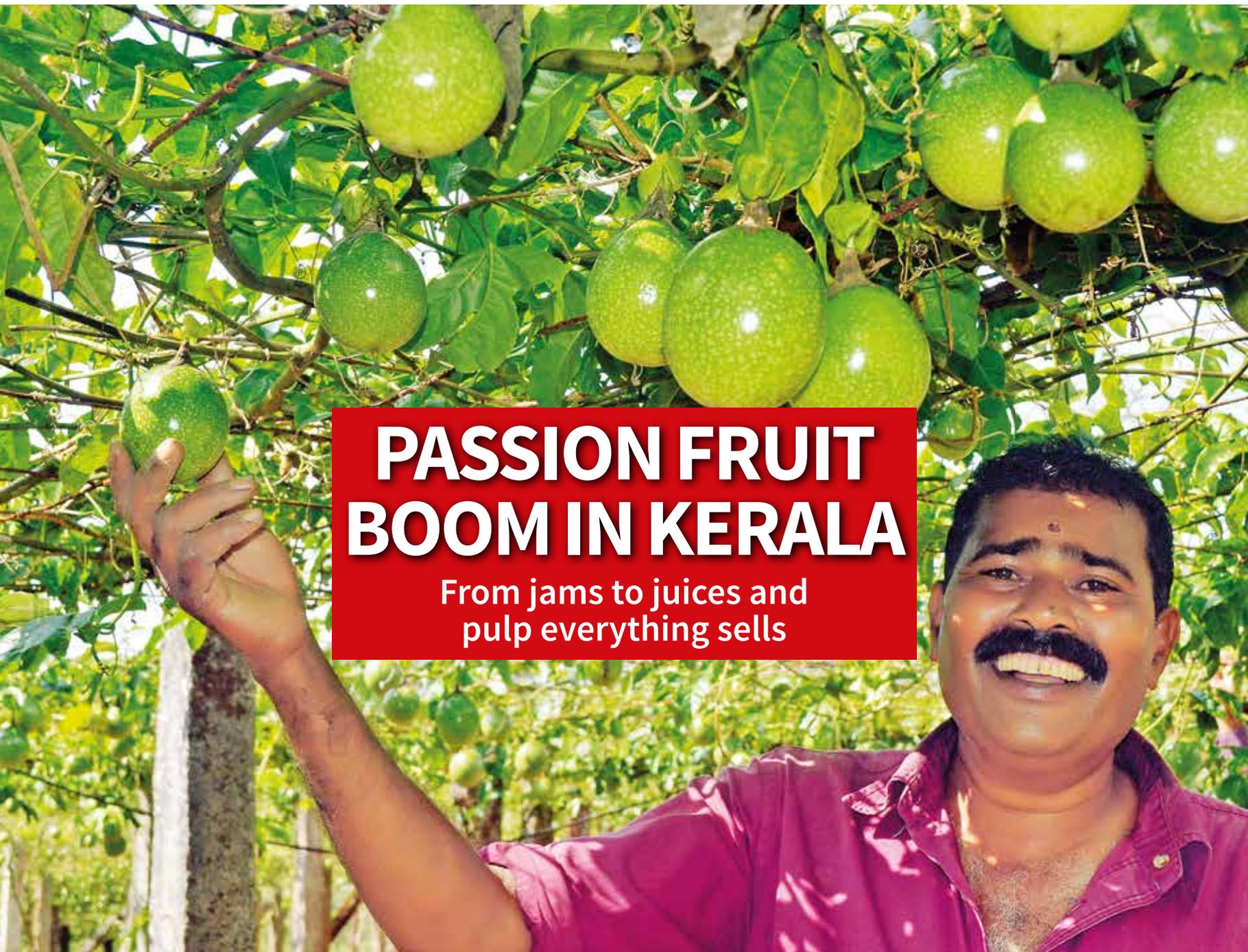


Civil Society



**PASSION FRUIT
BOOM IN KERALA**
From jams to juices and
pulp everything sells

AADHAAR A BLUNDER?

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PANAJI'S MANY PLANS

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TYRANNY OF TEXTBOOKS

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SMALL FILM WINS HEARTS

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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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Passion fruit is attracting investment in Kerala, driven mainly by the agro-processing industry. Rising sales of squash, juice, jam and pulp are encouraging farmers to grow the fruit.

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Civil Society
READ US. WE READ YOU.

Passion fruit to Aadhaar and more

PEOPLE often ask us how we get our diverse collection of stories each month. The answer to that has always been the same over the years — we function as unencumbered journalists and so we find them.

We are guided by the principle that as journalists we need to give readers information that will surprise them and help them discover new worlds. So, we don't do customised stories and we consider it a waste of our time to be me-too on issues. There is always the risk that some readers may not like what they get. But let's say we have been lucky and in the process made our own lives as journalists a lot more interesting and unpredictable.

This month's cover story on passion fruit comes with all the earthy flavours and aromas and complex insights that Shree Padre's stories on the farm sector have. It shows once again the many opportunities that exist for increasing rural incomes.

We also have a digital activist, Nikhil Pahwa, pointing out the problems with Aadhaar and why we should all seriously worry about our personal information being compromised or the government having more control over data than is good for a democracy. Seven years ago, we were interviewing Nandan Nilekani and tracking Aadhaar before it was even called Aadhaar. Over time we have observed its implementation. Clearly, there are issues of access, privacy and security, and constitutional rights that need to be addressed. The Aadhaar of today is not the convenient number that it was originally deemed to be. It has acquired a menacing character, which can't be brushed aside. Pahwa and other digital activists raise significant points of concern.

We are wired to approach CSR stories with caution. The reason is that there is a lot of window dressing being passed around. But there is also little doubt that companies can use their many strengths to make a difference to society by going beyond their specific business interests to solve problems and do good.

It was by sheer chance that we came across the efforts of Sonalika International, a tractor company, to find a solution to the burning of crop stubble in the fields of Haryana and Punjab. As is well known, this adds to New Delhi's already dangerous levels of pollution. Though crop burning is banned, the farmer is helpless because of the costs involved in removing the stubble after a harvest and before the next sowing. Sonalika has embarked on a very interesting initiative in bringing different stakeholders together to shape a sustainable solution. It is uniquely positioned to do so because as a trusted tractor company it has a strong presence in the countryside.

