

Civil Society

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What is a better river policy?



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SAMITA RATHOR

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very well-balanced and creates awareness of the issue. Those who have great concern for stray dogs and feed them regularly should also keep in mind that the dogs can harm passers-by, children, the elderly and people on two-wheelers or cycles. Of most concern are children because they are not aware of whether the place is safe or not. The huge population of strays in our cities should also be minimized.

Harsh

For the first time I have read an article on the hazards of the growing dog population in our cities. Thus far we were only told by NGOs about how feeding strays is some kind of sacred duty. The dog is not a cow. It can bite and kill. Dogs maul and kill children.

Shanta Sinha

Holistic healing

I was there at Vaidyagrama in September 2017 for the very same reason as Jyoti Pande Lavakare who wrote your story, 'Healing at Vaidyagrama'. At the end of the first week, I noticed a total shift in my thought process, a sense of calm and acceptance. I stayed for 21 days and at the end of that period I was reluctant to go back home. The *vaidyas* here not only heal the body but also the mind. Vaidyagrama offers very holistic treatment.

Priya Ramachandran

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in a foreign animal and starting experimentation with it without much hope.

Ravi Srinivasan

Forest food

Bharat Mansatta's write-up, 'Eating from a forest', on Vanvadi, a natural forest, covered its available fruit, tubers, vines, mushrooms and other forest produce foods very well. Forest food is the lifeline of tribal people and those living on the fringes of forests and nearby villages.

Rabindranath Patra

Dog dangers

Your article, 'When dogs rule the streets and endanger people', was

animals? Let's care for them, like our Gir lions and the Great Indian Bustard.

Prem Singh

Dr Ravi Chellam has been repeatedly communicating in his interviews and articles on the top priority of conserving the Gir lions by translocating them to an ideally adaptable ecosystem like the Kuno National Park. Also, that African cheetahs, if brought into Kuno, will endanger the Great Indian Bustard. The scientific study of the survival of African cheetahs at Kuno looks bleak. Let's look at the top priority of conservation which is our national lions rather than bringing

LETTERS



Refugee saga

I enjoyed reading your extract from Ram Gidoomal's book, *My Silk Road*. I loved his clarity of thought, courage and conviction. I do hope the book's widely read.

Ashish Alexander

Interesting read, especially keeping in mind Rishi Sunak's recent attempt at becoming prime minister. He is the first British Indian to do so and he won't be the last. It is immigrants, with their energy and positivity, who will take Britain forward.

Shamita Reddy

Foreign animal

Your interview with Ravi Chellam, 'Cheetahs are for tourism, not conservation', makes some very valid points. Why do we need to bring in foreign dinosaurs like the cheetah when we have our own original



COVER STORY

ON THE TRAIL OF THE GOMTI

The Gomti has never been studied before the way Venkatesh Dutta has by trekking along its length and living with the local people. Learnings from this effort are the basis for a proposed river policy.

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Reviving rivers

HEALTHY rivers make for a healthy economy. But how does one bring ailing rivers back to health? With love and patience is the answer. It is a task complicated by the scars caused by systematic abuse over generations. Governments that think a few rounds of dredging and some sewage treatment plants can restore a river don't get it right. Much more is required beginning with recognition of a river's right to exist and respect for its ecology. A river belongs in the cultural and economic life of people. It is a delicate web of connections.

In this month's cover story, we set out to frame a model policy for rivers in India. No two rivers are the same, but are there some common principles that can be laid out? Venkatesh Dutta, who is a professor of environmental sciences but much more really, has looked closely at the Gomti in Uttar Pradesh. He has traversed the river's length with his students to understand its complexities.

The Gomti's story is really that of every other Indian river. Encroachments and dumping of wastes have been the most common forms of abuse across the country. A river, he reminds us, is much more than the water that flows in it. There are marshes and groundwater and zones into which it can flow freely when required.

As we learn from the Gomti we hope to be able to have a set of guiding principles which in a broad sense could be applicable to Indian rivers in general. From it we could hope to have a more effective national river policy. But more than a policy is needed. We need change leaders who will work to restore nature's balance even as we seek to grow and develop. Dutta, who writes a column in *Civil Society*, is one such thought leader who works at ground level.

The first time we interviewed Zakia Soman was in 2007 when the movement against triple talaq was at a nascent stage. The years have flown and, incredibly, the law against triple talaq, good or bad, has come under a BJP government. But what has changed for Muslim women? It is still a daily struggle to assert their rights. We have our opening interview with Soman, who is as lucid and full of steely resolve as ever. Apart from the monstrous remission of criminals in the Bilkis Bano case we have Soman on the hijab controversy. She also provides an update on the organization she and her colleagues founded to fight against triple talaq.

We take you to Punjab where we have been following citizens' groups that are seeking relief from pollution. These battles have been ongoing, but they have gathered momentum, since the elections. The AAP government, we are told by these groups, is more sensitive to the issues they are raising. There are already some successes, but it is a long and difficult road ahead. What is truly amazing is that ordinary people are coming forward and there is coordination among them.

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Zakia Soman on Bilkis Bano and the impact of hate

‘Remission has been abused by freeing killers’

Civil Society News

New Delhi

THE rights of Muslim women are as fragile as ever before. An unsettling reminder of the challenges they face is the remission of sentences given to the rapists and killers of Bilkis Bano and her family, during the 2002 riots in Gujarat.

Zakia Soman, 57, who has been in the forefront of speaking up for Muslim women, says it is an article of faith for her and other activists of the Bharatiya Muslim Mahila Andolan (BMMA) to oppose the remission.

But this is for them just one more long battle in the journey which began in 2007 when they sought an end to triple talaq by which Muslim men can end a marriage by saying the word talaq three times.

In 2017, the Supreme Court finally deemed triple talaq as being against the Indian Constitution. Two years later, the NDA government at the Centre passed a law banning it. But with Bilkis’ wounds now being reopened by the recent remission, it is clear that much remains to be done for Muslim women’s rights.

For Soman, the 2002 riots were a defining moment. She walked out of her marriage and left her job as a lecturer to work in relief camps and help traumatized Muslim women and their families rebuild their disrupted lives. “I was not so acutely conscious of my Muslim identity till I started working with survivors in the relief camps. I understood then the burden of being a Muslim and having a name which can play havoc in your life,” says Soman.

It was not as though she hadn’t experienced communal violence in a personal sense. “For three generations we have seen communal riots. My granny’s home was on what we call the ‘border’ in Ahmedabad — the place where the Muslim *elaka* ends and the Hindu area begins. Her home used to get burned down during riots.” During L.K. Advani’s Somnath *rath yatra* in 1990, Soman’s parents’ home was burned down too.

But the violence of the Gujarat riots was different. Soman plunged into social activism and in 2007, with three others, founded the Bharatiya Muslim Mahila Andolan (BMMA), an informal grouping of volunteers, to fight for the rights of Muslim women. It spread to 15 states and attracted more than 100,000 volunteers.

The BMMA shot into the limelight for its spirited campaign against triple talaq. The women took on conservative clerics, members of the Muslim Personal Law Board and political parties keen to pick up the conservative Muslim vote. They approached the Supreme Court on a matter that till then was regarded as an internal issue of the Muslim community to be settled by clerics.

But, since then the Muslim women’s movement has had to change tack. Instead of fighting for women’s rights and social reform, it has had to battle the unceasing onslaught against the community in an atmosphere of hatred and discrimination.

“Our work got disrupted during the COVID pandemic, but we are there in 10 states. New members, mostly young women, have joined. They are very active on gender justice, human rights, communalism and



Zakia Soman: ‘Bilkis had to struggle. The killers have been treated leniently by the state’

on building a mutually peaceful society,” says Soman, still earnest and with an unsubduable attitude.

We spoke to her on the troubling implications of the release of the men convicted in the Bilkis Bano case and the ongoing atmosphere of intimidation that the Muslim community faces.

Q: The release of the rapists and killers of Bilkis Bano and her family has been shocking. How will your organization counter this action by the state?

This action by the state is reprehensible legally, morally and ethically. It is shocking beyond words. Remission in law is a kind of affirmative provision. It has been abused to pardon mass murderers and rapists who have committed crimes against humanity. They killed 14 people, including two infants. Apart from Bilkis they gang raped three other women — her mom and two of her sisters-in-law. This unethical and questionable move by the state has been done to facilitate the politics of polarization. We all know elections are due later this year (in Gujarat).

We immediately demanded that this remission be rescinded. Bilkis has really struggled to get justice and it came after so many years. Even though she got the verdict in her favour and she got compensation from the Supreme Court, it’s not as if her life has been easy. She has had to run around. She has been hiding, going from one place to another. Her entire life, with her children, her husband, her family, has been a life on the run.

The criminals, on the other hand, have been treated very leniently by the state. They’ve been coming out on parole off and on and that has been terrorizing not just for Bilkis and her family but the entire minority population in Randhikpur (Bilkis Bano’s village in Gujarat).

As soon as the men were freed all the families left the village and migrated. That’s the kind of fear there is because there has been a lot of coercion, pressure and open support from political quarters.

So, it’s a dark day for Indian democracy. And it happened on August 15. The prime minister talked about *nari shakti* and the rapists were pardoned.

Q: In such an extreme situation what happens to an organization like yours. How do you speak for your constituency?

We held demonstrations in different cities. We are part of ongoing efforts by civil society groups called Justice for Bilkis. We know that it’s not actions by one or two groups that will yield results. Pressure has to be maintained on a sustained basis. Wherever we have a presence we are participating and leading with local civil society groups.

For us this is a matter of our core commitment. We are a Muslim women’s organization and justice for Bilkis and her family is a core objective and a lived struggle we are all part of.

Q: During every election the BJP tries to woo the Muslim women’s vote. They passed legislation banning triple talaq too. What has been its impact?

The law is still very new. Even if it’s not the best of laws, it is a kind of measure. It was brought about in a hurry, without consultation, really. It’s early days. Laws, to have an effect on the ground, take much longer in our country.

Our experience is that in most places the police is not yet aware of the law although the incidence of triple talaq has gone down drastically. That’s thanks to the judgment of the Supreme Court which declared triple talaq null and void and also equally due to the campaign against triple talaq. The women made fellow Muslims aware of the fact that the Koran nowhere sanctions this kind of triple talaq. That huge community education was done by ordinary women.

I need to say this: conservative clergy failed to bring out this basic truth all these decades, that divorce has to happen in a just and fair manner and that instant unilateral triple talaq is nowhere sanctioned in the Koran. This education was done by ordinary women and not by the clerics or the so-called Muslim Personal Law Board. It has had a huge impact within the community. We meet so many Muslim men who say I don’t want to commit this *gunah, jo Allah ne hi ijaazat nahin di*.

Q: Has it led to the liberation of Muslim women?

I don’t agree with this whole pitch of liberation of Muslim women. Liberation comes from within, when a person stands up, empowers herself, raises her voice and fights for her rights. Liberation can’t be imposed from outside.

Nevertheless, any elected government is duty-bound to uphold the constitutional principles of gender justice and gender equality which, to be very fair, the Centre did by filing an affidavit supporting the abolition of triple talaq. The logic given was that instant triple talaq is not legal in almost 25 Muslim countries and suggesting that it is not an essential practice of Islam. It was a good affidavit and it really helped in the abolition of triple talaq as far as the Supreme Court was concerned.

Beyond that it is all politics. We know that no political party, unfortunately, is a champion of women’s rights. They are all patriarchal, misogynist, full of stereotypes and their mindsets are anti-women.

It is laughable, this talk of emancipation of Muslim women. Muslim personal law reform is just one of the issues faced by Muslim women. They are also part of the family and the community. At a time when there is so much religious polarization and hate, how can you pick triple talaq? It’s pathetic.

Q: How has this overall atmosphere of intimidation affected women?

I’d like to qualify that we have always had incidents of communalism and communal riots in different parts of the country and under various Congress regimes as well.

We have also always had marginalization in education, lack of jobs in the government, in the army, in the formal sector. We are economically marginalized. These are figures from evidence put forward by the Sachar Committee, appointed by former Prime Minister Manmohan Singh. It has always been more about politics than engagement in general welfare.

But now the kind of hate and ideologically driven onslaught on the Muslim community we face in broad daylight with impunity by those affiliated with the party in power is unprecedented.

The so-called love *jihad* law criminalizes two persons from different faiths marrying. If the man is Muslim, invariably he is immediately arrested, his family is harassed and so is his wife or fiancée. Then, the Citizenship (Amendment) Act (CAA). Our Constitution gives equal rights to all irrespective of caste, faith, religion or geography. There is now a kind of official backing given to the marginalization and exclusion of Muslims. And that has led to almost near total disenfranchisement of the Muslim community socially, economically, and politically.

When no tickets are given to Muslim candidates for Assembly and Lok Sabha elections, we are sending out a message that our own people, our own citizens are the hated other. We are demonizing our own people.

Under the circumstances it is very difficult to raise core personal law related issues. When we were working against triple talaq from 2010 onwards, the run-up years from 2012 onwards were very important. A lot of Muslim women took part and hundreds spoke out about what they had gone through due to triple talaq. Women from other faiths and even men supported them.

‘The hijab issue is an important part of our work. I’m very clear about this — that the hijab is a patriarchal imposition. It is not mandatory for Muslim women.’

