

Civil Society

AN ECOLOGICAL MAP TO MAKE US THINK AGAIN

DELHI'S GREENER PAST

DELHI'S GREENER PAST

The map includes several key sections:

- ECOLOGICALLY SENSITIVE AREAS:** Lists various forests, public parks, regional greens, and agricultural lands.
- GREEN STRETCHES ALONG RIVERS:** Identifies green corridors along the Yamuna and other water bodies.
- WATERWAYS:** Discusses the Yamuna's historical role and current challenges.
- URBANS OF THE CITY:** Analyzes the city's urban form and its relationship with the environment.
- NEW DELHI - THE CAPITAL CITY:** Examines the planned urban layout and its impact on green spaces.
- SOILS:** Provides information on different soil types in the region.
- LANDSCAPE FOUNDATION INDIA:** A logo for the organization that created the map.

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Harvesting Rain for Profit

Name: Shri Muniraj,
Village: Muthur, Krishnagiri district, Tamil Nadu

Muniraj, a marginal farmer with seven acres of land from Muthur village of Krishnagiri district, had a greenhouse where he practiced floriculture. However, a falling water table meant that irrigation became a problem – especially during summer months even for drip irrigation.

To overcome the problem of insufficient water, Srinivasan Services Trust (SST) encouraged Muniraj to save every drop of rainwater falling on his green house. SST provided technical information and engineering support for creating a pond, next to the greenhouse, large enough to collect six lakh litres of rainwater. To prevent loss by seepage, the pond was lined with a polythene sheet and a shade net was used as cover to help arrest loss by evaporation. The pond gets filled up with 3 days of rain. The water saved in this pond is sufficient for the crop needs for one season.

IMPACT: Muniraj is now financially secure and earns more than ₹30,000 per month. He has built a pucca house and also bought a car. He has become an expert on rainwater harvesting and offers advice to several villages in the area.

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COVER STORY

Delhi's greener past

Delhi used to be a greener and ecologically designed city. To know what the city used to look like we now have a map to plot what has gone missing. It is a guide to better urban planning.

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Civil Society
READ US. WE READ YOU.

What is smart?

AN impression seems to have gained ground that all the solutions to our urban problems can be found in technology. Smart city conferences are being held every other week — even as the quality of our urban life deteriorates. Perhaps we need to think again and ask ourselves what is a smart city really? Does technology, though important, by itself serve the goals of inclusion, better opportunities and a clean environment that our cities are meant to provide? Or should technology be shown its place as a mere tool employed as part of a larger and more thoughtful approach to urban management?

Many of our cities were, in fact, much 'smarter' in the past than they are today. This month's cover story on Delhi is an effort to look back and identify what the capital has lost by way of its natural features and systems and what it can aspire to gainfully bring back. Geeta Wahi Dua and Brijender S. Dua have, through a map, plotted Delhi's ecological history to create a record of those features which once made it a sustainable place to live in. It is possible to find the solutions for the future of our cities in the way we lived in the past.

In the East Calcutta Wetlands, for instance, we have a perfectly modern and natural solution to the problem of sustainably dealing with urban wastes. Dhrubajyoti Ghosh, who devoted his life to promoting this model and trying to save the wetlands, passed away this month. He was a close friend and his passing is a personal loss. But it is also a great loss to the country because Ghosh showed through his work the importance of traditional systems and the need for an interplay between past and present. He deserved national recognition and his work should have been integrated into urban management systems.

The Duas show us that the Delhi of the past was much smarter than the Delhi we have today even though it didn't have access to the technologies that are now available. We must allow ourselves the space to take such journeys of meaningful discovery. Delhi's canals and tanks and integrated water systems which were once built in consonance with the Yamuna have much relevance to our current needs. The Ridge with its forests should get back its pride of place. We should again make the environment central to our thinking and lifestyles. Cities around the world have had such awakenings and re-engineered themselves. Delhi's moment to take a fresh look at itself is now. Delhi can also lead, enjoying as it does a special position as the country's capital city. If it could fix itself it could well serve as a model for other Indian cities, which must first find ecological balance before they can meaningfully be engines of growth, attracting millions to their fold.

Water shortages across the country have inevitably led to disputes over the sharing of river waters. From Goa, we have a story on a spat with Karnataka. At the root of the problem is the failure to treat water as a limited resource and build our lifestyles around that reality. Whether it is what we grow or the cities we build, we would do well to recognise the limits nature has set for us.

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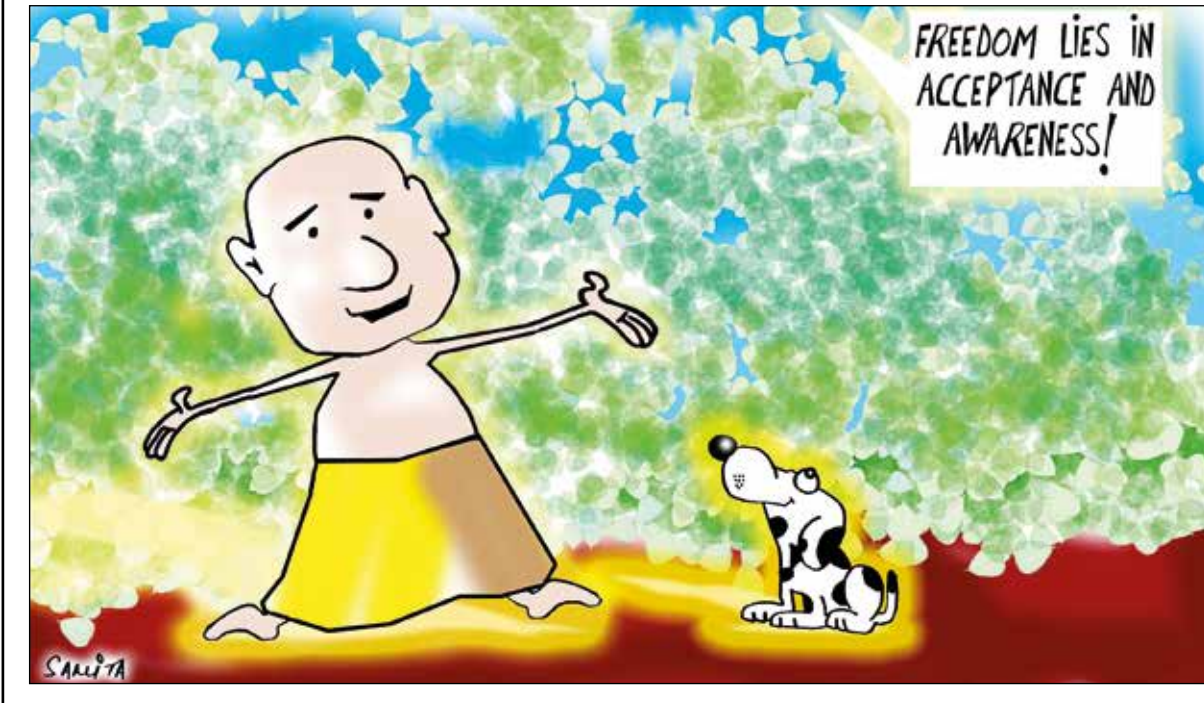
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IN THE LIGHT

SAMITA RATHOR



LETTERS



Passion fruit

Thanks for your cover story, 'Passion fruit boom in Kerala.' This is a good example of enterprise at the grassroots. In fact, farmers can increase their income with help from government agriculture agencies by growing fruits and setting up processing units. They can also form farmer-producer companies. Consumers will get a range of healthy products. Jobs will also be created.

Subhash Shukla

Passion fruit is the way ahead for dryland farmers. Such fruit does not need much water.

Lalitha Rao

This is a revealing story about how a backyard vine like passion fruit turned out to be a money spinner. It also reveals how Kerala is emerging as an enterprising state seeking to

resolve its own job issues.

Radhakrishnan

Inspiring feature on passion fruit based on in-depth field study. Congratulations to Shree Padre and *Civil Society*.

Shivaram Pailoor

Wonderful information for passion fruit growers. Thank you Shree Padre. Anybody interested in buying yellow passion fruit in Bengaluru can contactusat9902916129/9341967172.

Hema Malini

Unjust Aadhaar

With reference to your story, '7 reasons to worry about Aadhaar,' I can say for sure that inclusion is not going to work, digitally or otherwise,

in a society where inequity is the norm.

Sanjay Prakash

The government should pull back from Aadhaar or make it voluntary. This infamous biometric card should be banned from ration shops and health facilities. Both are essential services and don't need identification.

Rati Verma

Stubble trouble

Your article on crop burning in Punjab was very well written. The government must take necessary steps to eradicate pollution by stopping stubble burning.

Subhas Padhi

Agricultural residues can be converted

into compost in four weeks time by using a waste composter developed by the National Centre of Organic Farming in Ghaziabad. The composter makes good manure and can reduce the use of chemical fertilisers. Compost-making is a simple process.

D. Madhusudana Rao

Healthcare debate

Your interview with Dr Srinath Reddy, 'Healthcare should not be a business' was interesting. Dr Reddy's insights into healthcare management in public as well as private healthcare facilities were candid. Government hospitals must face the challenges of accountability.

I agree they can't compete with the comforts offered by private sector hospitals but there is no difference between the two as far as the expertise of doctors, nurses and technicians is concerned.

The article makes multiple references to ethics and morality among medical professionals. All of us, especially the elderly, have gone through these problems.

While one is in hospital no one talks about it for fear that the treatment may get botched up if 'they' get annoyed. After the treatment ends it is the 'let it be' philosophy that operates.

As Dr Reddy says, government hospitals and private hospitals can co-exist but the public healthcare system needs to be made much stronger. For that we need serious commitment by governments and the revival of a few simple traits like honesty, integrity and the willingness to serve.

Amina Kishore

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‘Not just cure, but integrate people with leprosy into society’

Yohei Sasakawa makes another Global Appeal

Civil Society News
New Delhi

EVERY year, on World Leprosy Day, Yohei Sasakawa makes a Global Appeal to end stigma and discrimination against people affected by leprosy. He has been doing this for 13 years with the same passion with which he first took up the cause of leprosy and the ostracism associated with it.

Sasakawa is chairman of the Nippon Foundation. Since 2001, he has been the WHO Goodwill Ambassador for Leprosy Elimination. He was conferred the International Gandhi Peace Prize by the Government of India in 2006.

This year's Global Appeal, made from New Delhi on 28 January, had added punch because it was delivered in partnership with Disabled Peoples' International (DPI) which has an outreach in more than 130 countries. Thus far, the struggle for the rights of people affected by leprosy was a lonely one.

People with leprosy have been embraced by the disabilities movement. From now on they will jointly fight to end the stigma and discrimination associated with leprosy. "Nothing about us, without us," is their slogan. It is an outcome that Sasakawa has been encouraging.

Javed Abidi, Global Chairperson of DPI, said the first issue on their table is getting discriminatory laws against those who get leprosy, repealed. A series of such laws, from the Special Marriage Act to the Life Insurance Corporation Act, discriminate against them. A new law, Elimination of Discrimination Against Persons Affected by Leprosy (EDAP), was drafted by the government in 2015 and is now languishing.

India has about 60 percent of the cases of leprosy globally. India's National Leprosy Eradication Programme, the largest in the world, tackles prevention and detection of leprosy, going door-to-door in villages.

India had achieved the elimination target set by the World Health Organisation (WHO) in 2005 but new cases continue to be detected. The disease can be treated with medicines but the person who is cured remains a social outcaste because of the stigma attached to the disease. People who contract leprosy are forced to live in dilapidated colonies away from villages or urban areas and often beg for a living.

The Sasakawa Foundation works for the welfare of those affected by leprosy by providing education, skill-training, medical help and by fighting discrimination.

Sasakawa says his dream is to build an inclusive society and demolish the walls that separate blighted



SHREY GUPTA

Yohei Sasakawa: 'Young people from leprosy colonies are starting small businesses and are seeds of change'

colonies from the world outside. While in India, he travelled to Jharkhand and states like Uttar Pradesh (UP) and Maharashtra, where there is high incidence of leprosy, to assess progress on the ground.

Civil Society met Sasakawa, who speaks through an interpreter, in New Delhi for an extended conversation.

This is the 13th Global Appeal to end stigma and discrimination against people affected by leprosy. Have we achieved some success?

The uniqueness of leprosy is that it has existed for thousands of years. The word leprosy appears in the Bible, in the Old Testament. This is the only disease with discrimination stretching back to thousands of years. Once a person was diagnosed with leprosy, he or she would be ostracised and abandoned by family members either on an island or in the middle of a desert or up in the mountains. This kind of situation is quite unique to leprosy.

Since 1995, medicine to cure leprosy is being distributed free of cost. If the person who gets leprosy can access this medicine at an early stage he or she can be fully cured without developing the disability associated with the disease.

What are the social successes?

Changes are happening within societies. There is a certain storyline behind our Global Appeal. We felt, not only myself but people working in WHO, that treating the disease was going to solve the problem. But it was not so because society strongly discriminates against people who contract leprosy even if they are fully cured of the disease.

Old laws exist, prohibiting those who were affected by leprosy from getting on a bus or a train or going to various areas. If one's spouse was diagnosed with leprosy, one could even get a divorce. So, we realised treating the disease won't help. Laws and customs still exist in society that discriminate against people affected by leprosy.

That's why I took this up to the United Nations. As a result, we were able to get support from 193 member-countries to pass a resolution on elimination of discrimination against persons affected by leprosy and their family members in the UN General Assembly in 2010 together with principles and guidelines.

My help alone is not going to propagate this information. I needed to work with Nobel Prize Laureates, religious leaders, political leaders, scholars, medical groups... to further this knowledge so that society becomes aware that leprosy is no reason for discrimination. This kind of cooperative effort led us to issuing a Global Appeal. We felt it would be an effective tool to fight against leprosy.

Media support has been critical for propagating awareness. With their help we were able to inform the public about what was happening in the colonies. I will be visiting Jharkhand and what I always do is take journalists along so that they can see with their own eyes the situation on the ground.

It's a difficult problem to deal with. Beyond media what are the subtler, quieter initiatives?

The thing is that leprosy is such an old discriminatory practice that it has become embedded in people's DNA. They believe that it is dangerous. Despite medicine to treat it people are still stuck with the old thought process. Its an obsolete mindset.

In order to get rid of this bias we are working quite a lot on education. At the same time, we are encouraging people affected by leprosy to live in a self-sufficient way so that they gain the confidence to live on their own.

I mean they have actually been discriminating against themselves. They have given up on living because of stigma and discrimination. So, they need to get back their confidence and believe that their lives are worthwhile and they have a right to be living on this earth.

The situation is changing. Young people from colonies where people affected by leprosy live, are starting small businesses. Due to that activity people living around the colonies who don't have leprosy are going back and forth and having more relations with the people in the colonies. Some people now get married to non-leprosy people. So this is the change we have observed.

Do you think young people who don't have leprosy, but come from leprosy-affected homes, are key to changing attitudes? What could be done to speed up this process?

I am travelling to various rural areas in Bihar, Odisha, Maharashtra and UP. In the course of visiting these areas I will meet officials of these states so that I can help them bring down the number of leprosy people who are begging to zero.

The state governments have supported our efforts and are gradually increasing the special allowance for persons affected by leprosy so that they can live self-sufficiently within the community.

Self-sufficient living is going to be key. We

provide vocational training to the second generation living in the colonies so that they can work and earn money. They are enthusiastic about becoming leaders and representing the colonies.

These young people will be key to changing society so that the painful past is not repeated. They are enthusiastic and passionate. Their numbers are not large, but they are the seeds of change.

The downside of human beings is that they always want to discriminate against someone. Young people will have to face it, rectify it and contribute to changing society. If I see that, it will make me absolutely happy.

My final goal is to demolish the walls that separate the community from the colonies. This means integrating persons affected with leprosy with the rest of society. In some areas that has already started. Some people outside the colonies are moving in to live with the people affected by leprosy. So, if that happens more often then the mainstreaming of people affected by leprosy can be done.

‘In the past, although persons affected by leprosy also had disability, they weren't able to join the disability groups either. Even people with disability discriminated against people affected by leprosy.’

In your Global Appeal, you have associated closely with the disabilities movement. Will the emphasis change from seeing leprosy as a disease to seeing it more as a disability?

Globally, there were no nationwide organisations formed by persons affected by leprosy. India is the only country that has one. It is called APAL (Association of People Affected by Leprosy). I encouraged them to get organised so that their voices could be heard by mainstream communities. In the past, although persons affected by leprosy also had disability, they weren't able to join the disability groups either. Even people with disability discriminated against people affected by leprosy.

By forming APAL, we were able to come on equal ground and talk to the disability rights groups. When I mentioned this to Javed Abidi of Disabled Peoples' International (DPI) he said that a person with leprosy is also a person with disability so why aren't they joining DPI? So that led us to work with them for the Global Appeal.

The Nippon Foundation has been working intensely with people with disability. In 2020, Japan is hosting the Olympics and Para Olympic Games. The Nippon Foundation has been involved in training volunteers for the Para Olympics. We need to build an inclusive society. Science has been advancing but an inclusive society needs to grow parallel with it.

The private sector in India has done a lot for people with disability in terms of jobs. What you

see today are changing workplaces in terms of design, access, training. How far has the private sector extended this to people affected by leprosy?

Not yet, but it is not zero. Some years ago, I was very impressed visiting one of Tata Motors' vendor's in Pune. In this vendor's factory around 50 to 60 people employed were persons affected by leprosy. Some of them did not have fingers but they were able to do press work in this factory for Tata Motors.

So there are companies who have the courage to hire people affected by leprosy. If the media covers this example, other companies will come to know.

In Japan, private companies are required by law to hire 2.3 percent of their staff from people with disability. This is to be achieved by March 2021.

A lot needs to be done but the law is actually helping the disabled get jobs. In Japan, government offices have been doing this even before it was extended to the private sector. The private sector, too, had set this target on their own before the law stipulated this percentage.

Is there a fall in the number of new cases?

Actually, in the case of India, the number is growing. But there is a reason for this. WHO had set the elimination target at one patient out of 10,000. Once a country achieves this objective, they call it an elimination achievement.

Many countries have been successful in achieving the elimination goal. However, after these countries achieve this goal if they see a rise in new patients they get cagey. Officials feel the central government will criticise them for not doing a good job.

The person in charge of the leprosy programme starts manipulating the number of new patients so that it stays flat at one per 10,000.

I call this effect the elimination trauma. The reason is that once the country achieves the elimination target they don't want to dishonour it by having a rise in new patients.

But I have started telling people that a rise in new patients is a good thing because there is medicine free of charge that can cure the disease. Why not find patients at an early stage so they can be fully cured? An increase is not a bad thing.