Finally, we are happy to carry an analysis of the health policy by Ketki Shah and Nerges Mistry, two spirited professionals who keep alive the legacy of the legendary Dr N.H. Antia. Public health remains an area we will pursue.

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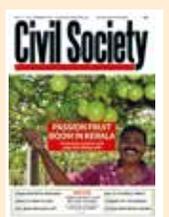
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LET'S DRESS UP OUR PLANET GREEN

260 Lbs of oxygen is generated by 1 tree in a year.

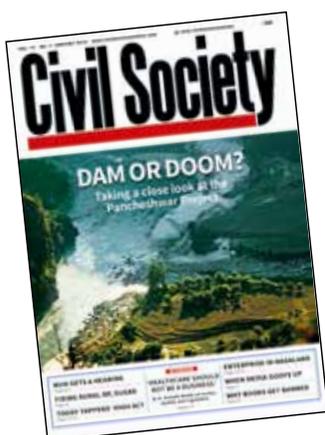
Himalaya has planted over 5,00,000 trees across India, contributing 13,00,00,000 Lbs of oxygen per year. This is sufficient for more than 1 million lives on earth.

IN THE LIGHT

SAMITA RATHOR



LETTERS



Dam monster

Thanks for your cover story on the Pancheshwar Dam, titled 'Dam or Doom?' In my opinion this is an utterly useless project. It will bring down huge tracts of forest, kill our precious wildlife, submerge hundreds of villages, reduce the pristine Kali and Saryu to dirty little streams and more. The nation will even pay a lot of money for this utter devastation. What madness.

Ritika Dham

Is the Pancheshwar Dam really needed? The project seems unviable. It is high time we looked for alternative sources of energy like solar and wind instead of opting for such massive hydro-electric projects that drown forests and villages and displace people. In whose interest is this being built? That is the million-dollar question.

Latha Bhaskar

This dam is a disaster in the making. A very foolish and greedy decision, neglecting nature, people and the environment.

Major Indra Chand

Midwife taskforce

With reference to your interview with Dr K. Srinath Reddy titled 'Healthcare is a service, not a business', I would like to point out that overcrowding of public facilities, overburdened staff with limited resources and almost no supporting infrastructure is the reality in nearly all public hospitals in India with regard to maternity and newborn services.

India needs professional midwives. They can be the backbone of maternity services. This unique taskforce of midwives can deliver care

at community level and refer complicated cases in time thus helping to save lives and reduce overcrowding. It is time for the government to demonstrate true leadership and the political will to invest in professional midwifery across India. It should be made mandatory for any hospital providing maternity services to have professional midwives. Only then will women be offered respectful care and maternal morbidity/mortality will decrease.

Evita Fernandez

Goa's gram sabhas

I read your story, 'Goa's gritty gram sabhas,' with interest. Every politician who has been elected to the State Assembly has used this grassroots body to enhance his or her political

career. When politicians are on this side of the fence they highlight the plight of gram sabhas and plead for funds for development. But when they get elected as MLAs they conveniently forget what they once espoused. They fail to realise the reason why people elected them as their representatives.

Even when the central government amended the Constitution to strengthen panchayati raj, our Goan politicians weren't bothered. They expected somebody to take the matter to court where they would be able to tame the judiciary.

See what happened in the 2G scam case. Only a revolution of the masses can save this state. The other option is to leave it in the hands of the Almighty.

Orlando da Silva

Rural outreach

I read the story 'Villagers get grievance redressal under one roof,' in your last issue. The Sehgal Foundation is working hard to bring smiles to the faces of people who are poor and illiterate. Sharing is the best caring in today's selfish globalised world. I appreciate their efforts.

Manisha Dagar

Child nutrition

I would like to thank Bharat Dogra for his story, 'Rural creches for better nutrition.' The work of the Jan Swasthya Sahyog is truly admirable and impactful. I think the creches being run by them could be a model for anganwadis elsewhere in rural India.

Shamika Agarwal

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‘We have raised crop output but not farm income’

Dr Suresh Pal on helping farmers earn more

Civil Society News
New Delhi

THE rural sector faces multiple challenges ranging from environmental decline to lack of infrastructure and inadequate access to markets. Recent agitations by farmers show that they are in distress not just in a few weak pockets but across the country.

Even as farmers protest, the BJP-led Union government has set a goal of doubling farmers' incomes in the next five years. How challenging is this target, considering that agricultural growth declined in 2017-18? Is it feasible at all?

To have a clearer understanding of the government's farm strategy, *Civil Society* spoke to Dr Suresh Pal, Director of the ICAR-National Institute of Agricultural Economics and Policy Research.

Is it possible to double the farmer's income by 2022? What needs to be done?