All that is not possible now. Even if a woman is facing injustice, she will not come out to speak because she knows the kind of onslaught her community is facing right now. So, it’s a huge setback in that sense.

Q: There have also been strident protests against the hijab in Karnataka. What is your perception?

The hijab issue is an important part of our work. I’m very clear about this — that the hijab is a patriarchal imposition. It is not mandatory for Muslim women. If that were the case, then all the Muslim women in the world would be in hijab. Even now, when the hijab fashion is at its peak, hardly 30 to 40 percent of our women are in hijab. The fact is our grandmothers did not wear the hijab. They used to cover their heads with a *dupatta* or a sari during religious occasions like *ziyarat* or a funeral or *dua*. Some elderly women used to cover their heads permanently. But not with the hijab.

This has come to India about 15 to 20 years ago. The veil is an Arab import. It is not part of our culture. It has been imposed.

But it is equally wrong and discriminatory to single out girls in hijab and not allow them to enter the classroom. So many MPs sit in Parliament in *bhagua* (saffron). A chief minister wears saffron to his office. He is celebrated. You have no *shikayat* against them.

So why do you have a problem with a girl going to school or college with her head covered? You are singling out the girls and denying them the right to education which is a fundamental right. The uniform can never be more important than education. That is a flimsy, technical argument. I’m sure it will not stand the scrutiny of the Supreme Court.

Muslim girls too need to think why this insistence on hijab. It’s a matter of choice. I respect it but I’m sure as more girls get educated, economically independent and empowered they will ask these questions.

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Post the Gujarat riots a lot of our volunteers were in the burkha and today none of them wears a burkha. It is a journey for a woman to discover herself, empower herself, discover her strengths. Then her own choices come to the fore. I am hoping that will happen.

Q: Is it preventing girls from going to school or college?

Definitely. In Udupi and nearby districts of Karnataka a lot of girls have dropped out *en masse*. Girls who turned up in hijab to write their exams were denied entry into the hall. Some girls agreed to remove the hijab. But some girls who perhaps came from very conservative backgrounds where it is unthinkable to remove the hijab in public, chose to skip the exams. A crucial exam like Class 10 or 12 was missed.

As it is, the dropout rate is very high in the Muslim community in Class 10 or 12 as per the Sachar Committee report. Conservative parents in the *mohalla* who are not able to withstand social pressure remove the girl from school and then get her married two or three years later. It's a huge disservice being done by the Karnataka state government to the education of Indian girls and their future. It is a violation of the spirit of the Constitution.

Q: Is it because of parental pressure that girls wear the hijab or is it that the girls feel more comfortable with it on, or is it a form of identity for them?

Actually, it's very nuanced. Lots of girls say they are comfortable with it. But look, there are little girls going to kindergarten, three or four years old, covered head to toe in the Arabian style, dressed in a hijab. Little girls should be running around, playing and cycling. But she isn't given a chance and is bound like this from such a young age. She doesn't then know the comfort of wearing a *salwar-kurta* without external covering.

This is a backward community which has been denied opportunities, educationally, economically and socially. It is a very conservative community which has been ghettoized. If eight or 10 girls in the *mohalla* don't wear the hijab, they will say your girls are roaming around with their heads uncovered, you've given them a lot of *azadi*. This is how social pressure works. I'm sure this is how it works in every community.

There is also great dominance of the conservative *ulema*, those who read the *namaz* or are *qazis*. They are not scholars. They are usually people who don't have a formal education or a worldview which is based on an understanding of human rights or gender equality.

They may not have the correct understanding of Islam too. Islam relies hugely on interpretations to make itself understood and misinterpretations can also occur. Due to the realities around us, invariably interpretations tend to become misogynist and conservative and that's why the incidence of hijab has gone up in the past 15 to 20 years.

Q: And it becomes entrenched?

Yes. Imagine you are living in a small town, say, in Udupi, and you are living in the Muslim *mohalla*. I don't think there would be a single parent who could think of going against what is the widely accepted norm. When a girl attains puberty, she is expected to cover her head.

After the Gujarat riots, I was doing relief work in Ahmedabad. The displaced families were living in far-off places, so some girls were not able to go to school. We requested donors to donate bicycles for the girls. In the first week itself, when the girls started going to school on their cycles, the people in the makeshift mosque that had been set up created a huge *hungama*. Riots have taken place and you have given girls so much freedom to roam around on cycles, they said. *Sharam nahin aati*. Those mothers literally pulled the girls out of school. We had to fight with those people and counsel them.

Some families even thought of moving their homes again because they were stigmatized so much. The freedom of girls is so stigmatized in our community. You have to live in those *mohallas* and *galis* to realize what kind of pressure it can create on girls and their parents. This kind of politics has done long-term damage to the girls. ■

Punjab pollution has more people protesting now

And the government seems to be listening

Civil Society News
Gurugram

It was a Sunday, August 14, a day before Independence Day, with all the enticing possibilities of a really long weekend. But 10 residents of Ludhiana were instead holding a freedom-from-pollution protest at a complex of dairies which have been dumping cow dung and other wastes into the Buddha Dariya which runs through the heart of their city, Punjab's leading commercial centre.

The Buddha Dariya has for long been just an eyesore and embarrassment for Ludhiana. The city's own water supply is not directly affected, but the chemicals and organic wastes dumped into the Buddha Dariya are a major hazard for people downstream where it joins the Sutlej. There are effluents from industrial units and 300 dairies, and of course sewage from homes, that go into the Buddha Dariya from Ludhiana.

Thanks to the ongoing efforts of public-spirited residents, a plan for cleaning up the Buddha Dariya was approved by the outgoing Congress government. During the recently held state assembly elections and after the Aam Aadmi came to power, the residents ensured there was a fresh political buy-in for the plan.

They have come together under what they call the PAC or the Public Action Committee for Sutlej, Buddha Dariya and Mattewara. It gives them a presence in their interactions with the government.

Their first success was at Mattewara where they managed to get the government to cancel the plan for a textile park by clearing forests and instead agree to the setting up of a biodiversity park. Getting industry to back off in favour of saving forests is a major achievement that has been possible only because the hallmark of the PAC's style of functioning is its low-key persistence.

But now much work needs to be done on implementing the government's ₹840-crore plan for cleaning up the Buddha Dariya. Transparency and oversight are required so that the money is properly spent. There is also a mistaken notion that the setting up of effluent treatment plants (ETPs) will be a silver bullet solution.

The members of the PAC have been pointing out that the problem is more complex. Industrial units should be put together in clusters so that their treatment requirements can be met efficiently. For the dairies, the opposite action is called for because ETPs can't process their wastes. They should be dispersed so that cow dung and other organic wastes can be used in agriculture where they are located.

But the businesses, being well entrenched and networked, are tough nuts to crack. No one wants to move. The dairies, in fact, see the ETPs as the fig leaf of pollution control behind which they can hide. Two dairy complexes have gone ahead and started constructing ETPs of their own.

The problem can't be left to local officials to resolve and some difficult decisions need to be taken in Chandigarh. The residents have managed to get a Punjab Vidhan Sabha Committee appointed on the Buddha Dariya and the Ghaggar river.

But it is going to be an easy fight. The PAC wants the 300 dairies dispersed in such a way that there are no more than two at each location. In this way the wastes they produce will readily be



Battling it out: Residents of Ludhiana turn up at a dairy to protest eyewash pollution control measures

used in agriculture on nearby farms.

In fact, it is only in Ludhiana that so many dairies exist in close proximity to each other. Elsewhere in Punjab there are 10,000 dairies which cause no problem at all because they are scattered and integrated with the rural economy and, crucially, their wastes can be recycled locally, the PAC points out.

Jaskirat Singh, who is an electronic engineer and one of the early movers in getting Ludhiana's residents together, says: "The very idea of ETPs for dairy waste is technically unsound. It threatens to derail the entire ₹840-crore Buddha Dariya rejuvenation project. The dairies should be scattered in surrounding villages."

In a letter to the head of the Vidhan Sabha committee, Singh says: "All experts agree that the Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of dairy waste is too high to be treated in such ETPs successfully. It is our understanding the dairies must be moved out of Ludhiana city and the banks of Buddha Dariya."

"Entire Punjab is waiting to see the rejuvenation of the Buddha Dariya and Sutlej. Moving the dairies out will be the most helpful step to ensure the success of this plan," he says.

Col J.S. Gill, member of the Buddha Dariya Task Force, says: "Dairy waste can't be treated in ETPs. The idea has been opposed by people who know what they are talking about including a former IAS officer and chairman of the Pollution Control Board. The government should consult independent experts and scientists and not waste time and money on ideas that are not going to work. Such decisions can't be taken by non-technical bureaucrats."

The situation is complicated. The dyeing and electroplating industries in Ludhiana would like the dairies to continue where they are so that the pollution that they cause covers up for the industrial units' excesses, explains Kapil Arora, a PAC member.

Punjab is a minefield of environmental problems acquired over long years. Politicians have generally been unmindful of the consequences. No party has had a meaningful green agenda. Ordinary citizens have felt daunted by the magnitude of their problems and the forces that they have to confront.

But as the problems have grown, so has the inevitability of citizens having to act in their own interests. There is very often no option left. There is also hope in the Aam Aadmi Party coming to power and promising to be activist in its orientation towards basic issues like clean air, water, health and education. The Vidhan Sabha committee on the Buddha Dariya and the decision to protect the Mattewara forest are examples of what changes in governance can achieve.

Including Mattewara and the Buddha Dariya, there are several recent citizens' initiatives that have made their presence felt.

The Zira Sanjha Morcha has in recent weeks held massive public protests against the Malbros Distillery near Zira in district Ferozpur to stop them from discharging effluents into aquifers through borewells. The distillery is closed because of the protests.

At Chamkaur Sahib, an agitation is stopping a paper mill from coming up because they too fear their groundwater will be affected. Water remains a major concern in Punjab. Like the Zira protesters, here too people don't want their groundwater depleted or contaminated.

There is also coordination among activists and an eagerness to learn from the experience of one another. The Mattewara protest is held up as a success story that other groups want to emulate.

When activist Parvinder Singh Kittna took on stone crushers in the forests on the border of Punjab and Himachal, they tried to get him arrested. Many environmental activists from Punjab got together to support him and went along with him to the Una civil courts for his anticipatory bail application. ■

Check out Old Delhi and do it by cycle

Kavita Charanji
New Delhi

IT is 6.30 on a warm Saturday morning in Old Delhi. Gathered outside Delite, a run-down cinema on Asaf Ali Road, are seven enthusiastic bikers ready for an adventurous cycle tour through Old Delhi's chaotic traffic and narrow alleys. Among them are Serena and Scissor, a couple from Milan in Italy. They flew into Delhi at 3 am and despite jetlag headed straight for Old Delhi.

Accompanying the group are a guide and a co-guide from Delhi By Cycle (DBC), India's first cycle tour group. "We heard about DBC from *Lonely Planet* which described it as one of the best cycle tour groups in India," explains Serena.

The tour of the historic city of Shahjahan has been carefully mapped and planned down to the last detail. The itinerary is Delite cinema to Turkman Gate, on to Chawri Bazar, Khari Baoli, Madras Colony, Civil Lines, Chandni Chowk, Red Fort and then Karim's restaurant for breakfast. Also included are a tea break at Civil Lines and brief stopovers at Labour Chowk and the Jama Masjid. Then it is back to run-down Delite.

The cyclists are led by Jeswin Joseph, a seasoned guide for DBC and other tour groups. Supporting him is a co-guide, Mukesh Paswan, who has been with DBC since its inception in 2009.

As they begin to cycle from Delite, Joseph explains the significance of each spot. Turkman Gate is named after famous Sufi saint Shah Turkman Bayabani, whose tomb is believed to lie inside, he says. He regales the cyclists with stories of Chawri Bazaar's tawaifs or courtesans whose charms once attracted the nobility. "They were highly respected ladies and the highest taxpayers," says Joseph.

The cyclists marvel at the overpowering aroma of spices from the spice market of Khari Baoli. After a brief stop at Madras Colony, the group arrives at serene Civil Lines, where the British moved after the 1857 uprising. Passing by the Lieutenant Governor's house and Maidens, a heritage hotel, the bikers get time to unwind — it's time for *chai* and biscuits at a small tea stall next to Maidens.

The cyclists engage in some friendly chit-

chat. Anna, from Wurzburg in Germany, is on the trip with her family and a friend. She has been in Delhi for a year now. "We are on a DBC tour for the third time. We love the tour and take all our visitors along to give them an insight into Old Delhi. I really like the Khari Baoli spice market even though it is very strong on the nose. I think it is a fantastic place," says Anna.

Tea and banter over, the cyclists restart their tour. They pedal to Labour Chowk, Chandni Chowk, Red Fort and the Jama Masjid where they stop for a meal at Karim's. The cyclists tuck into meat curry, vegetable curry and the famed *rotis* of the restaurant. And then they are back at Delite. The entire tour was for four hours.

The 31-year-old Himanshu Shekhar, CEO, director and team leader of Delhi By Cycle (DBC) has just returned from a rushed cycle tour that he led in Old Delhi. Over coffee at a South Delhi café, Shekhar says, "Before DBC

was set up in 2009, the concept of cycle tours was unheard of in India. People never thought of taking cyclists to the small, congested and dirty areas of Old Delhi. But for them it is like riding in an open-air museum. An American from Germany described Old Delhi as a close encounter with death that made him feel alive. Others who did the tour with me today labelled it as the experience of a lifetime."

