme in Uttarakhand.

The village was on Himmotthan Pariyojana's radar for quite some time. "The usual solutions would have been to tap natural water resources and provide gravity-piped water supply. Or we could have harvested rainwater in tanks in the village. But changing precipitation patterns and adverse climatic conditions meant we needed to find alternative solutions. Many discussions and much research later, we decided to go in for a solar energy water lift in this village," explained Fakruddin of Himmotthan Pariyojana.

The project has received much attention and the non-profit is planning to replicate it in other villages. "We're planning to establish the same scheme in 50 water-scarce villages as people are now moving to the edge of mountains, away from rivers and water sources after last year's disaster. But they are hamstrung for lack of water. We are surveying villages after they approached us for this scheme," says Bailwal. ■

PICTURES BY RAKESH AGRAWAL

No paradise for hangul

Jehangir Rashid
Srinagar

HANGUL, the official state animal of Jammu and Kashmir, has seen a stable population over the past few years. Statistics with the Department of Wildlife Protection, Jammu and Kashmir, show that there has been a steady increase in the hangul population over the past five or six years. But the hike is not of the desired level and experts cite several reasons for this.

Dr Sameena Amin Charoo, Research Officer, Department of Wildlife Protection, Jammu and Kashmir, says that strong political will is needed for the conservation of the hangul. She says that, despite it being the state animal, serious efforts are yet to be taken for its conservation.

"Grazing is the prime concern and it needs to be looked into by the concerned stakeholders. We have been able to control human interference in the lower Dachigam area but in the upper Dachigam area the grazers are having a field day. This needs to be checked at the earliest," she says.

The immediate impact of grazing is that the female-to-fawn ratio has come down in the Dachigam National Park, the official hangul reserve in the state. Due to disturbance in their habitat, the carrying capacity of female hangul has reduced drastically.

The department has been carrying out a hangul census for the past decade. In 2004, it was decided by the Wildlife Institute of India, Dehradun, and the Union Ministry for Environment and Forests that the census would be carried out every alternate year.

The 2004 census found 197 deer in the Dachigam National Park. This number came down to 153 in 2006. The 2008 census showed that there were 127 hangul in the reserve. In 2009, 175 deer were counted in Dachigam. In 2011, the population showed an increase of 43 animals. The department officials believe that the 2013 census figure would be around 218-220. The results have been delayed due to technical difficulties at the Wildlife Institute of India but



Kashmir's hangul: its numbers remain small but steady

Wildlife Protection was asked for suggestions for its successful implementation.

Wildlife Protection was asked for suggestions for its successful implementation.

"As part of this exercise, we had asked for a captive breeding centre at Shikargah-Tral. The Central Zoo Authority had accepted the proposal but till date we are yet to get control of the breeding centre. We are yet to get the animals for breeding at the centre," says Dr. Charoo.

Some years ago, the department, along with the Sher-i-Kashmir University of Agricultural Sciences and Technology – Kashmir (SKUAST-K) started a satellite collar project. It involved collaring hanguls and tracking their movement. It was found that hangul movement was restricted to the Dachigam area. The project is likely to be extended in the future.

Department officials are also worried about possible genetic disorders among the hangul. They say full-fledged research needs to be carried out in order to find out the genetic viability of the animal. The results would clarify likely inbreeding.

"It is not easy to carry out a census in a disturbed place like Kashmir. One has to take many things into consideration before undertaking such research. The

are expected to be finalised in a month or so.

Since hangul have been spotted in other parts of Kashmir, it is important that some areas be reserved for the state animal. They have been spotted in Ducksum, Ovura, Shikargah, Gurez and Wangath. But their presence in other areas cannot be ruled out.

The hangul is among the 10 most critically endangered species in the world. In 2008-09, the Union Minister for Environment and Forests drew up the Hangul Action Plan. The Department of

weather has an important role to play. At times we have been stopped by security forces while carrying out the census of the animals and had to reschedule the whole exercise," said Dr Charoo.

She laments the lack of awareness about conservation of the hangul. She says that allied departments like the Department of Forests and Social Forestry should also chip in. And the necessary infrastructure and promotional avenues should be provided to the department officers. ■

SAMITA'S WORLD

by SAMITA RATHOR



‘We are not inspectors’

Aangan on improving Observation Homes

Suhit Kelkar
Mumbai

LIFE becomes an unending nightmare for a child who is taken into custody by the state and sent to an Observation Home. These state-run institutions are notorious for being akin to filthy jails where children are submitted to torture and abuse.

Mumbai-based Aangan is one of the few NGOs that has managed to penetrate the thick walls of such ‘homes’. Beginning in 2001 with a psycho-social programme for 75 children in an Observation Home in Dongri, Mumbai, Aangan now works to raise standards in state-run institutions for children across India.

It tries to make such institutions child-friendly and rehabilitative. Aangan trains staff and ensures that Observation Homes are clean and peaceful, that the children get nutritious meals and follow a daily schedule of learning. Its most successful project is a state-run girls’ home in Saharanpur, Uttar Pradesh.

Aangan was started by Suparna Gupta who quit her job in a leading advertising agency to follow her passion – she wanted to improve Mumbai’s state-run children’s institutions.

She was soon joined by Shailja Mehta, who left her job in Procter and Gamble to work with Aangan and strengthen India’s child protection system.

In an interview to *Civil Society*, Suparna Gupta spoke about the trauma faced by children in state-run institutions and how Aangan is working to ensure a more congenial environment.

Whom are we speaking of when we speak of children in conflict with the law?

These are children accused of offences. Some are waiting for Juvenile Justice Boards to decide their fate. Others in the system have already been found guilty by judges on Juvenile Justice Boards.

More than 94 per cent of these children have been arrested or accused because they have engaged in petty offences in order to survive. We are speaking of children pushed out of their homes to earn very early. They work and live in brutal conditions – violent, abusive, little dignity. Boys spend 14-hour days in garbage dumps, exposed to dog bites, disease. If they find something valuable, the fights over the scrap are terribly violent.

Imagine the case of a child who tries to escape violence and forced labour in Odisha, gets on a train and is caught for ticketless travel, goes into a home in Bihar and is beaten, abused and ragged to death literally by adults who have been allowed into the Observation Home.

There is also a small number of children who have committed serious offences. While the punishment for such children is currently much emphasised, what must be strengthened is the work with them. That means assessing the root cause and actually designing a very specific intervention to



Suparna Gupta: ‘We see ourselves as partners of frontline workers in Observation Homes’

‘More than 94 per cent of these children have been arrested or accused because they have engaged in petty offences in order to survive.’

work and follow up with the child. The numbers are few so it can be done, but we tend to limit ‘intervention’ to locking away the child.

What does Aangan do to ensure the enforcement of the Juvenile Justice Act, 2000?

We work with children in state care – rescued from dangerous situations or in some cases children accused or arrested – for their effective rehabilita-

tion. We also work with children who are at risk of being harmed, trafficked, placed in dangerous or illegal work, abused or are at risk of offending in order to catch early warning signs and prevent harm.

In order to do this we work in two kinds of spaces: First, Children’s Homes and Observation Homes where we meet children. Second, we work in neighbourhoods where most marginalised communities live and where rates of child labour, isola-

tion, child marriage, and trafficking are high.

Aangan has so far focused a lot on the first point, making sure that children who are in state custody are treated right with a view towards rehabilitating them so that harm does not recur. Aangan has worked closely with the Departments of Women and Child Welfare as well as frontline workers like superintendents and staff in homes.

We have been working in 16 states. Aangan’s is the first monitoring system that ensured state authorities regularly heard the child’s perspective and understood ground-level realities in the homes and were compelled to respond in several (though not all) situations.

Since 2009, Aangan has also worked with a few people to prevent harm being done to children growing up in some of the most marginalised neighbourhoods. Keeping in mind that trafficking, violence, abuse and institutionalisation makes children more vulnerable to recurrence of harm, our programmes – Shakti for girls and Chauraha for boys – aim to keep children safe.

‘Aangan’s is the first monitoring system that ensured state authorities heard the child’s perspective and understood ground-level realities in the homes.’

How many children and in what areas does Aangan reach?

Since the time we started, Aangan has impacted 150,000 children across 16 states – many of them rescued or arrested and then placed in state care. We now prioritise children and protection systems in six states: Bihar, Uttar Pradesh (UP), Madhya Pradesh (MP), Bengal, Maharashtra and Odisha.

How many Observation Homes do you work with?

We have previously monitored conditions in more than 75 Children and Observation Homes, and those were in the worst condition. We have worked more closely with staff of about 10 Observation Homes (in UP, MP, Bihar, and so on) to really focus on rehabilitation planning by making a ‘life plan’ for each child.

Are Observation Homes effective in rehabilitating or mainstreaming children who are in conflict with the law?

Not yet. There is a lot of focus on getting procedural work done. With most Probation Officers (POs) working with very limited resources, there is little time to focus on rehabilitation planning. In fact, a study Aangan did with POs in Maharashtra found that most POs were heavily engaged in investigating what happened but found little time to work with the child on rehabilitation so that there is no re-offending.

What happens to most children in conflict with the law after being discharged from the Observation Homes? Do the authorities follow up with them or their families?

At this point, there is little follow-up and the child disappears into the same dangerous and difficult conditions that brought him there in the first place, with just as few coping skills to survive.

Do you know of studies which measure the effectiveness of Observation Homes?

Actually, I do not. We did two pieces of action

research: One, called Changing Spaces, sought to understand effectiveness from the child’s point of view. We found basic things – like many children had never spoken to their PO (who was probably ‘working on the case’ by completing paperwork). Another study on Observation Homes in Maharashtra that we did, called A Real Opportunity for Change, found that many children had never been addressed by the judge who decided their case.

How hard was it to get access to Observation Homes?

It’s extremely hard. Especially when we started out, the doors were firmly shut at homes. The history of the relationship between the institutional system (state authorities) and NGOs is bad. There is no trust. They would say to us, “You NGOs are watchdogs, you can inspect, file PILs and complain. But can you actually make a change?” We actually see ourselves as partners of frontline workers more than inspectors. Identifying what’s wrong is only the first part of the programme. But to prove that

NGOs are more than fault-finders is difficult.

How do authority figures react to you pointing out issues in their work?

One has to fight indifference – that is the biggest challenge. Many will say, “We already knew this was a problem, what’s new about your monitoring?” Others will say, “But we don’t have the resources to change this, so what can we do?” Let’s not forget that people who have worked for decades in the system also started out wanting to do good work and have tried numerous things. But in the states where the homes are in really bad condition, it is because senior authorities/decision-makers know, but do not believe in the basic principles of the UN Child Rights Convention or the Juvenile Justice Act.

In such states, to convince them that it is harmful to keep children with adult criminals or cruel to place them in such cramped conditions where they cannot even sleep with their legs stretched out is difficult.

In your opinion, what are the assumptions that underpin the views of the authorities about children in conflict with the law?

We forget to see adolescents as minors, as children. The same children who we know do not yet have the decision-making skills to vote, drive, marry, drink – but whom we believe must go out and earn at 14, ill-equipped in terms of education or skills. There are too many times when survival strategies bring children into the system. And once they are here, we must also understand the vulnerability that brought them to this point.

Authorities, too, believe that building literacy and employment skills is all that boys need. We rarely look at what their lives have been like. Also, at this point, we are all cynical and so are the authorities – there is a feeling that young boys are dangerous and should simply be locked away. Most important, we have to believe that rehabilitation can work. ■

Pluses and minuses of the budget

Bharat Dogra
New Delhi

THE reaction of NGOs and activists to the first Union Budget of the BJP was that they would have liked more money to be allocated for the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and the food security law. They feel this was essential because of the looming drought. Rainfall has been scanty and patchy. Also, they say new official estimates indicate that levels of poverty are higher compared to earlier data.

According to a detailed analysis of budget expenditure data by the Centre for Budget and Governance Accountability (CBGA) in New Delhi, allocations for most development sectors in this budget have either been retained at the same level as those proposed in the interim budget for 2014-15 or increased to a small extent.

“For instance, the allocation for MGNREGA is pegged at ₹34,000 crore and that for food subsidy at ₹1.15 lakh crore. However, with the apprehension of drought conditions in certain parts of the country this year because of a deficient monsoon, the allocations for MGNREGA should have been stepped up. On the food security front, the deficiencies in financing the National Food Security Act will persist this year as well,” states a press release by CBGA.