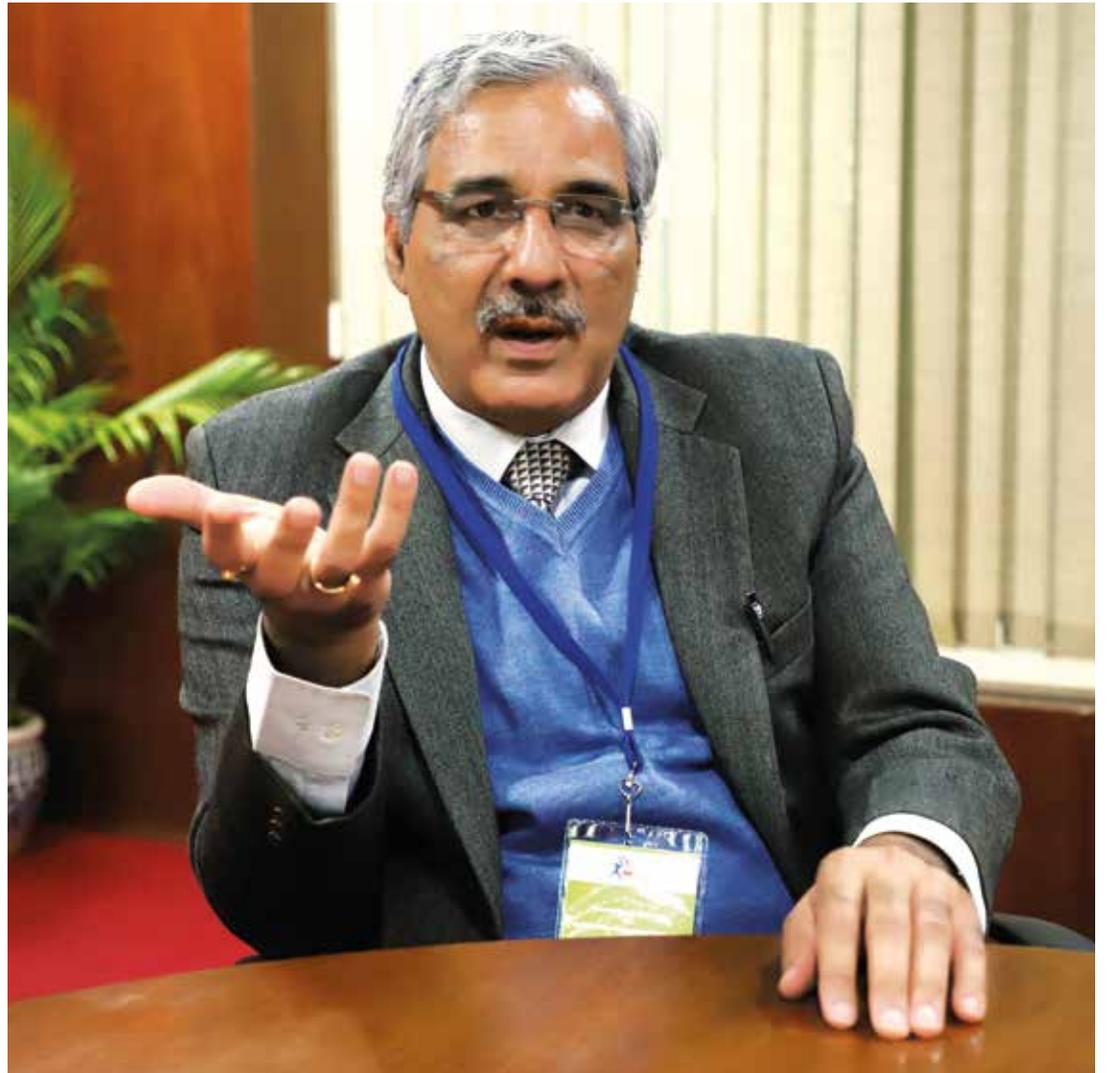
It is a real challenge. But the objective is timely. The government has signalled a policy shift. In the first stage, such a shift will sensitise government, research institutions and other stakeholders working in the field of agriculture. We need to focus on income policy. In agriculture, we are doing well both in production and other parameters but if you look at the income of farmers, it is very low. The size of holdings is very small. We haven't paid enough attention to enhancing farmers' incomes.

Can we achieve this? It is difficult to answer primarily because agricultural systems depend on several things. If in one year you have two or three bad crop seasons it will seriously impact the income of farmers. But assuming everything is normal, it is possible to boost income provided we have a systematic strategy and an action plan.

I would say we need to focus on those regions where farmers' income is very low. These are the 150 districts identified by NITI Aayog. In some states, for instance, Odisha, farmers' income has doubled. We require a strategy and resources to invest in agriculture and sensitise the government machinery and all those working for agriculture.

The farmer produces crops at a high cost to himself. How do you reduce that?

It is possible to reduce costs in terms of input-output. The entire input system is undergoing a major change. There used to be large participation



Dr Suresh Pal: 'I would say we need to focus on those regions where farmers' income is very low'

of parastatal agencies. Public sector companies are still there in fertilisers and seeds but a large part of the input system is now in the private sector.

All pesticides are in the private sector and so are growth regulators. In farm machinery, the private sector is poised to take a big leap. So, since we have private sector participation, there is going to be full recovery of costs as there can be no subsidy. However, if there is competition, private companies can bring down costs. They can also improve efficiency.

The other issue is the declining interest in farming. Nobody wants to work in agriculture. Therefore, wages are rising very fast. For most crops, the major cost component is labour. In many areas farm mechanisation is picking up. That has its own implications. Farmers will need to buy those machines.

Are we headed for a big technological revolution in farming?

The technological revolution has already happened — biological, technological and chemical. Large-scale application in farmers' fields is now picking up

— because wages are rising.

But what would be the ingredients of a new strategy?

Agriculture is a complex subject. But some areas have been discussed. There is a seven-point programme which the Ministry of Agriculture is focusing on. First is to improve the efficiency of agricultural production and thereby reduce costs.

Second is diversification. It has been happening, but we need to accelerate that by boosting commodities that give higher value like meat, milk and horticulture. This diversification has to be sustained in terms of delivery to the consumer for which we need better marketing systems, which are currently not very efficient. We need integrated supply chains that benefit producers, consumers and investors.

In some commodities, we have surplus. We export rice, horticultural produce, fish and meat. Here, trade policy is important. For example, we recently increased the import duty on oilseeds. This is because imports were increasing and incentives for producers were depressed. So, prices for

domestic producers can improve. We need to export more to bring money to the country and to farmers. Value addition, mechanisation, precision agriculture can all bring value to farmers and reduce per unit cost of production.

How important is the environment issue for farmers?

I don't think environmental issues are limiting the prosperity of farmers. At the same time, there are some issues which if we address them, can help the income of farmers. Take waste management, specifically crop residues. There are technologies. But you need business models. If those can be successful, value can flow back to farmers.

One example is paddy straw. They are looking at taking it into the soil and improving soil fertility. That will improve productivity. We also need to improve water efficiency through micro-irrigation in central India and northwest India where water is scarce. But that requires investment. Where will that come from? Farmers don't have the money to invest in those systems. They take money from informal sources where the rate of interest is very high. Access to institutional credit needs to improve. Kisan credit cards have been introduced and are effective but not all farmers have them.

Most governments are veering towards providing higher Minimum Support Price (MSP) for crops. Is that a sustainable way of increasing the income of farmers?