Jack Leenaars, the founder of DBC, thought along the same lines. As the South Asia correspondent of Dutch daily *De Telegraaf*, he spent a lot of his time exploring Old Delhi on a bicycle.

"A bike is a great way to explore new areas. You can cover large areas and you are in full contact with your environment and its sights, sounds, smells and people. And it's green!" says Leenaars in an email interview.

He invited friends to join him. Exploring the historic city for two months on a cycle, he finally designed the best possible route — the Shahjahan Tour of Old Delhi. In 2009 he set up DBC and eventually gave up his career in journalism to focus on this unusual business. Soon DBC had 85 cycles, three routes in Old Delhi and two in New Delhi, as well as a team of great guides and co-guides. The tours got glowing reviews, and *Lonely Planet* gave it a positioning in its Delhi chapter.



Himanshu Shekhar



Cyclists pause at the Turkman Gate



Near the Chawri Bazaar metro station

Leenaars has since moved back to the Netherlands. He continues as adviser to DBC, now headed by avid cyclist Shekhar. Pedalling away on a big-frame cycle even as a pre-schooler, Shekhar hasn't stopped cycling since. A graduate from Delhi College of Arts & Commerce, he was all set for a career as a chartered accountant. However, he decided that he was not cut out for the staid world of finance.

He grabbed a job offer from Mysore-based travel start-up goMowgli where he worked as Operations Manager, showing people around Mysore. Though he enjoyed the city's rich history, culture and stories, he missed Delhi.

Shekhar joined DBC in 2016, but not before he had cycled 3,300 km across the country to understand it better. Joined by a friend, he began a 32-day cycle odyssey from Mysore to the Jim Corbett National Park in Uttarakhand.



Shahjahan Tour with Jack Leenaars on the right and Himanshu Shekhar on the left

He says Jim Corbett, the famous British hunter and conservationist, was a major inspiration for him. He believes that travellers to the Jim Corbett National Park could do more than just shoot pictures of tigers. "The problem is that the people who go to Corbett don't want to understand the flora, fauna, villages, culture or heritage of the place. I fell in love with birdwatching there."

DBC has a list of cycle tours. There is the Raj Tour, Yamuna Tour, Nizamuddin Tour, all priced at ₹2,000 (inclusive of single-speed cycles, tea, food, guides and co-guides, optional helmets and baby seats). A good bet is the Ghalib Tour in the Walled City. Priced at ₹500 it conjures up the life and times of famous poet Mirza Ghalib and relates poetry and stories about him.

For the less energetic, there are walks to Old Delhi, the vicinity of Connaught Place, the Lodhi area and Mehrauli. Also included is a Street Food Safari to Old Delhi for foodies in search of a culinary experience. They've even organized a treasure hunt on cycles.

DBC also offers multi-day cycling holidays.

These include Krishna's Trails, a two-day cycle tour from Delhi to Agra. En route, cyclists get to explore Brajbhoomi and fascinating villages and towns steeped in Krishna lore, like Nandgaon, Barsana, Govardhan, Gokul, Badgaon and Vrindavan. There are tours to the Golden Triangle — the Delhi-Agra-Jaipur route — as well as to villages near Jim Corbett National Park and a West Coast Ride from Mysore to Goa.

DBC, which is financed by KLM, has acquired over 40,000 clients and much goodwill over the years. But they face challenges. "The main problem is that India is neither cycle-friendly nor tourism-friendly," says Shekhar. Moreover, there is the inevitable class stereotype about cyclists. The majority of DBC's clients are foreigners, happy to explore the city.

The DBC team plans to convince more Indians to sign up for cycle tours by trimming costs and pricing the tours between ₹500 and ₹700. They also hope to introduce more cycling holidays and cycle tours around South Gurugram with its beautiful Aravali hills and in Mehrauli. ■

Samita's World

by SAMITA RATHOR



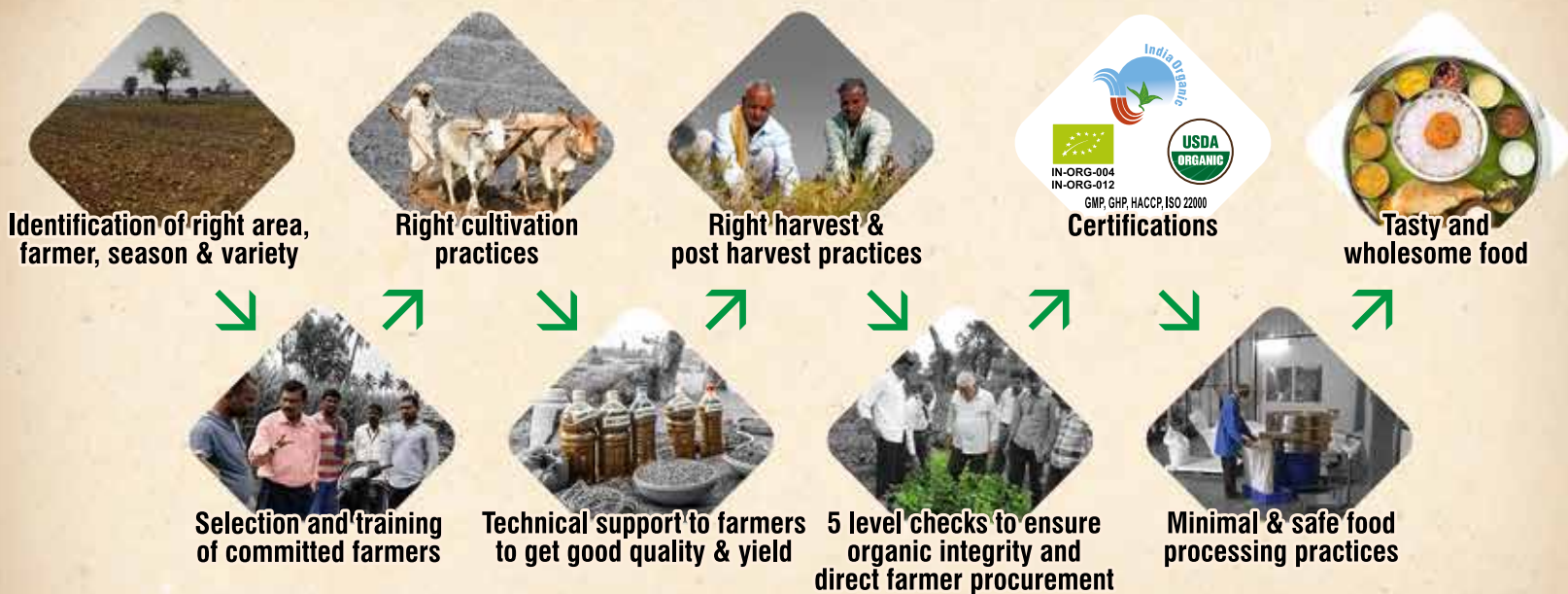
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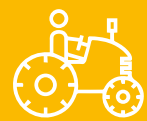
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Engineer saves farmers from dung curse with instant manure

Shree Padre
Kasaragod

A ChanakaVandi, or Dung Van, roaming around Ernakulam, has so many customers it is finding it difficult to meet demand. Dairy farmers from Kannur to Thiruvananthapuram now request the Dung Van to arrive at their doorstep. The Dung Van carries out a most crucial service, probably the only one of its kind in India.

Developed by Pradeep Subash, a dairy expert and owner of Farms Dairy, a company that provides consultancy for dairy farming in Ernakulam, the Dung Van is a pick-up truck mounted with a rejigged dewatering machine. It converts slurry into manure and returns it to dairy farmers if they want it.

"Kerala is suffering from excessive cow dung," says Subash, a strange comment at first, from a dairy expert. Cow dung is an excellent manure and a farmers' favourite. Why would he say that?

A B-Tech graduate, 48-year-old Subash ran a dairy for 14 years. His company now undertakes turnkey dairy projects in Kerala and Karnataka. But his work as a dairy farmer revealed to him the major challenges in dairying.

"Kerala is a heavy rainfall area. The monsoon is extensive and pressure on land is more than in neighbouring states. The density of houses in one unit is pretty high. Each dairy farm has a slurry tank. This gets filled up fast, sometimes as quickly as every two to three months. There is no farmer for whom it fills up just twice a year," he explains.

During the monsoon, the slurry tank fills even faster. If it overflows, its stench spreads in the area. Objections are raised. Dairy farms with six or more cows have to obtain a licence from the municipality. If someone complains, the municipality has the authority to cancel the licence.

Besides, groundwater levels in Kerala are high. During the rainy season, chances of water getting mixed with slurry when the tank overflows are very high. Management of slurry has become a big headache for dairy farmers.

Farms Dairy came up with a solution four years ago. Its Dung Van has a technical unit which transforms the slurry into manure and fills it into bags.

The unit works for six to seven hours a day. It is operated by a team of three people. On an average, 2.5 to 3 tonnes of manure are produced in a day. The van's monthly output is 70 to 90 tonnes of manure. "We work for about 25 days a month. One unit is not enough to cater to our city, Ernakulam. There is heavy demand for this service," says Subash.

Once the unit is ready, it pumps water to the dung pit to dilute the solid dung so that it can be easily pumped. Next, the slurry pump stirs the slurry. This slurry is lifted to the unit and dewatering begins. In five minutes, one bag is ready, filled with manure. One kilo of dung makes only 200 grammes of manure. The remaining water is flowed back into the pond. This is also rich in nutrients, but seldom used for farming.

KEEP OR SELL The ChanakaVandi services a radius of about 30 km. It



Pradeep Subash with his Dung Van



The machine dewateres cow dung from overflowing slurry pits

is equipped with a generator set that ensures uninterrupted power supply. It requires 45 minutes to prep up the unit. After the task is finished, another 45 minutes are needed to clean up the unit before the return journey begins. If conditions permit, the unit can produce a maximum of 6 to 6.5 tonnes of manure a day.

Generally, most dairy owners don't have any use for the dewatered dung. So Farms Dairy buys it back for ₹1.50 per kg for four tonnes and ₹2 per kg for larger quantities. If the customer sells the manure to the Dung Van, no dewatering fee is levied.

If the customer wants to keep the manure, he has to pay ₹2.50 per kg for the first five tonnes. Above that, the fee is ₹2 per kg. "We go to farms which have 100 cows and we go to farms with just two or three cows," says Subash.

Tresa Joseph, Subash's wife, manages the daily schedule of the mobile van and attends to marketing of the manure. "We decide our priority based on the level of slurry in the customer's dung pit because if his pit starts overflowing it creates a chain of problems for him," she says.

The dung manure that is brought from dairy farms has 35 percent moisture content. Farms Dairy dries the manure once they get it. This reduces the moisture content to 20-25 percent.

The manure is sold under their brand name, Nanma, in small packets of two, five and 10 kg at ₹12 to ₹15 per kg for homesteads, vegetable growers and nurseries. It is also available in large packs of 40 kg and 50 kg and costs ₹9 to ₹12 per kg. "Nurseries are our major customers. Of late, farmers have also started buying. They always buy in bulk," says Joseph, who is assisted by two staffers.

Continued on page 14

Continued from page 13

Anil Thiruvairanikulam, one of Farms Dairy's initial customers, has 40 cows. His dung pit gets filled every two months. Once it's dewatered, it yields 10 to 12 tonnes of manure. He is happy that such a service is available. He doesn't cultivate any crops. Earlier, he used to request people to take the slurry for free. Now he just sells it to Farms Dairy.

"We need to spend the whole day looking after cows, so dung management is a real burden. In fact, I was so fed up with my overflowing slurry pits, I was considering closing down my dairy," he says.

Edward Innocent, another dairy farmer, used to advertize the dung in his pit in newspapers. He used to get a few buyers, but they wouldn't pay even the paltry ₹1,000 he was charging for two tonnes. They would offer just ₹500. He too was thinking of closing down his dairy business. His half-acre dairy farm is within city limits so for farmers to come and buy and then transport the dung was not practical because of the distance.

Innocent has availed of the mobile dewatering service three or four times. "But they don't seem to have customers for the manure, and I still have one stock of manure on my farm," he says.

FAILURE AND SUCCESS Like other dairy farmers, Subash too faced the problem of overflowing slurry pits. So, in 2013, he bought a dewatering machine from Nagpur. But it didn't work at all and he lost ₹1 lakh.

Since he was a mechanical engineer, he developed his own machine. In the next two years, he sold 35 such machines priced between ₹1.5 lakh and ₹2.5 lakh, depending on the model, in Kerala. But these too did not last long. In two or three years the machines started rusting because dung is corrosive and damages machine parts.

Subash began an intensive search for the right machine. He finally found an Italian machine that was reliable. He began buying the machine and distributing it here through Farms Dairy. He sold 12 of them. But he still wasn't happy though this prototype was reliable and did the job. The machines were much too expensive. "Many dairy farmers can't even afford a milking machine, how will they buy a dewatering machine that costs ₹30 lakh?" he wondered.

This led him to the idea of starting a Dung Van, a mobile unit, that would go from farm to farm, turning slurry into manure. But he first decided to test his idea with dairy farmers. Their response was: how much will you charge?

Subash had not worked out the fee structure. At that juncture he met a woman dairy farmer who was a widow. He asked her. She said, "If you start such a service, I will buy two more cows."