India is one country that has taken action on this. They have begun to propagate that there is a cure and new patients should be found. This action has been led by Prime Minister Modi. A rise in the number of patients means you are finding new patients and doing a good job. As a result, last year India witnessed an increase of 8,000 new patients. Why hide leprosy when there is medicine to cure it. ■



Rajan Kerkar, general secretary of the Mhadei Bachao Abhiyan



The aquaduct that has been built on the Kalasa river

Goa and Karnataka slug it out over water

Derek Almeida
Panaji

NARAYAN Fatu Naik was the lone person wandering around near a gorge excavated at the village of Kanakumbi where the waters of the Kalasa, a tributary of the Mhadei are being diverted to the Malaprabha in Belgaum district in Karnataka.

Naik has lost 7.5 acres to the project. Other families have also lost their fields. But even as they seethe with anger a much bigger battle is taking place between Karnataka and Goa.

The Mhadei, which is also known as the Mandovi, begins in Karnataka but flows into Goa. It is the lifeline of Goa. Diversion of the river has been a long-standing dispute with the decision of a tribunal awaited in August.

But in the meantime, Karnataka has gone ahead and diverted water from the Kalasa tributary, destroying local agriculture and biodiversity and bringing matters with Goa to a flashpoint.

"They paid me ₹18,000 per acre four years ago, part of which went to my lawyer," laments Naik. But his loss is larger. Naik's is one of the 30 families who have lost their land.

Naik and his brothers used to grow paddy as one crop. His fields would yield around 25 bags of grain per year. Today, these lands are covered with red soil dug up with excavators and farming is no longer an option.

Although Kanakumbi's residents like Naik are in Karnataka, they are betting on Goa winning the ongoing legal battle before the Mhadei Water Disputes Tribunal in New Delhi. The last hearings have been completed and an order is expected by August when the term of the tribunal ends.

Unknown to Naik, a political skirmish between the Bharatiya Janata Party (BJP) and the Congress

has fuelled a war of words and political brinkmanship over the Mhadei.

In December, Goa Chief Minister Manohar Parrikar announced that the state was willing to share water with Karnataka for drinking purposes. The statement followed a letter (now public) by Parrikar to Karnataka BJP leader B.S. Yeddyurappa declaring his intent to share.

Parrikar's statement came as a shock to the Mhadei Bachao Abhiyan (MBA), which has been opposing Karnataka's plans to divert water for nearly a decade.

Says Rajan Kerkar, general secretary of the MBA, "Parrikar's statement came as a surprise because he was instrumental in ensuring that the tribunal worked by offering it space at Goa Sadan in Delhi."

As pressure mounted, Parrikar backtracked but Karnataka went ahead and blocked flow from the Kalasa tributary into Goa.

Kerkar is literally Goa's sentinel on the state's northern border. "I was the first person to reach Kanakumbi when work started in 2006 and clicked the first photo," he recalls.

A lot of surreptitious work, being carried out by Karnataka, would have gone unnoticed if not for Kerkar. He was the first person to report on the blocking of the Kalasa tributary by Karnataka in total violation of the Supreme Court and tribunal's orders.

GENESIS OF THE CONFLICT: The fight over diversion of the Mhadei's water can be traced to 2000 when it became public that officials of the Karnataka government had met World Bank representatives on 15-17 June that year. Soon after, a letter by San Francisco-based Sierra Club followed. It urged the president of the World Bank not to fund the project without undertaking "the most rigorous scientific appreciation of this watershed's unique

and priceless biodiversity".

Kerkar, who founded the Vivekananda Environment Awareness Brigade, was also part of the 1999 delegation which convinced the then Goa Governor J.F.R Jacob to notify the Mhadei and Netravalli wildlife sanctuaries. He was an environment witness for Goa at the water tribunal hearings.

As we walked along the edges of the deep gorge in Kanakumbi, Kerkar said, "The Kalasa river has been completely destroyed. Karnataka has dug up reserved forest areas to build a five-km underground conduit to divert water from the Kalasa and Haltara tributaries to the Malaprabha river. All this work was undertaken without clearance from the Ministry of Environment and Forests (MoEF), the National Board of Wildlife or the Planning Commission".

In 2009, Ravendra Kumar Saini, a former Army officer, filed a petition in the Karnataka High Court to stop work being carried out in forest areas. In 2013, the court ruled that since Karnataka had not obtained clearances from the Union Environment Ministry and the National Board of Wildlife all work in forest areas should stop. Karnataka claims that work is being undertaken in non-forested areas.

At stake in this legal battle is 7.56 TMC (thousand million cubic feet) of water which Karnataka wants to desperately transfer to the Malaprabha irrigation project which it claims is water deficient.

Both the Mhadei and the Malaprabha start in the upper reaches of the Western Ghats near Kanakumbi and are a few kilometres apart. While the Mhadei flows westward into Goa, the Malaprabha flows eastward to join the Krishna river.

Karnataka claims that it requires water for the drinking needs of the twin cities of Hubballi and Dharwad. Goa rebuts this claim and alleges that the water is being acquired for irrigation as the twin

cities can easily draw water from elsewhere. Goa is also strongly opposed to the diversion of water from one river basin to another. It is, however, not opposed to water being utilised by Karnataka within the Mhadei basin.

Justifying Goa's stand against diversion of water, Kerkar says, "The Mhadei cannot be compared with the larger rivers that flow in other parts of the country. The Malaprabha has a length of 304 km and a catchment area that is five times that of Mhadei so both rivers cannot be treated in the same manner. Besides, the Mhadei is water deficient."

The Mhadei is 111 km in length and its basin spreads over three states. About 1,580 sq. km. of the river's basin lies in Goa, 375 sq. km. is in Karnataka and Maharashtra has only 76 sq. km.

RISING WATER DEMAND: So, what is Karnataka's game plan? Karnataka's initial demand was for 7.56 TMC which was to be achieved through the Kalasa *nullah* diversion and the Banduri diversion scheme. But it later added an additional requirement of 16.59 TMC to power the Kali diversion and Kotni hydropower diversion. This roughly translates to over 24 TMC which could prove detrimental to the Mhadei river and Goa.

The only way to acquire this much water was by building a series of dams across tributaries and *nullahs* feeding the Mhadei and using gravity to transfer the water to the Malaprabha river through underground aqueducts.

Work on the first dam across the Kalasa to divert 3.56 TMC is already underway. Two minor dams across the Haltara and Potli *nullahs* will augment water in the Kalasa reservoir. The Banduri tributary will be blocked with a dam to divert another 4 TMC of water.

First conceived in the 1960s, the Mhadei Hydro-electric Project was proposed with a dam at Kotni which would, in turn, be used to generate hydropower with a generating capacity of 320 MW.

Lastly, the Kalinadi Hydro Electric Project and the Katla and Palna Diversion Scheme envisage diversion of 5.527 TMC to the Supa reservoir.

"The Kalasa dam will have a height of 32.6 meters and a length of 340 meters," explained Kerkar. "A second dam across the Haltara *nullah* at Chorla at a height of 33.6 metres and length of 200 metres is proposed. Water from there will be transferred to the Kalasa reservoir through a 1,180 metre open channel. This will result in a loss of 178 hectares of reserved forest in Kanakumbi, 14.58 hectares in Parwad and 64 hectares in Koda".

Goa's submissions before the tribunal mention that "at present, salt water ingress and tidal influence is felt almost 36 km upstream in the Mhadei. This corresponds to around 69 percent of the river's length in Goa. A drastic reduction in fresh water flow is a sure invitation for near destruction of the river as tidal influence will advance significantly beyond Valpoi which is 40 km upstream."

The Mhadei basin is also a biological hotspot. It is home to 240 varieties of birds, 40 of which are rare. So far, 40 species of mammals, 50 reptiles, 30 amphibians, 192 butterflies, 31 spiders, 22 fish, four scorpions and three crabs have been listed as endemic and rare varieties. This balance of wildlife is now under threat.

Karnataka is desperate to draw water from the



Narayan Fatu Naik, one of the farmers who has lost his land

Mhadei because the decision to grow sugarcane has dramatically increased its need for irrigation. Agriculture here used to be rainfed and crops were different.

A study of hydrology and water allocation in the Malaprabha, carried out by the Norwegian Institute for Water Research in 2008, bolsters Goa's claim of water mismanagement by Karnataka.

The Malaprabha catchment can be divided into three zones — upper catchment in the Western Ghats (Zone 1), middle catchment (Zone 2) and lower catchment near the dam (Zone 3). Almost 80 percent of the monsoon's river flow is generated in Zone-1 while 60 percent of the post-monsoon runoff is generated in Zone-2 and Zone-3.

The report states, "Most of the water is extracted for irrigation in Zones 2 and 3, which were traditionally rainfed areas, but are now under extensive irrigation, thereby resulting in water

scarcity in the area."

The study further states that a 35 percent increase in water shortage is due to 56 percent conversion to sugarcane as a crop. It also found that, "an average 50 percent reduction in the intensity of water scarcity can be achieved with 56 percent reduction in the sugarcane area."

In 2008, the total demand for irrigation in the Malaprabha basin was 832 MCM while drinking water demand was 53 MCM. The total water available for allocation at 100 percent efficiency is 563 MCM. Since then, demand for water has risen and water scarcity has become more acute.

The math is clearly not in favour of Karnataka. Ten years after construction of the Malaprabha dam, Karnataka realised that the dependable yield of the project had dropped from 44 TMC to 26.6 TMC.

"The state government should have enforced demand side management and ought to have controlled water utilisation, giving highest priority to drinking. Instead, it promoted sugarcane and paddy which are water intensive," says a statement made by Goa before the tribunal.

The initial battle between the two states before the tribunal pertained to the Kalasa-Banduri projects and the drinking water requirements of Hubballi and Dharwad. While Karnataka referred to two inter-state meetings in 1996 and quoted the Deputy Chief Minister of Goa as saying that "it is a good project which will benefit both states", it also did its best to put the drinking water needs of the

twin cities at the top of the agenda. On this ground, it sought removal of the Kalasa-Banduri projects from the dispute before the tribunal.

Goa, on the other hand, wanted the tribunal to also adjudicate on whether the drinking water needs of the twin cities could be met from other reservoirs in the area.

MORE CLAIMS: An added complication to this dispute is the claim by Maharashtra, which is also constructing a dam across the Haltara *nullah* at Viridi. This *nullah* originates in Karnataka, enters Maharashtra near Viridi and after flowing for 6.6 km enters Goa to join the Valvanti river.

Maharashtra, in its submissions to the tribunal, agreed that the catchment area of the Haltara, which lies in Karnataka, almost entirely contributes to the flows in the *nullah* near the village of Viridi. The proposal by Karnataka to dam the Haltara would cut off flows in the post monsoon season and in summer. This would jeopardise water supplies to the inhabitants of Viridi. Maharashtra has laid claims to 180 MCM and argued that in case diversion is allowed then Karnataka must be directed to maintain flows in the Haltara in the post-monsoon season.

Even as the three states battle it out, the village of Kanakumbi is a mute spectator. At this time of the year, the village should have been a picture of greenery. Instead, it is brown all over. The traditional village tank in front of the Maulidevi temple has collapsed. For a village which is totally dependent on agriculture, no one is certain what is in store for them. They continue to oppose the project, but with a population of 1,700, their voice is not loud enough to be heard in Bengaluru. ■

How peace-loving Kasganj went up in flames

An aggressive bike rally disrupted the town's traditional amity

Amit Sengupta
Kasganj

KASGANJ is a quiet and laidback moffusil city in Uttar Pradesh. It is close to Aligarh and about 220 km from Delhi. There are the aromas of *pakoras* and *gujiyas* in its bylanes. People are proud of their friendships and are accustomed to coexisting in shared spaces which they have inherited.

Traditionally, there has been bonding between communities, including Hindus and Muslims. Families know each other and in associations built over time there has been no serious reason for bitterness.

On the contrary it is a city which has celebrated amity. The language is soft and polite, and the people are friendly, eager to talk to reporters like me, share their experiences and listen to stories from Delhi.

The young men disrupted the flag-hoisting ceremony at Abdul Hamid Chowk. Locals say they requested the youngsters to join the ceremony. But they were combative and disruptive and a scuffle broke out.

It is therefore surprising that Kasganj of all places should suddenly be swamped by communal violence and incidents that took place on 26 January, Republic Day. There was arson, looting and the death of a young man, Chandan Gupta, all of which has left people shocked.

Flag-hoisting ceremonies were being performed in many locations across the small city. Most of the police force was deployed at the official Republic Day function.

At the Veer Abdul Hamid Chowk (named after the famous Indian soldier who was martyred during the 1965 Indo-Pak war), the Muslim community had collected donations and were preparing for a flag-hoisting ceremony, reportedly with permission from the authorities.

It was then that trouble started and the Muslims were taken by surprise. Young men on about 70 motorbikes on a 'tiranga rally' roared aggressively into Veer Abdul Hamid Chowk. They belonged to the Sankalp Foundation and the Akhil Bharatiya Vidyarthi Parishad (ABVP).

HOW VIOLENCE BEGAN: The motorbikes had set out from Praful Park at around 8 am. The young men were carrying the national flag and saffron flags. They had taken permission for their

motorcycle rally, but Abdul Hamid Chowk was not on the route that they had said they would take. When they entered the *chowk* there were no policemen to stop them.

The young men disrupted the flag-hoisting ceremony at Abdul Hamid Chowk. Locals say that they requested the youngsters to join the ceremony. But they were combative and disruptive and in the hostility that ensued a scuffle broke out.

A few of the young men were knocked off their bikes and they fled, leaving them behind. The rest of the motorcyclists continued and reached Bilram Gate where bricks were taken from a tractor and thrown.

Soon firing started in nearby localities. Supporters of the ABVP were seen riding motorcycles and firing randomly. It was in this firing that a young man by the name of Chandan Gupta was killed. Naushad, a youngster, was shot in the leg by the police.

In violence that continued the next day, a Muslim man, not belonging to Kasganj and merely passing through the town in his car, was attacked and badly beaten up by a mob. He lost an eye.

Local people I spoke to across communities and even the police have still not been able to identify the person who fired the shot which killed Chandan Gupta. The bullet wound visible on his body was on his left forearm. Did he die of one bullet or more? It is still not clear.

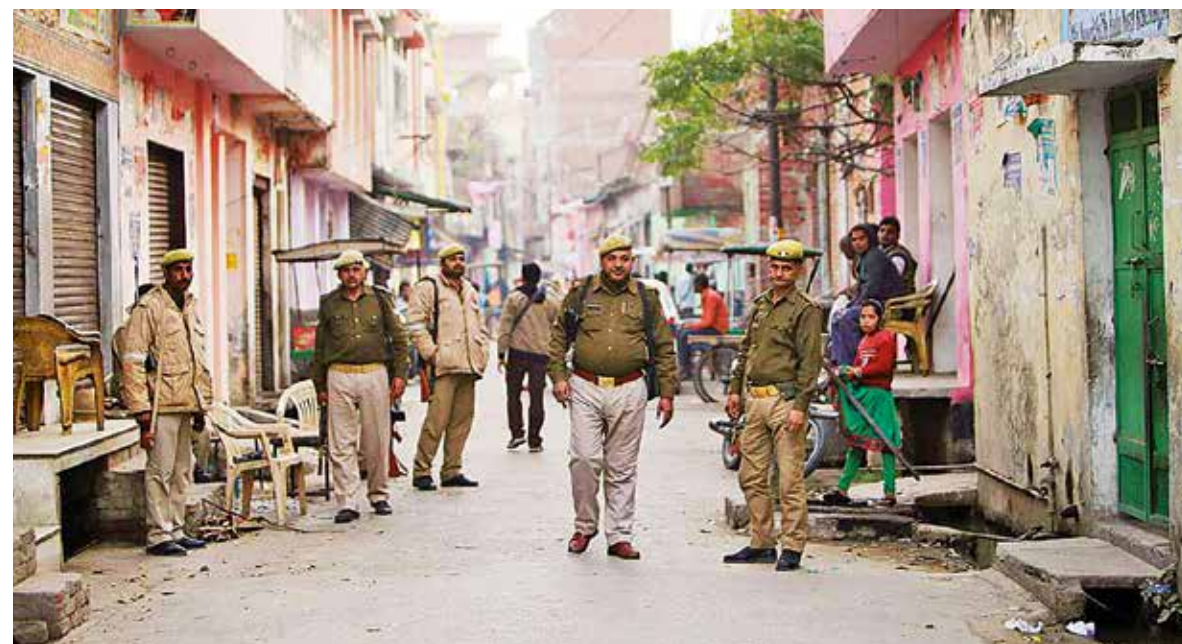
Nor is it clear where he was shot and at exactly what time, or the sequence of events before and after the killing. According to the police, he was shot near the police station at Tehsil Road, close to the house of Salim, one of the accused.

But Salim could not have fired the fatal shot from his two-storied house, which is at a considerable distance. A shopkeeper said he believed that Chandan Gupta was shot somewhere else and his body was transported here.

Salim and his brothers are reputed shopkeepers, respected in the locality. They run a flourishing shop called Barki Cloth House which touches the wall of the Kotwali. His shop was not burnt in the arson that followed the next day; some Muslim shops weren't burnt because their walls were adjacent to Hindu shops.



Buses were burnt and curfew imposed



Policemen patrol a tense street

Salim owns two licensed guns, which he has inherited. Locals say that he has never used them. Until the post-mortem report is revealed, the nature of the bullet-injury and the gun used will not be known.

Muslims said that several of them have been picked up on false charges, allegedly showing them with cartridges and so on and that all the people being accused of the murder are from the Muslim community. One young man this reporter met said he was in Aligarh and he has CCTV footage to prove he wasn't in Kasganj. But, he, too, has been picked up. So has his young, disabled brother.

Another shopkeeper, who runs a samosa shop, said that Chandan Gupta was right there in the morning when the ruckus started. Parents were waiting to pick up their children from the college nearby. They saw the violent crowd approaching, firing shots. "Both Hindus and Muslims got together to oppose them and pelted stones so that

While many stood as silent spectators, several Hindu shopkeepers helped to restore some order in the Muslim shops, putting up locks, bringing back the looted goods and saving whatever money was left in the safe.

they wouldn't reach the college and harm the students. I did not see Chandan being shot here," he said with certainty.

ARSON AND LOOTING: Tension had gripped the town on Republic Day, even as forces were rushed from the police lines. The next day, 27 January, after the funeral of Chandan Gupta, the atmosphere in the town was tense. Many Muslims and Hindus didn't open their shops.

A violent mob ran amok. Two mosques and 27 shops were looted and burnt down. All of them belonged to Muslims. Not a single Hindu shop, temple or property has been damaged. While many stood as silent spectators, several Hindu shopkeepers helped to restore some order in the Muslim shops, putting up locks, bringing back the looted and junked goods and saving whatever money was left in the safe. The famous Chamunda temple of the Hindus, located in a Muslim locality, was protected by the Muslims.