Subrat Das, executive director of CBGA, says, “As regards agriculture and allied sectors, the emphasis on crop insurance, soil health, agricultural marketing, animal husbandry and fisheries is certainly welcome. However, the issue of income security for farmers seems to have missed the attention of the government, though this was promised in the election manifesto of the BJP.”

However, he welcomed the creation of a Price Stabilisation Fund for cereals and vegetables with an allocation of ₹500 crore to deal with rising prices of essential commodities. “But a lot more was being expected from this government to tackle the issue of inflation that is troubling a large section of the population,” he says.

The allocations for Sub-Plans for Scheduled Castes and Tribes have been raised to some extent but are still below policy norms. In a review, the National Campaign on Dalit Human Rights (NCDHR) says, “The Union Budget 2014-15 should have allocated Plan funds under the Scheduled Caste Sub Plan (SCSP) and the Tribal Sub Plan (TSP) in proportion to the population share of SCs (16.8 per cent) and STs (8.7 per cent). However, the allocation is ₹50,548.16 crore (8.79 per cent) for SCs and ₹32,386.84 crore (5.63 per cent) for STs.”

On the bright side, the Union Budget proposes credit enhancement facility of ₹200 crore for young start-up SC entrepreneurs. Also, a welfare scheme for tribals called the Van Bandhu Kalyan Yojna is being launched with an initial allocation of ₹100 crore. ■

Has govt got Ganga right?

Civil Society News
New Delhi

AFTER a hiatus, the Ganga is once again in the news. The BJP has committed itself to rejuvenating the river. As promised, a separate ministry, the Union Ministry of Water Resources, River Development and Ganga Rejuvenation, headed by the redoubtable Uma Bharti, will now tend to India's blighted rivers.

Finance Minister Arun Jaitley has set aside ₹2,037 crore for an Integrated Ganga Conservation Mission called Namami Ganga in the Union Budget. The stretch from Allahabad to Haldia will be developed as a national water highway and ships will ply on it.

So, will the Ganga become clean and perennial? Water activists, NGOs and environmentalists are doubtful. At the Ganga Manthan on 7 July, organised by the National Mission for Clean Ganga (NMCG), many were left with the impression that the government could end up repeating the mistakes of the past.

Bharti was there and so was Nitin Gadkari, Union Minister of Road Transport & Highways, Shipping, Rural Development, Panchayati Raj, Drinking Water & Sanitation. The meeting was well-attended with officials, academics and people's representatives also pitching in.

A longish draft-summary of a Ganga River Basin Management Plan, prepared by a consortium of seven IITs, led by Dr Vinod Tare of IIT Kanpur, along with 11 organisations, was shared with participants.

"First of all, we need to understand the essential characteristics of the Ganga and rejuvenate it as a river," says Himanshu Thakkar, coordinator of the South Asia Network on Dams, Rivers and People (SANDRP), who attended the meeting. "The Ganga is not 2,525 km long. It has several tributaries and if those are not healthy then how can the main stem of the river be rejuvenated?"

"The Ganga is much more than 25,000 km, including all its tributaries, just as the Yamuna is not 1,400 km but 13,470 km with all its tributaries," points out Manoj Misra of Yamuna Jiye Abhiyan.

"The problem with the Ganga is not technology but governance," says Thakkar. The over-reliance on sewage treatment plants (STPs) and engineering solutions led to the failure of the first plan to clean the Ganga. According to estimates, around 70 per cent of pollution is due to sewage so a spate of STPs and sewer laying efforts are on.

In Varanasi, the UP Jal Nigam is examining bids for a five-part sewer laying and Sewage Treatment Plants (STP) with JICA money. In Kanpur, several streams are being diverted to Pandu, a tributary of the Ganga, that is already black with industrial pollution. In Patna, the World Bank is funding sewerage projects in Pahari and riverfront development.

But such infrastructure must be managed and monitored. Towns and villages along the river have to be held responsible for discharge of waste into the river. That means having strong mayors, strengthening municipal governance and empowering panchayats.

Dissecting why past plans failed, K.C. Sivaramakrishnan, the first project director of the



The Ganga at Varanasi

Towns and villages along the river have to be held responsible for polluting the river. That means having strong municipal governance and mayors.

Central Ganga Authority and its chairman, writes in *The Indian Express* that: "The Nagar Nigams and municipalities were marginalised and had little to do with the programme. The cities and the Ganga depend on each other for their life. One without the other has no meaning."

"We need management systems for every STP, every freshwater plant, every city and town, every three to five km of the river, every tributary and so on," says Thakkar.

That also means people's participation. At least half the members of such committees who oversee and monitor water discharge should be from outside the government. "People whose lives and livelihoods depend on the river – village communities, fisher folk, boatmen, riverbed cultivators and local sand miners must be represented. That will also create a sense of ownership in river rejuvenation efforts," says Thakkar.

Factories spew polluted effluents into the Ganga. The Pollution Boards rarely take action. "The Pollution Control Boards have not managed to clean a single river or even a *nullah* in their 40 years of existence. This is because they are completely non-transparent, unaccountable, non-participatory and exclusive bodies, where people whose lives are affected by the pollution have no role," says Thakkar.

We don't as yet have an urban water policy. "The 12th Five Year Plan on urban water said no urban areas should be allowed to have external water till

they exhaust their local potential, including recycling of treated sewage and other demand side and supply side options. The footprint of urban areas will increase exponentially if we do not act urgently," points out Thakkar.

Agriculture is the biggest utiliser of Ganga water. "At Bhimgoda, Bijnor and Narora barrages, we are diverting almost all the water in the river for irrigation. We have no water for the river," says Thakkar. Villages need to be encouraged to opt for water-saving technologies, appropriate crops, ponds, tanks and rainwater harvesting.

There is need for agriculture extension services. Currently, farms use a cocktail of chemicals and pesticides and their runoff is dumped into the river. "The government should encourage organic farming," says Thakkar. "If we change our water resources development and agriculture policies, it is possible to restrict these diversions to 50 per cent and release the rest for the river."

Also, encroachments along the river must be removed. A river regulation law must lay down how this land should be used. "We need to define the path of the riverbed or right of way for the river, based on its need to carry 100-year flood and silt," says Thakkar.

Environmentalists don't object to making the Ganga a national water highway. "But we don't need barrages every 100 km to make the Ganga navigable. Barrages will just destroy the river. Till 50 years ago ships used to ply on the Ganga, anyway. Why do we need barrages now?" asks Thakkar.

"The Ganga, of course, needs water. Urgently. Chart out a road map to achieve 50 per cent of freshwater releases from all dams and barrages in two years. Learn the lessons of the Uttarakhand disaster that affected the headwaters of the Ganga. And revisit all the existing, under construction and planned projects in the whole basin," is Thakkar's advice. ■

PHOTO FEATURE

By Lakshman Anand

SCENES FROM A BIHAR HOSPITAL

WE spent a day at the Danapur Sub-divisional Hospital on the outskirts of Patna. The pictures you see tell only part of the story. The hospital is actually much worse.

The walls are caked with dirt. The bathrooms would make you sick. Mothers with newly born babies lie around in dingy wards.

An aluminium partition defines the operation theatre. There is no OT table, the OT lights don't work.

Danapur was Lalu Prasad Yadav's constituency. His daughter stood from there this time. But if Lalu did nothing nor did the JDU-BJP combine that succeeded him despite two terms!



THE DIGITAL CRUSADER

LAKSHMAN ANAND



Osama Manzar at the DEF office in New Delhi

How Osama Manzar and the turbocharged DEF team are transforming lives

Arjun Sen
New Delhi

THE handwritten headline on a white board perched on a desk is eye-catching: 'One Billion Connect'. Next to it sits Osama Manzar, 47, founder of the Digital Empowerment Foundation (DEF), a non-profit in Delhi that works to bridge the digital divide in India.

Only 200 million out of India's total population of 1.2 billion is digitally literate. Getting the remaining one billion connected is now a national goal. Manzar is part of an effort that involves governments, industry and the non-profit sector. But he is a frontrunner and proof of how much change-leaders like him are needed to turn social goals into reality.

Manzar's bright smile hides his early years of rejection and failure. It was 12 years ago that he began to feel seriously bothered by the digital divide in India.

Currently, he and his team at DEF are celebrated as passionate and innovative drivers of digital inclusion. He has crisscrossed the country, helping people in remote corners reap the benefits of information communication technology for development (ICTD).

DEF's dream, says Manzar, is to connect all panchayats, schools, anganwadis, self-help groups (SHGs), small enterprises and all constituencies along with their elected representatives to the Internet. He believes it is possible by 2020.

What sets DEF apart is experience and knowledge. As early as 2004, when the digital divide was still being mulled, Manzar scouted India for best practices in ICTD. He examined Bhoomi in Karnataka, e-Choupal in Madhya Pradesh, Akshaya in Kerala, e-Seva in Andhra Pradesh, Drishtee in the North-East and Haryana, and n-Logue in Tamil Nadu, among others.

A year later, he launched the Manthan Awards to honour best practices in ICTD. "It is the Manthan Awards that really gave DEF the knowledge database

for launching our own programmes," says Manzar.

The Manthan Awards enabled DEF to know each and every noteworthy ICTD intervention taking place in India. As a result, DEF now has a database of over 5,000 such projects across India, South Asia and Africa and thereby understands what defines success in an ICTD project.

This is DEF's reference point, its core strength, that has helped it implement projects working with governments, companies, global foundations, communities and NGOs. Over the years DEF's footprint has grown and its revenues have doubled – from ₹4.94 crore in 2012-13 to ₹9.43 crore in 2013-14.

"I can't see revenues going down. We will only grow in future as everybody realises the importance of digital inclusion and digital literacy in solving developmental problems," says Manzar.

Amitabh Singhal, a board member of DEF, who is also a director on the board of the US-based Public Interest Registry (PIR) and an ICT consultant, agrees. "We now have a problem – how do we cope with this growth and manage future growth?" says Singhal.

THEN AND NOW: DEF's first major project was gyanpedia.in – financed by the Union Ministry of Communication and Technology in 2005. Gyanpedia aggregated content created by government schoolteachers and students and connected around 350 rural government schools to the information highway.

Since then, DEF has been mapping crucial underserved communities to whom digital literacy and connectivity would make a world of difference.

In 2005, it identified panchayats as an important area for intervention. Elected representatives, especially at village level, were not online and had no access to information, though they implement policies and schemes. India has 271,000 panchayats, representing some 545,000 villages. Connectivity would help decentralise administration, in keeping with the ideals of the 72nd Amendment which ushered in Panchayati Raj.

Thus was born the idea of the Digital Panchayat. In partnership with the National Internet Exchange of India, DEF has so far helped in connecting 500 panchayats. A functional digital platform and working station are created for each panchayat with Internet connectivity. Panchayat representatives are trained in IT skills. The objective is to provide a two-way flow of information so that people know about schemes, RTI, grievance redressal, employment and so on, and the local economy is helped through an e-commerce platform. Digital Panchayats were first started in Maharashtra and then expanded to eight states, empowering villagers and their elected representatives with information.

In 2009, the impoverished weavers of the famous Chanderi sari caught DEF's



Vocational training is part of DEF's outreach programme



DEF's Digital Panchayat programme helps grassroots representatives use computers

Panchayat representatives are trained in IT skills. The objective is to provide a two-way flow of information so that people know about schemes, RTI, grievance redressal...

eye. Chanderi is a town in Madhya Pradesh with historical forts and palaces. The saris provided revenues of ₹65 crore in 2009, but Chanderi's 3,000 weavers earned just ₹2,000-3,000 per month. Now revenues are ₹150 crore and weavers earn around ₹10,000 a month. DEF set up the Chanderi Weavers ICT Resource Centre, a cluster network, in an old palace – Raja and Rani Mahal. It formed SHGs, introduced new designs and trained people to use Computer Aided Software (CAD). Around 500 young people were trained in conversational English and computer skills.

Chanderi saris now have a brand name, Chanderiyaan, and DEF is setting up an e-commerce site to enable weavers to access markets directly. The weavers of Chanderi saris now earn more, their dependence on middlemen has been reduced and they aren't switching to wage labour.