There is a limit to that. MSP is a signal. Let's say, for paddy and wheat the government procures around 30 percent. The states procure sugarcane, to some extent cotton, jute and now pulses. But governments cannot assure that, so other mechanisms are being discussed like a price support scheme if prices fall below MSP.

Like Madhya Pradesh's Bhavantar Bhugtan Yojana?

Yes. Hopefully, it will be successful. Price stability is important. If you have over-production of just one or two crops, it has a major impact on prices. When we have even one or two million tonnes less, there is a steep rise in prices. One way of ensuring price stability is by processing, say, tomatoes. You can then have tomatoes through the year. You create demand and consumers can choose between fresh and processed tomatoes.

Farmers' organisations are asking for 50 percent over production costs, basically the recommendations of the Swaminathan Commission report.

There is serious discussion on that, too. Dr M.S. Swaminathan was invited to a meeting of NITI Aayog. He told us the background to this recommendation. He said they had considered a number of factors the farmers face and then calculated how much support farmers would need to tide over all those issues.

They weren't very specific about how this support should be provided but they gave a rough idea that if we have some parameters, like cost plus 50 percent, it would take care of issues like crop insurance, marketing costs, etc. He didn't say strictly that it should be cost plus 50 percent.

The government is taking it up. But for most

commodities where productivity is good, MSP is higher than that. Take wheat and paddy for Punjab, Haryana and UP where productivity is good — the MSP is already higher. It is in states where productivity is low and fixed costs are high that this problem exists. One opinion is that if the cost of production is so high then let us not encourage those crops in those states.

We have for long talked about nurturing a robust agro-processing industry. But there are still constant complaints about inadequate cold chain facilities, disinterested industry, messy contract farming. Why?

Contract farming is working. We don't have model contracts but still most premium produce does not enter the formal market but is being exported. For example, Basmati rice and Alphonso mangoes. Millers and exporters buy in advance.

So, although the market is unstructured, there are workable systems?

One way is through a formal agreement between the producer and the company. But when you do have availability in the market, buyers compete and

major step in bringing transparency.

Second, it is important for traders also. They don't require multiple licences. A single licence will do. If a trader wants to buy a commodity from another state, he will know what the price is as well as the quantity available. Wherever it is operational, farmers have benefitted.

Third, there is emphasis on storage. The farmer gets a warehouse receipt if he or she is storing produce in a warehouse. That receipt is negotiable. You can get a loan against it. Besides, the farmer can sell when the price goes up.

Programmes are being integrated, streamlined and delivered to farmers, whether it is horticulture, farm mechanisation, access to credit or DBT (Direct Benefit Transfer). There has to be synergy between the government, development agencies and farmers. You also need to inform farmers that these are the initiatives and programmes they can benefit from.

So the government will need a big communications programme?

Yes, earlier somebody would go to the village and tell people but now everyone has a phone, a smartphone and a TV.

'Crop diversification has to be sustained in terms of delivery to the consumer for which we need better marketing systems which are currently not very efficient. We also need integrated supply chains that benefit producers, consumers and investors.'

buy from farmers for export. Take apples. The fruit arrives at the Azadpur Mandi and exporters buy it from there. It depends on the nature of the commodity, what is the demand, who is the supplier.

If the commodity is in short supply, the buyer will go in for a formal agreement with the producer. Or if there are serious quality issues. The buyer might require produce of a particular quality, for example, specific types of potatoes to make potato wafers.

But there are a number of commodities that could benefit from agro-processing but haven't.

You require investment and quantity of produce. The plant must be fully operational. The government is encouraging processing and providing several incentives. It will pick up. Consumers have different preferences. They might pick up packaged juice one time and then want fresh juice the next time. Maybe you require two different types of crops for that.

The government launched e-NAM, a virtual common agricultural market. How is that working and is it possible to reap benefits from it in the short term?

Karnataka has implemented e-NAM successfully. It is a good initiative because it addresses several issues. One major problem was lack of transparency in how prices were set, who is being paid how much, etc. Now you have transparency in price discovery and farmers get an advisory telling them the current price on that day. They can transact on the same day over phone or they can come to the *mandi*. It's a

How do you see the opportunities in organic agriculture?

It's a good concept but success will be determined by what benefit consumers see. The farmer will then get a premium. Consumers will decide.

But isn't that happening? Sikkim is now an organic state.

States in the northeast have a natural advantage in turning fully organic. They are not yet using much chemical fertiliser and pesticides. But bringing that produce to the rest of the country will require a lot of investment.

During the Green Revolution things were done in mission mode. Why is that spirit missing?

No, we are in mission mode. In fact, we are much better organised now. Take the case of pulses. Every year, we were running a deficit. Now we have a surplus in just one year. The government said it had to be done. So, price mechanism, technology transfer, seeds, everything was directed to achieve self-sufficiency. It all worked together and in one year we achieved this increase.

The Green Revolution was a big phenomenon, a revolution. Such a major change is rare globally. We now increase productivity in stacks. For some crops like cotton we have reduced costs and improved productivity through Bt. We have done significant improvement in maize, without GM. There are many success stories in cotton, maize, vegetables, fruits, pulses, fisheries, and milk. ■

Seven reasons why we should worry about Aadhaar

Civil Society News
New Delhi

IN *Civil Society*, we have been tracking Aadhaar much before it became Aadhaar. Our interview with Nandan Nilekani in May 2010 was all about choice and inclusion.

An identification number, as it was envisaged then, was specifically meant to help the poor and disenfranchised. It was one of many IDs. Most important it was optional and not mandatory.

Nilekani said to us in that interview: “The purpose of this programme is very clear. It is about inclusion. It is about the fact that there are a few hundred million people in this country who don’t have any form of identity, who don’t have a birth certificate, who don’t have a school certificate, 75 million homeless people...they are the ones who are suffering due to lack of identity.”

In seven years, much has changed. The poor, for whom it was meant, complain that they can’t access their benefits because of biometric glitches and lack of connectivity. There have been starvation deaths in Jharkhand because people can’t get their rations.

Millions and millions of disabled and aged people as well as labourers find Aadhaar a problem because they cannot meet its biometric requirements.

Aadhaar is still optional on paper but mandatory in the way the government implements it. Huge power is put in the hands of the government by linking everything from bank accounts to mobiles and tax returns to Aadhaar.