Sherwani Boots, another flourishing shoe shop at Ghantaghar, owned by Mansoor Sherwani, was looted and burnt down. The shop next door owned by a Muslim, Baba Shoes, was partially damaged. Sherwani looks like a broken man. "When a business is destroyed, it is like the death of a son or daughter in the family," said a friend, even as Sherwani withdrew into a tragic silence.

His Hindu neighbour, who owns a clock shop, says he was too afraid to intervene when the looting and violence was going on. "Sherwani *saheb* is a very good man. We are shocked."

Another Hindu shopkeeper right opposite Sherwani Boots was literally in tears. His voice choking, he said, "He is a thorough gentleman. A good and noble man. My heart goes out to him."

Hindu-Muslim unity floats in the debris of

ruined shops. Known for its brotherhood, harmony and peaceful coexistence, people are shell-shocked as to why this violence was engineered.

Despite the violence, there seems little bitterness on the ground. A *mithaiwalla*, deeply saddened, said that his family has been around for 100 years in the town, but they have never witnessed such nastiness.

A jeweller, who has been around for decades, said that he had told Salim's younger brother to go home because the situation was getting tense on the morning of Republic Day.

Almost 181 plus people have been reportedly arrested, approximately 81 Muslims and 40 Hindus. Hindus, too, have complained that their family members were picked up arbitrarily. Muslims were not being allowed to register FIRs, not even those whose shops have been burnt.

They were made to run from pillar-to-post with their typed complaints not being entertained. Sherwani's complaint was not accepted.

The Muslims entered the police station for the first time on 2 February, and their FIRs were officially accepted, when a fact-finding team visited Kasganj and sought a meeting with the SHO.

The SHO made the team wait for a considerable time, despite the fact that the delegation included a retired Inspector General of Police from UP, a senior advocate from the Allahabad High Court, senior journalists from Delhi and Lucknow, social activists and a former JNUSU president.

"We will follow the process of law and justice," said the SHO. "Now the investigations will be taken over by a Special Investigation Team. We have restored peace in the area. We are not biased." ■

The writer was part of the fact-finding team which visited Kasganj on February 2, 2018. He is a journalist and academic based in Delhi.

Samita's World

by SAMITA RATHOR



Democracy Fellows take stock

Bharat Dogra
Bhim (Rajasthan)

ABOUT 50 Democracy Fellows of the Loktantrashala, who have completed the first year of a three-year fellowship, gathered recently to talk about their work among poor and marginalised communities.

The Loktantrashala or School for Democracy has its campus at the village of Badi ka Badiya, a few kilometres from Bhim in the district of Bhilwara in Rajasthan.

The school seeks to promote democratic values through an understanding of the Indian Constitution. It sees itself as a space where adult learners of different backgrounds can delve into the theory and practice of a functioning democracy.

The fellowship programme is one of the Loktantrashala's initiatives and supports work by grassroots activists and organisations.

The fellows bring to the school their diverse and enriching experiences and they take away a deeper understanding of democratic systems and values.

The fellowship is a hugely important aspect of the Loktantrashala's work because it combines practice and theory. Much like mid-career professionals take courses to improve their knowledge, activists who become Democracy Fellows get an opportunity to reflect on their work and the theoretical contexts that define what they do.

The Loktantrashala trains fellows to understand the Constitution and its provisions on equality, justice and secularism. Under the guidance of reputed and experienced social activists like Aruna Roy and Nikhil Dey, fellows also learn about non-violent, peaceful struggles to achieve such rights.

Ramlal Bhat, one of the fellows, comes from the community of traditional puppeteers whose occupation has been badly hit over the years. While some new opportunities have opened up thanks to tourism, on the whole, traditional puppeteers and acrobatic artistes or *nats* have suffered a lot. Ramlal is an exceptional artiste who linked up with the development sector and learnt to use puppets to deliver social concerns and development messages.

The fellowship brought him into closer contact with new associates. Working with them, Ramlal has been able to use puppets in ways that weren't even considered in the past. For example, he has prepared a puppet show on the problems of silicosis patients and how to get them medical relief and help. He has also designed a show on PESA or the special panchayat legislation for Scheduled Areas, which educates tribal communities on issues of

local governance and rights.

Ramlal wants to help other members of his community find opportunities for work. He would like to begin a bigger initiative for traditional puppeteers so he has been visiting colonies where traditional puppeteers and other artistes live.

"I was really saddened to see their plight when I visited colonies in Delhi and Jaipur. Instead of being



Social activist Harsh Mander speaks to students and fellows



Taramani



Ramlal Bhat



Noor Mohammad

provided progressive opportunities our people are being pushed back further. Their houses are being demolished. They had managed to create some space for themselves in these two cities but now they are being marginalised once again," said Ramlal sadly. He is trying to check this retreat and he has also started some social reform activities in his community.

Noor Mohammed is from Tonk district of Rajasthan. He belongs to the *Kalandar* community whose ancestral occupation, making sloth bears dance for amusement, was banned by the Wildlife Protection Act 1972. However, the ban was imposed by the central government without any discussion with the community. No alternative livelihood plan or reskilling programme was offered.

Those earning their livelihoods from the bear dance found themselves stranded without an occupation. Noor Mohammed was also engaged in this work and so he understands well the pain of

giving up pet bears. But the community has to find its feet and decide how to move ahead so Noor has been visiting them in five settlements of Tonk to identify new opportunities.

With help from other members of the *Kalandar* community, he has drawn up a charter of demands. Senior political leaders and officials have been invited to meetings to make a strong case for these demands. Already, some of their demands like BPL classification, land *pattas* and housing, have been partially accepted. This has brought some hope to the bleak life of the *Kalandar* community.

"When I meet so many senior social activists and trainers as part of my fellowship training programme, it gives me a lot of strength to continue my work in my entirely marginalised community. I have a feeling we can get support from friends for our difficulties. They are very sensitive and sympathetic to our problems."

Taramani Sahu is a social activist associated with Jharkhand NREGA Watch. She is based in Simdega district of Jharkhand. Taramani has helped hold social audits in several villages and trained local women in social auditing. She monitors the implementation of food security, livelihood and welfare schemes and programmes. During her work, she has come across several instances where many poor people were denied their rations because of the inherent faults with the Aadhaar system.

Taramani came across the case of Santoshi, a girl who starved to death since the ration shopowner refused to give them their rations because of issues pertaining to Aadhaar. When she drew attention to this hunger death she had to face opposition from

several powerful persons who did not want the truth to become known. But Taramani continued to draw attention to the reality with courage. As a result, the story was picked up by the national media and attention could be drawn to the problems associated with Aadhaar cards and ration shops.

Similarly, other Democracy Fellows have been able to make important contributions in just one year of their three-year fellowship. Suresh Chaudhary has greatly helped disabled people in Rajasthan. Kailash Meena has, at great risk to his personal safety, reduced environmental and health hazards created by stone miners and crushers in Rajasthan. Surekha Gaade has contributed much to the welfare of rag-pickers in Maharashtra. Shen Lang Kharbuli has been able to help organise workers at the grassroots in Meghalaya.

The Loktantrashala's fellowship programme is the only one of its kind for social activists. It is impactful in ways that go much beyond the learning experience at the school. ■

DHRUBAJYOTI GHOSH

The engineer-ecologist

Umesh Anand
New Delhi

IN the many years that the Leftist parties governed West Bengal, they paid little attention to protection of the environment. It just wasn't part of their paradigm for development. They also had no time for anyone who thought differently. In an old-fashioned way, they ran a closed administration and you had to be very brave to want to be out of step.

It was in such circumstances in the 1980's that Dhrubajyoti Ghosh, then a mere civil engineer in the Public Works Department, discovered the garbage gardens and sewage-fed fisheries in the eastern fringes of Kolkata and then took it upon himself to seek their preservation because of the unique service they provided by recycling waste and giving it back as food.

By the early 1980's, Kolkata had begun expanding rapidly. The eastern fringe, because of its proximity to the city's core areas, held special attraction in terms of real estate. Already Salt Lake City had been built by filling up marshlands. A bypass to the airport had been constructed. What remained were the sewage-fed fisheries and garbage gardens and they were in danger of being grabbed and destroyed in the name of urbanisation.

It was Ghosh who singlehandedly staved off their destruction. He brought the world's attention to the enormous ecological value of the recycling taking place. When he passed away in his flat in Kolkata on 16 February at the age of 72, he had spent a lifetime immersed in this cause.

At the time he chanced upon them, the garbage gardens and sewage-fed fisheries had been working for 70 years or more. Sewage flowed to the villages through Kolkata's sewer system which had been designed to slope eastwards in keeping with the city's topography. Garbage was distributed to plots in villages in what was known as the Dhapa Square Mile under an agreement with the municipality.

Several traditional practices had evolved, which though undocumented, were perfectly scientific. Without any formal training, the villagers of the eastern fringe areas had provided a modern solution to the problem of sustainably processing urban waste. They were, in fact, ahead of the rest of the world.

It is interesting that Ghosh should have recognised this with his middle-class upbringing, conventional education as a civil engineer and his secure government job. There was no reason for him to see the eastern areas as anything more than an extension of the city and mere real estate. But he did.

His exposure to the villagers and their practices seemed to help him discover the ecologist in himself. He explained it well in *Ecosystem Management: Toward Merging Theory and Practice*, which we at *Civil Society*

PICTURES BY LAKSHMAN ANAND



Dhrubajyoti Ghosh at the sewage-fed fisheries in 2008



Interlinked sewage ponds and a morning's catch

published under our NIMBY Books imprint.

Ghosh says in his book that he found the villagers of east Kolkata had an altogether different worldview. While wastewater was seen by everyone as a "pollutant", they saw it as a "nutrient". Sewage, when kept standing in a shallow pond with the sun rays playing on it, produced algae on which fish could feed.

The pond also performed the functions of an efficient treatment plant. Water released after 20 days had qualities comparable to effluents from a treatment plant using the best-known technology.

Ghosh continued to serve in government while speaking up for the wetlands. He found his way around innumerable odds, developing allies as he went along. He also earned a good doctorate.

He made a major contribution by mapping the unique ecosystem in the east in 1985 and giving it the

name, 'East Calcutta Wetlands'. The name continues though Calcutta is now officially Kolkata. He also got the fisheries protected under the Ramsar Convention on Wetlands of International Importance.

But the wetlands remain under serious threat because of the absence of government rigour in preserving them. Ghosh's final years were marked by disappointment. If the Leftist parties could not see the sense in saving the wetlands, the Trinamool Congress, which succeeded them, has done no better. Fisheries get taken over and built upon with impunity.

I first met Dhrubajyoti in 1984 while I was hanging around in the State Planning Board in Kolkata in search of a story. It was a chance meeting and I took a lift in his Ambassador car. He mentioned the garbage gardens and sewage-fed fisheries and I said I wanted to go there.

He took me on innumerable visits and each was a magical experience as I learned about the fisheries and the growing of vegetables on garbage. The system provided amazing insights into what sustainability can be for cities.

From being a source for innumerable stories, we forged a close friendship that stretched over 30 years. The last time we visited the fisheries together was in 2008 when I wanted Lakshman and Rita to see the fisheries with him.

We turned that day spent together into a very popular cover story in *Civil Society*. (See *Civil Society* 2008: How to clean a river.) By then he was much older and highly diabetic. But the passion in him hadn't diminished.

We last spoke twice before his passing. He had been in hospital to be treated for pneumonia and a lung infection. He was back home, but he could hardly speak.

Dhrubajyoti Ghosh received many awards. But the one recognition he should have got was for the wetlands to be accepted nationally as a natural and scientific system of urban waste management. It never came. ■

Wayanad has flowers and a fest



Wayanad's flower fest stretches across 12 acres and attracts local and international visitors

Shree Padre
Ambalavayal

A profusion of flowers might just change the destiny of Wayanad, Kerala's most backward district, infamous for drought and farmer suicides.

Thanks to an amazing flower festival taking place here for five consecutive years, the district is likely to emerge as a hub for floriculture.

This year, the flower festival, a cornucopia of colour across 12 acres, was held from 1 to 18 January. It attracted an estimated 500,000 visitors across Kerala and has the potential to become an international event.

Locally called Pooppoli, the festival is organised by the Kerala Agriculture University's (KAU) Regional Agriculture Research Station (RARS) at Ambalavayal.

"The Pooppoli is emerging as the best flower show in the country," said Dr M. Aravindakshan, former Director of Research, KAU, and Ex-Director of the Coconut Development Board.

"The Ooty flower show is confined to roses and cut flowers though it has picturesque botanical gardens in the background. In Bengaluru, the flower show is held in a very small place called a glasshouse," says Dr Aravindakshan. "But here in Wayanad, the festival takes place on 12 sprawling acres with a profusion of flowers, water ponds and amusement options. There are gladioli, aster, chrysanthemum, gerbera, dahlia and about 1,000 varieties of orchids you won't find in flower festivals anywhere else in the country."

One acre was devoted to gladioli alone. Entire families turned up and took selfies with marigolds, dahlias and succulents. Children took boat rides in ponds. The landscape was dotted with installations

K.R. RAMITH

we needed torches to walk through since there would be snakes crawling amidst the wild plants and trees," recalled Dr Rajendran.

Early in his career, Dr Rajendran had worked in the RARS at Ambalavayal for a year. He remembers that from way back then, funds were always a problem. Casual labourers working on the RARS farm used to get only 14 days of work in a year.

When Dr Rajendran was posted here again in 2013, there was an acute scarcity of water. He started two major initiatives almost simultaneously. First, a series of ponds were dug to catch rainwater. A few of these are low-cost ponds lined with jute gunny bags dipped in cement solution. Today, this farm can boast of having as much as 300 million litres of water in its many ponds.

With permission from his bosses, Dr Rajendran obtained external funds and started neatening the farm and making its fields less of an unruly jungle.

The first flower festival was announced for January 2014. "It was more to bring the idle land into cultivation rather than any other objective," he said.

The university did not specially sanction funds for the festival, but Dr Rajendran got permission to use ₹25 lakhs of the funds that were available. That's how the first festival, a modest affair, was held on four acres. Stalls were put up under temporary sheds. Yet, the event earned the university ₹20 lakhs. Year by year, the area for the festival expanded along with the variety of flowers, stalls and sources of revenue.

This year, KAU sanctioned ₹1 crore for the festival. RARS now has permanent halls to house hundreds of stalls and it has been announced that the festival will be an annual feature.

The festival even drew people from overseas. A team of 300 German visitors attracted as much attention as the flowers. "The festival is an opportunity for local people at Ambalavayal to earn. The community here sees it as an essential event," says Dr Rajendran.

"There was no floriculture in Wayanad. But now the district has been deemed a special zone for floriculture by the Planning Board, after noting the performance of flower crops in the Pooppoli," said Dr C. Narayanan Kutty, a professor at the Agriculture Research Station at Mannuthy in Thrissur.

"The event has instilled confidence in farmers that commercial flower cultivation of gladioli, marigold, chrysanthemum, gerbera and so on is definitely possible."

With rubber prices dipping and faced with recurring drought, Wayanad has been searching for options. People are coming to RARS asking for different plants including gladioli.

Wayanad is now famous for its flower festival. But with Dr Rajendran slated to retire in a year, there is a question mark over whether the spirit in which it is now held will persist. ■

Contact: RARS Ambalavayal; (04936) 260 421; Email: adramb@kau.in



Dr C. Narayana Kutty in a cauliflower field

Kerala farmers learn to grow winter vegetables

Cabbage and cauliflower lead in popularity

Shree Padre
Thrissur

MOHAMMAD Kutty of Thoppil Thodi in Pazhayannur panchayat of Thrissur district grows vegetables commercially for sale. This year, he feels like an achiever. For the first time in his life he is eating cauliflower which he has grown on his own farm.

"Since the past one month, cauliflower curry is a regular dish at home. We eat it with *chapati*. The taste is really good. Maybe because it's farm fresh. Generally, we buy such winter vegetables when they are five or six days old," he says.

Shivaprakash Paleppady, a farmer in Kasaragod district is also feeling great. He planted two rows of winter vegetables — cabbage and cauliflower — and both have grown well. The vegetables were a bit small but he could cultivate them without any chemical pesticides. "The size was medium but the taste was notably superior," was his wife Geetha's assessment. Shivaprakash



Farmers with their first harvest of winter vegetables in the Pazhayannur panchayat

minimal use of chemical fertilisers or pesticides. In homesteads, farmers use bio-inputs to check disease.

Ranjit and his friend Sinoj of Mala in Thrissur are commercial vegetable growers who produce a range of vegetables throughout the year. Last year they cultivated cabbage and cauliflower on a commercial scale. Sunil Kumar, Kerala's Minister for Agriculture, harvested Sinoj's team first winter vegetable crop. Sinoj couldn't get land on lease this year but his friend, Ranjit, grew both vegetables on one acre.

"The climate has been just right," says Ranjit. "If it rains, we will land in trouble. Hundreds of households and commercial cultivators now have the confidence to grow winter vegetables." He said most cultivators were using neem-based sprays to prevent insect attacks. A little chemical fertiliser was sometimes used.

THE GROUND BREAKER: When Dr C. Narayana Kutty, Professor, Agriculture Research Station (ARS) at Mannuthy in Thrissur insisted that winter vegetables could grow in Kerala, his opinion was treated with utter disdain. Dr Kutty's optimism came from his experiences at the Indian Agriculture Research Institute (IARI) in Delhi, 15 years ago. Winter vegetables, like cabbage and cauliflower, were being grown on-campus successfully in 40 degrees Celsius. Kutty thought, why can't we then grow these vegetables in Kerala's 35-38 degrees Celsius?

After joining KAU, he suggested they experiment with growing winter vegetables. These vegetables won't grow in Kerala, he was told. We can just buy them from neighbouring states.

But Dr Kutty persisted. Initially, he found it difficult to get cabbage seeds which at Rs 40,000 per kg were expensive. Finally, a person he knew in a seed company gave him some seeds. In 2004-05, he began trials amidst a lot of criticism. He started growing winter vegetables in the backyard of ARS so that if his experiment failed, he wouldn't be publicly ridiculed.

But, wherever the sun shone on his vegetable patch, his crop of cabbages and cauliflowers bloomed. Dr Kutty happily showed these to his director of research who gave him the green signal to go ahead with his experiments.

Dr Kutty went to Israel in 2006 for training in vegetable seed production. "No farmer is given seeds there. The seedling nursery industry is so advanced that farmers order customised seedlings like 'plant with five leaves', or 'seedlings of four-inch height'. They were earning a huge income by exporting seedlings to countries like Russia," remarked Dr Kutty.