That settled the issue for Subash. In 2018 he began designing the mobile unit. Today, he finds it difficult to meet demand.

PANCHAYAT AS CLIENT Kerala has a cattle population of 14 lakh, says Subash. Each cow excretes 20 kg of dung per day, so the state's dung production is estimated at 2.80 crore kg per day.

"This overflowing slurry problem seems to be unique to Kerala," he says. "In neighbouring states like Karnataka and Tamil Nadu, pressure on land is less so they manage by spreading the slurry on the land. We serve only 100 to 130 dairy farms because repeated visits are necessary. Kerala, according to available statistics, needs about 3,000 mobile units like ours."

The Kerala government has approved of dewatering machines. Two panchayats, Noolpuzha in Wayanad and Pukkattupadi in Idukki, have started using such machines. Subash has now been approached by 30 panchayats, mostly from Kollam, to install dewatering machines.

Noolpuzha panchayat has 1,200 dairy farmers and 5,600 cattle who yielded 38 lakh litres of milk this year. "Since agriculture is not lucrative, people are opting for dairy farming," says Dr Assinar Kakketeri, a veterinary surgeon of this panchayat.



The dung is dried and, below, packed and sold under the brand name Nanma



Noolpuzha panchayat got a ₹32-lakh grant from the Central Financial Commission and bought the Italian machine from Farms Dairy a few months ago. An eight-member society, Ksheeramekhala Vikasana, has been entrusted with the responsibility of operating the unit for six months. The society has to pay a monthly fee of ₹10,400. The difference is that their dewatering machine is not mounted on a pick-up van. The society hires a tractor to take it to dairy farms.

But Pukkattupadi panchayat says that its mobile dewatering unit failed. The problem seems to be not the machine but management of it. It was entrusted to a Kudumbasree unit. The panchayat secretary says they aren't keen to revive it.

"When we started this service four years ago, we had no inkling that overflowing slurry is such a huge problem in the state," reminisces Subash. "Nor did we ever think panchayats would approach us to help out with this issue."

He is now working on upgrading his unit. Since most customers want their manure returned, Subash has designed the unit so that bags filled with manure can be brought back in the same vehicle and returned to the farmer. It will also run on engine power and not need a generator. He hopes his new unit will be ready by Gandhi Jayanti.

He has been approached by 12 cooperative societies in Thiruvananthapuram for his mobile units. "Three have applied for loans from the centre's National Agriculture Infra Financing Facility. Loans from this fund have a 3 percent interest subsidy and don't require collateral if the sum doesn't exceed ₹2 crore," he says.

Meanwhile, the Kumarappa National Handmade Paper Institute (KNHPI) in Jaipur has recently developed a technology that can produce paint and newsprint from cow dung. Its financial viability is yet to be known, though. ■

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The Fulhar Jheel, no better than a pond, is considered the source of the Gomti

ON THE TRAIL OF THE GOMTI

In search of a better national policy for rivers

By Venkatesh Dutta

IT was in early spring of 2011 that I decided to walk along the course of the Gomti from its origin to its confluence with the Ganga. An informal group was created with students, retired engineers and river enthusiasts. We developed a code of conduct for our river journey: we would not take any funding and would only stay close to the river, drawing inspiration from Vinoba Bhave walking across India in search of land for the landless.

It took us 10 days to complete a journey of 960 km. We started from Pilibhit and ended at Ghazipur near Varanasi. Nowhere did we stay in hotels. Villages, temples and gurudwaras close to the riverbank were where we made night halts. In one day, we used to visit up to five villages to do a ground assessment of the river.

We went to the headstream of the Gomti in Pilibhit district only to discover that the river had disappeared about 50 km from its origin. There was just a small pond there called Fulhar Jheel, which was considered the source of the river. Downstream from this pond were fragmented and isolated ponds interspersed with farmlands of paddy and sugarcane grown on the erstwhile riverbed.

It was a shocking revelation. The land that belonged to the river was

now in the name of private landholders. How could this happen, I asked myself. How was the river's lifeline marginalized and forgotten to the brink of desertion? Even the length of the river and its various tributaries were not recorded correctly in the official documents.

Uttar Pradesh's water resources are bountiful. The Gomti is one of eight major perennial rivers — the others being the Ganga, Yamuna, Ramganga, Ghaghra, Rapti, Gandak and Sone.

Keeping these rivers alive and healthy needs to be a national priority especially in the face of the upcoming challenges thrown up by global warming. Reviving the Gomti was to us as good a place as any to begin.

For the first time, we mapped all the tributaries of the Gomti, using older satellite pictures. Many rivers were not even mentioned in land records and were missing. What followed was a series of visits to land revenue departments and the office of the collector. Apart from articles in journals, many stories on our findings were written in newspapers. A Hindi daily carried one such story on its front page with a headline — 'Lekhpalon ne bech dali Gomti' (Gomti sold by Lekhpals).

An aerial survey was done by the then cabinet minister based on the reports documenting our findings in various newspapers. A committee was formed to prepare a restoration plan under the control of the irrigation department with its headquarters in Lucknow.

MAPS, PONDS AND POLITICS River restoration became a political agenda. During the 2013 Assembly elections, full-page ads were carried in prominent newspapers claiming that the Gomti would be restored.

However, the project report became the starting point of a destructive riverfront project in Lucknow, with some *ad hoc* work upstream of the Gomti in Pilibhit district. During the past decade, many district magistrates came and went but no one began the process of cancelling the lease or the private land holdings on the riverbed.

During the past two years, a channel of almost 50 km was cut with JCB machines but at many places the width of the river has been confined to a few metres. An informal compromise has been reached between farmers and the district authorities and only a small channel has been left in the name of the river.

Many water bodies were given on *patta* (lease) to fishermen and farmers four decades ago. Over time, due to destruction of the ponds' catchment areas by roads, highways and bridges, these water bodies became seasonal. When they dried up, farmers started cultivating on their beds. And now they claim rights over these lands. The land revenue department does not care to reverse these land holdings and restore them as water bodies. This is happening everywhere in the state, even in other river basins.

A letter was issued by the chief secretary of Uttar Pradesh to all district magistrates on June 2, 2022, to designate 100 metres from the edge of the river as a no-development/construction zone. This direction was also extended to smaller rivers and tributaries of the Ganga. The district magistrates have been asked to ensure that the 100-m zone on both sides of the banks remain free from encroachment and construction.

This requires zoning of every river — many smaller rivers have been encroached upon by farmlands and illegal construction. In some cases, these lands were given to individuals by the revenue department without realizing that they belong to rivers. Getting them back is a big challenge.

We have made several presentations to district officials and engineers involved in the restoration of rivers and smaller streams. During our numerous meetings and field visits, we have stressed phase-wise restoration work with three steps in the beginning:

- Identification and marking of encroachment on the two-km buffer on both sides of the river using revenue/cadastral maps
- Classification of the critical stretches of the river which need immediate attention such as obstruction, fragmentation, etc. and
- Marking of 'origin points' of rivers or minor streams as well as 'confluence points' with the 'major river' in the respective districts for special conservation zoning and priorities.

These three things are critical for taking up the task of restoration without which the work will not be fruitful. We have only achieved limited success. Much more needs to be done.

DREDGING ISN'T RESTORATION Ongoing mainstream work on river rejuvenation is not only short-sighted but also eerily pernicious. River dredging is not river restoration. Currently, this work is converting natural drains or smaller rivers into sewage carrying channels and even legitimizing them as *nullahs*. Sewage treatment plants (STPs) are being installed without putting in place a robust mechanism of maintenance and monitoring. Who will ensure the treated water meets compliance? Pollution control boards have poor monitoring mechanisms.

River rejuvenation is not a magic formula. Revival of rivers will take at least 10 to 15 years as overexploitation of groundwater by urban citizens and farmers needs to be minimized. Base flow must be maintained and restored and connectivity with any major river is to be evaluated and more. The IITs and other institutions should undertake complete mapping of fluvial geomorphology in the entire Ganga basin. That will create new understanding on surface and groundwater interface.

We have requested maintenance of slopes while digging or desilting, especially when doing it with machines. This will maintain upstream-downstream connectivity. If some pockets are deeply excavated and incised, it will attract algal growth during the lean seasons.



Developing a drainage map is the first step in restoration. Meeting with the Chief Development Officer and MGNREGA team in Bahraich district



The Gomti team at Kaithi

Revival of rivers will take 10 to 15 years. Groundwater use has to be minimized. Base flow needs to be restored. Dredging and setting up STPs is not rejuvenation.

While desilting, silt management is the most crucial step. It was observed that excavated sand-silt was used as bunds (as high as four to five feet), which will not allow water from catchments to come to the river channel. Secondly, the silt material will gradually come back to the river. River-bed materials should not be used to make bunds for smaller rivers. Instead, the natural slope and terrain of the landscape with a gentle valley slope should be retained. Arrangement for disposal of silt materials for other purposes can be made.

Similarly, the incision or excavation of a dry and silted river channel should be made as per the required channel width with distinct river terraces. If the channel width is less, then the depth of the channel should also be less, ideally in proportion to the width. There are cases where the channel width is very little but its depth has been increased with deep excavation. The river looks like an artificial canal. This must not be done.

POLLUTION AND A TRICKLE OF WATER Nearly 1,000 km of the Ganga passes through UP. It has almost 21 percent of India's renewable water resources, though with uneven regional distribution and vulnerability to extreme floods and drought.

The state takes up 7.33 percent of India's land but has 16.17 percent of its population. Its economy is dominated by agriculture which accounts

for 27 percent of the state GDP. High population density with different agroclimatic regions, districts and areas make it extremely vulnerable to climate change.

Climate models using data from 1951 to 2010 show decreasing rainfall trends in the Indo-Gangetic plain of which UP is a major part. The frequency and severity of floods will increase. More floods are expected in UP in days to come. Heat waves will also affect large parts of the state. There is a significant temporal and geographical variability in the availability of water, and several parts of the state are already experiencing water stress.

The Gomti is a plain-fed river — it doesn't get any water from the mountains. Instead, groundwater forms its major source of river flow. Unlike the Gomti, there are rivers like the Ganga and Yamuna, which are fed by sources in the Himalayas. What will happen if the snow-clad Himalayas become barren and glaciers diminish?

River systems in UP are seriously affected by pollution and insufficient flows relative to minimum ecological requirements. In addition to endangering the environment and human health, pollution, particularly from industrial and municipal effluents, is reducing the supply of clean water. Large stretches of rivers in various areas of the state lack flows necessary to maintain aquatic ecology, cultural requirements, and aesthetics in addition to being highly polluted.

The UP Pollution Control Board report of March 2022 under the National Water Quality Monitoring of rivers shows that out of 102 monitoring sites on different river stretches, 100 sites come under C, D, and E categories i.e. unsatisfactory to worse quality. Only one site is of B and one site of A category. This is the ground reality of alarming pollution levels in all rivers of UP as confirmed by the government agency itself. This presents a major governance challenge.

RIVER MANAGEMENT Planning, management, and use of water resources in the state have been largely fragmented and lack a cohesive vision. Water management is carried out on the basis of statutory enactments such as the State Water Policy, Uttar Pradesh Municipalities Act, 1916; Uttar Pradesh Bhoomi Evam Jal Sanrakshan Adhiniyam, 1963; Uttar Pradesh Water Supply and Sewerage Act, 1975; UP Panchayat Raj Act, 1994; UP Panchayat Laws (Amendment) Act, 1994; Uttar Pradesh Participation in Irrigation Management Act, 2009; Uttar Pradesh Water Management and Regulatory Commission Act, 2008; Uttar Pradesh Urban Sanitation Policy, 2009, and Uttar Pradesh Ground Water (Management and Regulation) Act, 2019.

An analysis of these enactments reveals that the state does not have any concrete regulatory framework for river restoration and conservation. Recently, with the renaming of the Union Ministry of Water Resources as Jal Shakti Ministry, five departments, namely, irrigation, groundwater, minor irrigation, Namami Gange and rural water supply, came under one umbrella.

However, the integration of the departments is still missing. Interdepartmental cooperation is required to provide an amalgamation of ideas and actions. It is currently hampered by lack of institutional coherence and policy convergence. This is because there is no vision for integrating the social, hydrological, and ecological components of water governance. The Jal Jeevan Mission intends to provide a tap with water in

every home. A huge task to complete as only 16 percent of houses in UP have tap connections. Much of the water is to be tapped from groundwater and rivers. If rivers are not revived, future supplies will be uncertain.

The state's water future will be jeopardized unless a paradigm change occurs in defining resource endowments and rights, scientific restoration techniques, and coherent institutional and legislative framework with appropriate administrative arrangements.

A POLICY FOR UP We have to think of ways and means to restore the health of our rivers — our survival is linked to their existence. A good entry point could be through a state river policy. National and state water policies have been unable to ensure long-term protection of rivers and river ecosystems, including ponds, lakes, and wetlands from pollution and encroachments. Policies have also been unsuccessful in encouraging sustainable, equitable, and balanced use of water. The institutions are unable to prevent further depletion of rivers and riverine environments with regard to their ecological water needs.

Being India's most populous state, UP has significant responsibility to be a first mover in steering policy reform in river rejuvenation. A proactive and forward-looking river policy is desirable with enabling ecosystems on both regulatory and legal fronts in addition to institutional and administrative support. A river policy can provide crucial directives to save water resources as well as directions to resolve conflicts, whether contemporary or in future.