Through the Wireless for Communities (W4C) programme, DEF has connected around 4,000 users in remote areas, using wireless technology and free spectrum.

In a village in Guna, Madhya Pradesh, connectivity drew children to school. Guna is one of the most backward areas in India, mostly populated by the Bhil and Sahariya tribal communities. Parents didn't take schooling seriously and children were sent off to work. An earnest teacher was keen on computers being introduced for his students. DEF provided not just computers but training and connectivity too. Children, who were at first afraid to touch the mouse, flocked to school, happily browsing the Internet and opening email accounts.

To spread digital literacy among rural youth and provide vocational training, DEF has set up around 100 ICT and Internet-enabled facilities known as Community Information and Resource Centres (CIRCs), jointly with governments, companies and NGOs.

PROJECT PICTURES BY DEF



Young girls use a laptop

Along with Intel, DEF is implementing the National Digital Literacy Mission (NDLM), an industry-led initiative that supports the Union government's aim of creating at least one digitally literate person in each household in the country by 2020.

DEF has also helped create telemedicine facilities in five rural health centres in the tribal district of Baran where it supports a local NGO through one of its largest CIRC's.

Through its eNGO programme, it has enabled 3,000 NGOs and 200 small enterprises to go online with their own websites.

Alongside, DEF has undertaken initiatives in Bangladesh, Nepal, Pakistan, Bhutan, Kenya and Nigeria.

As a result, DEF has created a network of 3,000 organisations that address issues of livelihood, health, education, agriculture, water supply and environment.

"Osama and DEF have a wide network in India and outside," says Dr Ajay Kumar, joint secretary in the Ministry of Communication and Information Technology. "They have this great ability to connect technology to rural people. They also understand how governments function so they can give very good inputs on how governments can work with civil society organisations. Moreover, because of their outreach capability they can implement projects that others cannot do."

DEF's diversity of programmes has much to do with its evolution over the years and the kind of funding it has received. But all its programmes have a single objective: to bridge the digital divide, make people digitally literate and ensure seamless last mile connectivity so that villages have a chance to develop.

EARLY DAYS: Manzar says he is 'almost' a college dropout. It took him several years to graduate. "My father was an engineer with Heavy Engineering Corporation in Ranchi and always wanted me to become one. But I couldn't get admission into engineering." Instead, he reluctantly graduated in physics from the Aligarh Muslim University and then found something he liked – journalism. He did a diploma course and then came to Delhi to find a job as a scribe.

For four years, he found none. He survived by living in the servant's quarter of a DDA apartment complex just opposite the Jawaharlal Nehru University campus, and accumulated a debt of ₹40,000. He didn't want to ask for money from his father, who was convinced he was a wayward, good for nothing.

But he settled his dues after he got his first job in *Down to Earth*, a science and environment magazine published by the Centre for Science and Environment. However, two months later, he got sacked. His boss didn't like him and kept making him rewrite copy, he says wryly.

Eventually, he got a job with *Computer World* as a reporter in 1994. That became the turning point of his life. "I interviewed hundreds of CEOs of top IT companies – N.R. Narayana Murthy, Shiv Nadar, Azim Premji and so on. That was when my passion for IT was ignited. I worked hard at understanding the Internet, which had just come to India in 1995, and the digital economy. I learnt a lot," he says. And this time he was blessed with an encouraging editor, he says.

In 1997 he joined *Hindustan Times'* Internet division and developed digitalHT.com, a news portal on the lines of rediff.com and yahoo.com. The division employed some 40 people. Then Chase Capital approached *Hindustan Times* and made an investment of \$9 million for the portal, hiring a new CEO from Malaysia. "I knew I had to move once again," Manzar says.

He decided to start his own enterprise in 1999. With a partner, he launched a media solutions and content management company called 4CPlus to help news-



Mobile apps help in education



papers and publishing organisations go online.

"We soon had many clients and in just one year our turnover grew from ₹20 lakh to ₹4 crore," says Manzar.

Alongside, he began writing and editing a book, *The Internet Economy of India*, which was published in 2001. "This was the first time I realised that poverty of information was the single most important impediment to development in today's world," says Manzar. "Even the poorest of the poor can be empowered to solve much of their problems if they become digitally literate and are able to access information bottom-up."

So this became his mission. The idea of DEF was born with its tagline, Empowering People @the Edge of Information.

Manzar's work as a journalist and as an entrepreneur, along with his book on the Indian Internet economy, finally got him recognition as an ICTD expert.

In 2003, he was selected as India's representative on the jury of the World Summit Awards which seek to promote the world's best in digital content and innovative applications within the framework of the United Nations' World Summit on the Information Society (WSIS).

Today, he is a member of its Grand Jury that comprises some 35-40 experts nominated from among 174 country representatives. The task of jury represen-



DEF has a database of some 1,200 mobile apps

tatives is to nominate organisations from their own countries which have done remarkable work in digital intervention for development. The Grand Jury makes the final selection. Manzar is also a member of several government expert panels dealing with ICTD. He is now the editor or author of five more books.

MANTHAN AWARDS: In 2003 Manzar spent a lot of time travelling to Dubai and then to Geneva, working for the World Summit Awards. It was a great learning experience for him as he came to know about various ICTD interventions around the world.

"I realised how such awards could become capacity-building platforms for creating knowledge networks. I began to work on launching the Manthan Awards to recognise and promote ICTD interventions in India and gradually in South Asia," he recounts.

Meanwhile, DEF had become a functional entity in August 2003 and Manzar sold off his stake in 4CPlus to his partner. The money came in a few months later but Manzar gave it to his father to build a house – a rather pleasant way of redemption, of saying he had made it despite all the criticism he had borne.

The same year, he edited and published another anthology, *e-Content – Voices from the Ground*, through his media and publishing company, Inomy Media Pvt.

Ltd, which he had launched simultaneously with 4CPlus as an Internet news portal and content house.

The book documented case studies of ICTD interventions across India and the world. He also used to produce a newsletter through this company that came to be very widely known and gave him an opportunity to write for global publications on a freelance basis. The money he earned helped pay his bills as he did not draw any salary from 4CPlus.

In 2004, funded by Planet Finance, a venture capital company, he travelled across India to learn first-hand about ICTD interventions in the country and subsequently began the prestigious Manthan Awards.

The awards recognise best practices in creative e-content. The jury carefully sifts through applications and ascertains the kind of digital interventions that have had the most impact on the lives of people. "It is less about technology and digital media and more about the right use of digital and technological tools," states DEF's website.

The Manthan Awards are given for the best initiatives in health, education, learning and employment, governance, agriculture, tourism and culture, women's empowerment, inclusion, ecology and community broadcasting.

Last year, for the first time, the Manthan Awards included a new category – social media and empowerment. It was meant for those using Twitter, Facebook, YouTube, Flickr and so on for campaigns on social causes. DEF recognised the power of social media, its democratic appeal and its ability to help in nation-building.

The awards went to Youth ki Awaaz, India's largest online platform for youth to express themselves on issues they are concerned about. The portal even offers an internship programme equipped with mentors to help the young express themselves with ease.

The Human Welfare Association was also awarded. It works with poor and minority communities in Varanasi, reaching out to them through SMS, word of mouth, social networking and meetings. Then there was Chinh Early Education, a web portal that promotes children's causes and, with its blogs and videos, attracts some 400,000 page views. Vidya Poshak that provides financial help to poor but meritorious students was also chosen.

Also awarded was the People's Movement for Drought Affected. Run by the Drought Help Group in Pune, this social media site links donors in cities to drought-affected villagers. You can donate money to build water tanks, desilt ponds or clear blockages in streams. The group works in eight districts of Maharashtra and does its work with accountability and transparency.

With the mobile phone becoming an important tool of digital empowerment, in 2010 DEF started the mBillionth Award to recognise and honour excellence in mobile communications in South Asia and help developers scale up their apps.

"The mBillionth Award is turning into a pool of m-knowledge, m-innovations as well as m-strategies and m-thinking with minds from India and South Asia all set to prove that the mobile is the next m-powering tool in South Asia," says DEF.

In 2013, the winners were ZipDial Mobile Marketing and Analytics, the SEWA-SBI Financial Inclusion Programme that helps women become self-reliant by delivering social security schemes and the Adivasi Tea Leaf Marketing, a collective of tea leaf growers in the Nilgiris who have invented their own mobile app that processes orders for tea and creates a database in a paperless workflow.

DEF now has a database of 1,200 mobile apps. On 18 July it held a meeting where around 100 mobile and telecom players, including app developers, congregated to share their innovations for social and economic change.

"Osama and DEF have a lot of knowledge of what works on the ground, what business models work, what outreach models work and so on. They have tremendous reach in villages and among NGOs that work among the underprivileged," says Ashutosh Chadha, Director, Corporate Affairs, Intel, South Asia.

"We are entirely project-funded. We have no corpus funds and nobody gives us any money to be spent generally over three years or five years, etc. Nor do we raise funds on ideas. We implement a project with our own funds, provide proof of concept and then seek funding to scale up," says Manzar. "So far, none of our funders have stopped funding us. Instead, they are all willing to help us scale up further."

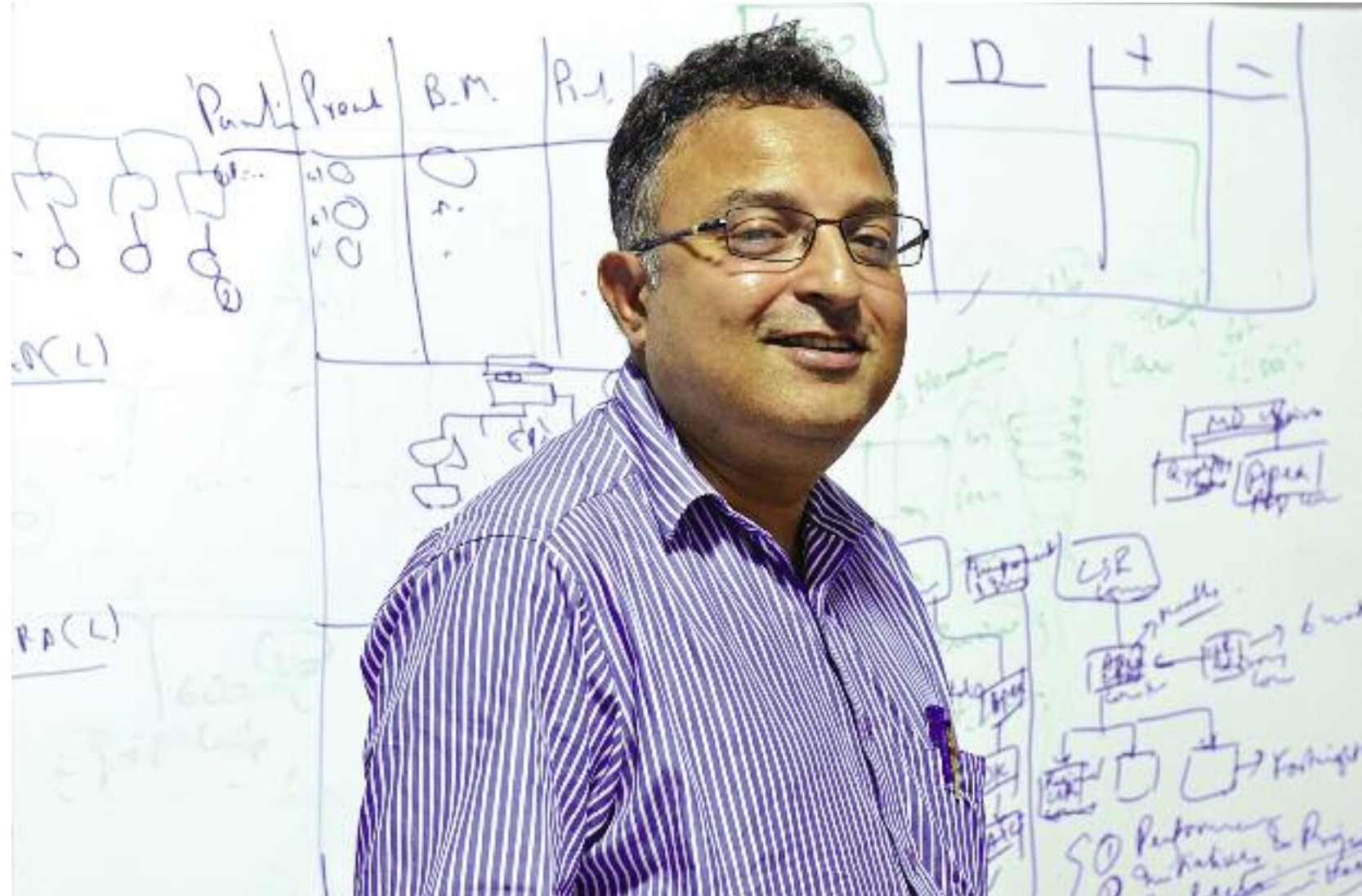
Manzar's affability, his knack of making friends and building relationships, has helped DEF's growth. Its major funders from the government are the Ministry of Information and Broadcasting, and the Ministry of Minority Affairs. It is also supported by Microsoft, Google, UNESCO, UNICEF and the European Union. The Bill and Melinda Gates Foundation, Ford Foundation, Sir Dorabji Tata Trust, Intel Foundation, Vodafone Foundation, Internet Society and Public Interest Registry also fund DEF.