In 2010, the offices of the Unique Identification Authority of India (UIDAI) in Connaught Place had the energetic mood of a start-up. Nilekani himself was reaching out to state governments and NGOs to garner support for his idea.

But these days, faced with criticism, Nilekani is defensive and complains of an orchestrated campaign. In the run-up to the Supreme Court’s hearings on petitions against Aadhaar, he has weighed in with a signed article in a newspaper insisting that Aadhaar is secure and that the personal data of citizens can’t be accessed.

But the fact is that there have been breaches, the most recent being documented by the *Tribune* in Chandigarh.

So, is Nilekani right or wrong? We asked Nikhil Pahwa, founder of MediaNama, to give us his criticisms of Aadhaar and why he thinks Nilekani is dead wrong in his assertions.

Pahwa, 36, is a digital rights activist and founder of the feisty MediaNama portal. He is a close watcher of developments regarding the Internet and telephony and was the first to flag the issue of net neutrality issue in India. Here are seven reasons

why Pahwa thinks Nilekani is wrong and Aadhaar is technologically flawed and gives too much power to the government:

1 BIOMETRICS IS IMPERFECT

Biometrics is an imperfect science. It is not deterministic, it is probabilistic, which means it maps out your biometrics and then when you again press your finger, because there might be dirt on your hands or it might be from a different angle, it tries to match as many points as possible and then beyond a certain percentage it accepts it.

In different circumstances the mapping is going to be different. There are always going to be false negatives, which means your fingerprints will not match your fingerprints that were given to Aadhaar. And there will be false positives, which means someone else’s fingerprints will match yours.

Aadhaar is supposed to fix the problem of corruption and leakages in government schemes. It is supposed to get rations to the correct people. But with biometrics technologically that is not possible. So, there are always going to be people who will be rejected and there are always going to be people who are not the right people who are accepted. It means someone who has cloned fingerprints is more likely to get the rations than someone who hasn’t cloned them because cloning is more exact than fingerprints changing over time.

2 NATIONAL SECURITY RISK

The system is so badly architected and implemented that it is a national security risk because of the level of access that is available.

They have made a permanent ID across databases. If a single number gets compromised it gets compromised everywhere Aadhaar is linked. Rationally that is a bad idea. Federated and independent IDs are safer because if one ID gets compromised only one database gets compromised.

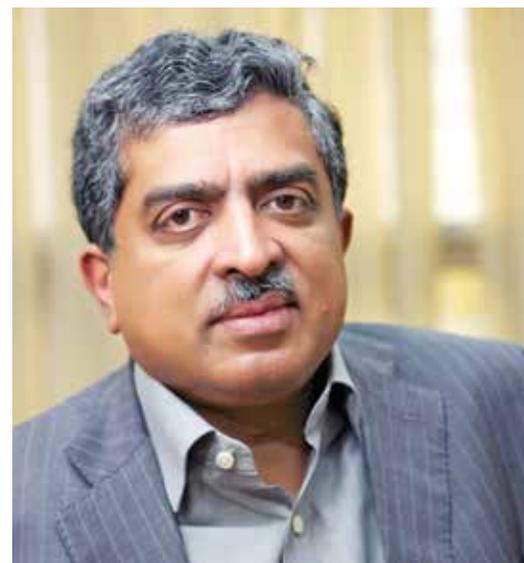
For instance, if your driver’s licence gets compromised only the things to which your driver’s licence is linked get compromised, and no one knows where your driver’s licence is linked as an identification process.

In the case of Aadhaar everyone will know where it is linked and it is a single number that will get compromised. And we have seen people are getting calls saying this is your Aadhaar number, I am calling from so and so bank, etc.

This is because the UIDAI has created tools which allow people to check for this information



An Aadhaar Centre: Biometrics is not a perfect science



Nandan Nilekani

online as well as through USSD messaging (unstructured supplementary service data built into GSM phones) where they can find out which bank a particular Aadhaar number or mobile number is linked with.

And so, people are capable of collecting these disparate data points and calling you, saying I am calling from such and such bank, please link your Aadhaar number to your account, I am sending you an OTP and they can use that to transfer your money out.

This has already happened to about 20 people; the finance minister has acknowledged it in



pointing out that in just four schemes the data for about 130 million people had been compromised that the UIDAI issued a directive to take this information off the Internet.

There are now global hackers who are downloading Aadhaar-related apps from the government like the maadhaar app, and looking inside the code and saying that this looks like it has been implemented by interns. They have done very basic mistakes like access to the central database is in some instances through http instead of https, which means that the protocol is not secure.

Last year, in the case of Abhinav Srivastav in Bengaluru, he built an app which used an http connection which the e-Hospital app was using and it was able to authenticate people's data because the National Informatics Centre (NIC) had implemented the e-hospital app in an incompetent manner.

This is the same thing that the *Tribune* story proves — that local village agents were given access to the entire database for checking people's Aadhaar details. When their business was shut down, the UIDAI did not remove that access and they started selling that access forward. We have effectively placed the personal identification data of the citizens of India at great risk.

3 PERMANENT USERNAME

Biometrics is a non-secure way of identification because it is like a permanent password. You can't change it. And with a permanent Aadhaar number, you can't change that. It doesn't make any sense for anyone to have a permanent username and password.

You can change your Gmail account. You can't change your Aadhaar number. You can keep changing your password every minute if you want, but you can't change your biometrics. A combination of biometrics and a permanent Aadhaar number effectively compromises every citizen.

4 YOU CAN'T GO TO COURT

Only the UIDAI has the right to go to court if your data gets stolen. That's a problem because data has been stolen. But it is only up to the UIDAI to go to court. As a citizen, you don't have rights over your own data. In fact, the UIDAI has consistently refused to answer the question of who owns your data. Is it the Government of India who owns it, is it the citizen who owns it? Is it constitutional to forcefully take this data from us? And we have been forced even though the Aadhaar Act says it is voluntary.

Since only the UIDAI can go to court if the data is stolen, it means I have no right to recourse. That is a constitutional problem if you think about it. Do I own myself or does the State own me? Biometrics are an extension of my person. The relationship between the State and citizen is being reversed, using Aadhaar.