He soon hit another roadblock. Seeds of winter vegetables were small, expensive and prone to soil born fungi attacks. Farmers would find it hard to raise seeds for cabbage and cauliflower. Professional seedling production in pro-trays in the nursery was the only solution, he decided. KAU has a standardised method for raising nursery level seedlings.

Continued on page 16



Students at a school in Thrissur used drip irrigation to grow cauliflower

Kutty's successful trials with winter vegetable cultivation hit the headlines. The Vegetable and Fruit Promotion Council Kerala (VFPCCK) got interested. They began producing seedlings in a big way. When the agriculture minister started harvesting big cabbages and cauliflower in his farm, everyone got interested.

At that time, not many knew of pro-trays or vermiculite, a natural mineral used in potting medium to enhance plant growth. Dr Kutty put in a lot of effort to procure pro-trays for further trials. These issues got resolved but the next question was whether farmers would buy the seedlings.

Coincidentally, at this time the Kerala government introduced a series of grow bag farming schemes to increase vegetable production in the state. Seedlings would be needed for the grow bags. Suddenly there was demand for seedlings.

Today pro-tray seedling production technology has spread widely. For example, Joseph U. J., a farmer from Mappalachery near Kanhangad, who dropped out of school, produces thousands of seedlings which he sells on the roadside!

Out of half a dozen winter vegetables, cabbage and cauliflower emerged as the most popular, especially cauliflower. Apart from KAU, the Department of Agriculture and VFPCCK are producing seedlings on a mass scale. Recently, seedling production has started commercially at farmers' level with support from these agencies.

Weeks before winter starts, Krishi Bhavans and agriculture departments in all districts begin producing winter vegetable seedlings. KAU has identified about 30 plus cultivars of cabbage and cauliflower that are tropical types and have proven successful in Kerala. Generally, seedlings of about four to five varieties are mass produced.

Commercial cultivation of these vegetables, in small amounts, has spread to almost all districts. "Cultivation picked up when grow bags became popular in the last four to five years. In remote Panaththadi panchayat at least four to five acres of



Joseph U.J. with a cauliflower and cabbage from his farm

Farmers are growing these vegetables because they are short-duration and off-season crops.

winter vegetables are being commercially cultivated. In Kanhangad block alone around 500 households are growing winter vegetables," said Sajini, Deputy Director, Agriculture, Kasaragod.

This year the ARS at Mannuthy produced 250,000 seedlings. It is estimated that other KAU centres produced about 1.5 million seedlings. Another 3.5 million seedlings were generated by VFPCCK and the Agriculture Department. Also, farmers' groups produced about 3 million seedlings. One acre requires about 4,000 plants. Dr Kutty estimates commercial winter vegetable production must have surpassed 500 hectares.

Both KAU and the Agriculture Department sell seedlings at ₹3 apiece. In Thrissur, the Perumatti Agriculture Society produced five lakh seedlings

and sold each for ₹1. Kasaragod has six centres that sell seedlings. Easy availability of plants has given a big boost to winter vegetable farming.

SALES PITCH AND MARKETING: Currently winter vegetables are bought by local consumers. Each cabbage or cauliflower is sold, depending on its size, for ₹5-40 apiece.

"Since we have an eco-shop, we can sell cabbage and cauliflower at a remunerative price. Regular shops won't be able to sell at this price. If more farmers cultivate such vegetables, marketing will become tough," remarked Joseph U.J. who is cultivating winter vegetables for the fourth year.

Last year Sinoj and his friends sold cabbages and cauliflowers for ₹60 each. This year Ranjit had to settle for ₹25 to 40 per kg. "Cabbage is now available at a cheap price. We could sell ours at a premium because they are grown without chemicals. If we had a variety of vegetables to offer to traders, we would earn more."

This is the second year farmers of Pazhayannur Krishi Bhavan are cultivating winter vegetables. "This time we had a cold winter, and therefore a good crop. Sixteen farmers have cultivated these crops this year. Our cauliflowers weighed 1.25 kg each and the cabbages around one kg each. If we cultivate these vegetables on 10-15 acres, we can sell the crop for a good price. Selling more than that would be tough," said Joseph John Therattil, agriculture officer.

Commercial farmers are keen to grow these vegetables because they are off-season and short-duration crops in Kerala. They can't grow any other vegetables during this period. Cabbage requires 80-85 days to grow and cauliflower can be harvested in 75 days. But apprehension of competition from the usual crops prevents farmers from devoting more land to winter vegetables.

"No commercial farmer will grow these on more than one acre. The simple reason is that winter vegetables grow only in winter," says Dr Kutty. "For farmers of other states, winter vegetables are a peak crop and sold here at a cheap rate. Their labour rates are lower too."

The reason local people like to buy local winter vegetables is safety. Farmers point out their vegetables are mostly free from chemicals. Cabbage and cauliflower are infamous in Kerala for high pesticide content.

Mohammad Kutty who is growing cabbage and cauliflower on one acre each says he does resort to using a little chemical pesticide at an early stage of cultivation. "Commercial farming will require mild chemical pesticides because of the inability to give attention to all plants," he says.

The reason why Kerala can grow winter vegetables with very little use of chemicals is because farmers grow just one crop. "Enemy pests can't continue their life cycle through the year as in regular cabbage growing areas. Growing just one crop is actually a boon from the crop management and health safety point of view. We don't have to worry much about pests," says Dr Kutty.

With winter vegetables being grown in Kerala, dependence on buying them from other states has declined. In the next five years, winter vegetable production will be a regular feature in most Kerala homesteads. ■

Dr Narayanan Kutty; 94956 34953; cnkutty@gmail.com



DCB BANK

Water for Life.

Project Neer at Hirve village was started in Mokhada block, Palghar district of Maharashtra which faced the issue of acute water shortage – resulting in seasonal cultivation and low-income levels, which forced the villagers to migrate in search of employment.

To help solve this problem, here's what we did with our implementation partners and contribution from local communities.

The project set up a water pump along with 1,700 metres of pipelines and also developed drip irrigation grid farming through solar-powered lift irrigation system. This forced the untouched waters from the valley up into the hills, and provided water for daily consumption as well as farming.

The implementation has been a success. Farmers gained access to almost 90,000 litres of water and were able to extend their cultivation cycle from a single Kharif crop to cultivating Rabi crop too. The word spread; farmers from across the river approached Project Hirve, hoping to benefit from it. Together, we covered and cultivated more than 100 acres of land.

The project has had a positive impact on over 400 lives across 9 villages. In addition to extending cultivation cycles, increasing the income levels and reducing migration, access to water has also improved hygiene levels and reduced drudgery.

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DELHI'S GREENER PAST

An ecological map to make us think again

Geeta Wahi Dua & Brijender S. Dua
New Delhi

LOOK around you in Delhi and the city seems to be teetering on the brink of hopelessness. A dying river, fragmented forest cover, dilapidated lakes and water tanks, open sewers, severe air pollution — matters appear to have gotten to the point where it has become difficult to imagine that they could get worse.

But gloomy as the present might be, stepping back in time reveals a Delhi that was quite different. It is instructive to see how the city took shape over centuries by managing its natural resources well. There was respect for topography and a willingness to fit in with nature. The Yamuna was a lifeline and waterbodies and canals served as its extensions. The Ridge enjoyed respect as the tail-end of the Aravalli's and served as a verdant boundary and lung.

Could the urban chaos of today have been avoided if this harmonious approach had been adopted as urban pressures grew? Is it possible that if the long-forgotten past of Delhi were to be revisited and better understood, the future of the troubled city that we now struggle to live in could be different?

Residents have been trying in their own homely ways to restore some balance. They have been working at reviving tanks and ponds. There are efforts to increase green cover. From time to time the Yamuna gets attention. But what if a map of Delhi were to provide a ready reckoner of the important resources and systems that once served the city well? Would it provide better focus and enable us to undo some of our mistakes more purposefully?

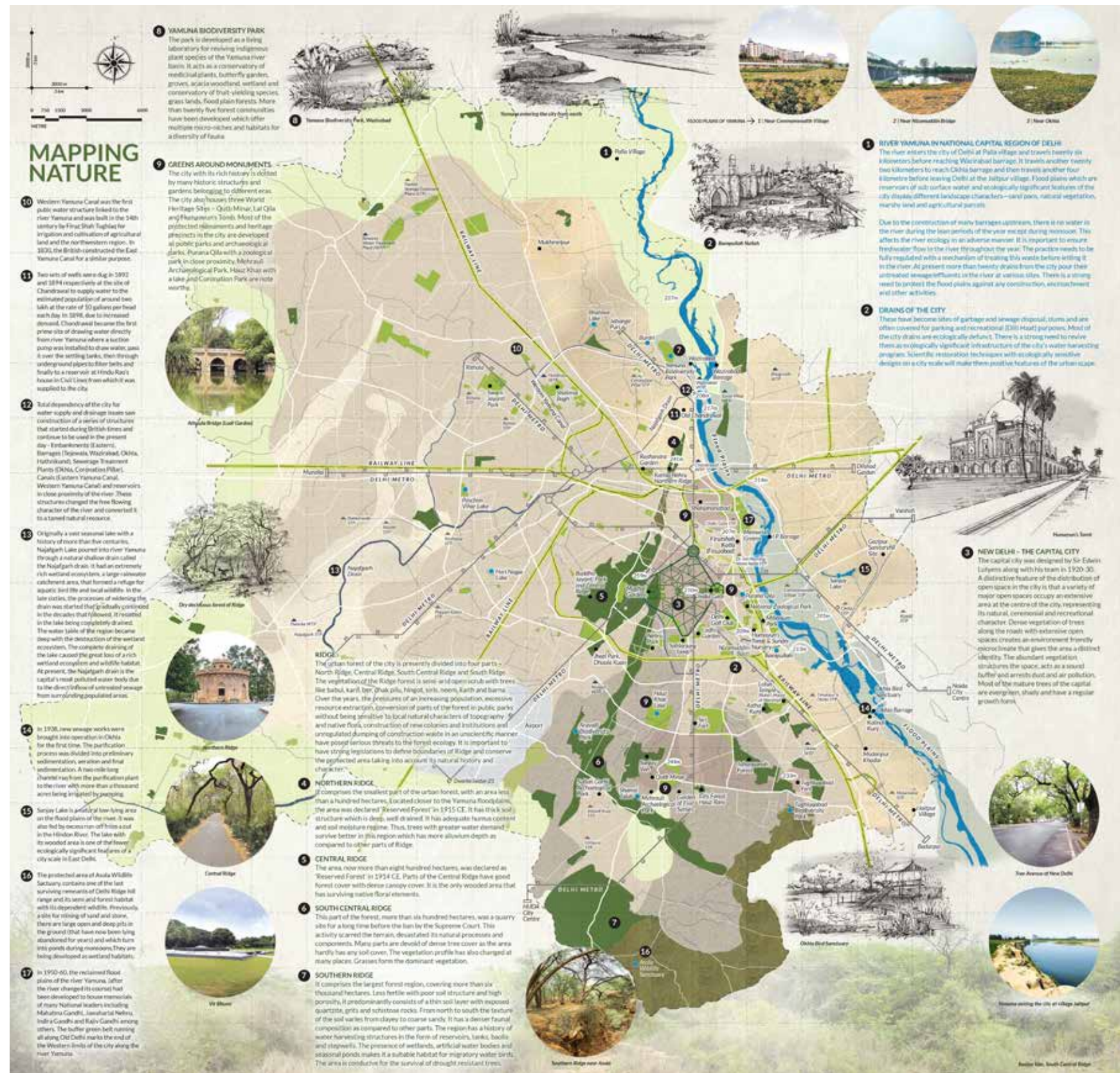
A map plots what we can't see. It helps us figure out where we are. It also helps us choose the directions in which we can go. It serves as a record that future generations can turn to.

Landscape Foundation, a landscape research studio, has conceptualised the *Delhi Nature Map* to trace the growth of the city over 12 centuries, specifically in the context of its changing relationship with nature. Most modern cities have sought to deal with the problems of over-urbanisation by reworking their relationships with nature. Perhaps Delhi could do the same and would be well served by a historical perspective.

STORY SO FAR: The city of Delhi is precariously positioned in the context of two prominent natural features. There is the Ridge, which consists of forests in the foothills of the Aravalli range of mountains entering the city from the south and leaving it near the north. There is also the Yamuna, which flows on the eastern fringe. These two features, with distinct topography, soil type, hydrology, microclimate and vegetation form a diverse landscape.

The earlier settlements of Delhi including Lalkot, Delhi-e-Kunha, Siri and Tughlaqabad were established in the southern ridge forests while the cities of Ferozabad, Purana Qila and Shahjahanabad were founded on the western river bank. In the early 20th century, the new capital city of New Delhi was conceptualised on the site that linked the central part of the Ridge to the river. The city has now grown in all directions, even across the river on the lower eastern side.

In the history of Delhi, there was a self-sufficient public system of water



The ecological map of Delhi

management with natural streams, channels and ponds, many of them draining off into the Yamuna on the east.

Water-harvesting in the arid and dry region was given due value in imperial building projects — tanks (Anangtal, Surajkund, Hauz Khaz, Hauz-e-Shamshi), *baolis* or step-wells (Ugrasen ki Baoli, Gandhak ki Baoli), moats around forts (Tughlaqabad and Adilabad) and barrages and bridges over water channels (Athpula, Satpula, Barapulla).

The topography of the region with the forested area of the Ridge had landforms and natural slopes which were conducive to the formation of such local water-harvesting structures. In earlier settlements, the river Yamuna, turbulent in nature, was never envisioned as the prime source of water supply. Later, when the imperial capital with settlements shifted towards the riverfront (Ferozabad, Purana Qila and Shahjahanabad) the scenario changed.

With the population shifting to the northern side of the city, the Western

Yamuna canal, (coming from northern Hissar) constructed in the period of Feroz Shah Tughlaq along with traditional wells and a few *baolis* became sources of water supply to these cities.

The traditional water structures, located on the southern side of the city, were abandoned. Large water bodies such as the Najafgarh *jheel*, a wetland, dried up over time.

Under the British, with the Yamuna becoming one of the main sources of water supply to the city, the decline of the water system that had survived for more than five centuries, started and never recovered.

The trend has continued till today. Moreover, the surviving water tanks are looked at as potential areas of reclaiming land in the city. The surviving remnants of the past integrated hydrological infrastructure have become defunct, filled with sewage and sludge in isolated pockets. Most of them have been covered by the city's development. As a result, there is a sharp decline of groundwater levels

in the city especially in the south, over the past few decades. The river, now a dead sewer, has become a carrier of the entire city's sewage plus industrial and agricultural effluents. There is hardly any water in it due to the construction of various embankments and barrages to regulate its flow. It has become a defunct ecological feature.

Coming to the other prominent natural features, the role of the Ridge forest in the city till the late 19th century was ecological, productive and recreational. It was the site of the earlier settlements of Delhi with orchards (Mehrauli), hunting grounds (Mahipalpur, Malcha) and agricultural fields. It gradually fell prey to rampant clearing by the British and later to their afforestation drives of exotic species. The trend has continued.

Rapid urbanisation, accompanied by indiscriminate and unscientific denudation, has made the forest fragmented, causing severe damage to its natural flora and fauna and its ecological cycle. Despite rules and regulations, the exploitative relationship that the city gradually established with the river Yamuna and the Ridge has persisted.

WAY FORWARD: There is an urgent need to rediscover the natural assets of the city and take strong measures to save them for posterity while creating ecologically sensitive living environments. Before we think of reviving them, it is important to understand that with changing contexts, the inherent character of these ecologically significant elements have undergone drastic changes. These need to be looked at, taking into account their new physical and ecological contexts.

Climatic conditions are different now. With the drastic increase in population, the city has grown in all directions. The city has a democratic government. All these socio-economic and political factors over time make it amply clear that it is not possible to bring back the original natural character of the city, but the role and significance of these elements in the revival of the environmental health of the bursting metropolis remains unquestionable.

RIVER YAMUNA: The first and foremost step in reviving the river is to allow a steady and adequate perennial flow in it. Flowing water dissolves soluble compounds and transports alluvial and dissolved sediments, enriching the floodplains by depositing silt and sediment, while maintaining its water quality. The path of the river through the city is but a part of its journey through a land with no boundaries. Its core character of flowing upstream through the city and downstream needs to remain the same.

Secondly, floodplains with alluvial soil are ecologically significant areas and are sources of sub-surface water, especially during the monsoon season. They are the sites of diverse riparian flora and fauna. As buffers they allow the river to expand during the monsoons when the flow is maximum thereby minimising flood threats. There is an urgent need to conserve the floodplains of the river against any construction activity.

Thirdly, the Yamuna is the carrier of most domestic, agricultural and industrial waste that comes through more than 20 city drains that pour into it. It is critical to ensure that these effluents are treated in sewage treatment plants (STP) before being released into the river. The idea of wetlands along the river where polluted water is treated by a bioremediation system of ponds, filters and swales before being poured into the river, may also be explored. All these measures, in an integrated manner, will contribute to reviving the river and maintaining its ecological health.

TRADITIONAL WATER STRUCTURES: Traditional water systems of the city in the form of *baolis*, lakes and tanks need to be rejuvenated taking into account their existing context. The tanks and lakes can become catchment areas of surface runoff and treated sewage effluents from surrounding areas, so that they have enough water with appropriate BOD (biological oxygen demand) levels throughout the year. This will help in recharging the groundwater regime. Instead of depending entirely on the river for water supply, the existing lakes can become sources of water supply to small local settlements. Regular desilting, weed removal and aeration methods will keep these water features alive and healthy. All city drains, isolated, interconnected or connected to the river should become ecologically reserved areas, free of any encroachment or part of reclamation land parcels.

They may be developed as wetlands where sewage effluents from neighbourhoods are treated by various bioremediation measures and other techniques. Each of these neighbourhoods, in collaboration with local authorities can have its own strategy to catch the maximum amount of surface runoff during the monsoons. Such water recharges open storm water drains, which, acting as a



The Hauz-e-Shamsi



Delhi's Ridge is its green lung



The bird sanctuary at Okhla near the Yamuna

An Ecological Master Plan can be part of the Delhi Master Plan 2021 or it can be a separate entity that planners, officials and citizen groups can use.

wetland, either recharge the groundwater or take the treated water down to a nearby lake or tank or *baoli*.

Since most of the drains are non-functional, the city is waterlogged even after light monsoon showers. Such a hierarchical and integrated system of storm water management, starting from the neighbourhood level is the need of the hour.

Once the challenges of quality and quantity of water are addressed, each of these water structures can become part of a live water museum where people can understand their significance and value in the past and present times.

RIDGE FOREST: Declaring the Ridge as a reserved forest was a big step in giving legal protection to this natural feature against any further development or encroachment. As mentioned earlier, the British, in the early 20th century, introduced many exotic species of trees including *Prosopis juliflora* (*vilayati kikar*). An invasive species, it grew vigorously in a short time, covering a large part of the Ridge and changing its ecological character.