"In our third phase we have been able to massively scale up our CIRC, W4C and eNGO programmes. We are now poised to realistically plan our 'One Billion Connect' goal by 2020," says Manzar with optimism. ■

Tata Steel's green score

A quick look at its latest sustainability report

PRASANTA BISWAS



Shubhenjit Chaudhuri, corporate sustainability chief at Jamshedpur

Subir Roy
Jamshedpur

WHEN Tata Steel expands production capacity to be more competitive, the cutting edge it looks for is in higher levels of sustainability. It is good for business, less damaging to the environment and important for the company's public image.

There are many things that a company Tata Steel's size does to stay in the reckoning. It invests in technologies that reduce consumption of water and energy because these have bottom line implications. But it also goes that extra mile to develop herbal gardens and grow fruit trees at its captive mines to repair some of the damage done to the earth.

Nineteenth and early twentieth century industrialisation was marked by smoke stacks and large

tracts devastated by open cast mining. As smoke stacks disappear and green cover is restored in the twenty-first century, the good earth is allowed to return.

As we settle down at the Jamshedpur works for a lengthy interview with Shubhenjit Chaudhuri, corporate sustainability chief of Tata Steel, he finishes a conversation with a colleague from another department on progress in using recycled paper. Sustainability is obviously a regular item on the steel maker's internal agenda.

The 13th Corporate Sustainability report (2012-13) of the steel maker puts it in context by saying that the path ahead, after the 2.9 million tonne per annum expansion has taken the capacity to 9.7 million tonnes of crude steel, is to add "new eco-efficient products to its portfolio while using fewer natural resources, less energy and less water per tonne

of steel produced."

Tata Steel has been slowly losing a historical advantage it has enjoyed. A key factor contributing to its competitiveness till now is assured access to captive sources of raw materials. This has given it the ability to ensure steady supplies and consistent quality of raw materials, control costs and plan strategy. But with this has also come the disadvantage of having to make do with poor quality coal which has high ash content, says Chaudhuri. So the way out is to blend it with higher quality imported coal. Besides, the quality of iron ore available, which has high alumina content, is deteriorating.

There are two key measures of raw material use: blast furnace productivity (the higher the better) and the coke rate (the lower the better). In the former, Tata Steel's blast furnaces average 2.39 t/d/m³. But its new furnaces do 2.58, which is closer to the

global benchmark of 2.5-3.5, according to a 2013 study of the global steel industry by Ernst & Young. It is the same pattern with the coke rate. The current average is 456 kg/tonne of hot metal. But the new furnaces average 440, which is closer to the global benchmark of 350-400.

In terms of overall energy efficiency, Tata Steel at its main Jamshedpur works consumed 6.08 giga calories (Gcal) per tonne of crude steel production during 2012-13, energy efficiency having improved by over 20 per cent during 2006-13. (The lower the figure the better.) By way of comparison, Steel Authority, the large public sector steel maker, achieved 8.68 Gcal during the first half of the same year. The global benchmark is 4.5-5.5 Gcal, according to the E&Y study.

A key route to energy conservation has been to use the heat and gas produced during steel making to generate electricity. New energy efficient blast furnaces now have top recovery generation turbines using gas coming out at high speed. Similarly, gas coming out of coke ovens is also used to generate electricity. Tata

Steel has captive power capacity (power plants running on waste gas) totalling 140 mw at Jamshedpur, out of an overall requirement of 450 mw.

On the issue of raw materials used, steel makers have been engaged in a running battle with iron ore exporters who claim that exporting fines which they do not harm to the country's steel making capability as steel makers typically use iron ore lumps which are like low hanging fruit. But that was more true in the past than it is today. Increasingly, leading producers like Tata Steel are using fines through cintering and pelletisation, thus reducing the need to use lumps. Tata Steel now uses more than 80 per cent of the combination (cinter plus pellets) called agglomerates, in charging blast furnaces, when the global benchmark is 90 per cent.

While energy efficiency is one part of the story, another key parameter is carbon dioxide (CO₂) produced during steel making. This is now 2.4 tonnes per tonne of crude steel, which, says Chaudhuri, "is the best in India for the kind of configuration we have". The global benchmark is 1.7-1.8 tonnes. Recovery of harmful gases to take care of air quality is again dependent on the raw material used, including the extent to which scrap is used. Tata Steel now uses 6 per cent of scrap in steel making.

Other than air quality, another key area is water consumption and what is done to the water discharged after use. Tata Steel was drawing 33 million gallons of water per day when it had a capacity of 7 million tonnes. Now at a capacity of 10 million tonnes it still draws the same amount of water, indicating less water consumed per tonne of steel produced. An important milestone is an effluent treat-



The long-term aim is to completely eliminate effluent discharge. Currently there is no effluent discharge at the mining locations. Whatever water is put back into rivers at the steel plant area is fully treated and is river water quality.

ment plant coming up in two phases which will significantly reduce the discharge of treated water from the factory. When the second phase gets going the discharge will come down to eight million gallons per day which was earlier 15 million gallons.

The consumption of water, currently at 5.5m³-5.7m³ per tonne of crude steel, will come down to 4m³/tcs after the effluent treatment facility gets going. In this, global benchmarks are not clear as different manufacturers' reporting systems differ. This (4m³/tcs) will be among the best performances for steel companies around the world, says Chaudhuri.

The long-term aim is to completely eliminate effluent discharge. Currently, there is no effluent discharge at the mining locations. Whatever water is put back into rivers at the steel plant area is fully treated and is river water quality.

What happens after steel making is over? You are left with slag and traditionally steel mills used to be lined with hillocks of slag. This is generated both during iron and steel making. Chaudhuri again explains that the slag rate is not going down as raw material quality is deteriorating. Blast furnace slag generated during iron making goes into cement making. Slag generated during steel making can also be used in making cement, but it is difficult. Slag can be used in road construction, as is done in other countries, but the government is yet to allow it. When slag left out in the open weathers, free lime is segregated from the slag. Where land is acidic - as in Jharkhand, Bihar and Odisha - the lime neutralises it and so the slag acts like fertiliser.

Sustainability does not end with steel making but

has a bearing on the sustainability of steel users. Carbon-friendly steel products reduce the carbon footprints of their users. There are two other aims. One, to progressively localise products imported into the country and, two, is to offer low-cost solutions for rural India. If through changes in steel quality lighter steel can be used to make lighter cars, then that makes basic steel making more sustainable. The sale of high-strength steel used in cars made in India is rising rapidly, which is enabling foreign car manufacturers in India to localise inputs.

Another initiative is the nest-in house, designed by Tata Steel, whose steel panels and structure ensure less decay and whose poly-urethane insulated panels make for better insulation in a country like India where extreme temperatures are common.

Along with all this there is also an ongoing green initiative that is particularly important where mining degrades the environment. The aim is to compensate for the loss of vegetation and spread of dust as a result of mining. This will reduce soil erosion and stabilise slopes and over-burden dumps created by mining.

A 45-acre botanical park has been established in a mined-out area in the Noamundi iron ore mines, in the same Jharkhand state as the Jamshedpur works. The company sees it as a model for reclamation. The park is resuscitating herbal species and helps develop medicinal plants. Another park has been established in Jharia where local varieties of fruit trees are being grown. And entire hills have been reclaimed in the West Bokaro collieries. ■

Kokum goes instant

Shree Padre
Kasaragod

KOKUM has finally arrived on the global scene. In a small but historic first step, Konimfurti, a food-processing cluster in Maharashtra, recently exported around three tonnes of dry kokum rind to the US.

In the US, kokum will be known by its new name, sant – short for santulan, which means balance. “Balance is the function of our fruit. It’s how we work with communities and the environment,” says Kim LaPaglia, a social worker from Chicago, who has pioneered this enterprising first step.

Her ‘Do it Yourself’ kokum beverage is being promoted as an organic chemical-free drink in the US. It’s easy to make. Just dunk the dry rind into water at room temperature and the fruit will release all its flavour and nutrients. You can drink it cold too.

Kokum (*Garcinia india*), a fruit endemic to the Western Ghats, is known for its many useful medicinal properties.

Hydroxy Citric Acid (HCA), extracted and exported from kokum, converts food into energy and not fat. It is an anti-cholesterol and anti-obesity food additive.

Kokum also has two important antioxidants – garcinol and xanthon. While garcinol is an anti-cancer agent that promotes digestion, xanthon strengthen the heart, are anti-inflammatory and contain Vitamins B, C, potassium, manganese and magnesium. Kokum is extolled in Ayurveda too for tackling digestive problems and increasing the red blood cell count.

The fruit grows abundantly in the Konkan and Uttara Kannada district of Karnataka. But very few farmers perceive its commercial value, though scores of cottage industries converting kokum into value-added products have come up. Kokum is still a relatively unknown fruit outside its home states or even districts.

According to one survey, kokum is grown in about 1,000 hectares in Konkan with an annual production of 4,500 metric tonnes. But just 30 per cent is utilised; the rest is wasted. The reasons are many: the onset of the monsoon during the harvest season (May to June), the absence of enough industries, problems in harvesting and in post-harvest processing.

The Western Ghats Kokum Foundation (WGKF), a voluntary organisation established in 2001, is trying to promote kokum globally. It held three national seminars on kokum (‘Kokum’s quiet successes’ - *Civil Society*, June 2011). It also published and disseminated a very informative book on kokum.

LaPaglia read the book and became interested in the fruit because of its medicinal properties. A frequent visitor to India, she became deeply interested in introducing the fruit in the US market.



PICTURES BY SHREE PADRE

Dry rind of kokum in a glass of water releases nutrients and becomes juice

In Maharashtra’s Konkan and Karnataka’s Uttara Kannada district, syrup, a carbonated drink and dehydrated rind are produced from the fruit. Though dried rind is available, its quality is below-average. Kokum is grown as a scattered crop on the premises of small farmers, who do not have clean drying yards. Neither do they know how to improve the quality of their produce. LaPaglia started interacting with WGKF but found it difficult to get good-quality rind.

When WGKF approached Konimfurti, things started working. Konkan Nisarg Manch (KONIM), an NGO, has helped set up the farmer-friendly Konimfurti at Kudal in Sindhudurg district. Mohan Hodawdekar, secretary of Konimfurti, knew that producing good quality kokum rind would be possible only if they worked with farmers.

So he spoke to them and Konimfurti provided tarpaulins and demonstrated how they could dry the rind better. Slightly higher, makeshift platforms were built for drying. Around 50-60 farmers brought their produce to the Konimfurti area and dry rind was produced after being sorted and vacuum-cleaned.

LaPaglia did a lot of research to ensure kokum’s introduction to Americans would be successful. “My friends in the US have really appreciated



Kokum syrup and dry rind

ed the website she has put up for kokum,” says Ajit Shirodkar, President of WGKF.

In India, kokum is used as sherbet or sol sadi (a rice additive with coconut milk) or as a souring agent for cooking. LaPaglia understood that a better way to market kokum in the US was by spreading awareness of its nutritive benefits.