GUIDING PRINCIPLES OF A POLICY

1 River as a living entity: A river is not simply a water channel. It is much more. Rivers are intricately connected to groundwater, biodiversity, floodplain agriculture and livelihoods. Clearly, the health of rivers won't have much long-term resilience under the *status quo*. Many countries have granted legal personhood to their rivers through acts, laws and amendments. If we treat rivers as living systems, our approach will definitely change.

2 Water for ecosystems: Rivers are part of the hydrological cycle along with plants and animals, forming a wholesome and dynamic ecosystem. We only 'want' from the rivers; we never worry about the river's demand. Water for ecosystems is a legitimate demand. Rivers must flow with a considerate ecological flow volume. The demand for ecosystem and ecological flows must be met while taking water from a river.

3 Creating water sanctuaries: Just like forest reserves, we need water sanctuaries — areas which serve as critical storage of freshwater naturally. Baghel Tal is one of the biggest water bodies of UP in Bahraich district. It is facing encroachment from all sides. It is not even declared a wetland. Ideally, this should have been a water sanctuary. Similarly, thousands of water bodies in the state are waiting to get legal protection as they are not notified as wetlands. Under a river policy, all such water bodies must get protection through notification as a unit of vital importance.

4 River basin as a planning unit: The use of water for agriculture cannot be separated from other usage. This necessitates an integrated strategy for river basin planning, management, and operation of water infrastructure. Water planning and management in the basin is hampered by the lack of an integrated data management system that



Students clearing water hyacinth from the Gomti in Lucknow

incorporates water accounting, water balance, and water budget analyses performed at the city, block and watershed levels. Wastewater management in urban areas and contaminated hotspots has to be prioritized. Plans for basin-level wastewater management should concentrate on decentralized treatment and reuse solutions. In a certain timeframe, all towns and cities should gradually expand the usage of treated wastewater for appropriate reuse.

5 River-sensitive master plans: Poor land use planning frequently blocks the drainage of an area, stymies recharge prospects and pollutes groundwater, affecting the health of rivers and aquifers. We need river-sensitive master plans while developing a town or city. Smaller rivers, tributaries, drainage canals, and other bodies of water should be carefully protected while developing a township or a highway. Blue landscapes can co-exist with buildings and roads — provided we are a little careful while planning.

6 Mapping revenue records: Most smaller rivers and streams have not been mapped correctly. With the advance of satellite and drone technologies, it is now easier to have a digital record of all the connected water bodies of a river channel, adjacent riparian zones and floodplains and how they have been erased from revenue records. If we regain the land belonging to the rivers and ponds, half the battle is won. Land records will be a prime factor in giving justice to water bodies. The issue of acquiring land for river restoration is crucial. For the explicit objective of conservation or the eradication of affecting agents and to assist future restoration operations, we must secure the lease, title, and easements of land along the rivers.

7 Knowledge base: Due to lack of knowledge about rivers and groundwater connections, groundwater exploitation has had serious implications on river-aquifer interaction along the main stem of the Ganga river and its major tributaries in the state. There is a sharp decline in critical base flow contributions during the dry season, causing a hydrological imbalance in the area. This has affected access to water for irrigation, with a widening gap between demand and supply. Unless the groundwater scenario is improved, revival of smaller rivers will be myth. The piezometer data shows that water level has declined in 73 percent of wells in UP. Until and unless groundwater over-extraction is not checked, rivers cannot get to their original state.

8 Nature-based solutions: Most complex problems require simple solutions — nature-based solutions are the best. By working around the rivers and their immediate landscape, we can improve the river's health without spending huge sums of money. River restoration should be taken up scientifically with minimum structural modification of river channels. The focus should be on revitalizing natural processes with a holistic understanding of rivers as natural ecosystems. There are many successful examples of improving fish habitat, water quality, or river recreation opportunities with nature-based solutions.

9 Enhancing resilience: River restoration can also improve groundwater recharge, mitigate droughts, provide flood buffers, regulate soil fertility and moderate climate. The state action plan on climate change has not given attention to these co-benefits. A resilient river system can endure climatic shock well and protect us from future impacts. By re-establishing the mechanisms required to maintain the natural ecosystem, river resilience improves ecological integrity which

quickly restores damaged watersheds in the wake of floods or droughts.

10 Participatory action: Promoting effective engagement, communication and coherence between policymakers, practitioners and river scientists is very crucial. Gram panchayats are the first level of a decentralized governance system. They need to be mainstreamed with multiple channels of governance. The success of restoration depends on how well restoration efforts are received by the people who live along the river and its floodplain.

11 Legal framework: An important aspect of river policy is a strong legal framework. No formal legislation outlining ownership and rights over water sources exists in India. River rights come from a variety of laws and traditional beliefs. There is no specific law in our country defining who owns rivers and groundwater. The Environmental Protection Act, 1986, the Water Act, 1974, Wetland Protection Act and so on can come in handy to support river protection. However, a separate legal framework on river conservation and management can be worked out. Our water legislation is rooted in the realities of the 1970s and 1980s. Situations have changed dramatically.

NATIONAL APPROACH India's economy is expanding, cities are becoming bigger, new industries are coming up, and farmlands have to keep pace with the food basket expectations of a growing population. But our water reserves have not increased — they have remained more or less static, even as users have grown exponentially.

No single department is a custodian of our rivers. While the irrigation department largely 'owns' running streams, departments like minor irrigation, groundwater, agriculture, land revenue and so on have major stakes. Not a single department is entrusted for their restoration.

We need to look at the river crisis holistically. When we work towards the restoration of rivers, we receive much more in return. There is a synergy between clean rivers and a healthy economy. Rivers protect us if they are protected.

The rural economy is integrated with clean rivers and a river restoration agenda will yield huge health and economic benefit. To promote scientific and unified management of water resources in the country, a guiding framework should be developed. The states can follow these guidelines and establish institutional structures for river basin management, avoiding administrative overlaps.

Our courts have given numerous judgments to clean rivers, but nothing seems to have worked so far. In fact, with increasing expenditure on pollution control, the situation is only worsening. The National Green Tribunal (NGT) passes the order, it reaches the concerned departments and then the responsible departments start defending themselves instead of working on problem areas and correcting the failures.

A lot of money is wasted on *ad hoc* controls, rather than developing long-term vision and action plans. To solve the emerging water management challenges, it is necessary to properly examine and adjust issues related to hydrology, ecology, social welfare, and economics. We won't actually have a single strategy for managing water unless these or similar measures are enacted. The country must put in place a cohesive, strong, and inclusive policy framework to tackle the challenges of protecting rivers. ■

Venkatesh Dutta is a Gomti River Waterkeeper and a professor of environmental sciences at Ambedkar University, Lucknow

Uncertainty complex



**DELHI
DARBAR**

SANJAYA BARU

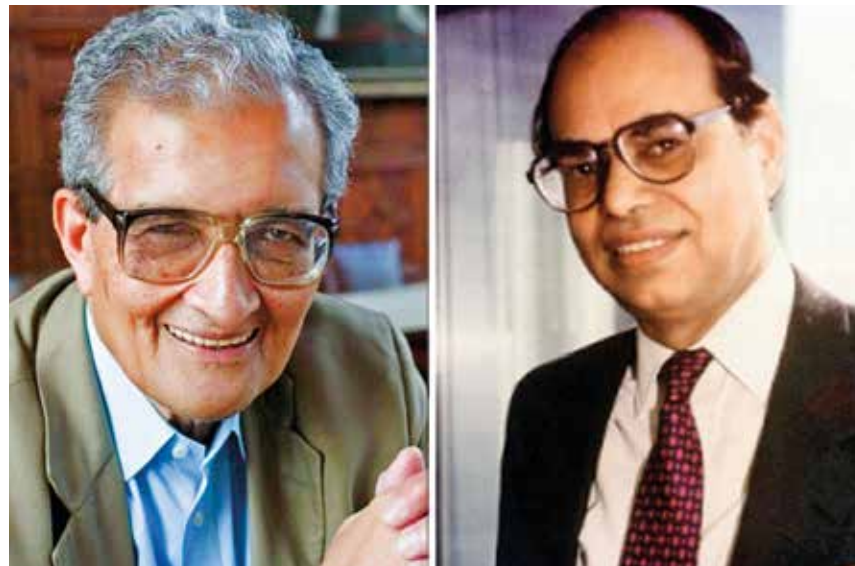
A new ‘uncertainty complex’ is unsettling lives and has already reversed the gains of five years of human development at the global level, says the latest United Nations Human Development Report 2021-22. Published annually since 1990, the UNDP HDR has become the global conscience keeper, reminding policymakers and political leaders around the world that an increase in gross domestic product (GDP) is not the only or the most pertinent indicator of progress. Rather, human progress should be tracked by considering improvements in the educational and health status of individuals and nations and human well-being as a whole, of which income is just one important measure.

HDR 2021-22 defines what are called “three novel sources of uncertainty” as follows: (a) the Anthropocene’s dangerous planetary change and its interaction with human inequalities; (b) the purposeful if uncertain transition towards new ways of organizing industrial societies — purporting transformations similar to those in the transition from agricultural to industrial societies; and (c) the intensification of political and social polarization across and within countries, due in part to, the report says, “misperceptions both about information and across groups of people — facilitated by how new digital technologies are often being used”.

“Political polarization complicates matters,” says the UNDP report. “It has been on the rise, and uncertainty makes it worse and is worsened by it. Large numbers of people feel frustrated by and alienated from their political systems. In a reversal from just 10 years ago, democratic backsliding is now the prevailing trend across countries. This despite high

support globally for democracy. Armed conflicts are also up, including outside so-called fragile contexts. For the first time ever, more than 100 million people are forcibly displaced, most of them within their own countries.”

HDR 2021-22 draws our attention to, among other issues, two post-COVID phenomena, namely, uncertainty and a reversal in human development. Economists have dealt with the problem of risk. However, measuring and understanding the impact of uncertainty on economic and social development remains a difficult task. In a book I edited last year, *Beyond Covid’s Shadow: Mapping India’s Economic Resurgence* (Rupa, 2021), I had an essay on “The Political Economy of



Amartya Sen and Mahbub ul Haq

Uncertainty”. I had referred to studies on the economic and social impact of the COVID-19 pandemic that drew attention to a massive spike in individual and social uncertainty about the future.

HDR 2021-22 echoes one of the conclusions of my essay, namely, that with increased uncertainty, individual economic expectations would be suitably moderated — impacting macro-economic outcomes. While governments around the world have been dealing with the consequences of such uncertainty, their hands have been weakened by a global economic slowdown that has followed, reducing their fiscal capacity to intervene productively in the economy. To add to this, the inflationary impact of post-COVID monetary easing kicked in just as the Ukraine

war further pushed up commodity prices. The global economy has slid into stagflation.

All this has contributed to a reversal of human development indicators, and in 2021-22 the global HDI went down all the way back to where it was in 2017. Of course, all countries have not been uniformly impacted. China, for example, has been able to improve its HDI ranking despite the impact of COVID lockdowns, while India has in fact experienced a backslide over a longer period, beginning with 2017. For six long years, India’s HDI numbers have declined, pointing to reduced income levels, and reduced educational and health outcomes.

When India’s GDP overtook that of Britain, becoming the world’s fifth largest economy, this news hit the media headlines. However, when HDR 2021-22 showed a decline in India’s HDI numbers and rank, the media largely ignored the bad news. Economic and social progress are better measured by human development indicators rather than national income, especially when such income is highly skewed and becoming increasingly so.

The international community owes the concept of human development and the idea of an index to two South Asian economists — Amartya Sen and Mahbub ul Haq. While Sen developed the concept of ‘human capability’, drawing attention to the need for public investment in education and health, that would turn human beings from being viewed as social liabilities into economic assets, Haq developed the human development index and produced the first HDR in 1990. The report boldly declared that “people are the real wealth of a nation” — echoing Telugu writer Gurajada Appa Rao’s famous slogan, “*desamantey mattikadoi, desamantey manushuloi*” (a nation is not defined by its territory but by its people.)

A contemporary of Manmohan Singh at Cambridge University, Haq was finance minister of Pakistan in two of Benazir Bhutto’s governments and went on to head the UNDP. It was just happenstance that I had moved from an academic position in Hyderabad to

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Decentralize or drown



**LOOKING
AHEAD**

KIRAN KARNIK

THE recent flooding in Bengaluru, the IT capital of India and amongst the most important global hubs for the tech industry, has once again highlighted the sorry state of urban infrastructure in the country. Equally, it has exposed the inability to foresee and forestall critical problems, so as to deal efficiently with those that do occur.

Earlier, images of floods in Hyderabad were flashed in the media: cars were submerged, buses stranded, and people waded through waist-deep water. Boats were also seen, not on rivers or lakes, but navigating roads in more than one of India’s premier cities. People being rescued in boats is, unfortunately, a routine yearly image from some parts of the country, especially Assam and Bihar. In fact, a file photo from a decade ago would look no different, except for the people. But boats on city roads are a new phenomenon.

Yearly flooding is routine in the financial capital, Mumbai, causing disruption in many critical economic functions and serious human problems, including flood-induced infections. In the national capital and its neighbour, the so-called “millennium city”, Gurugram, a few centimetres of rainfall throw traffic and life out of gear. While some of these issues may be laid at the door of “extreme weather events”, triggered by climate change, the problems occur even with just one sharp shower.