Afforestation measures may focus on species of trees which are native to the Aravalli region. There are many varieties including *Dhak* (*Butea monosperma*), *Pilu* (*Salvadora persica*), *Babul* (*Acacia nilotica*), *Karil* (*Caparis decidua*), *Ber* (*Ziziphus nummularia*), *Phyllanthus* (*Acacia modesta*) and *Hingot* (*Balanites aegyptiaca*). This will bring back the intrinsic character of the forest along with its biodiversity.

The conversion of parts of the Ridge into manicured lawns and parks planted with exotic varieties which require intensive use of water, needs to be immediately stopped. Where the forest is surrounded by residential areas, parts of it can be sensitively developed with native species in a regulated way while maintaining the natural topography with features like ridges, streams and rivulets.

ECOLOGICAL MASTER PLAN: An Ecological Master Plan (EMP) is a comprehensive dossier comprising of natural resources and use-guidelines for ecologically sensitive and culturally important natural and manmade features of the city. Documentation will include detailed description of each site including mapping its physical boundaries, salient features, history and ecological and cultural significance. Various spatial-planning software and advanced techniques of remote sensing will enable tracking each change and keeping updates.



Ugrasen-ki-Baoli

Conservation and use guidelines will comprise the other part of the dossier. These guidelines, framed by experts (with structured public participation) will specify the long-term and short-term uses, functions and conservation measures for each site. They need to be strongly backed by a framework of laws passed by the state and central government.

All development agencies need to work under the common umbrella of an Ecological Master Plan (EMP). The EMP can become part of the Delhi Master Plan 2021 or it can remain a separate entity. With the involvement of groups of

experts and professionals, citizen groups and official departments, such a dossier will go a long way in enhancing the natural character of the city.

THE PROCESS: Being the capital city and an important urban centre, Delhi's history and transformation over centuries is well-documented. There are many old maps of the city that provide information of the physical character and chronology of its growth. At the same time, there is limited documentation in history about its natural features and their relationship to different cultures. So, it was a challenge for us to cull relevant data from the extensive knowledge available on the city and weave a narrative for the first section of the map, which is the *Journey so far*.

We made a shortlist of archival maps and illustrations from various historical eras to serve our purpose, including Murray's Handbook (1901, 1906), Survey of India Maps (1807, 2010, 2016), Brill Publications and Cambridge University Press, among others.

While referring to them we created hand-drawn maps and sketches with the focus of establishing the link between nature and culture that allowed us to bind the whole narrative, starting from historical times to the present, in a comprehensive way.

Mapping Nature, the second section, is about the present condition of the city. We created a base map with natural features, topography, significant open areas, city forests and the course of the Yamuna by filtering selected features from the Survey of India Open Series Map. We referred to the Eicher Map and Google Earth Map to add main elevations with respect to mean sea level, data for main roads, parks, greens around monuments and ecologically significant sites and to verify the extent and location of some of these sites.

Interpolation of these maps along with other information, gave us the final picture. The routes of the Delhi Metro rapid transit system are marked on the map to orient the readers. It was an exhilarating learning exercise. Each line drawn introduced us to a new facet about the city.

Along with these digitally-created graphics, we developed hand-drawn maps and sketches so that the exhaustive information given does not overwhelm. We have done our best to make the map reader-friendly and easy to comprehend.

Today, all parts of the city of Delhi are well-connected and one can visit almost all areas shown on the map, even the remotest parts. We visited traditional

water-harvesting structures, the old cities of Delhi, the Yamuna riverfront, the Ridge forest, gardens and memorials to document our understanding of the landscape of the city.

Areas like the Lutyen's Bungalow Zone, Central Vista and various historic gardens and precincts are integral to our lives — we visit them for leisure, study them for our academic and professional involvements and travel through them every day. A few of these sites were shortlisted for sketching and photography.

Our research has been a multidisciplinary exercise which has immensely benefitted by useful inputs and suggestions provided by Dr Sunil Kumar and Dr Narayani Gupta, who are eminent historians; Awadhendra Saran, an expert in rural and urban sociology; Manoj Misra, environmental activist, Yamuna Jiye Abhiyaan; Malavika Karlekar, the well-known author; and Dr C.R. Babu, scientist and ecologist. There were many friends and well-wishers whose inputs were invaluable.

TIMELINES: We started working on the map in the months of January-February 2017. We began by understanding the city's history in the spatial-ecological context by reading books on its history and meeting resource people. The project progressed from there. It took us six months before we were ready with the first draft, which was later fine-tuned after taking inputs from experts.

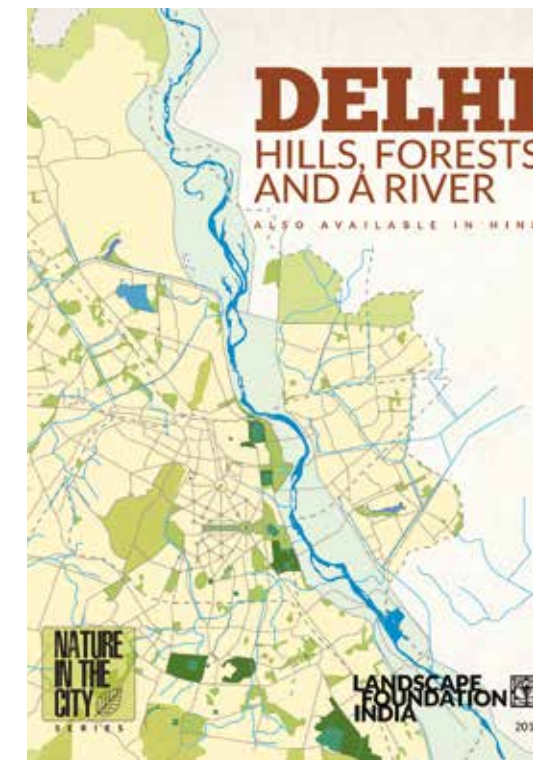
The funding of such research documentation projects is crucial, but we were also clear that this important work should not stop on this account. We tried a crowdfunding platform, with partial success. Friends, colleagues and well-wishers made donations for the project.

We would like to note here that it is challenging for a research studio like ours to develop a sustainable model of funding, and we are on the lookout for companies and other agencies which share our vision

and are ready to support such projects.

In our world of imagination, creativity and intellectualism, we tend to forget that people are the soul of discourse. Research of this kind needs to be accessible to common citizens, set them thinking and spur them to action. The map has been conceptualised as a set of bilingual flyers in English and Hindi. ■

Geeta Wahi Dua and Brijender S. Dua are editors of LA Journal, a quarterly publication on landscape architecture and allied fields in the Indian subcontinent. With a background in landscape architecture and architecture, they also conceptualise diverse landscape research works under Landscape Foundation, a non-profit trust.



The Delhi Nature Map is available from the Landscape Foundation India. Email: landscapefoundationindia@gmail.com

How cool is carpooling?

Orahi stays the course in hope of big gains

Civil Society News
Gurugram

FIVE years ago, Orahi popped up, like so many new-age companies in India, with small money, a big idea and brave founders eager to build a business that would make itself socially relevant by solving a problem.

If the bane of living in the National Capital Region (NCR) was having to endure sapping commutes and terrible traffic jams, Orahi believed salvation lay in carpools that would reduce the tedium and cut the cost of making it from home to office and back each day.

A carpool typically allows four people to ride together in one person's vehicle. Orahi's mobile phone application with nifty algorithms made it possible for anonymous commuters to check each other out, hook up and ride together. Not only was this more interesting than being alone at the wheel or in the backseat of a taxi, but it also served the larger urban goal of fewer personal vehicles being in use. Four people in one car means three cars less on the road.

Orahi's platform offered many firsts for people riding together. It verified users based on the companies for which they worked. It allowed people to choose whom they wanted to travel with. Timings were flexible. It left you free to choose to travel every day or once a week or may be just once a month. You could even switch off and ask not to be disturbed.

The mobile application came with an electronic wallet which made payments instant without having to handle cash. Passengers would pay ₹3.5 a km each to the member of the carpool who was at the wheel who, in turn, would give Orahi 50 paise per km. It happened seamlessly through the wallet.

Orahi has pushed its platform successfully largely for rides between Gurugram and other neighbourhoods in the far-flung NCR. The company has hung in to become perhaps the only serious carpool business in the country. From two rounds of funding, it has picked up a million dollars from the Angel India Network. Friends and family have also put in money.

Even after five years and all the tumult of the early stages of business, much of Orahi's start-up spirit seems to be intact. The founders continue to have the hunger to innovate and make things happen. It also remains a lean outfit with just 13 employees and a few workstations in shared office



Arun Bhati: 'We work with artificial intelligence to learn about the behaviour pattern of users'

space in Gurugram.

But is carpooling the big opportunity it could be in the crowded NCR? Ask around and you will find stories of people who have gainfully teamed up for their commutes. Orahi will supply you with more anecdotal accounts than you could want. The government, too, encourages carpools and sees them as a way of reducing congestion and automobile emissions.

Yet, carpooling seems to have a lot of distance to cover before it can capture the popular imagination and be the big solution that it has the potential to be. Arun Bhati, who founded Orahi along with Sameer Khanna after they gave up jobs at Erickson, says their carpooling business has been maturing. But it is not clear how the numbers stack up. Or why there aren't others getting into the business.

Bhati says Orahi has 200,000 registered users — the surge in users coming in 2016 at the time of the Delhi government's odd-even experiments. But the company won't disclose how many active users there are among the 200,000 and so one doesn't know if carpooling in real usage terms is finding more takers or not.

Of the users, Bhati reveals, 40 percent are drivers and 60 per cent passengers. Women are 22 percent and four per cent of these are drivers. There are 1.5

passengers per car. The top five users do 35 carpooling trips in a month.

Most people travel with one group in the morning and another in the evening because timings don't match. A group could consist of 10 or 15 or 20 people and they rotate travel partners within that group.

"The algorithm has been designed for this kind of number. We work with artificial intelligence to learn about the behaviour pattern of users. The algorithm can match time, location and mode (car owner or passenger). For instance, if you don't travel on Fridays the system learns that about you," explains Bhati.

"The years 2016 and 2017 were great for us," says Bhati, "because of odd and even. We acquired oddandeven.com a website on which there was a lot of traffic. We also worked with the Delhi government and made changes in our application so people with odd number cars could become passengers on even days and vice versa."

The payment model that Orahi began with has been amended. The company now takes a subscription of ₹90 a month from anyone using the platform instead of the 50 paise per km it took from the driver. The passengers continue to pay the driver ₹3.50 per km. But to ensure that short trips

don't become too expensive or too cheap, a floor of ₹22 and a ceiling of ₹89 has been set for trips.

Bhati says users had sought the switch to a subscription model so that they could pay Orahi once a month. Subscriptions also work better for Orahi because it is assured of steady revenue.

Orahi's strength is in an emerging sense of community among users. The demand for subscriptions seems to have come out of such engagement. People have begun to forge friendships and business connections. Happily, the users are well matched and so there haven't been spats and frictions to worry about.

"Fortunately, there are no complaints as such. The system is designed in such a way that people of the same socio-economic segment travel together. Why? Because people staying in a locality have the capacity to pay that much of rent. If they have the capacity to pay that much of rent, their qualifications are also of that type," explains Bhati. "And then they are travelling in the same direction, which means their companies are also of a similar nature. So, people travelling from DLF Phase-V to Cyber City are very similar."

This natural compatibility holds true for people based in Greater Noida, Bhiwadi, Ghaziabad, Rohini, Punjabi Bagh, Dwarka and other neighbourhoods. They all come to a carpool with shared concerns and interests and very similar preferences.

There are always some apprehensions while taking the first ride, Bhati says. But such are the socio-economic similarities that they invariably find it easy to get along. They are also in the same age group of 28 to 35. If they have children, they are roughly of the same age, going to school and so on.

Bhati and Khanna are basically techies. But they were entrepreneurial and drove useful business ideas even when employed. They created an app store with 60,000 applications for Nokia way back in 2006 when the Android and iOS app stores that now exist weren't around.

They have now found multiple uses for the platform that they have created for carpooling. For instance, they have discovered a valuable potential market in schools. For just an additional ₹100 a month parents are happy to track school buses on their mobiles. Alerts announce when a bus has left and when it is arriving.

An even bigger market is in facility management services. Currently most tasks are tracked through physical entries on a list. Was a bathroom cleaned? Was an ATM visited? The Orahi platform makes it possible to track tasks automatically. It is possible to know who is where and when.

A lot of interest in Orahi has come from car companies who see their customers preferring access over ownership. What that means is that more than one person uses a car and only when it is needed. Orahi has valuable experience in building communities and defining preferences.

Real estate companies have also begun seeing potential in Orahi, says Bhati. These companies don't just want to sell a flat or a house, but also want to offer mobility. Carpooling is one such option.

But it is in wider carpooling that Orahi really sees a big opportunity. It would help if the government were to come up with well-defined rules as has been done in other countries.

"If you see other economies, carpooling has

grown very big. In Europe, there are companies which are doing pretty good business. In the US, too, it is quite big," says Bhati. "They very clearly define guidelines for carpooling. We lack these in India."

"For instance, Singapore says you can do carpooling from home to office and office to home,

Bhati. At ₹3.5 per km with four passengers you cannot make money.

Across India, Orahi is probably the only serious carpool company. Others have come and gone and those that exist aren't operating on a significant scale. The reason is the nature of the business.

"One of the biggest challenges with carpooling is



A typical car pool

Orahi's strength is in an emerging sense of community among users. The demand for subscriptions seems to have come out of such engagement.



Most people travel with one group in the morning and another in the evening

which is what we do. Secondly, you can do it twice a day. Thirdly, you cannot stop at public places to pick up people. Similar guidelines exist in UK, US, and China."

Governments have been encouraging and supportive, but they haven't gone the distance to lend formality to carpooling as a business which can contribute to better mobility in a city. Any standards thus far have come from a company like Orahi thinking things through.

"The reason we kept the charge at 3.5 per km is that at ₹3.5 it cannot be a viable business for a car owner. So, if you want to do a taxi on carpooling it won't work. Your cost is ₹8 or ₹10 per km," explains

that it is a Catch-22 business. If you don't have a carpool, people won't come. And if people don't come you won't have a carpool. So, you need to grow a carpool to a level that people come to be attracted to it. That is what we have been able to crack," says Bhati.

But is that good enough? Orahi's success going forward and the extent to which it will grow will be determined by how much of a game changer the company becomes in the stressed domain of urban mobility. In the absence of public transport, opportunities abound. Helping people get around without tears will be good for society and the company's profitability. ■

Taking crabs to market

Derek Almeida
Panjim



Pravyl Braganza near the pond he has taken on lease to rear crabs

WHEN researchers of The Energy and Research Institute (TERI) discovered that two ponds in Batim village were ideal for rearing crabs, they decided to help Goan farmers tap the lucrative market for seafood. Batim is located around 10 km from Panaji, off Highway 66.

The researchers had, as an example, a successful crab rearing scheme supported by UNDP, in Sindhudurg in South Maharashtra. Crabs were being supplied to markets in Mumbai and surprisingly, even to Goa.

Since the climate and water salinity in Goa is similar, it was decided to transfer Sindhudurg's success to Goa. The TERI office of Goa, which undertakes marine and coastal research, got involved. Having worked with the National Bank for Agriculture and Rural Development (NABARD) on mussel cultivation in 2015, TERI approached them for finance and they agreed.

Around 30 farmers were taken on an educational tour to Sindhudurg. "We have a fish farmers group in Batim and had undertaken marine projects in Chapora and Choroa. So we were able to gather a team of 30 farmers and entrepreneurs for the Sindhudurg tour," said TERI fellow Asha Giriyan, who was put in charge of the project.

The Sindhudurg experiment had started with a rapid rural assessment by TERI to ascertain the needs of local communities and entry points into the economy. This study identified areas for crab cultivation in pens, ponds and soft crab cultivation which has high value in the export market.

Following the trip to Sindhudurg, 18 farmers were selected for a five-day hands-on training at the Rajiv Gandhi Centre for Aquaculture in Chennai, the only crab hatchery in the country. Crablets or larvae are produced and sold between ₹10 and ₹21 each and Giriyan said it was better to select the ₹21 variety to reduce mortality during the journey to Goa.

TERI decided to set up a demonstration unit in Goa to show farmers that crab farming was financially viable. This is how Batim came into the picture. Two ponds, taken on lease by Pravyl Braganza, a resident of the village, were selected because of their proximity to a tributary of the Zuari river. Also, the ponds had a sluice gate required for constant flushing. Pravyl was more than willing to be part of the experiment.

First, a thorough survey was undertaken. "We had to check water and sediment quality, sluice gates and location. Experts from RGCA came to Batim and after testing, cleared the ponds for the

project," said Giriyan. "Testing of sediment quality is important because crabs tend to burrow through the walls of the pond and escape if they are too soft. Wild crabs are a tougher lot and burrow through, but the Chennai variety are easier to handle."



With NABARD providing finance of ₹4.26 lakh, around 1,000 crablets were procured and transported from Chennai to Goa. "About two per cent of the crablets were lost during transportation and another four per cent perished during segregation," said Giriyan.

All crabs do not grow at the same rate. Said Pravyl, "Some of the crabs, called shooters, grow quite fast. They have to be taken out and put into another pen. We noticed that crabs of one size tend to fight less." After three to four months when the crabs were large enough, they were transferred to the second pond until harvest time.

During the growing period hideouts in the form of tiles, pipes and rocks have to be provided. If one crab selects a particular hideout, encroachment by others does not occur.

The initial investment can be quite high because pens have to be constructed. Fencing is also important because crabs can easily climb out of the pond and enter the river. The pond at Batim has a plastic-sheet fence on the inside and a chain-link net on the outside. "Crabs tend to climb out in the wee hours of the morning," said Pravyl.

Crabs have to be fed thrash fish and this is a problem in Goa where rates could be as high as ₹300 a kg as compared to ₹10 in Andhra Pradesh. To reduce costs, thrash fish caught at the sluice gate are used as feed. "Feeding is difficult because we have to buy sardines and cut them into fine pieces. I used to let water into the pond to trap small fish which brought down expenses," explained Pravyl.

The harvesting time depends on demand and size. "The longer you keep the crab the bigger it grows, so it all depends on what size you are looking for. A one-kg crab could go for ₹1,000," said Pravyl

who added that the tourism market is a lucrative one.

According to Giriyan the best time to harvest crabs is before the onset of the monsoon because crabs do not grow during the rains. However, this was not possible as the demonstration unit became operational only in

February 2017. "The ideal time for crab farming is between September and May," she said.

So what was the harvest like? "We had two harvests, a partial harvest in August and a second one in December last year," said Pravyl. In all 140 crabs weighing around 350 gms each were harvested.