“Just put a couple of rinds into water and drink it a while later,” advises her website. “Sant’s fruit starts releasing nutrients, flavour and colour as soon as it hits water. The longer you infuse the fruit in water, the stronger the colour and flavour. Sant infuses fastest in water at room temperature, but it can be enjoyed both hot and cold.”

“They wanted three tonnes more. But we couldn’t organise that because of the onset of the monsoon,” says Hodawdekar. Will this export opportunity open up a big market for kokum in the US and other western countries? “If we do this business systematically, we hope to attract more consumers,” says Shirodkar. “Once this gains acceptance in the US, it can become a model for India too.”

He says more research into the instant use of kokum rind immersed in water is required. “In traditional preparations like sol kadi, we boil the kokum rind. We have to standardise the optimum time required for kokum rind to release all its useful contents like antioxidants, HCA and so on into water.”

Dr D. Chandrashekar Chowta, a kokum-grower in Kasaragod district of Kerala, is a regular consumer of kokum juice. “I had a heart attack a few years ago. Since then I drink kokum sherbet almost daily,” he says proudly. “Although I take allopathic medicine, I strongly believe that kokum has helped my health.”

He feels that kokum can be introduced as a herbal tea in the US. “Kokum can be offered as a tea powder. Providing it in dip bags would make it even more consumer-friendly. Just pour boiling water into a cup, dip a kokum tea bag and drink it,” he suggests.

The export of kokum has indirectly benefited the farming community. Konimfurti was able to offer farmers a fixed price of ₹100 per kg through the selling season. “The prevailing market price was fluctuating between ₹40 to ₹60. Due to our intervention, it has risen to not less than ₹80,” says Hodawdekar.

However, it requires about 10 kg of fresh fruit to get one kg of dry rind. To that has to be added the cost of labour for harvesting and drying the fruit. So the increased export price is still not remunerative but this is only a beginning. If quality can be achieved and there is a proper supply chain, kokum’s potential for business is manifold.

“The fruit has versatile properties. We need to find ways and means of communicating this to people so that they can benefit from it. With better post-harvest care and promotion in an organised way, we can sell kokum rind in supermarkets across the country,” says Shirodkar.

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INSIGHTS

OPINION | ANALYSIS | RESEARCH | IDEAS

Unusual fruits for India

KEN LOVE

WHEN I was first asked to develop a list of 12 fruits that have profit potential for India, I spent much time trying to figure out the country’s climate zones and taking into account what fruit might be native to each zone and each state. Simply making a list of fruits that I think would be good for all of India would be horticulturally impossible. Yet, part of this list has already been completed by the renowned Dr Chiranjit Parmar of Himachal Pradesh. His lists of local wild fruits in the state are legendary among fruit enthusiasts worldwide.

One must also take into account extreme weather conditions such as drought and monsoon tolerance. The ability to use the fruits in value addition products and their shelf life for marketing to chefs and markets should also be factored in. When I compare this to what might work in other countries, India is a considerable challenge.

I suggest a different approach for growers looking to become more sustainable from exotic and unusual fruits. Perhaps the most important way to begin is to develop working relationships with chefs, usually at hotels. At some of the world’s top hotel chains like the Taj and the Oberoi, chefs are always looking for the unusual and exotic. Having worked with chefs at the Taj West End in Bengaluru, I can say with assurance that there is always an interest in presenting guests with something unusual and delicious. They need this as a competitive edge. Many of the chefs and students at culinary schools throughout India are involved in culinary competitions and need to be very creative with unusual ingredients. The unusual fruits fit well into what they do. Another area to build interest and acceptance for some of the unusual fruits is with TV cooking shows.

I would send samples to these shows as a way of introducing them to the fruit. This is also true for food writers at newspapers, magazines and blogs. Another successful approach is to work with a high-end supermarket that will be willing to buy the fruit and sell it while a grower or chef presents samples of fresh fruit and fruit used in a recipe. This has helped to increase sales of jackfruit and chiku (sapota) in Hawaii 10-fold.

In terms of the types of fruits, I would divide the list into temperate areas, sub-tropical areas and tropical areas. There is considerable overlap in some cases but nothing should deter growers from trying to grow something normally outside its native area.

For temperate areas I would refer to Dr

Parmar’s work at www.hort.purdue.edu/newcrop/parmar/index.html

Since I think of fruit as both a horticulturalist and a chef, my main interests would be:

Bael fruit (*Aegle marmelos Correa*): Although considered more of a medicinal fruit, I have tasted some excellent fruit that I would like to see used in culinary creations.

Poha (*Physalis minima Linn*): Related to the poha in Hawaii which was one of our original 12 fruits, this has great potential beyond its Ayurvedic uses both as a sweet and as a savoury in a wide variety of sauces.

Amla (*Embllica officinalis Gaertn*): Amla presents a number of interesting options. Once, on the road to Pune, I stopped at a roadside stand with more than 50 different amla value-added products. The dozen I purchased were excellent yet I’ve never seen this at other markets in India. Perhaps, like jackfruit, it needs strong advocates for wider acceptance

by the general public. In Hawaii we often work with *Phyllanthus acidus* called Othetie gooseberry, which chefs utilise for sauces or jellies.

Myrica nagi Thunb, a relative of *Myrica rubra* which has a large following in Japan and China could be utilised in a number of ways. This fruit is just beginning to find a following in the US. Often found in desserts and as a savoury in Japan, I would have the nutrient values checked to see if the Indian kaiphal is higher than the *Myrica rubra*. This could be an excellent marketing tool.

Dr Parmar’s link also mentioned a number of plums, grapes and raspberry species. As unusual types of a more common fruit, it would be some-

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Tree Tomato



Pulasan



Ablu



Garcinia cowa

Continued from page 25

what easier to develop markets for these fruits as their relatives are already well known.

For more temperate areas in India, there are a number of fruits grown that are very popular. I would add fruits like loquat (*Eriobotrya japonica* Lindl), which are highly prized from Japan to Spain, yet have only a very small following in India. Chefs in the US are just beginning to develop an appreciation of loquat.

Figs of *Ficus carica* species along with the other *Ficus* species in India also have great potential as fresh fruit and to be utilised by chefs.

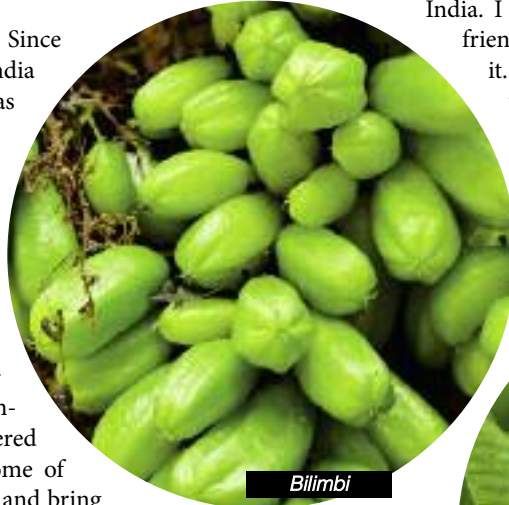
Pummelo (*Citrus maxima*): Since the first pummelo came to India in the late 1300s, the fruit has had a small following. Still, the fruit has never gained much of a foothold. There are many modern varieties with a much higher quality than some of the early fruit that I sampled in Coorg.

There are many other fruits that will grow in temperate areas yet are considered tropical fruit. Below are some of the fruits that I would grow and bring to market if I lived in southern India.

Mootty (*Baccaurea courtallensis*): Like its Southeast Asian cousin, Tampoi (*Baccaurea macrocarpa*), mootty is highly underutilised and virtually unknown outside its native area. In fact, there are over 100 *Baccaurea* species that are under-appreciated. The sweet-sour fruit is a palate pleaser that deserves more attention. I would be planting these for the future. One can only guess at what chefs would do with these but I know they would enjoy working with them.

Bilimbi (*Averrhoa bilimbi*), a sour relative of starfruit, it is highly productive and extremely useful in culinary applications. Once juiced, it can be used as a nutritious replacement for vinegar, which has no nutritional value. The acidity in bilimbi makes it ideal to use with value-added products to obtain a safe pH. It can be dried, pickled and used as a base for many soups.

Artocarpus hirsutus, known as aini, anhili, anjili and hebbalasu: The tree is endemic to the Western Ghats and usually grown for its wood. The fruit is a more acquired taste than its cousin, jackfruit, but holds great potential. There are thousands of fruitarians who travel each year to Thailand and Borneo in order to eat primarily Artocarpus fruits and durian. Surely a fruit festival of sorts would be a boon to tourism and the growers who would make it possible. Chefs would find the complex flavour very intriguing and relish a chance to work with it.



Bilimbi



Kokum



Rollinia

Kokum (*Garcinia indica*). It is one of my favourite fruits. Not just the processed rind but the fruit itself which is seldom used. I hope my trees in Hawaii will produce fairly soon as I'm rather anxious to make jelly and to get some other opinions. Many of my friends in India find the fruit itself to be too sour to enjoy but I find the slight sourness rather pleasing. I enjoy it more than its cloyingly sweet, popular relative, mangosteen. Of course, there are many medicinal benefits of kokum. I often use it to produce salad dressings, sauces and flavour other dishes.

Cowa (*Garcinia cowa*): Another of the unusual underutilised *Garcinia* found in south India. I was able to try the syrup a friend made and will never forget it. Without a doubt the best tasting fruit syrup I have ever had. Other *Garcinia*, like *Garcinia Cambogia*, *Garcinia atroviridis*, *Garcinia Gummi-gutta*

well as the other annonas, cherimoya and atemoya, the rollinia is unique in taste and colour. If one says that the other annonas are like vanilla or custard pudding, then rollinia is like vanilla, lemon, caramel and custard pudding. Usually eaten raw, the fruit is seldom found in markets in many tropical areas. The reason is simple – this is the fruit that farmers like to eat. In extremely good years, some culinary experimentation has taken place with rollinia soufflé being the most noteworthy result. This is a must plant fruit for India.

Abiu (*Pouteria caimito*). It has perhaps the highest sugar content of tropical fruit. So much so that some find it too sweet. It is special in many ways as it provides the body with a unique set of amino acids as well as energy from its sugar content. My old farm was very steep on the side of Mauna Loa Mountain. I planted abiu at the top and bottom in order to get some energy when walking up and down. The bright yellow colour is very distinctive. The fruit oxidises fast when opened. So, often, chefs will cut it at the table for customers to see how creamy white it is before its colour changes.

Pulasan (*Nephelium mutabile* Blume): A cousin of the popular rambutan, the spines on this fruit are slightly more rubbery and firm than on rambutan. The flesh is also sweeter than most rambutan and highly prized by fruit enthusiasts in tropical locations. The fruit's shelf life appears to be slightly longer but growing it is more difficult in many locations, giving India and Southeast Asia an advantage. Pulasan will tolerate more water much better than other fruits.

Green sapote (*Pouteria viridis*): Like rollinia, green sapote is another of those fruits which come to mind as soon as someone asks what my favourite is. The green sapote turns to a burnt orange colour when ripening and then to a darker brown when fully ripe. These two stages represent two of my favourite flavours, pumpkin and chocolate. When the colour is in between, it tastes like a combination of the two. It is delicious. The very tall tree produces abundantly and its shelf life is quite good if harvested when it is three-fourths ripe.

Lastly, no list of fruits would be complete without the venerable jackfruit (*Artocarpus heterophyllus*). The work by Shree Padre and many others have raised the level of acceptance of this 'king maker' of fruits. As Western tastes become more acceptable in the cities of India, new types of value-added products with jackfruit would inevitably become more popular, creating an even larger demand. Seeing this fruit becoming more and more popular in the US has also been a rewarding experience, especially seeing jackfruit used as a meat substitute in mainstream restaurants.

There are tens of thousands of other fruit species and varieties that have economic and nutritional values that are underutilised. These represent one possible future for agriculture and farmers who want to take their operation to a higher level. They represent a possible future for value-added producers to create truly unique products found nowhere else in the world. Collectively, we must work to make farming profitable. ■

and the more than 100 other edible *Garcinia* species are gaining in popularity but in medicinal and culinary circles. India is blessed to have many native species that offer growers delicious options.