It is now well established that inadequate stormwater drains, their abysmal maintenance, and bad road engineering are major causes of urban flooding. However, the biggest contributor is probably poor — or subverted — town planning. Filling of lakes and natural drains, felling of trees, and unthinking concretisation leave no place for any excess water flows to be absorbed.

A few months after the calamity of the otherwise-welcome monsoon rains, urban centres in North India begin to gear up for the dangers of air pollution. This, too, has become

a routine yearly feature, with a repetition of the same concerns, warnings and promises. Like the similar-to-the-past images of floods in Bihar or Assam, the headlines and news reports of yesteryear could be used this year too. Sadly, this includes things like one more extension of the time-limit for thermal power plants to comply with pollution norms. First mandated in 2015 for implementation in two years, even seven years down the line the only action is another extension — upto 2026, in some cases. Meanwhile, people continue to suffer the effects of pollution, from respiratory problems to even death.

Images of submerged cars, boats in the streets of our major cities, and CEOs going to work in tractor trailers make for interesting viewing and humorous comments. However, for those who live amidst the problems, it is a time of loss and sorrow. It also has a wider



A rescue effort in Bengaluru

impact, with the breakdown in civic amenities and infrastructure affecting the image of India globally.

The speed of future economic growth is dependent on India becoming a big part of global value chains. These require reliable partners and locations for global supplies. At a time when many — including the government — seek to promote India as a better, more trustworthy alternative to China, work disruptions, for whatever cause, are hardly an advertisement for the reliability and dependence of supplies from India.

Looking ahead, despite global efforts (“reduce, remove, repair”), carbon-triggered climate change and the consequent extreme weather events are not going away anytime soon; if anything, they may get worse in the short and medium term. Rising sea levels, high temperatures, droughts, and intense rainfall are already becoming the norm. It is leading to inundation, water shortages, forest fires,

floods, and a host of health issues. Added to this is air pollution.

Climate change and many of its consequences are inevitable in the next few years. The questions then are: how best can we minimize the impact and handle these challenges? If we focus on urban areas, the one overall single factor which is vital for handling many problems is governance. So many of the problems can be traced to poor policies, organizational issues, lack of expert advice and inadequate resources. Corruption—through the nexus of politicians, builders and the executive — distorts or bypasses policies and regulations. The recent court-enforced pulling down of the twin towers in Noida is a classic example. With the connivance of the powers-that-be, the builder violated all norms. Apparently, no one in authority saw these massive structures coming up! It was only after

a years-long legal battle by local residents that they were declared illegal. Similarly, in the national capital, encroachment on the floodplain leads to flooding in the Yamuna. Worse, there are officially-sanctioned projects on the floodplain.

In Bengaluru, a great deal of the flooding is due to construction that has come up on lake-beds. In Mumbai, encroachment into the Mithi river leads to flooding. In Haryana, the government is trying to dilute regulations and court orders to reduce the area

of reserved land in the Aravalis: this, at a time when Gurugram is amongst the worst-polluted cities and desperately needs more tree cover in and around it.

All these issues point to a deficit in governance. Multiple administrative agencies worsen the situation and dilute accountability. Despite the 74th Constitutional amendment, local governance in the city has neither the resources nor the authority to do very much. Enforcement of laws, efficient implementation, accountability, and transparency all require decentralization of these. When this is done (e.g., during Covid in Mumbai), the results are visible. Yet, neither the Centre nor the states seem keen to empower city administrations.

For their well-being, all our cities need strongly empowered and well-resourced administration. Without that, we will continue to drown. ■

Kiran Karnik is a public policy analyst and author. His most recent book is 'Decisive Decade: India 2030, Gazelle or Hippo.'

Be green in Himachal

BHARAT DOGRA

HIMACHAL Pradesh made good progress in its early years, progress which reached remote villages as well. An important factor contributing to this was the integrity and commitment of its leaders from the freedom movement days.

This leadership with its links to the values of the freedom movement was perhaps best represented by Dr Y.S. Parmar who dominated the political scene here till 1977. Their deep concerns regarding the welfare of their people also increased their ability to mobilize people for development tasks. In addition, this state received significant support from the central government which helped it to improve development indicators.

According to the official classification of states on the basis of development indicators available for 2017-18, among 36 states and Union Territories, the Human Development Index (HDI) ranking of Himachal Pradesh is 7 while the Gender Development Index ranking is even more impressive at 2. This gender development ranking is particularly impressive compared to the immediate neighbours of Himachal — 14 for Uttarakhand and 16 for Haryana.

The life expectancy in Himachal Pradesh for that year (2017-18) was 72.6 (75.6 for women), compared to 69.0 for the entire country. The expected average years of schooling that year for Himachal were 14.7 (compared to 12.4 for the country). The per capita gross state domestic product during that year (using constant prices of 2011-12) for Himachal was ₹152,128, compared to ₹100,268 at the national level.

The achievements of Himachal Pradesh have been impressive, and seem all the more so when one considers that it has been much more difficult to raise internal resources in the hilly state.

So, in the political discourse of Himachal

during this assembly elections year, when new entrant Aam Aadmi Party says that earlier politicians had only plundered and not achieved anything significant, it is not even close to the truth.

It would be much more credible to look at more recent instances of very real plunder of nature that have increased hugely during the past five years or so.

Himachal Pradesh has increasingly linked its economic development to hydro power projects and to construction and widening of highways. However, this has been increasingly done in ways that have badly ravaged the fragile geology and sensitive environment of this Himalayan region.

Himachal has rivers, springs and drinking water projects. Yet in its cities and villages there are shortages. Water pollution is also increasing.

In terms of climate change there is need for more protective policies but indiscriminate construction activities, neglect of precautions and large-scale felling of trees have contributed to increasing the vulnerability of people to disasters in times of climate change when more extreme weather events are to be expected. If just the numerous reports of various landslides and mishaps taking place on the leading Parwanoo-Shimla highway during the past two to three years are compiled, they would encompass a huge volume.

Ironically, despite all the great rivers of the state and the more numerous natural springs, as well as the increased recent emphasis on drinking water projects, water shortage in many cities and villages is actually increasing,

and this testifies to the increased ecological ruin. Cases of water pollution too are increasing.

Even while legal as well as illegal axing of trees has been increasing, the ravage of forest fires too has increased greatly in recent times. In the case of horticulture, while the apple economy is reported to have crossed the ₹5,000-crore mark, apple growers are increasingly angry that they are treated very unfairly when it comes to marketing of apples.

The state government recently publicized its facilitation of big business entry in apple purchase as a means of getting a better price for apple growers, but organizations of apple growers have been complaining bitterly that the bigger businesses led by the Adani group have actually operated in ways that led to lowering of the price available to apple growers.

The input cost, including packaging cost, of apple growers has increased steeply while the price they are getting this year is lower than what they got two years ago.

While the issue of price dominates public discussion and newspaper headlines, there are several other problems of apple orchards which do not receive adequate attention — the problems created by indiscriminate use of agro-chemicals, by the adverse impact on natural pollinators and natural pollination processes, and by indiscriminate introduction of exotic species.

Although the state government has highlighted its efforts to promote natural farming, far more remains to be achieved before Himachal Pradesh can emerge as a winner in this context.

An ecologically protective path which emphasizes sustainable livelihoods of common people based on natural farming and eco-tourism as well as prevention and damage-minimization of disasters, accidents and hazards would be the way forward for Himachal Pradesh. ■

The writer is Honorary Convener, Campaign to Save Earth Now. His recent books include A Day in 2071, Planet in Peril and Man over Machine.

drawn our attention to the challenge of human development. Between 1990 and 2016, for a quarter of a century, India consistently improved its index numbers and HDI rank. The slide in the numbers since 2017 and the fall in rank in 2020 and 2021 should send alarm bells ringing not just in New Delhi but across all state capitals. Health and education are the responsibilities of both the Centre and the states. In fact, the states bear a larger responsibility.

Many state governments had started publishing state-level annual HDRs, with Digvijay Singh pioneering the effort in the 1990s as chief minister of Madhya Pradesh. These reports tracked state-level changes in human development. HDR 2021-22 should revitalize this effort. The Centre and state governments should endeavour to improve India's rank next year and every year thereafter. ■

Sanjaya Baru is a writer and Distinguished Fellow at the United Service Institution of India.

Uncertainty complex

Continued from page 20

join the media in New Delhi in 1990 when Haq arrived in India to launch his first report. Few in the Delhi media took any interest in HDR at the time, but I formed a lifelong association with Haq, attending every single global HDR launch around the world and, in 1997, went on to act as a UNDP consultant evaluating the impact of HDR.

For 32 years the HDR has systematically



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Reinventing the daily *dabba*

Food Darzee has tailormade meals

CIVIL SOCIETY REVIEWS

LIKE many people these days, chances are that you aren't much into cooking at home. But you also want to eat healthy and be smart about your meals. The daily *dabba* or tiffin carrier from a neighbourhood kitchen won't do because it is too oily, full of carbs and tastes like nothing. Where then do you find food that is good for your health, fun to eat and turns up at your door every morning?

You could sign up with Food Darzee, one of several new customized meal services. We in this magazine have done so twice. Once much before the pandemic and again when we were down with COVID-19 and our kitchen was closed. On both occasions, give or take a few glitches, we weren't disappointed.

By 8.30 am lunch and dinner would arrive in small microwavable containers with our names written on them and go straight into the refrigerator to maintain the cold chain. At meal time we would take out our packs and heat them. We went in for main meals, but for the record, breakfast and an afternoon snack were also available. Each main meal per person cost ₹350 including delivery.

Food Darzee offers a range of diets. You could choose from ketogenic, vegan, low-carb-high protein and a balanced or homestyle meal. We chose homestyle meals because we had no fads, didn't need to lose weight and had no troubling ailments which required dietary restrictions. Our only interest was in well-made and wholesome food with just the right number of calories. One of us was vegetarian.

When the meals arrived, we were pleasantly surprised. All the boxes had been ticked and, despite the careful calorie count, we weren't depriving ourselves of anything. Think butter chicken, prawn curry-rice, *choley*, *rajma* with brown rice, *paneer* dishes and *rotis* from millets. Sounds too homely? There was also pasta, pizza, Thai green curry, grilled chicken, grilled paneer, shepherd's pie with the vegetarian version made with soya granules, noodles and chilli chicken. And the portions were just right, ensuring you didn't overeat.

Our tryst with Food Darzee on both times began with a fairly detailed interaction with



A homestyle meal comes home: The portions are just right

one of their nutritionists. Height, weight, age, diseases and expectations were listed. So were preferences, the most basic being whether one is a vegetarian. But you could also get choosy such as by asking for more protein.

All such detail is put together to design meals that give you what you want to eat with the right number of calories. Food Darzee, as the name suggests, attempts to customize what you eat. These are tailormade meals so that you

stay healthy but, equally important, don't feel you are missing out on what you like. So, it is not just the body type but personal preferences too that are taken into account.

START-UP AT HEART Food Darzee began in Mumbai around 2018. Its founders are four young men who are all friends from school. Dr Siddhant Bhargava, a medical practitioner, came up with the idea. The other three,

Anirudh Ganeriwal, Devaj Jhunjhunwalla and Anik Bhandari, are chartered accountants.

In the style of start-ups, everyone did everything in the beginning. The ideas came from personal experience, the meals were those they liked to eat themselves. Their own health concerns were those that they saw their customers addressing, losing weight being one of them. Better health is really the focus and selling point at Food Darzee with diet being the answer to lifestyle diseases and of course, obesity itself.

Beginning in Mumbai, Food Darzee now operates in six cities through a network of kitchens monitored centrally. It provides 3,500 meals a day and if its social media advertising is any indication, sees great prospects for itself.

"For me personally I always wanted to do something of my own. I am a huge foodie and so is Anik. Siddhant and Devaj were fitness buffs. We wanted to do something wherein health meets tasty food and that's how we started," says Ganeriwal. "Our nutrition is different from what everyone else does."

Dr Bhargava explains: "The entire concept was really down to three things: taste, variety and health. Healthy food is different for different people. Vegetables doesn't mean health: it has to be a meal with all the micronutrients. So, by giving food which is very real, the diet is sustainable. By giving people just rice bowls or salad bowls, eventually people are going to get bored of it."

But the array of meals and different diets? Where did they come from? Was there a lot of experimentation, consulting of chefs and so on? Balancing Indian meals so that they are friendly to the palate and also healthy seems so difficult to do.

"Actually, whatever the four of us liked to eat we just put that together and made it healthy. That's all. We realized it's not that difficult to make a dish healthy. Like butter chicken. You can count the oil, the portion of chicken, and then it is individualized for each person," says Ganeriwal.

MENU PLANNING But Dr Bhargava says: "Let's give ourselves credit. Menu planning is definitely an art. If you get *roti* in one meal you don't want *roti* in the second meal. If you get bread for breakfast, you don't want it in a snack. So, you make sure it's not repeated and the meals too are not repeated the next day and the day after. And we try to cater to people's likes and dislikes. You, for instance, didn't like Indian food, so how do we plan meals which are not Indian food? We do wrack our brains to ensure every person gets the opportunity to enjoy food."