Although the initial harvest did not impress Pravyl he is enthusiastic about the venture. "I have gained from the experiment, though I did not make much money. However, if you ask me if I am interested in continuing, the answer is yes. If someone invests around ₹5 lakhs in five to six years one could look at a revenue of at least ₹50 lakhs if done properly." Giriyan agreed and said that crab rearing is profitable after two years.

The spread of crab farming is also dependent on land ownership. Said P.V. Sreenivasa, manager at NABARD who was involved with the project, "The problem in Goa is that the farmer is willing but the landowners are residing elsewhere. As a result, large tracts of land are left fallow. The only solution is contract farming."

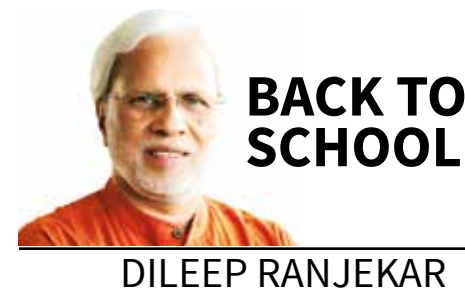
Pravyl faces a similar problem. He has taken two ponds, around 3000 sq mts in size, on a two-year verbal lease from the owner who is in the UK. But banks are not willing to finance projects without a formal lease document. And NABARD does not directly finance projects as the bank's chief aim is to act as a facilitator for rural development.

"One of the biggest challenges in crab farming is setting up of a hatchery," said Sreenivasa. With RGCA being the only one in India, getting crablets is tough. A second hatchery could give crab farming the fillip it is looking for. ■

INSIGHTS

OPINION | ANALYSIS | RESEARCH | IDEAS

We are unjust to our children



WATCHING the Under-19 cricket team in the recently concluded Cricket World Cup was a joy for many reasons. The most important was the brilliant performance of the team in every aspect of the game. They outplayed

almost all the other teams and each match was won with thumping margins. However, what I noticed was their behaviour on the ground. Barring a few exceptions of emotional display, they were a very controlled lot. Yes, there was aggression appropriate to the occasion at times. After all, they are young people between 16 to 19 years old and bound to feel great about their achievements. Probably most striking to me were the interviews of Manjot Kalra and Shubham Gill on their performance. Their mastery over the English language was not great but the content of what they said was simple and very mature.

All this pointed to the culture that was built around them by their coach Rahul Dravid — of continuously striving for excellence, keeping one's feet firmly on the ground and not getting carried away by momentary success.

The biggest congratulations go to their parents who kept aside all norms of the usual traditional standards of education and encouraged them to pursue their area of interest. A preliminary look at their parental background indicates that some of them are in professions that were not at all aligned to sports. Illustratively, the parents of Harvik Desai — the wicketkeeper batsman who hit the inspiring winning shot to clinch the championship — have a tailoring business in the modest town of Bhavnagar in Gujarat since generations. Harvik is also good in academics. It would have been natural for his parents to expect him to pursue his studies and also join the family business. However, they wholeheartedly supported his sporting interest once they realised where his talent and heart lay.

Under the guidance of 'Dravid Sir', the boys learnt hard work, discipline, team spirit over individual goals, confidence, humility and a higher order of thinking that enabled them to realise their potential fully. In the interview, almost 12 hours after the match, some of their parents said they have not been able to speak to their sons. They also said that during the fixtures the boys were not allowed to use their mobile phones. That is focus, determination and concentration!

KNOWN INFIRMITIES: All these are precisely the qualities that our education is supposed to instil but does not necessarily develop.

Scores of parents complain and admit the

We are also aware that examinations and assessment merely focus on rote memory-based performance. And that examinations do not assess abilities such as creative thinking, critical thinking, scientific temper, sensitivity, respect for others, inclusivity, working with people of diverse origin and development of constitutional values (more particularly equity, democracy, socialism and secularism) among children. A large part of the parent and education community is not even aware that developing these abilities is the very essence of education as per our committed education policy. However, we continue to demand unreasonably high performance from our children in a system that is primarily rote memory-based. Even if a child



Dravid and the victorious Under-19 team

Under the guidance of 'Dravid Sir', the boys learnt hard work, discipline, team spirit over individual goals, confidence, humility and a higher order of thinking that enabled them to realise their potential fully.

'meaninglessness' of the way education is happening in thousands of our schools. Parents, members of society, education functionaries and to a large extent the government system knows very well the infirmities in the education system. That there is poor infrastructure, inadequate pupil-teacher ratio, practically no budgets for quality teaching-learning material, low quality textbooks, non-adherence to the norms of the mid-day meal programme and most importantly, inadequate teacher preparation.

scores 80 percent marks in a given subject, we want the child to strive more. We want the children to completely focus on the requirements of their teachers and schools. The children are constantly burdened with the thought of meeting the expectations of their parents, neighbours and teachers.

So they get very little or no opportunity to explore areas that they truly enjoy and instead spend most

Continued on page 26

Continued from page 25

of their energy in going through the rigid motions and rituals set by their schools, teachers and parents. The majority of children are unable to connect their education to real life. Some of them fall behind in understanding the subjects and hence score low in the exams. They find many other extra-curricular and out-of-school activities far more endearing.

All the above creates extraordinary pressure on the children to face assessments of various kinds. Children who are not good at rote-memorisation especially find it difficult to cope with a situation in which they have neither understood the subject nor are they able to rote memorise to perform in the assessments. As such, assessments and examinations become the most dreaded ordeals for such students. Adults can never imagine the stress that students experience in facing their parents and teachers when they know that they cannot meet their expectations. Nor can they confide in them — since in all probability, they would be blamed as being “lazy, incompetent and not worthy of being students” and branded as “failures”.

This unbearable stress often leads to terrible decisions by students such as running away from their homes, falling prey to lure created by undesirable elements in society or, in extreme cases, committing suicide. All statistics in India clearly point out the degree of menace that examinations create leading to students committing suicide. India is among countries where a higher proportion of students commit suicide.

RADICAL REFORMS: This vicious cycle has to stop. We are forcing our children into such decisions for no fault of theirs. We have to majorly correct quality on the supply side. We have to equip our teachers and parents to deal with the complexities in school. The entire draconian system of one time summative examinations that primarily assess rote memory-based education has to be radically reformed. The threatening atmosphere in schools has to change. The school must become a friendly, comfortable place for children that encourages free expression by children. Teachers must become friends, facilitators, mentors and guides who are willing to listen to the children. Discipline has to be replaced by the commitment of students. There has to be a culture of inescapability about commitments by students. There has to be a greater sense of direction and connectedness to real life. We need to create processes that integrate various subjects and disciplines so that children are able to see a compelling need to understand them. We have to radically improve the infrastructure, culture and practices in schools to enable “all round development” of children.

If we don't invest adequately in making school a preferred place to be in and education an enjoyable and yet a rigorous and meaningful process to go through, we are simply torturing our children and then expecting them to develop into responsible citizens of this country.

When we know that the education system is not geared to achieving its goals, when we know we are not preparing our teachers for achieving these goals and that children are not learning what they are supposed to, merely forcing them to go through the motion of learning is an injustice to our children! ■

Dileep Ranjekar is CEO of the Azim Premji Foundation

For insurance to work strengthen primary healthcare



**HERE
& NOW**

SUBIR ROY

THE Union Budget's proposal for a National Health Protection Scheme has generated tremendous interest and excitement. It seems to offer an answer to a formidable problem plaguing India's healthcare system. Two-thirds of what people spend on healthcare comes from their own pocket and treatment of a serious illness invariably leads to a severe financial setback. The poor often cannot afford proper care or, in trying to find a way of doing so, sometimes fall into destitution.

The scheme envisages 100 million not so well off families (notionally 500 million people) getting a ₹5-lakh per year cover for secondary and tertiary care which the government claims will be the “world's largest government funded healthcare programme.” But, along with the excitement, has come a flood of comments from experts arguing that the money would be far better spent on

Private for-profit deliverers will try to game the system by not opting for the least cost path, including undertaking unnecessary tests and procedures, thus maximising their revenue and profits.

strengthening the public health service with focus on primary care and prevention. This scheme, according to the government's own admission, addresses just the apex of the healthcare pyramid.

The logic of focusing on preventive and primary care is simple enough: help people live healthily so that they don't fall ill and when they do, provide care at the lowest level (sub-centres and primary health centres), thus preventing as many as possible from having to go for costlier care.

Delivering this through the public health service reduces costs as the government itself is paying for and delivering what is effectively a single-payer insurance policy covering all, thus eliminating the costs incurred if care is delivered through private insurers. State delivered healthcare does not exclude anybody though the better off can opt for private care of their choosing.

But one reason why it can be practical to at least initially go in for a private insurance-and-hospitals delivered system is the current serious inadequacy of the public healthcare system and the time it will take for the government to build sufficient capacity. Also, there can be intrinsic disadvantages in having to live with a vastly extended government run

system and theoretically it may be more efficient to outsource delivery and supervise it.

THE FAULT LINES: However, even the most ardent advocates of private insurer-hospital delivery will agree that it will be difficult to find private or non-government deliverers in the most farflung thinly populated parts of the country, where primary care facilities must exist. So, quite simply, the government has to do what no one else can or will. The situation obviously changes as you go up the specialisation ladder via district and super-speciality institutions.

A key reason for opting for the private delivery model is the inherent inefficiency of the government machinery in third world countries among whom India belongs. Hence, the overall rational at play since economic liberalisation began, is for the government to stop doing what can well be done by private players.

The argument against bringing in private players is equally powerful. Intrinsically, private for-profit deliverers will try to game the system by not opting for the least cost path, including undertaking unnecessary tests and procedures, thus maximising their revenue and profits, knowing full well that the tab will be picked up under the overall insurance cover.

Indian experience with the Rashtriya Swasthya Bima Yojana (RSBY), under which people are covered upto ₹30,000 and which the new scheme will subsume, bears this out. For example, unnecessary hysterectomy procedures have been reported and patients with minor ailments have been known to be admitted for pointless investigations simply to run through their insurance cover.

The problem with private delivery goes right up the ladder and in recent months, the media has been replete with stories of top corporate hospitals overcharging and mismanaging individual cases. There has been little effort to minimise cost to the patient. For example, patients are charged for consumables at MRP but the large discount that a hospital usually gets for bulk purchase is not passed on to patients. When a patient is covered by insurance, cost control is exercised by third party administrators (TPA) but even then, a patient often has to pay extra for expenses disallowed by TPAs.

If the private delivery route is widely adopted, as is likely, then it can only be allowed with rigorous regulation, something that does not exist today. The Indian system's ability to enforce regulation which



A mohalla clinic in Delhi which provides primary healthcare

is efficient, is not rent seeking and does not act as a bureaucratic impediment is low, across sectors.

If both state and private hospitals are allowed to bid under a system of public procurement of healthcare delivery and successful bidders are paid based on number of patients treated and their polled satisfaction levels, then there is scope for some healthy competition. But to be able to compete effectively, government hospitals need to have the necessary infrastructure and staffing, and their supervisors have to allow their managements the space to function.

BEST AND WORST EXAMPLES: One way of finding out what works is to look at healthcare systems across the world, particularly those that work the best. A study by The Commonwealth Fund (*Mirror, Mirror 2017*) of the healthcare system in 11 of the highest income countries finds the UK,

health insurance. Australian Medicare is like the US Medicare.

In the Netherlands, private insurers pay healthcare costs. They, in turn, are funded by community rated premiums and payroll tax levied on employers. These are pooled and distributed among insurers depending on the risk profile of their customers. This managed competition system is somewhat akin to the insurance marketplace created by Obamacare (Affordable Care Act of the US). The US, despite the recent improvement through the new system which makes it obligatory to take out health insurance, does not offer universal coverage.

While there will be debate about how to run healthcare at the top of the pyramid, what does the budget offer for primary care which perforce has to be mostly government run? The budget allocates ₹1,200 crore for 1.5 lakh health and wellness centres for comprehensive care which covers not just maternal and child health and free drugs and diagnostics, but also treatment of non-communicable diseases. (The latter typically includes diabetes, cancer and cardiac ailments.) To deliver such wide coverage, the allocation is pathetic and looks like tokenism.

The new health protection scheme will be run by the states. They will have to pick up 40 percent of the likely annual tab of ₹10,000 crore and can choose the mode of delivery — a private insurance system or a trust-based system under which a trust set up by a state government supervises and administers the spending. Since these are early days it may be a good idea for different states to try out different models and then winners will emerge.

But there can be no dispute over what is the topmost priority in delivering healthcare. To make a difference, it is the bottom of the pyramid that has to be addressed foremost. The chairman of UK's NHS, Malcolm Grant, with the weight of history behind him (NHS is 70), put it pithily in an interview with the *Indian Express*, “It would be wise to ensure that a significant amount of investment goes into primary care and not into more shiny hospitals.” ■

**WHERE
ARE WE
BEING
READ?**

Civil Society is going places...

Kutch, Porbandar, Chamoli, Bhavnagar, Ahwa, Tiswadi, Amritsar, Sabarkantha, Valsad, Sirsa, Hamirpur, Aizwal, Kinnaur, Dhanbad, Dumka, Palamu, Chamarajanagar, Haveri, Madikeri, Malappuram, Jhabua, Amravati, Kolhapur, Osmanabad, Bishnupur, Dimapur, Rajsamand, Mokochung, Mayurbhanj, Bathinda, Fatehgarh Sahib, Barmer, Hoshiarpur, Jhalawar, Auraiya, Farrukhabad, Lakhimpur Kheri, Pratapgarh, Burdwan, Murshidabad, Pauri Garhwal, Cuddalore, Ireland, Sivaganga, Kancheepuram, Varanasi, Bellare, Erode, Ramanathapuram, Kanyakumari, Lohit, Perambalur, Pudukkottai, Shahdol, Goa, Tiruvannamalai, New York, Nalgonda, Domalguda, Bhutan, Tezu, London, Thailand...

Civil Society

Onus on govt for land acquired



**FINE
PRINT**

KANCHI KOHLI

WHEN people's movements and researchers welcomed India's new land acquisition law in 2013, it came with one caveat. The colonial 1894 law had allowed the government to exercise its powers of eminent domain only for public purpose, whereas the new law made it possible for the government to do so for private companies too. It was concluded that this was made possible by expanding the definition of public purpose to include public-private-partnerships (PPP) within its scope.

A recent judgment of the Gujarat High Court brings out a very interesting facet of the 1894 law. Moreover, the observations of the court have a

for "public purpose" along with clearly defined terms and conditions for acquisition. Separate rules of this section have been defined under the Land Acquisition (Companies) Rules, 1963.

When governments get into such agreements with private companies, one crucial issue on the table is responsibility. Who is accountable when the terms are not fulfilled? These agreements could require a government department to collaborate with a project proponent to achieve legal compliance. Beyond financial contracts these include legal requirements for acquiring land, payment of compensation and taking possession of the land, all of which are critical in ensuring that the acquisition process is complete.

THE CASE: A group of farmers from Jamnagar in the Saurashtra coast of Gujarat had been resisting the acquisition of their land for about a decade. A large Indian multinational had claimed that the farmers who had refused to receive compensation comprised five percent of the land required for the operations of the Special Economic Zone (SEZ). The company claimed it was right, as it had received

(RFCTLARR) Act, 2013. It pertains to situations when land has been 'acquired' under the 1894 law but is in various stages of the legal process of acquisition being complete, i.e. payment of compensation or taking physical possession of land or both.

One such instance is clarified in Section 24 (2). It applies to instances where land has been acquired under the 1894 law, but no compensation has been paid and possession is still with the original landowners for five years (or more) after acquisition. In such cases the proceedings are considered to have lapsed. If the government desires, it can reinstate the process under the new law including the requirement of consent and social impact assessments.

The company, on the other hand, challenged the very constitutionality of Section 24 and called it unreasonable along with extinguishing the right of the company to obtain possession. Their contention was that the old law did not define any timelines within the possession of land. The inclusion of Section 24 in the new law was too sudden and did not give any transition time. The company should not be penalised, it was argued, for the lethargy of the government for not ensuring that possession was handed over.

The central government did not agree with the company's contention. It held that the legal clause had legislative competency and therefore was "constitutionally valid and not ultra vires." It also submitted that their observation was undisputed that possession had not been taken from the appellants farmers.

THE JUDGMENT: All eyes were on the Gujarat High Court and on 11th November the judgment was delivered. The court held that while 24 (2) would apply for all acquisitions made for government use, it needs to be "read down" when it comes to land acquired by the government for private companies.

The judgment gives two reasons. First, the enactment of the new law does not give any breathing time for compliance to a private company. Secondly, the onus of delay rests on the government with whom the private party has entered into an agreement. This is because private companies cannot finalise the acquisition process of notices, compensations and possession on their own, and such processes can be done only through the government. Therefore, if the government cannot meet its obligations, the private company should not be penalised.

Such a judgment has national level implications. It means that all those who are in possession of their land and have not received compensation, just like the farmers in Saurashtra, cannot avail the benefit of Section 24 (2) if the acquisition was for a private company using Part VII of the 1894 law. Today its applicability has been stayed with a challenge in the Supreme Court, and the conclusion there can tilt the balance of justice any which way.

Meanwhile the logic of the Gujarat High Court's judgment is for all of us to debate and deliberate on. ■

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The court held that private companies cannot finalise the acquisition process of notices, compensations and possession on their own. Such processes can be done only with govt.

significant bearing on those seeking repatriation of land that has been acquired but has remained unused for five years or more.

THE 1894 CLAUSE: Few of us knew of its existence. The 1894 law had a specific clause which allowed governments to acquire land for private companies. The specifics have been prescribed in Part VII of the law. This section contemplates that the government can acquire land for private companies provided it is

the required consent from the state government of Gujarat and had deposited the required amount in the government's coffers.

The court had two sets of contentions before it. The farmers had approached the court asking that the repatriation clause specified in Section 24 (2) of the 2013 law should apply to them. This is one of the few critical sections of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement

LIVING

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3 candid films in global fests

Balekempa, Jonaki and Garbage push boundaries

Saibal Chatterjee
New Delhi

THREE independent films, each with a distinctly personal accent, have got Indian cinema off to an encouraging start this year on the international festival circuit. Prestigious slots in the first two major festivals of 2018 — Rotterdam and Berlin — augur well for filmmakers across the country looking for global breakthroughs as they await the other big launch pads of the year — Cannes, Toronto, Venice, Busan, Locarno, Karlovy Vary, among others.

The 47th International Film Festival of Rotterdam (IFFR, January 24 to February 4) hosted the world premieres of debutant Ere Gowda's Kannada film *Balekempa* (*The Bangle Seller*) and Aditya Vikram Sengupta's second directorial venture, the Bengali-language *Jonaki*. Both titles were in the festival's Bright Future Competition section.