Tree tomato (*Cyphomandra betacea* Sendt): This is one of those fruits that chefs love to work with. It lends itself to both sweet and savoury dishes. Although somewhat time-consuming to process, the results are always worth the effort. Also called tamarillo, it is easy to grow and you can eat it raw like the common tomato.

Langsat (*Lansium domesticum*): Perhaps the most popular fruit in the Philippines, the langsat, also called langzonie, is often plentiful, easily sold to those who have tried the fruit and very, very sweet when harvested at the correct time. Its flavour has been compared to a very sweet grapefruit. Langzonie is untapped in the culinary world. We have made jelly with it and now have a waiting list of potential buyers.

Rollinia (*Rollinia deliciosa*): I've always been reluctant to answer the frequent question what fruit do I like best but rollinia always comes to mind immediately. Related to sugar and custard apple as

Delinquent power plants

KANCHI KOHLI

THOSE stacks, can you see them? There are six of them not too far away, painted white and red. Can you spot them?" asked my companion in Mundra *taluka* of Kutch district in Gujarat. I did see them. Two fully functional coal-based thermal power plants stood tall. They belong to two large industrial and power conglomerates.

When we drove closer to these power plants we saw fly ash dumped on the road, dried-up mudflats and denigrated mangroves. The two plants had located themselves on ecologically fragile inter tidal areas – a place that was once home to artisanal fishing communities and a variety of resident and migratory birds that enjoyed unhindered shelter near the fishing settlements.

Today, life here is different. And people living just 25 km away from where we stood knew this. When I spoke to them, after leaving the Tragadi and Junabander fishing harbours, I realised the residents of the Randh bander fishing settlement knew exactly what they did not want to experience. They had visible evidence of what would happen to them if the power plant was allowed to draw water from the Randh. The natural water cycle of the inter tidal area, critical for their daily fish catch, would be disturbed. All other impacts that residents of other fishing harbours faced would stare them in the face too.

It is not surprising that the people of Tragadi and Randh are involved in different kinds of struggle every day. At Tragadi, they need to ensure that their daily access to the harbour is sustained, that fishers continue to get their fish catch and the power plants don't expand into what remains of their homes. At the Randh, after waging long street and court battles, fishers have managed to keep the plants away from the coastline and pushed the company into changing its cooling technology so that water from the sea is not drawn. But the final verdict from the environmental tribunal remains pending.

Over the years, conversations with affected communities and my environmental journeys have taken me close to many thermal power plants. These experiences have revealed myriad dimensions of how human lives evolved, survived and struggled ever since these power stations began to be set up from the 1960s onwards.

Far away from Mundra lies the Singrauli region cutting across the states of Uttar Pradesh (UP) and Madhya Pradesh (MP). Here, residents of Dibulganj village find themselves in the middle of four coal-based thermal power stations. This, said the villagers, was the biggest panchayat in Sonebhadra district of UP. The village was just off the main road from Waidhan to Varanasi via Robertsganj, the district headquarters.

The people of Dibulganj had been promised over 2,000 jobs when the first plant came up in 1985. Till three years ago, they were still demanding those promised jobs. Only 234 people actually got jobs. The people lived with air pollution, health issues, a dysfunctional medical facility and long electricity cuts. All the electricity being generated in the three



KANCHI KOHLI

The people of Dibulganj had been promised over 2,000 jobs when the first plant came up in 1985. Till three years ago, they were still demanding those promised jobs.

other plants and the upcoming ones was not meant for Dibulganj. It was meant to feed a central grid that would fulfil the base load power demand of other industries and cities. Ironically, powerless Dibulganj in Singrauli, the power hub of India, meets the demands of our ever-growing industrial and commercial centres.

The older power plants in India don't have these red and white stacks. Those built in the 1960s with older technologies were bulkier and visually more revealing. One such plant lies in Punjab's Bathinda district in the heart of the Malwa region. Since it is an old power station, the pollution it causes is taken for granted. Travelling in these parts back in 2010, my colleague and I recorded some testimonies of people working in these plants. Even though our objective was to understand the functioning of regulatory institutions, the conversations we had revealed some important facets of lives around some of India's oldest power stations.

"When the plant is in operation dust flies into offices inside the complex too," said one official working in the thermal power plant built in 1969. Another person who was part of the workers' union mentioned that "everyone knows that there is pollution but there is no indiscriminate dumping by the plant. Usually, there is thin ash that settles over mud mounds all over the city".

The thermal power plant had four units but the equipment to control fly ash was only functioning in two units. Back then, we were told that there had been no move to get the dysfunctional units to function so that fly ash production could be minimised.

It is possible that problems in the Bathinda power plants have been rectified today. Perhaps more people from Dibulganj have found jobs in the nearby thermal power station. But the lives of people living in coastal or forest ecosystems are likely to change drastically if one is to go by the number of such plants coming up in the country today. Each company seeking permission to operate a coal mine is often doing it because they have power plants to feed. And with each plant, there is not just a change in existing land use – farms, forests, fishing and related livelihood. The entire ecological ethos and biodiversity, in fact, is completely replaced by the quest for 'power'.

The people of Jaigad in Ratnagiri district of Maharashtra fought hard to prevent a thermal power plant from coming up in their area because it would impact the production of their world-renowned Alphonso mangoes. Our regulatory and judicial system did not uphold their plea and concurred that the impact on these mangoes could be studied even while the power plant is constructed and goes into production.

There is glib talk of balancing increased industrialisation and environmental protection. But the lives of people living near thermal plants in Mundra, Singrauli, Bathinda and Jaigad are all examples of how illusive that balance looks. We have permanently displaced the local milieu, ignored long-standing pollution, and we now allow this scenario to be repeated. Our regulatory authorities and political system continue to make place for them. As citizens of this country, we are all complicit in creating demand for such industrialisation through our consumptive lifestyles. Together, we create these spaces and leave them to their fate. ■

Dirty data politics

AMITANGSHU ACHARYA

IN 2012, Jairam Ramesh, former Minister of Drinking Water and Sanitation, made an embarrassing admission to the Rajya Sabha. He said that states were deliberately fudging data on toilet construction to get Central Government funds released. If the minister had to believe the data reported from the states then almost 60 per cent of rural India had access to toilets. Unfortunately, in reality, the 2011 census figures showed that only a meagre 33 per cent had such access. More recently, an independent evaluation conducted by the Planning Commission estimated that 73 per cent of rural India performed their daily ablutions in the open.

That there will be 'dirty politics' around toilets is hardly surprising. India has a rich history of politicising data on public issues. Dam projects regularly get justified by inflating cost-benefit ratios. Districts get established as 'drought-affected' to write off bank loans to rich farmers from powerful political lobbies.

By registering the occupation of a farmer who committed suicide as 'Self-employed (Other)' instead of 'Self-employed (Farming/Agriculture)', farmer suicide data continues to go underreported.

Shyam Benegal's *Well done Abba* captures the theatrics of data politics on celluloid, where wells constructed under a government programme exist only on paper. The lead protagonist, played by Boman Irani, shakes up the state's political machinery by leading a mass movement demanding restoration of 'missing' wells. The system goes into an overdrive and wells are dug overnight till the data matches the reality on the ground.

If data doesn't play into political agendas then it either gets suppressed or has its existence denied. For example, roughly 13.7 million people in nine districts of West Bengal are at risk due to exposure to arsenic by drinking groundwater. Strangely, data on the distribution of arsenic-contaminated drinking water tubewells in the state is absent from any public domain. A district collector explained this paradox on condition of anonymity: "If I release the data, I am supposed to do something about the problem. But I don't have any funds or powers at my disposal to do anything. So what's the point of telling everyone how unsafe their water is?"

Such honest admissions from well-meaning bureaucrats to helpless ministers are indicative of India's 'data dilemma'. We cannot develop without data. In some cases we do not have it and what we have, we cannot trust.

In an effort to reduce the trust deficit, if not the annual budget, and increase transparency, the Government of India through the National Informatics Centre has recently launched <http://data.gov.in>, a public data portal. This may not mean much to a lot of people, but it is a significant achievement in data transparency.

Why? Because data collected from various ministries made available on this portal will be available to anyone in a 'raw' form. This means people can download actual datasets in excel sheets and do the



India has a rich history of politicising data on public issues

While working in rural India, I have witnessed bundles of surveys kept in government offices being entered into Excel sheets by underpaid and overworked data entry operators. Their interest in the quality of the data was as little as those who had collected it.

analysis themselves. The portal allows others to 'use, reuse and redistribute' the data, adhering to the culture of 'open data'. In April 2013, in an effort to reach out to citizens with government data, the NIC and Planning Commission organised a 'hackathon' for the 12th Five Year Plan. Bearded academics and bespectacled software developers spent two entire nights visualising innumerable rows of data into meaningful and interactive visuals.

Throwing open large databases is a welcome step, provided it is of verifiable quality. Data is fudged at the point of collection in India. It is not rare to walk into a panchayat office and witness a merry bunch of enumerators sipping tea and filling up survey sheets in quick succession. While working in rural India, I have witnessed bundles of surveys kept in government offices being entered into Excel sheets by underpaid and overworked data entry operators. Their interest in the quality of the data was as little as those who had collected it.

Gawking at these datasets will keep only the jaws busy. Hence, open data needs to walk that extra mile. The process and methodology by which data has been collected also needs to be made open.

Data, open or closed, will always remain a political project. Opening up databases on land ownership can create new opportunities for land grab. Data related to minorities can open up avenues for targeted discrimination. Data is money, and profit

interests can shape open data priorities. Hence, data that helps build smartphone apps to connect the urban rich to desired services will witness steady demand while the market-unworthy poor and rural areas will continue to remain a blind spot. Hence, the last mile challenge still remains. How does open data make a difference to the lives of those at the other end of the digital divide?

Interesting initiatives are now taking place across the country to answer this question. In Jharkhand, an NGO, FXB-India, has mapped water points contaminated with faecal coliform in their project area. They are taking these maps back to the villages for improved water quality management. Similarly, another NGO, Water for People, has mapped all the hand pumps in two blocks in South 24-Parganas in West Bengal with photographic evidence of their functionality. The data is available on a publicly accessible website. These examples from NGOs are setting new benchmarks for local governments and getting them interested in open data for change.

Like any other resource in India, information, too, has historically gravitated towards power and wealth. By allowing citizens to keep a watch over government, open data may help reverse this trend. It's a start worth being hopeful about. ■

Amitangshu Acharya is a water sector professional and an Open Data enthusiast. He is based out of New Delhi.

LIVING

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Monsoon magic in Wayanad

Whispering woods, waterfalls and muddy football

Susheela Nair
Wayanad

DURING the monsoon months from June to September, Wayanad is truly magical. It is the time of the year when nature is at its most beautiful. When the rainy season begins, travel agents, tour operators, travel writers and destination connoisseurs make a beeline for Wayanad to take part in Splash 2014, a three-day monsoon carnival. The Wayanad Tourism Organisation (WTO), a consortium of resorts, hotels, homestays, hospitality stakeholders and Kerala Tourism introduced Splash to sell the rugged charms of the monsoon and nature's bounty.

Wayanad, which was relatively unknown 10 years ago, has now metamorphosed into a dream destination in India, thanks to the persistent efforts of WTO. Realising that the district has a multitude of



A stroll in the rain



A traditional home in Vythiri

variegated experiences and attractions to offer during the rainy season, WTO decided to woo tourists to Wayanad's waterfalls and lush forests. "This changed the traveller's perception of the monsoon as a lean season. Moving from conventional marketing strategies, we have been able to change Wayanad's traditional reputation as a half-yearly tourism destination into a 365-day affair. The sixth edition of Splash B2B Meet is an excellent opportunity for meeting and interaction between buyers and sellers," said K. Ravindran, Secretary, WTO.

The best way to savour monsoon magic in Wayanad district, the heartland of coffee plantations in Kerala, is to go on long, invigorating walks across coffee and spice tracts with an umbrella, or drive up to see its sights, or explore the whispering woods. You can get soaked to the skin, or sit in your room and watch the rain drench the pretty landscape. The great outdoors of Wayanad also offer tourists the thrill of bamboo rafting, off-road rallying, mountain biking, zip-lining, commando walking, a walk



Girls playing in muddy fields

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through paddy fields and more activities in the rain during the annual Splash festival. There are additional thrills like farm-related activities with competitions in paddy transplantation, catching crabs, and archery. Vast open fields are converted into pitches for muddy football matches.