5 NUMBER CAN BE BLOCKED

The UIDAI has complete right under the Aadhaar Act to cancel your Aadhaar number for any reason that they may deem necessary. There is no process,

no mechanism, put in place. The Aadhaar Act does mention reasons. But it has this one line that any reason the authority might deem necessary is enough to cancel your number.

That is disproportionate power in the hands of one entity without due process and access to recourse. Especially under the circumstances where everything in your life gets connected to an Aadhaar number.

Imagine if your mobile connection gets blocked because your Aadhaar number gets cancelled. Imagine if your bank account gets frozen. Already it has gone to the point where children are being refused birth certificates and admission to school without Aadhaar.

6 NO MONITORING MECHANISM

The UIDAI has no monitoring mechanism. It has an audit mechanism. The Aadhaar database itself has never been audited. So, we don't know how many fakes there are in the Aadhaar system because UIDAI has no way of checking unless they authenticate every citizen or resident in the country.

That is the other thing: Aadhaar is for residents and not citizens. We have seen in a recent Pathankot case a Pakistani national living in India for decades had an Aadhaar number. Since the UIDAI doesn't verify documents, someone can easily get a fake identity card and get an Aadhaar in a fake name which everyone thereafter believes is authentic.

It is also easy to photoshop any information on an Aadhaar card because it is not chip-based. People are accepting any laminated card as an Aadhaar card when it is not.

7 PRIVACY LACKING

The last point is a privacy point. While the UIDAI claims they have only a limited amount of personal data, that data is enough for phishing attacks. The data has also been transferred to state resident data hubs. Now, these hubs have no limitation to the amount of data that they can link to Aadhaar and store.

Andhra Pradesh has started mapping people using the Aadhaar number. In a similar way, they are also tagging Aadhaar numbers with details of traffic violations. Historically, when you needed to connect one dataset to another, legal permission was needed. Aadhaar destroys this boundary between databases and the legal protection that citizens have from an overbearing State.

In most cases, there is no law governing the state data hubs. In the absence of an oversight mechanism in terms of access to this data, any bureaucrat from the government can get access and say, I know your entire history.

We have to think about this from a democratic perspective. From December 2018, the National Intelligence Grid or Natgrid is going to connect 21 databases using Aadhaar as a de-duplication mechanism. In Phase 2 Natgrid is going to connect over 955 databases, public and private.

What differentiates Ajay Kumar in one database from Ajay Kumar in another database? It is that de-duplication ID, which is the Aadhaar number. The ability to monitor citizens without any judicial oversight puts disproportionate power in the hands of the State. ■



Nikhil Pahwa

Parliament. There have been cases reported in the press. It has also happened to an MP in Punjab. So, people are susceptible to these phishing calls. And people are going to get hurt.

Because of the incompetent manner in which Aadhaar has been built, personal identification data has been leaking all over the place. For example, we saw and reported last year that there were several government projects where people's Aadhaar numbers, names, bank account numbers, father slash husband's names, addresses and mobile number were uploaded on an Excel sheet on the Internet.

It was only when CIS India put out a report

Panaji has plans, but they don't take off

Derek Almeida
Panaji

ARMANDO Gonsalves has seen Panaji grow and wither. He has been living in Campal, the heritage-preserved quarter of the city, since 1969 and is bitter about the direction Panaji has taken over the past three decades or so.

“There are some positives but many disappointments as well. The number of senseless buildings coming up... traffic is in a complete mess. Governments in power are not doing their job and the No Mo Zo (No Motor Zone) idea, which was great, was never taken forward,” he laments.

On 13 May, 2012, Gonsalves launched a campaign to rehabilitate the St Inez Creek which runs through the city and is today a repository for untreated sewage and garbage. “Cleaning the creek is not difficult. There are engineering defects of the worst kind there which need to be corrected, but the government does not want to do it,” he says.

Gonsalves's disappointments are shared by many who have seen the city go from bad to worse. Panaji was originally a ward of Taleigao village and its sole landmark was the castle of Adil Shah, constructed on the bank of the Mandovi river. Although historical accounts of Panaji date back to Kadamba King Shasthadeva (1007-50), its modernisation started in 1826 when D. Manuel de Portugal e Castro embarked on the difficult task of converting partly swampy, partly sandy stretches into the new capital of Goa.

The city's grid road system with broad footpaths was laid down by the Portuguese, but haphazard growth has created an imbalance between carriageway and vehicles. According to the Revised City Development Plan for Panaji, 2041, about 1.06 lakh vehicles enter the city every day. Parking facilities are insufficient to tackle this influx.

Urban and Regional Development Plans Formulation and Implementation Guidelines stipulate that about 14 to 15 percent of the total city area has to be covered by roads. In Panaji, total road coverage is just 5.45 percent. Consequently, traffic movement in the core areas of the city is congested. Besides, increased use of private vehicles has led to haphazard street parking and reduction of road width.

The plan document notes that “one of the biggest issues in Panaji is the inadequacy of public transport which accounts for a meagre 15 percent of the total trips in the city. Public transport routes are not comprehensive and do not cover all areas of the city.”

Panaji got its first multi-level parking facility with a capacity of 465 cars in November 2016, but the ₹35-crore edifice, constructed at the entrance to the city, has remained under-utilised as there is no transport from the facility to the central business district.

There is no dearth of plans for the city's growth. A

comprehensive ₹742-crore mobility plan, prepared by the Corporation of the City of Panaji under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) scheme, envisaged a public transport system and pedestrian precincts. It was submitted to the Union Ministry of Urban Development in 2013, but was never cleared.

After the Congress government was voted out in 2012, the new BJP government with Manohar Parrikar as chief minister commissioned Spain-based LKS to prepare a draft master plan for holistic development of the city. The plan, which laid emphasis on public transport with seven bus routes and a frequency of one bus every 12 minutes, never saw the light of day.

The Charles Correa Foundation, a non-profit, also prepared a comprehensive mobility plan, but lack of political will ensured that it was never implemented.

The latest to join this long list of plans is the smart

A question mark hangs over the city's development as the Panaji Corporation and the government are not on the same page.

city and solar city concept floated by the Narendra Modi government. Sidharth Kunkalienkar, former MLA of the city and now Chief Minister Parrikar's right-hand man, represents Panaji in the Assembly. He is virtually in charge of the city's development.