Balekempa, the maiden directorial outing of the writer of the critically acclaimed *Thithi* (helmed by Raam Reddy and bestowed Locarno's Golden Leopard in 2015), went on to bag the FIPRESCI (International Federation of Film Critics) award at Rotterdam.

The 68th Berlin Film Festival (February 15 to 25) had one Indian feature film in its programme — *Garbage*, a hard-hitting socio-political drama crafted by Goa-based Qaushiq Mukherjee, popularly known simply as Q. Screened in the Panorama section, which is devoted to stylistically daring, envelope-pushing films, *Garbage* wasn't what the title suggested.

Each of these films — and their directors, all of whom are doing their bit to shake up the complacent, hidebound, insular world of Indian cinema — have emerged from very different backgrounds and employ dissimilar approaches to filmmaking, testifying to the exciting diversity that is intrinsic to the subcontinent's ever-expanding off-mainstream cinema.

Ere Gowda, 36, born and raised in a village in Karnataka's Mandya district, worked as a security guard and a domestic help, plucked coconuts and unloaded goods from transport trucks before he, at the age of 19, landed up in the corporate office of future filmmaker Raam Reddy's father. Raam was only 11 back then. His mother, a social activist, took Gowda under her wings. He began to accompany her on her field trips.

Once the self-taught Gowda's interest in filmmaking peaked and his observation skills evolved, he collaborated (as a screenwriter and casting director) with Raam, an alumnus of St. Stephen's College, after the latter returned to Bengaluru from a stint at the Prague Film School.



Garbage, a film by Q, is a hard hitting socio-political drama

Thithi happened. The film announced the arrival of a new creative force in Kannada cinema.

Gowda, on his part, has taken little time to branch out on his own and give the world a glimpse of what he is capable of as a director. *Balekempa*, funded by Vivek Gomber (who acted in and produced Chaitanya Tamhane's *Court*), draws its inspiration — and characters — from the agrarian society that the first-time filmmaker knows so well.

It tells the story of an itinerant bangle-seller Kempanna, who has little time for his wife Saubhagya. The couple isn't able to conceive. Saubhagya's mother is worried stiff. She prays for divine help. But her faith is of no use without Kempanna's intervention. The man whiles away all his free time with a childhood buddy, while Saubhagya's only companion is a neighbour's teenage son who brings milk to her home. In the close-knit village community, a scandal is inevitable.

In an interview posted on the IFFR official website, Gowda said: "There are so many characters in my life: some I know personally, some I have heard of, and some are in my imagination. In India,

films are about what is good and what is bad. The characters in my head, they are not good people or bad people. They are just people. So, there are these two characters in *Balekempa*. They simply go through life in this patriarchal, rural society."

With the exception of Bhagyashree, who plays the wife, all the actors in *Balekempa*, shot in 40 days not far from where Gowda grew up, are residents of the neighbouring villages. This replicates a strategy that Raam Reddy resorted to with great success in *Thithi* (which had no professional actors).

The cultural sphere in which Aditya Vikram Sengupta, 34, operates is far removed from Gowda's. He grew up in a well-off Bengali family in Kolkata, went to St. Xavier's College and the National Institute of Design, Ahmedabad, and worked as a creative director with Channel [V]. His first feature, the dialogue-less *Asha Jaoar Majhe* (*Labour of Love*), fetched him the Best Debut Director award in the Venice Days section of the 2014 Venice Film Festival.

As a teenager, Sengupta was part of a rock band that often played at venues, including Park Hotel's Someplace Else, where boys of his age weren't even allowed entry.

His new film *Jonaki*, which unfolds in a poetic, *Continued on page 30*

Continued from page 29

surreal, nebulous dreamscape that reflects the director's firm grounding in the fine arts, is about a comatose 80-year-old upper-crust woman. The film imagines what might be going on in her mind as she awaits death. A meditation on thwarted love, loss and memory, *Jonaki* is a deeply affecting cinematic essay that, in order to evoke mood and create a sense of place and time, uses none of the dramatic devices of average Indian films.

"The protagonist of this film," says Sengupta in the Director's Note, "is my grandmother whom I was incredibly fond of and shared an indelible bond with. Chronicles of her life, her affluent upbringing, her authoritarian mother and the loss of her father early were the subjects of my bedtime stories, as I lay beside her. Her most painful narration was her obliterated love for a Christian boy and her forced marriage at the age of 16, which needless to say remained an unhappy one."

"This plot," he adds, "is my imagination of what her thoughts could have been and my portrayal of them while she lay in coma for four days before she bid adieu." *Jonaki*, in substance, spirit and visual texture, bears the stamp of a sensitive, painterly vision, which is projected by the means of hypnotic strokes that may at first defy comprehension, but eventually create an approximation of a fragile, intriguing and meaningful reality.

The cast of *Jonaki* is headed by yesteryears actress Lolita Chatterjee, who debuted in Bengali cinema in the mid-1960s opposite Uttam Kumar before shifting to Mumbai and appearing in films like *Talaash*, *Aap Ki Kasam* and *Victoria No. 203*, and includes the marvellously protean Jim Sarbh, seen in *Neerja*, *A Death in the Gunj* and *Padmaavat*.

With the combative, iconoclastic, controversy-courting Qaushiq Mukherjee, 44, we enter an entirely different orbit. He worked for over a decade in the advertising industry and then ventured into the domain of independent filmmaking. He has succeeded in fiercely protecting the unique space that he has created for himself.

Q's cinema is neither for the faint-hearted nor for defenders of cultural conventions. He believes in using sledgehammer effects to communicate with his audience, which, of course, does not make his films the easiest to watch. *Garbage* obviously isn't a happy ride either.

The film captures the ugliness that has engulfed a polarised India through the story of a Goa taxi driver and social media troll who takes inspiration

from a rightwing extremist Baba and spews venom on his targets. He keeps a woman chained to the wall of his home. He meets a female victim of revenge-porn who has sought refuge in Goa after a sex video has gone viral.

Garbage, Mukherjee's sixth fiction feature, pulls no punches in depicting the devastating fallout of patriarchy, misogyny, religious bigotry and cyber crime. He says: "For the longest time, we lived in this state of ennui where people did not take clear positions. However, in the context of the constant chaos that we're living in these days, the need to



Jonaki is a story of thwarted love



Balekempa reflects on a close knit agrarian community

take sides is becoming increasingly important. There's an imminent threat of this fragile social fabric imploding and affecting everyone. *Garbage* is my way of trying to understand the tension."

He acknowledges the contribution of his actors in adding layers to the story. "About a year back, I lost a few close people in quick succession. Much of their lives, and the bearings of their deaths, have informed *Garbage*. The actors have then contributed tremendously, creating the eventual identities of their characters." The role of the taxi driver in the film is played by the Royal Academy of Dramatic Art-trained Tanmay Dhanania, while the two women are portrayed by Satarupa Das and Trimala Adhikari.

Garbage, says Q, represents a break from the past for him. "This is the first time that I'm trying a straightforward narrative. That is a big step for me since I have in the past knowingly steered clear of this kind of storytelling pattern. This is also the first time the filmmaker in me was not having fun. In my films, on my sets, the angst usually surrounds the protagonist, while the filmmaker is joyous. With *Garbage*, the dark delirium was all pervasive." ■

Bahubali on a hill radiates peace, compassion

Susheela Nair
Bengaluru

IT was an arduous climb up a flight of well-hewn stone steps to the Gommateshwara statue adorning the top of the lofty Indragiri hill or Vindhyagiri. At the base of the hill, a large gateway with images of the Lord carved on a horizontal slab supported by two pillars heralded a welcome.

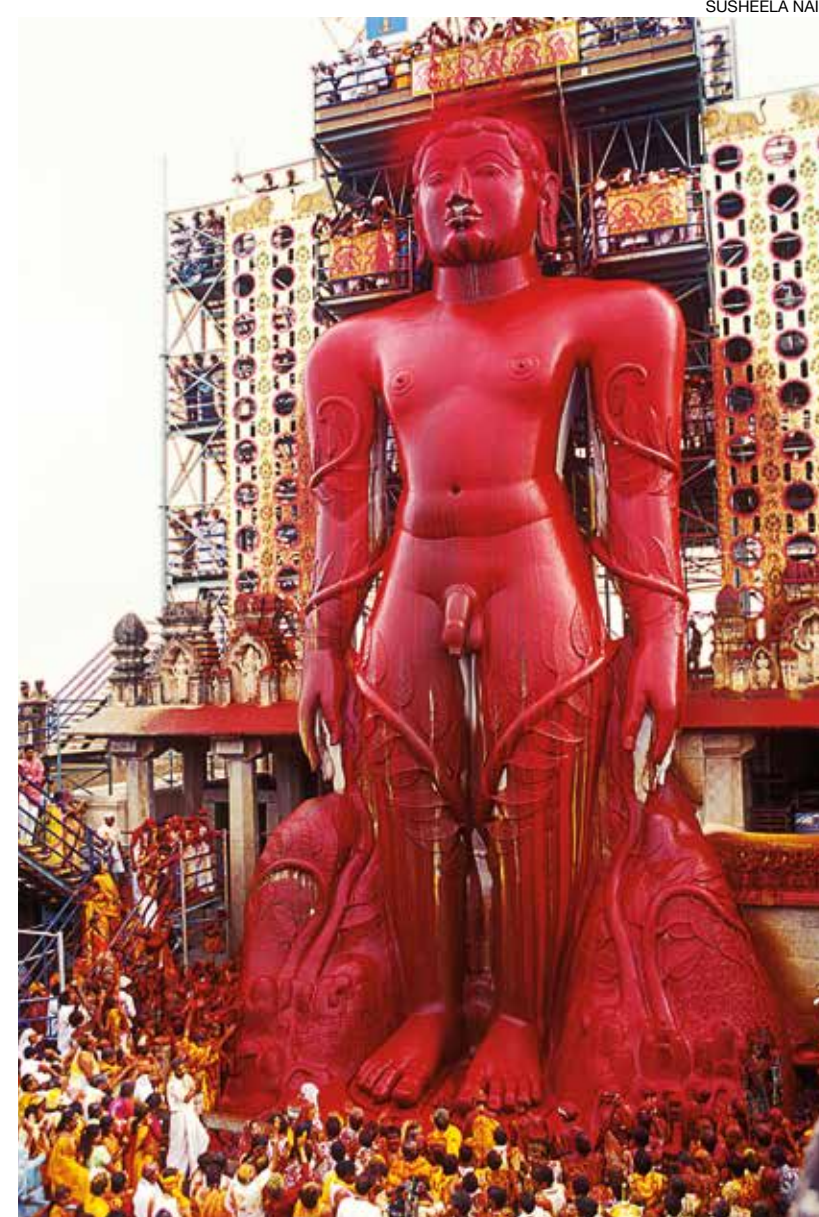
As we climbed higher and higher, we could see Shravanabelagola town down below with its clustered red roofs, clumps of rocks, some foliage and the tranquil green waters of the Kalyani (tank), the central feature of the town. The 17th century tank is believed to have replaced the 'white pond of the ascetic' — the ascetic being Gommateshwara, which gave Shravanabelagola its name. Behind the town rises Chandragiri Hill called Chikka Betta in local parlance. Atop the Chandragiri hill we saw the *mana shaba*, a pillar designed to remind man of his insignificance, and a temple known as Chandragupta Basadi, dedicated to Emperor Chandragupta Maurya.

Besides the magnificent monolith of Bahubali, Shravanabelagola is dotted with ponds, hills several Jain Basadis (temples), myriad monuments and interesting caves. It is one of the oldest and holiest of Jain pilgrimage centres, thronged by devotees all round the year. The town has other claims to fame. It has the largest number of Digamber Jain Basadis and the largest number of inscriptions concentrated in a single centre. The temples here also contain several manuscripts, received as offerings from devout pilgrims.

En route to the summit, we passed a stone gateway leading to Odegal Basadi, the largest Basadi and the only Trikutchala (triple-shrine) temple at Shravanabelagola. As we approached the summit, a stone gate led us to the colossal statue of Gommateshwara in the courtyard. In front of the entrance to the inner enclosure is the beautiful sculpture of Kushmandini Devi with an oval cup in her hands. The statue is of Gullikayajji who forms an integral part of the Bahubali legend.

I stood gazing in admiration at the world's tallest free-standing statue of Bahubali carved out of a rising boulder of granite with meticulous perfection. Interestingly, it appears flawless, almost as smooth as when the unknown sculptors fashioned this work of devotion. Strangely, the face seems untouched. Moulded in colossal calm with a soft smile of benevolence, Bahubali has been showering his benediction and message of peace and nonviolence for over 1,000 years. Oblivious to the vines and creepers entwining his limbs, indicating his deep concentration in meditation, he stands, inspiring awe in worshippers and tourists.

Created at the behest of Chamundaraya, the famed general of King Rachamalla of the Ganga dynasty, the statue was installed and consecrated at the inaugural Mahamastakabhisheka in 981 AD. The colossal figure of Bahubali fashioned by the greatest sculptor of the age stands in detachment, radiating the timeless message of peace, compassion, tolerance and universal brotherhood. There is no



The magnificent monolithic statue of Bahubali

statue in the world that can match the magnificence of the 58.8 feet statue of Bhagwan Bahubali that stands atop the Indragiri hill.

Shravanabelagola transforms into a throbbing city when millions of devotees converge here to participate in the spectacular ceremonies for the Mahamastakabhisheka. The grand spectacle of Mahamastakabhisheka, the ritualistic head-anointing ceremony of Gommateshwara, has been performed since its consecration in 981 AD. The Mahamastakabhisheka is carried out on a selected auspicious day every 12 years — the last one was held in 2006. The second Mahamastakabhisheka of this century (2018) was held under the guidance of Charukeerthi Bhattaraka Swamiji, the spiritual head of Shravanabelagola, and renowned Acharyas with clockwork precision.

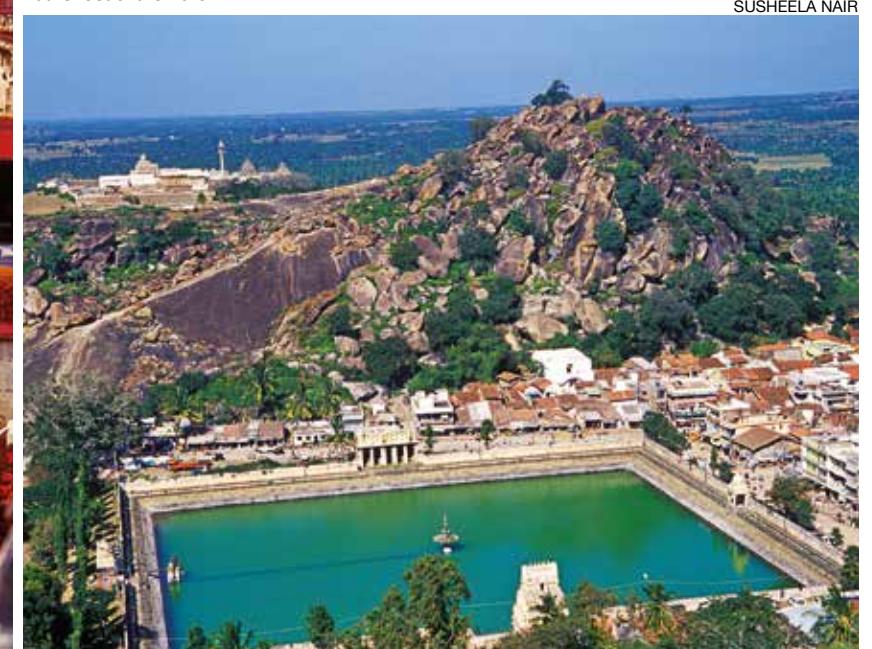
The courtyard in front of the colossus is a spectacular sight. The sacramental worship began with the chanting of hymns when 1,008 ornamental *kalashas* containing pure water were neatly arranged over layers of fresh paddy in a geometrical pattern in the courtyard, below the statue of Bahubali. A coconut with mango leaves

SUSHEELA NAIR



At the feet of the Lord

SUSHEELA NAIR



The town of Shravanabelagola and its historic tank

was fastened to each and auspicious coloured thread was placed on top of each *kalasha*. Clad in saffron and white clothes, thousands of devotees clambered up the specially erected scaffolding rising behind the statue to perform the ritual bathing. At the auspicious time, sacramental water was poured on the towering statue amid scriptural incantations and ecstatic exclamations of 'Jai Bahubali ki jai' by the surging sea of devotees. Some of the pilgrims even made it to vantage points in Indragiri as well as Chandragiri, opposite the Indragiri hills to watch the spectacular ceremony.

With each *abhisheka*, the chanting of devotees became louder and louder, as well as the background beat of drums and the blowing of trumpets. The magnificent monolithic statue of Bahubali looked resplendent when it was bathed in milk, tender coconut juice, sugarcane juice, sandalwood paste and a torrent of holy powders like turmeric, rice powder, *kashaya*, *kesar*, *srigandha*, *chandana* and *ashtagandha*. Each of these substances carries special significance. I stood speechless watching the monolith's features being inundated and changing colour with every application.

Precious offerings of gems, gold, silver petals and coins are also showered on Bahubali as symbols of reverential homage. The highlight of the mega event was the Pushpavrushti — the anointment of Bahubali with 52 varieties of flowers gathered from all over the world! The gentle cascade of flowers was indeed a visual feat! This was followed by *shanthimantra* — the chanting of hymns for the peace and well-being of the world.

As I returned home, I was filled with reverence for Charukeerthi Bhattaraka Swamiji, a gentle ascetic who has made it his life's mission to nurture Shravanabelagola. To promote the study and research of Prakrit literature and translation, he set up the Prakrit Jnana Bharathi Education Trust. The money from the auction of the *kalashas* was used to set up hospitals, colleges, renovation of Jain temples, educational and literary activities, *dharamshalas* and health centres in the surrounding villages. ■

FACT FILE

Getting there

Nearest airport: Mangalore.

Nearest railhead: Shravanabelagola.

Buses are available from major cities in Karnataka.

'We need wildlife and its services to survive'

Civil Society News
Gurugram

PREMA Singh Bindra's book, *The Vanishing*, is a superlative account of the animals and habitats which India is losing. Culturally, Indians worship wildlife and the environment, but, ironically, there is rampant destruction of both.

Bindra has spent years travelling to forests, coastal regions, deserts and mountains to observe a range of wildlife. Under a moonlit sky in Odisha she watched Olive Ridley turtles clambering through a sandy beach to nest. She empathised with a herd of gentle elephants chased from their forest and cornered, till a squad of daily-wagers came to their rescue.

Bindra has been witness to leopards sharing space with people in Mumbai. She has documented the fate of the tiger, tracking its numbers closely. She has also been in touch with the austere and beautiful Great Indian Bustard in the desert.