Wayanad is truly a sight to behold when rains lash the landscape. The feathery mist that envelops it, lends a surreal touch to its scenic charm. When the mist lifts you can see an undulating carpet of coffee and cardamom plantations in varying shades of green. Wayanad is a wondrous place for a monsoon break with its gushing streams and sparkling waterfalls and glorious green stretching before you.



Adrift on bamboo rafts

The various reservoirs and tanks, filled to the brim, beckon adventurous and fun-seeking tourists by the hordes for a wet and wild holiday.

Interestingly, although the district is called Wayanad, there is actually no town by that name. So if you scout around for a place called Wayanad in Wayanad district, you are likely to be disappointed. Keeping Kalpetta, the district headquarters, as the base, the visitor can explore the region's myriad tourist attractions.

Wayanad's popularity can be attributed to several reasons. For the adventurous, there are hills to trek. For the religious, there are sacred shrines. The history types can explore the prehistoric caves of Edakkal. For the laidback, there are lakes, mist-cloaked undulating hillsides swathed in plantations, hedged by lush rainforests, rushing rivulets and sparkling cascades.

From Kalpetta, explore the rest of the district's highlights around Sultan Battery, Mananthavady, Lakkidi and Vythiri. Visit Lakkidi which receives the second highest rainfall in India. The sylvan environs of Kalpetta abound with sparkling falls like Meenmutty, Kanthampara and Soochipara which can be reached by walking along intricate jungle paths.

A winding road past tea plantations, followed by an invigorating trek through a dense forest and rugged terrain leads to Soochipara Falls, also known as Sentinel Rock Falls or needle rocks in Malayalam. The name is descriptive – the water falls on sharp spikes of rock. You can perch yourself on a rock at a distance and watch the water cascading down granite rocks, engulfed in a burst of spray.

Close by are the Kanthampara Falls. Tucked in the dense forests are the Meenmutty Falls, hurtling down from a great height.

For a slice of raw adventure, do the nine-km trek through a dense forest to Pakshipathalam, a grotto of caves crafted by nature millions of years ago in the Brahmagiri Hills. Or you can climb up to Chembra Peak, the tallest summit in this region, and pitch a tent. Or go island hopping to Kuruva Dweep, a 950-acre maze of islets. Or clamber up a crane lift to Vythiri Tree House to get a bird's eye view of the luxuriant forest. Listen to the sounds of the jungle and wake up to the musical chirping of birds.

Marketing through road shows and word-of-mouth publicity has put Wayanad on the global

SUSHEELA NAIR

SLAVERY ACROSS THE WORLD



Scenes from Not My Life



Saibal Chatterjee
New Delhi

EVERY eight minutes a child goes missing without a trace in India. But children certainly aren't the only victims of human trafficking and slavery in the world's worst affected country.

Conservative estimates put the number of trafficked victims in India at more than 10 million.

Many individuals and organisations have been waging war on this evil for decades, but progress has been slow and limited.

Can a documentary film achieve what concerted activism on the ground hasn't? Anti-human trafficking campaigners in India are optimistic that Oscar-nominated Robert Bilheimer's feature-length *Not My Life* will inject new urgency into the movement.

Not My Life is a harrowing but redemptive film that travels into the heart of darkness and emerges with stories of horror and hope that shine a light on an inconvenient truth.

A specially edited Indian version of *Not My Life*, "the first film to depict the cruel and dehumanising practices of human trafficking and modern slavery on a global scale", has been co-produced by Bilheimer's Worldwide Documentaries Inc. and Riverbank Studios, New Delhi.

The film, with a Hindi voiceover, was aired on Doordarshan's National channel on 29 June last.

Plans are now afoot to re-broadcast the 84-minute *Not My Life* on Doordarshan in November to coincide with its India premiere in New Delhi and "the announcement of a three-year community-based awareness campaign designed to radically alter how Indians from all walks of life understand, and respond to, human trafficking and modern slavery crimes".

The 'Every 8 Minutes' campaign is being led by iPartner India, a UK-based charity that currently works with 40-odd organisations in 16 states.

Not My Life, originally narrated by veteran Hollywood actress Glenn Close, clearly establishes that human trafficking is by no means an exclusively Indian problem.

Not My Life was filmed over a period of four years on five continents and in 13 countries – Albania, Brazil, Cambodia, Egypt, Ghana, Guatemala, India, Italy, Nepal, Romania, Senegal, Uganda and the US.

The film reveals that slavery, in one manifesta-

tion or other, exists in virtually every part of the world. It also highlights the heinous ways in which the weak and the vulnerable are exploited.

Faced with continuous physical, mental and sexual violence, the enslaved are pushed into forced labour, domestic servitude, armed conflict, begging or the sex trade.

Says the film's director: "Human traffickers are earning billions of dollars on the backs and in the beds of our children and yet no one knows this is happening. We have a huge responsibility, right now, to know the truth and act on it."

"This is the greatest potential of the medium of film," says Bilheimer. "It is a profoundly democratic and enormously accessible way for us to communicate with one another and better understand the world in which we live."

He turns his lens on children and girls subjected to appalling forms of slavery, many of whom have either fought back or been rescued by activists.

The film also celebrates the voices and interventions of remarkable men and women who have led the fight against human trafficking locally and globally.

Therefore, despite the distressing scenario that the film paints, Bilheimer's call to action transmits a message of hope, which is embodied by the growing tribe of supporters and activists throwing their weight behind the struggle to help victims worldwide.

Among the many stories that *Not My Life* narrates is that of Grace Akallo, who, at the age of 14, was abducted from a boarding school in northern Uganda by Lord's Resistance Army and turned into a child soldier.

She recalls that killing, hunger and rape "were a part of daily life" and "escape was not an option". But she did manage to flee after seven months of captivity and reclaim her life.

Today Grace is a mother, activist and writer who

works to draw the world's attention to the plight of children forced into armed conflict.

Not My Life also tells the story of Angie, a teenager from Kansas, who, after running away from home, fell into the clutches of traffickers and ended up as a prostitute at a truck stop in Oklahoma.

Angie was rescued during an FBI sting operation that led to the arrest and conviction of 15 traffickers working across the American Midwest.

FBI Special Agent Mike Beaver, who headed the operation, says in the film: "Angie was, by all



Robert Bilheimer while filming in Romania

Bilheimer turns his lens on children and girls subjected to appalling forms of slavery, many of whom have fought back or been rescued.

accounts, an all-American girl." In other words, she came from a good home and even went to a private school.

As an activist asserts in *Not My Life*, "This (human trafficking) really can happen to anyone."

Poverty-stricken children are, however, most at risk, a fact illustrated in the film by the story of Cambodian sex trafficking survivor Sreyppov Chan.

She was only seven when she was sold by her mother to a female sex broker. She was forced into prostitution in the city of Phnom Penh, where she endured rape, torture and abuse until she escaped at

the age of 10. Today she shows her emotional scars to the world so that other victims can heal faster.

"I can never forget my past or the cruelty of those men," says Sreyppov. "I'll never understand it, but I use it as power to push for change. I feel better knowing that I'm helping other girls."

Bilheimer writes in his Director's Note: "Sreyppov is the only individual in *Not My Life* to speak, in detail, about the horror of sexual slavery... She does so matter-of-factly, with little show of emotion..."

No matter how diverse their tragedies are, the fishing boys of Lake Volta in eastern Ghana, the garbage pickers of Delhi's Azadpur landfill, the girls sold to brothels in Mumbai, victims of sexual violence in Romania, child workers in Nepal's carpet industry, and the teenagers forced into the sex tourism industry in Cambodia and Vietnam share a similar fate.

Not My Life also seeks to understand what fuels human trafficking on such a humongous scale. Is it only the \$32 billion that it yields annually in illegal profits? That is certainly the key reason, but the fact that risks in this business are low draws the criminally minded to it in such large numbers.

Prisons terms are laughably short and cannot serve as a deterrent for people willing to exploit humans for profit.

In the course of filming, a young Romanian trafficker was interviewed inside the Zoha prison in Bucharest. After serving a four-year sentence, he is back to his old ways on the streets.

Cecilia Malmstrom of the European Union admits on camera: "Traffickers are very aware of our weaknesses and vulnerabilities, and they exploit it. They also know that they risk very little because very few of them get caught."

Says Bilheimer: "It is impossible to spend four years among the victims and survivors of these crimes – virtually all of them children – and emerge with anything other than a sense of sheer and utter horror."

But at no point does *Not My Life* suggest that the world is fighting a losing battle against the perpetrators of human trafficking.

The film shows a clampdown on a Mumbai brothel from where many caged girls are rescued.

It also records a police raid on a human trafficker in Guatemala City. The action is swift and successful and the criminal is led away by three law enforcers.

Trafficking is the defining human rights issue of our time, a problem that is proving to be more intractable than most others. *Not My Life* demands active engagement from those that have been turning a blind eye to the injustice. It is not difficult to fathom why activists see the film and its message as a boost to their campaign to make the world sit up and take notice. ■

GREEN CURES / Dr G.G. Gangadharan

Forms of water



FOR modern science water is just H₂O. It is either potable or contaminated. But Ayurveda has a lot to say about water and its effect on health. The qualities of water, based on its source, time of collection and so on, are explained in great detail.

The purest water, according to Ayurveda, is rain-water that has been collected after the first two showers of the rainy season are over. This is to avoid the impurities suspended in the air before the rain.

Water is also reverentially known as Gangambu because the water of the river Ganga which originates in the Himalaya is said to be the purest and holiest. According to Hindu mythology, the Ganga is pure because it is believed to have originated from the heavens.

Among water from running sources, the water from the Ganga is considered the best, for it is sweet to taste and aids digestion. Ganga water balances the doṣas. It is because of such qualities that the Ganga is reckoned to be divine.

People think that water in any form – cold, lukewarm, warm and hot – has the same effect on the body. Ayurveda categorises water into different types. Warm water is easy to digest. It can bring down temperature, improve digestion and remove toxins from the body by enhancing the excretory process. For certain types of fever, warm water is the only remedy for three days. Drinking just warm water with light food brings the temperature down.

Warm water spiked with a little dry ginger makes it carminative and digestive. People who lack appetite should drink a cup of warm water with dry ginger every day. Warm water taken with one teaspoon of triphala powder every day at dawn and at bedtime helps to bring down obesity and ease bowel movement. Drinking water regularly in the morning on an empty stomach and at bedtime works as a Rasayana – a rejuvenator of body tissues.

Seventy-five per cent of our body mass consists of water. It is hence a very important factor in maintaining the body's dynamic equilibrium. Ayurveda says water consumed before food makes you lean, water consumed after food makes you obese and drinking water while eating is good for health generally. Water is the only substance that has never been proscribed in any condition. Water is a life saviour.

Bhojanakutuhalam, a 14th century treatise on dietetics by Sri Raghunatha Suri, extensively discusses different varieties of water: from a well, a pond, lake, the river and falls. The treatise states that the physiological actions of water from various sources affect the body differently.

So water from saline earth, or

from clay and marshy areas or from rainfed areas, act differently on the body.

Many of you might have noticed that when you drink water from another source in another place, you get a sore throat, indigestion, headache or a feeling of heaviness in the chest. This effect has nothing to do with infestation but with the source of water.

Water collected when dew is still falling generates phlegm in the body. Water collected in the afternoon after it has basked in the sun is lighter and easily digestible. Water collected at night is heavy and difficult to digest.

The depths to which our scientists of yore went to understand and document the things they saw and observed can be noticed in a simple substance like water.

Water has been so extensively understood in Ayurveda that many new ideas emerging in modern science on water today were already known in Ayurveda. The best example I can recollect from memory is a study on Gangetic water published in an international peer reviewed journal. It was found that there is an inherent mechanism in Ganga water that purifies it. This is why the water of the Ganga was believed to be the purest. But even this quality of the Ganga has been eroded by industrial and human waste.



Water collected when dew is still falling generates phlegm in the body. Water collected in the afternoon after it has basked in the sun is lighter and easily digestible. Water collected at night is heavy and difficult to digest.