Over time, a four-week menu was put in place to ensure a dish does not repeat, across breakfast and lunch, assuming of course that the customer doesn't have dietary restrictions.

Initially, there was just the four of them and

the bare minimum of staff.

There was also no known model to go by. Quite literally, they put on the menu what they liked to eat themselves. As they grew over a year and a half, professionals came in.

"Professionals do it now and we oversee them. We don't have any food and beverage background. Three of us are chartered accountants and Siddhant is a doctor. We hired chefs and a couple of consultants to help us but we monitored them very closely. There were in the early days seven or eight people in the kitchen. There was also less variety. Now we have a lot more," says Ganeriwal.

Making good meals is one thing. Delivering them in good shape, daily, on time, is an altogether different challenge. Our food packs would turn up in Gurugram before 8.30 am, the time we had suggested. For sure there were glitches such as just one meal instead of two



The founders: From top left Anirudh Ganeriwal, Siddhant Bhargava, Anik Bhandari and Devaj Jhunjhunwalla

arriving. But these were initial problems and the phone calls, though irritating, were tolerable because the delivery man was truly apologetic and the nutritionist got into the act soon enough to make amends.

CHILLED DELIVERIES Food Darzee's meals arrive chilled instead of hot as meals on Zomato and Swiggy are delivered. This may at first seem surprising, but there is a logic to it because food goes stale between temperatures of 20°C and 55°C. The meals are delivered once a day and, when they arrive, they are meant to go directly into the refrigerator where they stay fresh till they are heated and eaten.

Says Dr Bhargava: "We realized early on that food goes stale between temperatures of 20°C and 55°C. That is the environment which is warm enough for bacteria to proliferate. The idea is to get the meal below 20°C. Once the cooking is over, everything is done in a cold environment to make sure there is no bacteria happening."

Dr Bhargava explains: "Say, your lunch got

cooked at 4 am and to when it's delivered at, say, 9 am it's all going to be at a temperature of 5°C. Because at that temperature you are ensuring there is no bacterial growth and food is fresh. This should be the SOP for all home deliveries."

The median time for making deliveries from kitchens to customers is 90 minutes. With ice packs it is possible to keep the meals at 5°C based on a calculation of the last destination.

SIX CITIES Now that Food Darzee is in six cities its staff has also increased. It has 485 employees and 30 nutritionists based mostly in Mumbai. Not all of them are full-time hires, but the nutritionists are because they have a key role to play.

"They primarily communicate with the customer in trying to customize the client's food in the best way possible. This is relayed to the operations team which relays it to the kitchens team. It's quite structured. Six cities, six kitchens and a hierarchy where you have got chefs, a packaging team and a logistics team for deliveries. It's four-five teams working in tandem and that's how food is procured, processed and delivered," says Dr Bhargava.

Standardization is crucial. Achieving it daily can be challenging. Problems can vary from disappointment with the food to wrong deliveries. We experienced wrong delivery. Despite an app which is meant to provide instant responses, it was easier to just phone the nutritionist.

"It is tough but we have processes in place. We have quality check measures in place. A lot of it is monitoring on WhatsApp because we can't be in every place. There are SOPs and processes at every stage," says Ganeriwal.

"We are a very evidence-heavy company. We say we are giving you calorie counted food and when we say that, it is, and that is what sets us apart from most other companies," says Dr Bhargava. "We have pictographic evidence to show that it is measured during pre-cooking, cooking, post-cooking and packing."

Dr Bhargava explains that their 2,000 customers are a floating population pan-India. Most of them subscribe for around 45 days and they take two and a half meals. Serving them can be challenging because Food Darzee prefers to go beyond diets.

"Rather than associating ourselves with serving diets we take pride in delivering the results the customer wants. If a customer wants to lose weight, this much kg in this much time, we deliver," says Dr Bhargava.

Food Darzee currently seems to be on a roll. Advertisements with Alia Bhatt in them and growing levels of visibility are intimations of big plans.

"Everyone consciously or sub-consciously wants to be healthy. In the last three years that trend has really picked up. We want to cater to it in whatever way possible," says Dr Bhargava. ■

CRUNCH ON SOME INSECT COOKIES

SURMAYI KHATANA

A cookie packed with protein, chocolate and crickets is creating a buzz in culinary circles. It has been developed by a team at the Ashoka Trust For Research In Ecology And The Environment (ATREE), an NGO based in Bengaluru. The idea, say team members, is to start a conversation around insect eating or entomophagy.

A French culinary expert, Chef Amiel Guerin, who grew excited by the idea, came up with a recipe and made the cookies in his bistro's kitchen, in Bengaluru.

Chocolate dominates the taste of the cookie which contains 13.5 percent cricket powder in its composition. With sugar, flour, chocolate chips and egg, the cookie's ingredients are just like any other cookies. Since it is an experimental project, each cookie costs as much as ₹10 to develop.

Right now, the cookies are not for sale. The ATREE team, which has been working on methods of mass insect rearing, came up with this idea. One motivation has been the FAO's (Food and Agriculture Organization) promotion of insects as an alternative source of protein and as a solution for food security.

With rising population and climate changes, "it is better to focus on other sources of protein and insects are the best alternative," says Priyadarsanan Dharma Rajan, senior fellow, ATREE. His team members include Seena Narayanan, Femi Benny, and Varsha Ganesh.

The cookies are protein rich with 70 percent protein and up to 30 percent lipids. The cookies also have calcium, potassium and iron among others ingredients. It is rich in Vitamin B and has Vitamin A, C, D, E and K.

In the past few months, they have managed to harvest a few kilograms of crickets. The team decided to incorporate the crickets into a food and zeroed in on cookies.

Harvesting insects does not require much land and water requirements too are low. Rajan says that the carbon footprint of insect farming would be much less than in the case of commercial livestock, if done correctly. Edible insects are rich in protein, vitamins and minerals. Rearing them emits less greenhouse gases than with livestock.



The ATREE team



It is seminar time

The purpose, currently, is for the cookie to be a conversation starter on entomophagy in India. "Entomophagy is not a rare thing or something brand new. Before we developed tools, humans were dependent on insects as a source of protein and food," points out Rajan.

The FAO estimates that at least two billion people today consume insects across the world. According to Rajan, around 300 indigenous communities in 153 countries consume insects.

"In Northeast India, we have recorded more than 300 species of insects that are consumed," says Rajan. But insects are not cheap. Silk Moth caterpillars, one of the cheaper insects, cost between ₹350 and ₹400 per kg. There are insects that can sell for even ₹1,000 per kg in local markets.

In India, indigenous communities in Odisha

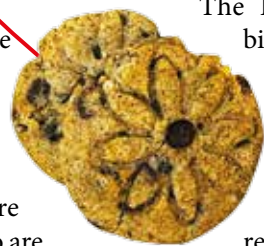
consume 'Kai Chutney' made from red ants and their eggs for which a GI (Geographical Indication) status has been requested. Eesalar winged termites in Tamil Nadu are regarded as a crunchy source of protein for tribal communities living there.

Apart from normalizing the idea of insect eating, the team at ATREE wants to mainstream such products and help with sustainable rearing practices. One reason the team developed the cookie is because currently entomophagy needs are met by harvesting insects from the wild. The concern is that without sustainable mass rearing practices, the uptick in insect consumption would lead to an imbalance in the wild.

"With the FAO promotion, people around the world are leaning into entomophagy. The demand, both from outside India and inside, for varieties and quantities would put pressure on the wild. If we can develop rearing methods for these insects before that and put them into practice, the pressure on the wild will be reduced," explains Rajan. For entomophagy as a business in India, appropriate technology and clarity in lists of recognized edible insects are important.

ATREE has been working on insect rearing solutions for individual homes in their projects on capacity building and documentation of knowledge on insect rearing.

In Kerala, ATREE has created 'fly pods' to enable households to rear insects in their homes with kitchen waste. "It is to be a part of the circular economy," says Rajan. The fly pod needs to be installed in an open area like the backyard and it converts kitchen waste to a good source of protein by introducing flies. The flies are used as a protein-rich pet food and feed. ■



Hyderabad's earnest chronicler

CIVIL SOCIETY REVIEWS

IT was Hyderabad's famed biryani that first seduced Serish Nanisetti when he came to the city to work for *Deccan Chronicle*. One mouthful and he was smitten. Hyderabad was tantalizing in other ways too. Its mysterious history, for instance. When Nanisetti started digging around, hoping to uncover its past, there was little he could find. He scoured libraries and bookstores and found an *Imperial Gazetteer* was missing.

There were practical reasons too for his search. "When I used to edit copy, the sequence of the kings was not known and there was no one to tell us what the order was. So out of curiosity I started reading," says Nanisetti, a lean 50-year-old with the sanguine air of an achiever.

Around that time the Nizam's dazzling jewels were displayed in the city. Nanisetti went to see. That stoked his curiosity even further. How did the Nizam become so rich? Where did his wealth come from, he mused.

We meet him at the Qutb Shahi necropolis, an imposing array of tombs where the nine rulers of the Qutb Shahi dynasty lie with their begums and nobility. They were the rulers of the fabulously wealthy Golconda empire and founders of the wealthy city of Hyderabad.

Nanisetti spent close to 10 years researching the trajectory of the dynasty and the growth of the city, sifting through old maps, perusing epigraphic information, empirical research and travelling to historic sites. He discovered new facts and myths.

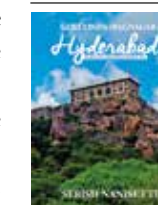
"I wanted to know all the place names of the city. Take the Ma Sahiba's (Queen Mother) tank. The Queen Mother was identified as Hayat Bakshi Begum. But when I was researching, I came to know it wasn't Hayat but her mother-in-law who got the tank built. That is the kind of misinformation that was happening. I thought we should set it right, so I started working on a book on Hyderabad's history," he says.

In 2019 he published his own book, simply titled *Hyderabad: Rise and Fall of a Global Metropolis in Medieval India*. It really is a labour of love — full of information and perspective and rather engrossing though he says he didn't want to write it like a story. He just wanted to stick to the facts. "I wanted it to be a simple book which people could read and understand. I wasn't a keen student of history because the subject was only about battles and dates. Researching this book, I came to know how people lived at that time," he says.

Surprisingly, he couldn't find a publisher. "Publishers don't trust a working journalist," says Nanisetti, who spent quality time on his book, alongside his job. He is now City Editor of *The Hindu*. "The publishers want to know your style, read a chapter, and then they want to place a bunch of photographs in the middle of the book. I wanted to scatter the pictures across my book. I don't think anybody can really read text for long. Journalism helped because everything is placed in context."

That's true. Each chapter, devoted to a particular king, has his picture. A painting dated 1650 depicting the marriage procession of Muhammad Quli Qutb Shah to Bhagmati catches the eye. There are many such pictures matching the text along with maps and footnotes.

The remarkable history of the Qutb Shahi dynasty has never been documented in detail. The dynasty ruled for an uninterrupted 169 years from 1518 to 1687. Its founder, Sultan Quli Qutb-ul-Mulk, a staunch Shia, arrived from Persia at a port on India's west coast with his uncle. He became a soldier for the Bidar rulers and was given charge of the mud fort of Golconda. He conquered territories, converted Golconda into an impregnable fortress and turned it into a safe mart for trading in diamonds. He planted the seed of the city of Hyderabad.



Hyderabad: Rise and Fall of a Global Metropolis in Medieval India ₹1,000 on Amazon



Serish Nanisetti: 'I wanted it to be a simple book which people could read'

It is the fifth king, Mohammad Quli Qutb Shah, who laid the foundations of an unfortified city, unusual in those days, which would be called Hyderabad, in 1591. Even European travellers marvelled at its palaces, gardens, lakes and fountains. The last ruler, Abul Hasan, surrendered to Aurangzeb when he captured Golconda, and then ransacked Hyderabad. The machinations and jousting by various European traders to secure favourable trade deals are well told.

Nanisetti also made discoveries. Was the city of Hyderabad ever named Bagnagar, after Bhagmati, Muhammad Quli Qutb Shah's favoured queen? It was, he says. And who gave the Koh-i-Noor to Shah Jahan? It was Mir Muhammad Said, a Persian trader turned commander who fought battles for Abdullah Qutb Shah and later sold out to the Mughals. He committed this treachery on July 7, 1656, handing over the Koh-i-Noor and other dazzling diamonds from the Golconda mines in palm-sized velvet packs to the Mughal emperor.

And did Nanisetti get all the answers he was looking for. Like, how did the Nizam become so rich? "Hyderabad became prosperous because it was a safe place to trade in diamonds. Machilipatnam was a safe port," he says. Golconda became a hub of manufacture and global trade under the Qutb Shahi rulers. Artisanal steel ingots and pellets were exported and turned into the famed Damascus swords. Woollen carpets, Kalamkari and much more was exported.

While the first two kings were conquerors and warriors, the later rulers were inclined towards the arts, to building the city and to leading more redolent lives. The kings intermarried, learnt Telugu and encouraged a syncretic culture to blossom.

"The Qutb Shahi kings let other cultures thrive. On top of the Golconda fort there is a temple. They did that. The later Nizams saw themselves as Sunni. Then they realized this does not work so they worked with the local Shias. A syncretic culture was the key to prosperity," says Nanisetti who plans to write a sequel to his book. ■

Village of ancient temples

SUSHEELA NAIR

AFTER a heritage sojourn to Badami and Pattadakal, I stopped by the picturesque village of Aihole on the bank of the Malaprabha river in Bagalkot district. The first capital of the early Chalukyan dynasty, Aihole has been hailed as the 'cradle of Indian temple architecture'. Originally named Aryapura, Aihole was a university town that patronized art, culture and education. The temples are associated with both the early and later Chalukyas, rulers of Badami.