Bindra served as a member of the National Board for Wildlife for three years from 2010. She was on Uttarakhand's State Board for Wildlife as well. She provides a graphic account of how poorly these boards function and fail to keep vested interests in check. But her book has much more and is worth reading because of her deep empathy for animal life and her multiple journeys to corners of the country.

You travelled across a range of ecosystems for your book. What is it that moved you so much about India's wildlife?

Our wildlife is so rooted in our culture. We are very unique. We worship so many aspects of nature from mountains to rivers to elephants. There is Lord Ganesha, Hanuman, Jatayu the vulture, a temple in Bikaner that worships rats. Given our population, our grinding poverty, wildlife still exists. We have predators like lions, tigers, leopards, bears and elephants despite population pressure. That is remarkable. We have the finest laws though implementation is another story.

My passion for wildlife started with my love for animals. It was rooted in a simple belief that we share the same roof. But our 'civilisation' is built on the exploitation of land and wildlife.

The more you observe animals whether it is a tiger, a *gharial* or an elephant, you realise they are not automated machines, but intelligent beings with feelings. They react and are very protective of their young. They have that intrinsic wildness of spirit and innocence and they don't waste anything. Also, unspoiled wilderness touches your heart.

Its incredible to watch wildlife. In Palamau in Jharkhand, forest guards told me about how elephants tackled a flimsy wooden bridge across a stream. During the summer months the stream would run dry and the elephants would just walk across. But in the monsoon, the stream swelled with water. The elephants realised their young would not be able to cross it. They tapped the bridge repeatedly to test whether it was firm



Prema Singh Bindra: 'Our wildlife is so rooted in our culture. We are very unique'



The Vanishing
India's Wildlife
Crisis; Prema
Singh Bindra
Penguin
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enough for their kids to walk on and only then sent them across while a female elephant walked through the stream and waited on the other side.

We can't survive without wildlife. Look at the ecosystem services that they provide. About a third of our crops depend on animal pollinators be it bees, birds, bats or elephants. In Himachal Pradesh, I was told the number of cold days, the chill

factor, had decreased and it was affecting apple production. There weren't any bees, so the apple orchard owner had to hire a guy with bee boxes for pollination. This guy would be rushing from farm to farm.

Biodiversity makes a forest healthy. The tiger doesn't need us. We need the tiger.

Your book points out that protected areas are shrinking and being fragmented because of development projects. Is there a need to actually expand protected areas?

Definitely. Officially, about 5.6 percent of India is listed as protected area. Within that you have highways, reservoirs, irrigation projects, canals, villages. There is no study but undisturbed pristine area for wildlife would be just around 2 percent.

There are forests beyond this. But, we need to

expand protected areas because not only are they the last havens for wildlife, they are watershed areas from where our rivers flow. India's forests sequester 11 percent of our greenhouse gases. Forests are an effective way of fighting climate change. We need to conserve ecosystems and expand them. Some areas have to be sacrosanct and some multi-use for people's needs.

You also flagged the need to rejuvenate grasslands?

The picture that comes to mind when we think of forests is the rain forest. But grasslands are a critical ecosystem and most neglected. That's where our pastures are and they also sequester carbon. Grasslands are rich in wildlife. Even in tiger reserves if you don't have grasslands your tiger population will decline because that's the habitat of herbivores. Rhinos, the Great Indian Bustard, the *chinkara*, wolves all depend on grasslands.

And wildlife needs corridor space to move.

Yes, otherwise tigers and elephants will become extinct. Our sanctuaries and reserves are very small pockets in human-dense, built-up landscapes. Tigers, elephants and bears are wide-ranging animals. So, at the very least, we need to connect one forested area to another. Otherwise genetically, they will become weaker and weaker

and that leads to eventual extinction, as happened in Sariska. So while the culprit was poaching, it is also a fact that this small island is surrounded by roads and a huge density of villages. There is also mining.

When the tiger population reaches a critical low you need to connect. Ranthambhor was connected to Chambal all the way down to forested areas in Madhya Pradesh but that too is getting fragmented.

So do we need a policy for corridors?

When I was part of the National Board of Wildlife, we were pushing for wise land use in corridors. We actually need that for the entire country. You make these corridors tiger-elephant permeable so that they have safe passage. We aren't saying don't do anything in those areas. You can have agriculture, coffee plantations or tea plantations. But not a cement factory. You don't have to make corridors strict protection areas which is difficult given our population. We know which areas need to be made into corridors. We got a commitment from the prime minister at that time. But nothing happened and then the government changed.

Our wildlife is being squeezed out of its habitat. Why are there so few voices to

protect their forests and ecosystems?

See, currently we are all anti nationals since we question development. Even though this is not the focus of my book, development is not equitable. Is it bringing development to the place that we develop or is it only the industrialist and the miner who comes in and displaces people and wildlife? The lands for wildlife are the only ones that remain. Everyone has their eye on forest land because they are a treasure. There are minerals underneath. It's a resource.

And there isn't any rehab policy for homeless wildlife. But are people being compensated?

See voluntary relocation from core critical tiger habitats is being done in a very comprehensive manner. People are desperate to leave. They don't want to live there. There are no roads or facilities. Those living there want to join the mainstream. I mean why aren't we prioritizing that?

Roads and railway lines crisscross wildlife reserves and mow down wildlife. You have made very valid suggestions on infrastructure projects in protected areas. Were these not put forward when you were a member of the wildlife board?

The maximum number of proposals for giving away land in and around protected areas was for expansion of roads. We said we won't consider any proposal for roads till we make guidelines. It's not easy to say that. A committee was set up to frame rules to govern building of roads in and around protected areas. It was tough but we brought out fantastic guidelines which said that no new roads would be built or old ones expanded in protected areas. Maintain what there is and take mitigation measures such as closing the road at night. The government accepted the guidelines in principle putting in a provision for national interest. But who is following those guidelines? Once a road is built through a protected area, wilderness comes to an end.

You have written about your experience as a member of the National Wildlife Board.

The Ministry of Environment, Forests and Climate Change, officially, on its website lists as its achievements the number of clearances or projects allowed in and around protected areas when its mandate is to protect wildlife. Instead the mandate of our institutions, our watchdogs is being subverted to ease of doing business.

So political will is most critical to save our wildlife and forests?

Absolutely. Today we have collapse of political will. Politics apart, it was Indira Gandhi's leadership in conservation that gave us a legal framework — the Wildlife Protection Act, Forest Conservation Act, regulation of air and water pollution — and a vision for wildlife, environment and forests. You need political will along with the support of local people. ■

Intriguing life of Sister Nivedita

By Anjana Basu

THE fact that her name was Margot was probably forgotten by history — in India no one calls her anything else but Sister Nivedita, that white gowned pillar of rectitude with a string of *rudraksh* beads around her neck. There is a stamp dedicated to her and she is known as Swami Vivekananda's right hand person. Reba Som deliberately uses the short form of Margaret to give her biography a personal touch.

She bases her information on Sister Nivedita's many autobiographical writings. Margaret Noble, when she arrived in India, documented everything she saw and wrote extensive commentaries. From the beginning she was swayed by the magnetism of Swami Vivekananda, fresh from his triumph at the Parliament of Religions. Som says, in fact, that there was a deeply personal connection between Vivekananda and Margot. To deflect this, he declared her a *brahmachari* and inducted her into lifelong celibacy. Margot found his decision difficult but she adhered to it.

Som says the names that she gave Swami Vivekananda are significant — king, master and even father and they indicated the changing nature of the relationship between them. Through Vivekananda she came to know other influential members of Bengali society, mainly the Tagores. Readers may be interested to know that Vivekananda felt that Tagore's poetry weakened the youth of Bengal by its lyricism. The need of the hour was a strong martial body of youngsters as the British did not regard the Bengalis as a martial race in any sense of the word.

Margot's thinking gradually evolved. Initially, she felt that the British could be brought around to accepting the Indian way of thought. Gradually, she became a freedom fighter who insisted that India become independent. Her thinking was reinforced by her contact with figures like Jagadish Bose whose theories were discriminated against by his British colleagues in Presidency College so that his research did not progress. Eventually, he took his struggles abroad and managed to achieve recognition there.

Margot was very often his secretary and editor, helping him set down his work in a way acceptable to foreign audiences. She was, in fact, fairly often involved in putting down or organising the thoughts of others — like Patrick Geddes whom she tried to inspire into more India-centric work. A great deal of the book covers lectures and writings and Sister Nivedita's attempt to win the West over to her trend of thought. Even Tagore, who originally saw her as a superior English governess for his children, was impressed by her fervour.

The lectures and notes interspersed by pilgrimages and voyages do have the effect of slowing the book down. But then Sister Nivedita's life was ultimately one of proselytising rather than one of action — though there is an interesting episode where she encounters Okakura, the visitor from Japan who mesmerises her with his silk kimono and cigars. There was certainly some kind of relationship between Okakura and Margaret Noble, though the unkind said that he jilted her. But, she held steadfastly to her vow of celibacy. Som also points out that the second generation, like her friend's recalcitrant daughter Olea, saw her as an evil kind of influence out to win funds rather than any greater good. ■



Margot
Reba Som
Penguin India
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Dr SRIKANTH

Fighting allergies

ALLERGIES are abnormal reactions of the immune system to substances that are otherwise harmless. When an allergen comes into contact with the body, it causes the immune system to react. Eyes, nose, lungs, skin and stomach are most prone to allergies.

Allergens are foreign substances that can cause an allergic reaction. Pollen, dust, mite and food are common allergens.

Allergic rhinitis is the most common of allergic diseases. Caused by dust, mite, animal dander and pollen, the illness is characterised by a running nose, sneezing, congestion and an itching sensation in the nose, ears and eyes.

Pollen allergy is caused by pollen grains and characterised by early morning sneezing during the pollen season, slight rise in temperature and watery eyes.

According to the World Allergy Organisation, allergic rhinitis and asthma are on the rise in India. Currently, with an incidence rate of 26 percent, allergic rhinitis is more prevalent than its associated disease, asthma, with an incidence rate of 10-12 percent.

With increasing incidences of allergic disorders, it is important to take preventive measures by those who are susceptible.

CAUSES: • Allergies can develop at any age. Common causes of allergy include: pollen, dust and certain animals. • Risk factors: Heredity, environment and pollution.

DIET & LIFESTYLE: • Have freshly-prepared, warm food. Hot soups and lukewarm water will help to relieve nasal congestion. • Avoid stale, junk and heavy food. • Foods like dairy, wheat, sugar, potatoes, tomatoes, peppers, bananas, oranges and grapefruit should be avoided. • Also avoid cold beverages, ice creams and curd. • Ensure covering your nose in dusty or cold surroundings — you may use a protective mask. • Whenever you feel slight congestion, opt for plain steam inhalation for about one or two minutes, twice daily, to avoid flaring up of symptoms. (If you are not

specifically allergic, then you may add a few drops of eucalyptus oil during steam inhalation for faster relief from nasal congestion.)

HOME REMEDIES: • My grandma used to administer the following mixture to relieve us from common cold: quarter teaspoon of turmeric powder, 2 pinches of black pepper powder, half tsp of cow's ghee and 1 tsp of sugar candy powder (mishri) mixed in a cup of hot milk 2-3 times in a day. This is easy to prepare and an effective remedy! • Consuming half teaspoonful of Indian gooseberry (amla) fruit powder with 1 teaspoon of honey, twice daily regularly will be helpful, especially during the susceptible seasons. • Boil 8-10 fresh leaves of holy basil (tulsi) and 1 teaspoon of freshly grated ginger in a cup of water. Reduce the liquid to half. Strain and add half teaspoon of sugar candy powder (mishri) and drink lukewarm twice daily, substituting it for your regular tea/coffee.

AYURVEDIC MEDICINES: Ayurveda has answers for allergic respiratory disorders. There are many preparations explained in the textbooks of Ayurveda that are useful in the management of allergic respiratory disorders. Herbs like haridra (turmeric) and tulsi (holy basil) are widely used to treat such disorders.

A compromised immune system is the usual culprit in allergic respiratory disorders. To improve one's immunity, any of the following may be taken and continued for about 3 months: • Amrita sattva (Giloy sattva) or Samshamani vati (Baidyanath) or Guduchi tablets (Himalaya) — 2-0-2 tablets, to improve immunity. • Chyavanaprasha (Himalaya/ Kottakkal), Dasamoola rasayana (Kottakkal) 1 tsp, twice daily about 1 hour before meals — this works as a tonic to boost the immune system. • Brihat Haridra khanda (Baidyanath/ Kottakkal) 1 tsp in a cup of hot milk/ water — twice daily.

In addition, for faster relief from symptoms like sneezing and running nose, Lakshmilvas Ras/ Maha lakshmilvas ras (Dhootpapeshwar/ Dabur) — 1 tablet thrice daily will be helpful.

Personally, I've got encouraging results with a combination of Septilin and Bresol (Himalaya). Both are available as syrup/tablets. • For children, Septilin and Bresol syrups — both 2 tsp, thrice daily till symptoms are completely relieved as a curative and 2 tsp, twice daily as a preventive during susceptible periods. • Adults can consume tablets — both Septilin and Bresol 2-2-2 tablets in case of severe symptoms and 2-0-2 tablets as preventive therapy. • Bresol NS (Himalaya) spray/ nasal drops is quite helpful in instantly relieving nasal congestion. It can be used 3-4 times daily for symptomatic relief. ■

Dr Srikanth is a postgraduate in Ayurveda and has been a consulting physician for the past 17 years. He is currently National Manager, Scientific Services, at The Himalaya Drug Company

PRODUCTS

Versatile clay



SH and Monali Roy graduated in nistry but they fell in love with racotta. "Frankly we had little interest in pursuing careers in chemistry," says Rajesh sitting in his small stall in Dilli Haat's Dastkari Haat mela. rracotta is quite a craze in Kolkata. We nd the clay to be beautiful and we too decided to try our hand at sculpting it into useful products."

Rajesh and Monali taught themselves to make a variety of arty stuff from terracotta. They painted each piece with delicate motifs embellished with beads, sequins and thread. They set up a tiny workshop at home and now employ two people. The name of their micro-enterprise is Pallet and their slogan is 'colour your mind.' Pallet produces a range of jewellery: earrings, necklaces, rings and more. Their wooden bangles, each piece painted intricately, are especially attractive. Pallet also makes murals on terracotta. On one slab a number of pictures are painted that depict stories of weavers, potters, fishermen



and so on. "These murals are for children," explains Rajesh. "Its an artistic way of telling them a story." The murals combine a number of folk art traditions from Warli and Madhubani to the Gond style of art. Prices of all products are very reasonable. ■

Contact: Pallet, G-27/1Upper Ground Floor, Aruna Park, Shakarpur, Delhi-110092; Phone: 9811546336, 9818275876 Email: rajesh.monali@gmail.com

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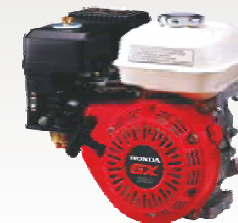


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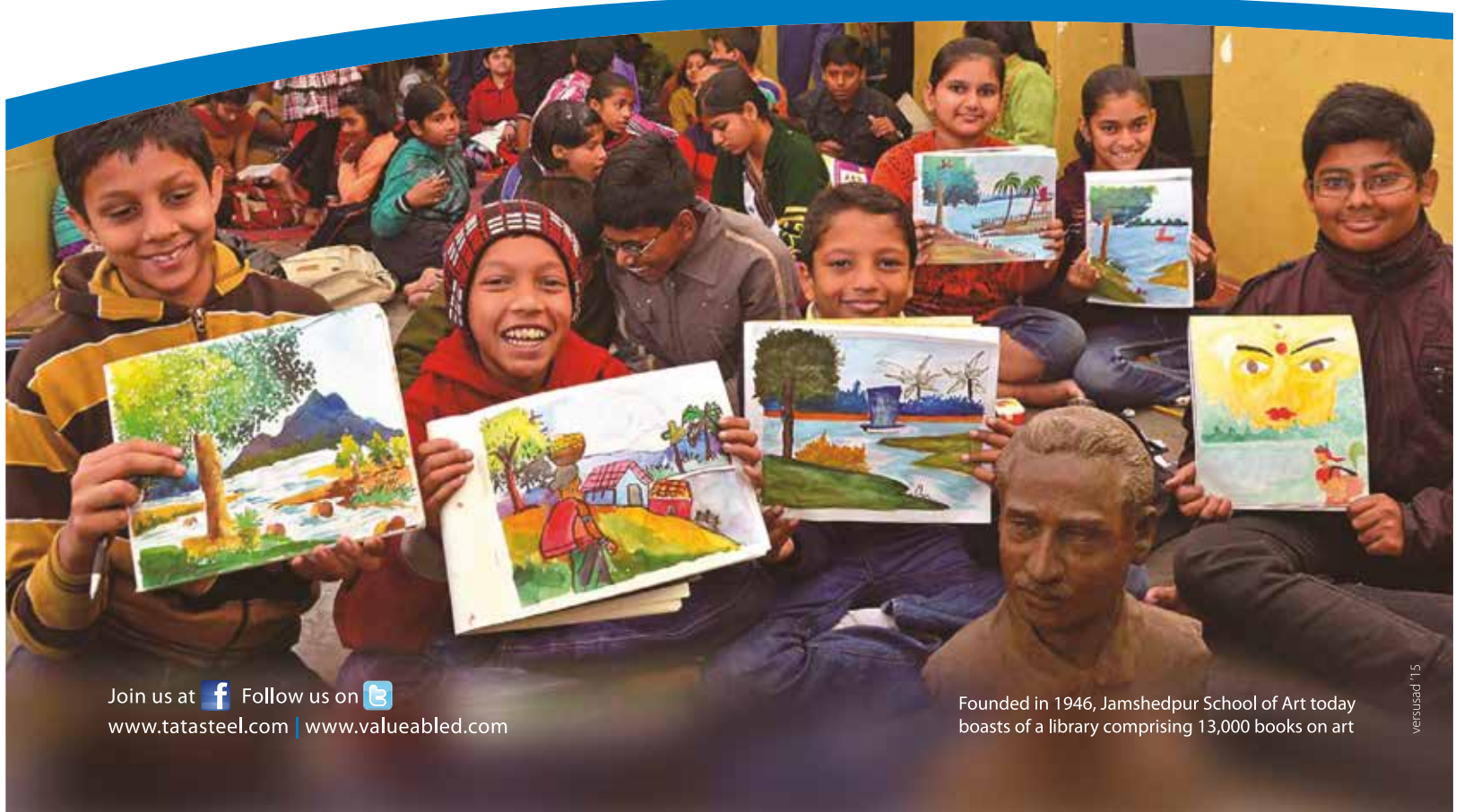


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Founded in 1946, Jamshedpur School of Art today boasts of a library comprising 13,000 books on art