RECIPES

Steamed delight

Methi Kadubu

Ingredients:

- Water: Sufficient quantity • Rice flour: ¼ cup
 • Wheat flour: ¼ cup • Jowar flour: ¼ cup • Ragi flour: ¼ cup • Salt: ½ tsp • Green chillies: 4
 • Methi leaves: 2 cups • Onions: 2 cups finely chopped • Coconut: 1 tbsp • Oil: To grease steamer

Method:

- Mix all ingredients in a bowl and knead into soft dough, using a little water.
- Divide the dough into 12 equal portions, shape into rounds and flatten by pressing between palms.
- Place in a steamer and steam for 5-8 minutes or bake in a preheated greased baking dish at 200°C (400°F) for 7 to 8 minutes.

Serve hot with some tasty coconut/mint chutney.

Benefits: Multigrain flour: Benefit from the nutritive values of a mix.

Methi (fenugreek) is good for digestive problems such as loss of appetite, upset stomach, constipation and inflammation of the stomach.

It is also used for conditions that affect the heart such as hardening of the arteries and for high blood levels of certain fats including cholesterol and triglycerides. Since the dish is steamed and very little oil is used, it is good for health. ■

Dr. J. M. Chethana, BAMS, YC (DNHE)



RANDOM SHELF HELP

A quick selection from the many books that turn up for review



UNDERSTANDING INDIA CULTURAL INFLUENCES ON INDIAN TV COMMERCIALS
 Rohitashya Chattopadhyay
 Sage ₹ 695

Indian advertising has acquired global status since the last decade, winning international awards and recognition. The older generation didn't have much to choose from in the closed economy of yesteryears when foreign jeans were a most prized possession of the young. They patiently watched ads for Lux soap, shiny Brylcreem or fizzy Thums Up before the movie began in a cinema hall. But today's post-liberalisation generation is spoiled for choice. And it isn't easy to catch the eye of the young consumer, absorbed in a plethora of media.

Rohitashya Chattopadhyay, in his book, *Understanding India*, tries to figure out how TV commercials produced by ad agencies, post-liberalisation, are ideated, the kind of visuals used and the image put forth to attract consumers. This is an ethnographic study but Chattopadhyay has done a researcher-reporter job by spending time with ad agencies and watching how they work. He demystifies the thought process behind ads for SBI Mutual Fund, Tata Indicom and the popular use of cricket, film stars and women.

So what is the kind of social and cultural identity that TV commercials like to project? By and large, concludes the author, ad agencies promote an identity that is proud of its Indian roots. It is traditional and modern, global and local. The author doesn't delve into controversies surrounding the questionable promotion of brands like fairness creams by ad agencies. Still, on the whole, Indian advertising is at a most interesting juncture. Its turning point began with the famous Kamasutra condom ads. A decent read for those in the advertising and marketing world. ■

BRIDGING THE SOCIAL GAP PERSPECTIVES ON DALIT EMPOWERMENT

Edited: Sukhadeo Thorat, Nidhi Sadana Sabharwal
 Sage ₹ 995



Despite reservations, commissions, schemes, projects and pro-poor legislation, Scheduled Castes and Scheduled Tribes (SC/ST) continue to lag behind in human development indicators (HDI). Going by reports, not much seems to have changed. *Bridging the Social Gap* quantifies the exact levels of poverty and social injustice faced by SCs/STs. The authors seem to have worked really hard to collect extremely micro-level data from a range of HDI reports and other studies to pinpoint and compare the socio-economic status of different castes and tribes. In undertaking this exercise they seem to have come up with the beginning of an SC/ST development index, which is an achievement.

This is a thoroughly academic work but fairly easy to read. In 14 chapters, the researchers analyse and provide data on exclusion, government policy, poverty, consumption, literacy, health et al of different castes and tribes.

Browsing through the book at first glance, one might say its findings are predictable. Yet there are many surprises – for instance, in how different states have progressed or regressed in empowering SCs/STs and whether urbanisation has really helped SCs/STs move up.

Predictably, crimes against Dalits are worst in UP, Rajasthan and Madhya Pradesh. Tamil Nadu seems to be the only state where Dalits actually get justice. Out of 150 cases filed, 137 offenders were punished. Tribes in the North-East fare better than their counterparts in the Hindi heartland. SCs/STs in states with higher HDI such as Kerala fared better despite regional variations.

The book has implications for those studying policy. Programmes specifically for tribal and Dalit hamlets need to be implemented. For tribal communities the forest law could provide relief. ■



WOMEN AND LAW
 Edited: Kalpana Kannabiran
 Sage ₹ 995

In recent years, violence against women appears to be escalating. Cases of women being raped, murdered and burnt are reported with chilling regularity. It seems that a resentful patriarchal society has launched a full-scale battle against women, peeved by the entitlements that the state has sanctioned for them.

The law does play a critical role in ensuring women's rights are not trampled upon. But Indian society is socially very diverse, complex and has so many types of discrimination that the law often stutters in trying to deliver justice.

Women and Law, edited by Kalpana Kannabiran consists of 11 essays that try to figure out what exactly this interface between women and the legal system should be. Should those who fight for women's rights focus on women-centred laws and their implementation? Or should they really try to understand how the law perceives women and how women engage with the law? Or should they take an even broader viewpoint?

After all, violence against women is not confined to individual heinous acts. There is state violence and then there is the quieter form of discrimination women face: unequal pay, casual employment, no property rights and so on. The root problem is an unequal social order, the way the law sees women and the delivery of justice.

The 11 essays are lucid and should be read by everyone. The writers are all eminent, knowledgeable and doughty fighters for women's rights. Indira Jaising writes on the passage of the Protection of Women from Domestic Violence Act, 2005. Flavia Agnes' essay is on how tough it is for women to get maintenance when they seek divorce. Sagari Ramdas examines the fault lines in the implementation of the Forest Rights Act. Kannabiran's essay is on how laws on sex discrimination are misinterpreted and the problems inherent in this. Other writers tackle issues of health, workplace rights and state violence. ■

At home in India

CALCUTTA's calendar is dominated by two seasons – there is the Puja season and then there is the Christmas season. While the Pujas are quintessentially Bengali, Christmas is typically Anglo-Indian. And Christmas is an apt leitmotif in Robyn Andrews' book on the Anglo-Indian community in Kolkata, as the city is now known.

Andrews is a senior lecturer in the social anthropology programme at Massey University in New Zealand. She first meets an Anglo-Indian lady in Chennai and is intrigued enough to travel to Kolkata but with the intention of doing research on New Market. That doesn't work out. After a series of coincidences, Andrews realises it is the Anglo-Indian community she wants to research for her Ph.D.

Her fieldwork is thorough and intense. She crisscrosses the city, going from Park Street with its restaurants and bars to Tiljala, a slum in east Kolkata where impecunious Anglo-Indians live, and Bow Barracks, an older Anglo-Indian locality.

The book is an absorbing and educative read. Andrews does not bore the reader with pages of theory. Instead, she intersperses her analysis with evocative stories of the lives of handpicked individuals who are Anglo-Indian. Through their eyes, we begin to understand the community.

When India gained independence from British rule in 1947, Anglo-Indians began to leave – mostly for England. Despite several waves of migration, Kolkata still has a significant population of Anglo-Indians. Their exact numbers are not known. Some say they number around 30,000 in a city of around eight million people. Yet their stamp on the city is unmistakable, in its culture, architecture and numerous educational institutions.

The general impression is that the Anglo-Indian community is gradually losing its identity. This is a mistaken notion. The picture that emerges from Andrews' book is of a vibrant, dynamic entity, with, by the way, a few lessons to teach other communities in bonding and social service.

Andrews has divided her book into four sections: Identity, Faith, Education and Community Care. Anglo-Indians continue to retain their distinct identity even while integrating with the rest of Indian society. There is a gender bias, though, in the definition of who is an Anglo-Indian. The Indian Constitution defines an Anglo-Indian as a person whose father is of European descent and settled in India. But children of women of European descent who marry an Indian lose their Anglo-Indian sta-

tus. This is an ongoing subject for discussion within the community and there isn't a consensus yet on lobbying Parliament to change it.

The notion of identity is ably illustrated through two stories. One is of Angeline who grew up in the old days of the British Raj as a typical Anglo-Indian. Her father worked for the railways and she had a comfortable upbringing. Then there is Irene, very Anglo-Indian and yet not really accepted as one since her father was an Indian Christian.

Faith is central in the lives of Anglo-Indians. Their strong belief in Christianity bonds the community and they practise what they preach through their numerous charitable efforts.

It also impacts the way they see life, ably illustrated by two profiles – Dulcie, orphaned at three and brought up by nuns, and Jane, who is struck by polio and abandoned by her family, yet overcomes herculean odds to achieve success.

The chapter on education highlights the fact that Anglo-Indians today realise its importance. They strive to send their children to college, not just school. There is the moving story of Peter, illiterate and poor, who ensures his children get a good education.

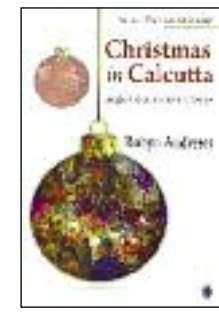
Andrews herself was surprised that elderly Anglo-Indians used

their thumbprints to get pensions and rations, when Anglo-Indian schools are still the most sought-after in Kolkata and there is reservation for the community in them.

The Anglo-Indian community is also helped along by its network of dedicated social service workers. There is Dr Graham's home for impecunious children, the All-India Calcutta Anglo-Indian Society and the All-India Anglo-Indian Association.

The community has also been politically well represented by the O'Brien family. There is an interview with Barry O'Brien whom Andrews describes as a charismatic politician, respected by the community. O'Brien talks of his family's history, of growing up in a typical Bengali neighbourhood, Indianising and celebrating his identity.

Andrews is herself part of the story. Her links with the Anglo-Indian community go back to her supporting children in Dr Graham's. She bonds with the community, socialising with them, attending Christmas celebrations, sharing humble meals and visiting shelters for the abandoned elderly. Her sympathy and fellow feeling for the community come through. This is an interesting and well-researched book. ■



CHRISTMAS IN CALCUTTA ANGLO-INDIAN STORIES AND ESSAYS
 Robyn Andrews
 Sage ₹ 695

Organic SHRAM

AFTER graduating from a prestigious management college Piyusha Abbhi could have got herself a job with a blue chip company. Instead she returned home and started a social enterprise with nine women from Batamandi village in Himachal Pradesh.

She organised them into a group called SHRAM (Self-Help Recycling, Altering and Manufacturing Group). They learnt to recycle local industrial waste and convert natural fibres into attractive products. This way, waste is not dumped into a landfill but creatively used. The women earn an income and, as a result, lead a better life.

SHRAM specialises in sling bags, duffel bags, coasters, waterproof satchels, envelopes made with handmade paper, crochet and embroidered products, cotton table linen and jute accessories. Waste plastic bottles are used to make furniture. SHRAM can also make products on order. Piyusha has taught the women art and design.

SHRAM has now diversified into food processing. They make pickles, candies and chutneys from Indian gooseberry, mangoes, strawberries and so on. SHRAM also makes roasted snacks from organic brown rice and organic wheat. You can also buy Gujarati *khakhra* in different flavours with organic ingredients. Their gluten-free muesli is another popular item. ■



For trade enquiries contact:

SHRAM SHG
Village Batamandi, Paonta
Sahib, Himachal Pradesh.
Email: piyusha4@gmail.com
Mob: 09318911011

Nettle fabric

IN the old days villagers in Uttarakhand used to weave fabric out of natural fibre extracted from the Himalayan nettle plant (*Girardinia diversifolia*). Called *kandali*, the fabric was spun into household items but today these products have been mostly replaced with their plastic counterparts.

The Himotthan Society in Dehradun is working to revive this unique craft in partnership with the Jagriti Resha Evam Vipadan Swayatt Sahakarita, a cooperative and a social enterprise that specialises in design.

Shawls, stoles, mufflers and carpets that can double as yoga mats, are being produced. The colours used are natural and the fabric is a fine blend of wool and fibre made from Himalayan nettle. Mechanical weaving of nettle fibre with wool blending is being piloted at the Bhartiya Gramitthan Sanstha in Rishikesh.

Himalayan nettle is a potential resource for rural enterprise in the high altitude ranges of the state. It is a commercially important species due to high demand for its processed fibre. ■

RAKESH AGRAWAL



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