“Under the smart city scheme, which also incorporates AMRUT (Atal Mission for Rejuvenation and Urban Transportation), we have taken up development of open spaces, gardens and a jogging and walking track along the Mandovi promenade. We have also taken up redevelopment of stairs which lead to the Altinho hill.”

There was a time when the city comprised Fontainhas (at present described as the Latin Quarter) and Altinho. Today, it has grown around the hill and spread towards the adjoining villages of Taleigao and St Cruz.

One development goal for the city is to make it septic tank-free by 2020. Most of its 17,807 households are connected to a sewerage system, but there are pockets in Campal, St Inez and Mala which are out of the system.

Under AMRUT, projects worth ₹209 crore have been sanctioned of which 50 percent cost will have to be contributed by the government. Funds from this scheme are being used to refurbish gardens all around the city. “The thrust of the smart city



Residents say traffic movement in core areas is congested

scheme is to create better living conditions by upgrading sewage facilities, garbage collection and creating better power and water supply systems,” said Kunkalienkar who is also vice-chairman of the Goa State Infrastructure Development Corporation (GSIDC) which is implementing most of the projects.

The signature project for the city is probably the Integrated Command and Control Centre (ICCC) which will act as the nerve centre for safety, garbage collection and traffic control.

“This ambitious project will provide comprehensive CCTV coverage by linking police surveillance cameras as well as private CCTV feeds. We will also incorporate 112 emergency numbers, which the police will set up. We will link fire services and coordinate disaster management through the collectorate,” said Kunkalienkar.

In order to set up the ICCC, a special purpose vehicle called Imagine Panaji Smart City Development Ltd has been established with the Secretary of Urban Development as its chairman. By 2020, the city should have a refurbished power and water supply grid, 112 wi-fi points, smart metering for power and a fully upgraded sewerage system.

A fourth bridge across the Mandovi from Betim to Panaji is also on the planning board to relieve pressure on ferries. “One proposal is to build a pedestrian bridge and the second is for a bridge to accommodate two-wheelers. The option of a larger bridge to allow cars is also being contemplated. Another option is to get larger drive-in-drive-out ferries which can accommodate cars,” explained Kunkalienkar.

VISION AND MISSION

According to the 2011 Census, Panaji has a population of 40,000. Around 5,800 persons enter the city every day and this figure is projected to increase to 12,300 by 2030. This will place enormous strain on infrastructure and make garbage collection and disposal more difficult. Although the CCP has



Surendra Furtado



Armando Gonsalves



Rahul Deshpande



Sidharth Kunkalienkar

a time-tested collection system, the city lacks a treatment plant.

Panaji produces about 70 tonnes of waste per day of which 42 percent is wet waste. About a decade ago, the CCP constructed about 100 units to treat wet waste locally. This system, which was the toast of the city, fell into disuse after the construction of a modern treatment plant at Saligao. At present, the city has three units with a combined capacity of 17 tonnes per day, which is clearly not enough.

Even as work under the smart city plan gets underway, on the surface it is the angst of having to put up with unruly traffic, unplanned development, shortage of parking and inability of governments to clean and rejuvenate the St Inez Creek that has delayed Panaji's journey to becoming a first world city.

Said Rahul Deshpande, architect and member of the Charles Correa Foundation, "Sustainable long-term vision is what ails Panaji. And I say this in the context of it being the capital city of a very unique state. We are a state that is urbanised in a very modern way. There has been development in the past 25 years, but without thinking about where it would take the city. There has to be curated thought about Panaji which isn't happening."

Elaborating on why a vision and plan are necessary, he said, "You need to develop the city on a string of elements and there has to be a 10-year

growth trajectory. We are a small city, so why can't we have the best public transport and make an example of it? The Charles Correa Foundation prepared a perfect plan for a hop-on-hop-off system. Why was it not implemented?"

Some years ago, the Foundation was also asked to create a shop signage policy by the CCP but the resulting plan was never implemented. Traffic issues, too, are contentious terrain. Despite emphasis on enhancing public transport by planners, the government is hoping that an increase in parking space will resolve the problem.

"The whole plan is to pedestrianise city roads, but without offering alternative parking space this plan cannot be implemented," explained Kunkalienkar. "We are trying to create parking lots in the city and three spots have been identified. We are also trying to introduce a public bicycle sharing system with 60 stations. The aim is to have a parking lot within 200 metres of each one's destination."

However, both Deshpande and Gonsalves are not convinced that this is the ideal solution. Deshpande says, "First, have we recognised that traffic is a problem? Second, have you set up a taskforce to create an action plan? It is not in the public or political discourse at all. All that every city is talking about is constructing multi-level parking lots. But that is not a solution."

Gonsalves adds, "The government should

encourage pedestrianisation of roads to reduce the number of private vehicles. In the central business district it should cost ₹50 to park a car so that people are deterred from using cars for short distances."

He also supports the re-energising of the Latin quarter of the city in Mala-Fontainhas with its quaint pathways and 18th-century houses. In his book, *The Age of Kali: Indian Travels and Encounters*, William Dalrymple referred to this area as "a chunk of Portugal washed up on the shores of the Indian Ocean".

"You must get the vibe out of the Latin Quarter instead of casinos which bring a set of tourists that Goa does not want or need," asserted Gonsalves.

MUNICIPAL LOGJAM

Despite cornering grants from the centre under the smart city scheme, a question mark hangs over the city's development as the Panaji Corporation and the government are not on the same page. "I and my corporators are not aware of development works going on in the city. It was year before last that the then mayor, Shubam Chodankar, in a corporation meeting gave a blanket NOC to GSIDC to carry out development work in the city. So far no plans have been presented to the Corporation, which remains in the dark because no elected member is on the smart city board. The commissioner is on the board but being a bureaucrat he is not in a position to put forth any objection," said Mayor Surendra Furtado.

During his tenure as mayor and when the UPA government was in power at the centre, Furtado was instrumental in getting ₹20 crore sanctioned for rejuvenation of St Inez Creek. "For 60 years every MLA who contested the Panaji Assembly seat gave top priority to cleaning the creek, but nothing happened. As mayor, when the Congress was at the centre, ₹20 crore was sanctioned to the CCP. The money came but under political pressure the work was not tendered and the money went back."