I started my exploration spree in Aihole by wandering at leisure through the fields and rocky outcrops. Strolling around the hamlet, I reached a fenced enclosure peppered with clusters of temples in the centre of the village. I found their names intriguing as they derive from the temporary inhabitants in recent times, rather than the divinities worshipped there.

The most striking one in this cluster is the sculpturally splendid Durga temple, remarkable for its semi-circular apse, elevated plinth, basement friezes and a gallery encircling the sanctum. The temple, resembling a Buddhist *chaitya* with a horseshoe-shaped structure, is said to be the only one of its kind in South India. It reminded me of the present-day Parliament House (constructed in the 19th century), which is inspired by this 7th-8th century temple. The name of the shrine is ambiguous: it refers not to Goddess Durga but to the fact that it once served as a defensive outpost (*durg*).

I was awed by its unusual shape, the carvings of scenes from the *Ramayana* gracing its walls and ceilings and the basement friezes with *ganas* (mythical comical dwarfs), foliage, and full-length niche deities. Among the main figures who appear on the walls are Shiva, Vishnu, Narasimha and Durga. But the carving of Mahishasuramardini, trampling the buffalo demon, is the most striking. The adjacent sculptural gallery, maintained by the Archaeological Survey of India (ASI), houses Chalukyan sculptures.

The Lad Khan temple, which is one of the earliest temples, was the next stop on our monument-hopping spree. It was originally a royal assembly hall and marriage *mantapa* chosen as the abode of a Muslim noble, Lad Khan. The river goddesses, Ganga and Yamuna, popular icons of the fourth-century Gupta dynasty, herald a welcome at the entrance. Couples embracing beneath trees are carved on the outer columns of the porch. I did not attempt to scale the stone ladder leading to the roof shrine with images of Surya, Vishnu and Shiva carved on its walls. Over the cells at the back is a square, flat-roofed superstructure, in effect forming a two-storey sanctum. Two other temples, Gaudhar Gudi and Chikki Gudi (both dedicated to Shiva), within the complex belong to the same age.

I then reached the Kunti Group, another interesting ensemble of temples, after a short ramble down the streets of Aihole. This quartet of temples, dating from different periods, consists of partly open halls with sloping roofs and overhanging eaves. Each temple has a small sanctuary positioned against the rear wall. The external columns of the *mandapa* are decorated with erotic couples. The northwest temple also has sculpted figures. The interior is pepped up with three finely carved ceiling panels of Shiva with Parvati, Vishnu on the serpent and Brahma on the lotus. Guardians flank the doorway. The two remaining structures are from the Rashtrakuta era, as is evident from the columns, which have squat proportions and triangular panels of lotus decoration. A free-standing



The splendid Durga temple in Aihole

portal with animal brackets links the two north temples.

Beyond these temples and the houses of the town, farther south is the Huchchappayya Matha. It has sculptures of amorous couples, with beautifully decorated beams inside and a hall roofed with ceiling panels depicting the same trio of divinities noted in the Kunti Group.

Another imposing monument is the Ravalaphadi (or Ravanaphadi) cave temple, Aihole's only excavated temple which celebrates the many forms of Shiva. I gazed in admiration at the ceiling, delicately carved with decorative motifs. At the entrance, I saw life-size sculptures of Ardhanariswara and Harihara and inside, the Saptamatrikas (fertility goddesses). To the left of the entrance of the cave is an enormous carving of Shiva, with his consort, Parvati. The sanctuary holds a huge *lingam*, and carved lotus motifs in the centre of the floor and ceiling. Don't miss the Huchimalli temple with a sculpture of Vishnu atop a large cobra.

Before reaching a hilltop, I passed by a Buddhist temple. Its desolation was highlighted by bats who occasionally swarm into flight under a ceiling graven with the image of the Enlightened One. It has a serene, smiling Buddha seated under a Bodhi tree.

From the Buddhist temple, a path leads to the Jain Meguti (or hilltop) temple, from where I had fine views of Aihole, the Malaprabha Valley and the surrounding countryside from the first floor. The roof is still standing over the remains of the austere Jain Meguti temple and covers the sanctum within which Mahavira sits, serene in perpetuity. The temple affords a view of the sleepy village below. It is known for its inscriptions by the renowned poet, Ravikiranthi, who built the structure in AD 634. Built on an elevated platform, it has two sanctums, a court hall and a portico.

Teeming with Hindu and Jain and rock-cut temples, it is little wonder Aihole is known as the birthplace of Dravidian temple architecture. Compared to the opulence of Hindu temple craft, we found the Jain and Buddhist temples here austere. ■

FACT FILE

Getting there: 46 km from Badami in Bagalkot district of Karnataka.

When to go: October to March.

Tips: Make Badami your base. It has a range of hotels and a host of transport options to travel to nearby places. It is advisable to hire a taxi for a day trip covering Badami, Aihole, Pattadakal, Banashankari and Mahakuta.

Photos: Civil Society/Susheela Nair



Mahishasuramardini slaying the buffalo demon

So you want to do your bit but don't know where to begin? Allow us to help you with a list especially curated for *Civil Society's* readers. These are groups we know to be doing good work. And they are across India. You can volunteer or donate or just spread the word about them.

CONNECTING CHILDREN WITH SPONSORS

Founded in 2008, Yuva Bengaluru has a force of dedicated volunteers who work to educate and mentor children from government schools, orphanages, slums and villages across the country.

Their programme, Educate India, brings together the child, school, volunteers and a sponsor to benefit children from marginalized communities. Yuva's project for vocational training, Empower India, empowers indigenous youth and women with sustainable livelihoods.

The NGO provides financial assistance and initial investment for small businesses and for equipment like sewing machines and computers. Their Enable India project works for people with disabilities.

<http://yuvabengaluru.org/>
contact@yuvabengaluru.org
 +91 8861262531

NAVIGATING HOSPITALS

Sapna is an NGO in Alwar which helps people access hospitals and medical facilities in Delhi. The NGO works with Safdarjung Hospital in Delhi and assists patients in navigating the complexities of the hospital's systems. Altogether 630 surgeries at the hospital have been facilitated by Sapna. Their community optometry and ophthalmology projects with eye surgeons have facilitated over 10,000 cataract operations in Alwar. Since 2004, Sapna has helped in the medical treatment of around 55,000 people from disadvantaged backgrounds.

Sapna provides palliative care to chronically sick and injured people. They have frontline caregivers who come from diverse backgrounds.

<https://sapnaindia.org/>
 Email: ngo.sapna@gmail.com,
info@sapnaindia.org
 Phone: 7835959399

PREVENT SEXUAL ABUSE OF CHILDREN

Arpan, an NGO based in Mumbai, addresses child sexual abuse with prevention and intervention services for children and adults.

Their flagship programme is the Personal Safety Education Programme which empowers children to prevent sexual abuse and seek support if they are violated or feel threatened.

The NGO runs a free e-learning portal for children. It also equips teachers and parents with knowledge and skills to prevent and deal with child sexual abuse. Arpan shares its experience and knowledge in this complex aspect of child care by having partnerships with government bodies, schools and other NGOs across India.

<https://www.arpan.org.in/>
 Email: info@arpan.org.in
 Phone: +91 22 2686 2444 / 2686 8444

FIRST PERSON

NAYANA BORGHAIN, 23, M.A. SOCIOLOGY, JNU

'I BECAME FAR MORE PATIENT TEACHING SMALL CHILDREN'

My interest in education and learning motivated me to seek an internship at Avas Foundation in Guwahati, Assam. I got to know through a friend that the foundation teaches children in slums. The project I was associated with was aligned with the government's National Child Labour Project which aims to rehabilitate working children in 12 districts.

I worked with the foundation for a month in 2019. But you can work for a longer time as a volunteer or an intern. I conducted classes, and I usually taught in the evening slot. We



put together courses based on what the children needed help with like mathematics, the alphabet and basic English language skills. We also taught the children what we felt they should know. The classes were usually for an hour or two in a semi-formal setting. Some of the children were not going to school regularly so we had to adopt

different methods to teach them.

Due to the COVID lockdown the foundation had to stop some of its classes for a while. I feel extremely grateful for the experience. I have learnt a lot because various factors come into play when you are teaching children who live in

slums. I became much more patient because we were sometimes dealing with very young students. The experience also worked as a big confidence booster for me. I was in the position of conducting classes and was called 'teacher'. It was all very rewarding. ■

SUPPLY NUTRITION TO HIV/AIDS CHILDREN

Sparsh Balgram works for the welfare of children afflicted by HIV/AIDS. It strives to provide them with education, health and nutrition. The NGO runs a shelter for children with HIV/AIDS in Pune. It works across Maharashtra for such children. Their project, Sparsh Sanjivani, involves providing nutrition bags filled with pulses, fruits and other groceries to young children. Currently, 20 children are being provided a nutrition bag every month. Sparsh Balgram aims to bring under its care 100 children by year-end. The NGO takes care of medicines needed by children and it also provides a good education to the children.

<http://www.sparshbalgram.in/>
sparsh.balgram@gmail.com,
mahesh@sparshbalgram.com
 020 25823700 / +91 7620 0402 30

HELPING OUT WITH EXAM COACHING

Alankaar, an NGO based in Gurugram, helps children from marginalized communities stay in school and pass their exams by providing extra coaching after school hours. They have set up teaching centres with volunteers who help the students.

The volunteers also organize events, activities and festive celebrations for the children. Alankaar currently has over 150 students and over a hundred volunteers with diverse academic backgrounds.

They have teaching centres in Sectors 14, 15 and 45 in Gurugram. Alankaar focuses on providing quality education to underprivileged children along with exposure to activities and events which create awareness of social issues.

<https://alankaar.org.in/>
alankaar.community@gmail.com

PRODUCTS

Small producers and artisans need help to reach out to sell their wonderful products. They can't advertise and they don't know to access retail networks. *Civil Society* happily provides information about what they have on offer, their skills and how you can get to them.



Seed or flower?

Abracadabra! You can do magic too. Plant a pencil, sprinkle some water and watch it grow into marigold flowers. Seed Paper India sells wedding cards, pencils, calendars, price tags and visiting cards made from plantable seed paper. You can even just buy sheets of seed paper from them.

Are you a Ganesha devotee? Seed Paper India offers a Plantable Seed Ganesha. Place the Ganesha on top of a tray of soil and pour some water every day whilst chanting your prayers. In two to four weeks a plant will sprout. A six-inch Plantable Ganesha is available for ₹490 and an eight-inch one for ₹90.

The Seed Paper team works with printers to customize designs on their paper products. Wedding cards are priced at ₹50 each. Seed Paper also offers recycled handmade paper. And a pack of magical seed pencils comes for ₹24.

Contact: Roshan Ray: +91 6364699837;
email: seedpaperindia@gmail.com
website: <https://www.seedpaperindia.com>

Vibrant medley

Atulyakala is a micro-enterprise run by a group of deaf artists who make a range of products. There are colourful notebooks priced at ₹280-550, tote bags made of vegan leather which cost ₹600-1,200 and home decor products like candles and rugs. Plus, there's jewellery, including earrings and bracelets, which cost around ₹400 to ₹600.

Atulyakala was started by Smriti Nagpal, a former TV presenter with Doordarshan. She is also a sign language expert and a social entrepreneur.

This spirited enterprise is managed by a team which is deaf and mute and communicates in sign language. They also offer an online Indian Sign Language course and offline workshops for learning sign language.

Like to gift your purchase? Buy a gift box with a collection of their products.

Contact: Smriti Nagpal: 099582 66514; email: atulyakala@gmail.com;
website: <https://www.atulyakalaindia.com>



Frames for your wall

You can look beautiful behind a beautiful mask. ArtDarshan, a community of handicrafts artists, sells an assortment of lovely handpainted Madhubani masks designed by Mamta Devi, a traditional artist. Also available are a variety of Madhubani paintings of various sizes, depicting weddings, folklore, rivers, fish and so on with or without a frame. ArtDarshan sells several handmade art items by traditional artists.

Mamta Devi learnt the art of Madhubani in her village in Bihar. Her work is intricate and the colours used are natural. The vibrant red paint is extracted from hibiscus flowers. Mamta Devi creates most of the designs while her family helps with painting. You can buy the paintings online or visit them at Dilli Haat INA where Sunil Jha sells the artwork.

Contact: Sunil Jha: +91 9971984729; email: info@artdarshan.com
website: <https://artdarshan.com>



Civil Society
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TATA STEEL FOUNDATION

Skilling programmes at the **Foundation**, are poised to **Reimagine** and unlock potential

Our journey of partnering the nation's aim to build a technically skilled youth base, is now in its 10th year. Our Industrial Technical Institutes of Tamar (from 2012) and Jagannathpur (from 2017) have ushered a rigor in this vocation among rural youth and in particular, girls from tribal belt in Jharkhand. The need is strong, and so is the appetite to create more bases (the third at Chandil, from 2022), to provide many more trained hands for a resurgent India.

**More than 650 youths
trained and the
journey continues!**