Speaking on a plan for upgrading public transport, Furtado said, "The centre had sanctioned ₹800 crore for a comprehensive mobility plan for which a DPR was done by a Bengaluru-based consultant. We were supposed to have 80 world-class buses for the outer and inner rings. Unfortunately, the government changed at the centre and the plan fell through."

The mayor was also critical of the funding pattern for the present phase of development. Under the JNNURM, the centre contributed 80 percent while the state government was expected to cough up the remaining 20 percent. The funding pattern under the smart city scheme is 50-50. "Now, you tell me which scheme was better," said Furtado, "and the irony of it all was that when Narendra Modi was chief minister of Gujarat he took maximum benefit of the JNNURM scheme whereas we did not."

Furtado also lamented that, of the ₹72 crore sanctioned by the centre for building a 24x7 water supply system only ₹17 crore was utilised and the remainder was sent back.

Doubtless, Panaji's growth has remained stunted because the CCP has very little say in what happens in the city and no powers to make changes on the ground. Even traffic management is vested in the traffic department, leaving the CCP with no role to play. As long as the 74th Amendment to the Constitution, empowering urban local bodies, is not implemented in letter and spirit, the city will struggle to reinvent itself. ■

SOS India has been reaching out

Kavita Charanji
Faridabad

IN SOS Children's Villages, homeless children and single mothers are brought together to live as families in a home environment. With 32 projects in 22 states and 25,000 children under its care, SOS's operations in India are its largest internationally.

"In our villages, the focus is on giving every child a caring and loving family and creating a community so that they are not in child care institutions but belong to a family and home," says Anuja Bansal, secretary-general, SOS Children's Villages of India.

The India operation has been successful in tackling numerous new issues from shrinking funding, to bringing up older children, the impact of new technology including social media, and more.

But perhaps the most significant achievement since the villages were first set up in 1964, has been to reach out and boost SOS Children's Villages' Family Strengthening Programme (FSP) which helps vulnerable families take care of their children.

The FSP dates back a decade, but has received an impetus in recent years. It is aimed at preventing abandonment of children by vulnerable sections such as single women, widows and below poverty line (BPL) families.

The FSP runs in slums and rural areas that lie within a 30-km radius of an SOS Children's Village. The programme, which runs for a time span of three to five years, has empowered many families economically and socially.

By strengthening education, health, nutrition, and vocational training, the needs of the children are addressed. Self-help groups (SHGs) of women are organised and are helped to become financially literate and boost their income.

The child's caregiver, usually the mother, sometimes the father or an elder sibling, is helped to earn a livelihood through livestock rearing, tailoring, paper bag production or a grocery shop, to name a few instances.

"We believe that if a woman is empowered and is economically enabled to earn an income, she will be able to take care of her children. So we do the capacity building, creation of market linkages and provide financial support as well. In the second or third year we aggregate the caregivers into an SHG. The SHGs come together and so the corpus starts to build," says Bansal.

She says skilling for youth is also part of the outreach. Currently, 300 girls across the country are receiving IT training so that they can enter the job market.

The showpiece of the FSP is SOS's Anangpur project, which spans 11 locations in Faridabad and Nuh districts of Haryana. The project covers 1,560 children, 501 families and 37 SHGs. On a visit to the Gurukul location, we see an SHG meeting in progress. The women in their red and cream saris are instantly recognisable. A group of 17 women discuss their accounts, individual savings and proudly show off their bank passbooks.

Financial support from SOS as well as the



Guddi, a beneficiary of the SOS Family Strengthening Programme, in her small shop with her children



A happy family of nine studying outside their home in the SOS Children's Village

Haryana government, coupled with bank interest, helps the SHG build a corpus from which it can begin inter-loans. "An SHG which started from zero is able to generate lakhs of rupees at the end of a year," says Riyaz Husain, project-in-charge of SOS' FSP in Anangpur. The project, he says, has brought about a dramatic transformation in the lives of beneficiaries. "Enrolment in schools and immunisation is 100 percent, there are no drop-outs and all the children go to *balwadis* and *anganwadis*," he says.

Laxmi, who runs a cosmetics shop at Gurukul,

says her life used to be an unending struggle. Her husband was a daily wager and she had four little girls to raise in abject poverty. They lived in a small room, food was insufficient and the children were bedraggled.

When she became a part of the FSP in 2011, she received financial assistance for the health, nutrition and educational needs of her children. Supported by the FSP, she opened a small stall selling cosmetics. Now a member of the Maa Saraswati SHG, Laxmi has converted the stall into a shop by taking a loan from the SHG and using her own savings. She has

PICTURES BY SHREY GUPTA

since expanded her business. All her daughters go to school. Expenses for school fees, books, stationery and uniforms were met by the FSP.

“With SOS’ support I was able to build a house and give it on rent,” says Laxmi, whose family has since exited the FSP. She now plans to help other women set up stalls by selling cosmetics to them at wholesale prices.

TACKLING FUNDS CRUNCH

SOS Children’s Villages of India also had to grapple with shrinking funds since global donors now perceive India as an economic powerhouse. But in recent years domestic funding has more than doubled as corporates and individuals step in to sponsor children. Online fund-raising has had a measure of success. SOS has used media advocacy also to bring children’s issues to the forefront.

SOS India is looking for long-term sponsorship of children as they need to be taken care of till they can become self-reliant. It helps that SOS has positioned itself in a unique manner. “Fund-raising is not so much a challenge for us because we are an implementing organisation. The donor then has a direct connect with the child for whom they are giving money,” says Bansal.

FIRST VILLAGE

In 1964, the first Children’s Village in India was set up at Greenfields, a serene spot in the frenetic industrial hub of Faridabad in Haryana. The Greenfields village is dotted with small, comfortable homes — each with a distinct name.

In a house called Amar Jyoti, K. Chandramouli lives with her brood of nine children. Rajan, a small child, plays happily on her lap. The other children compete for her attention. They are like any other children except that they lost parental care. Chandramouli speaks with pride of her “baby” who came to her as a mere month-old. Now in Class 9 in SOS’s Herman Gmeiner School in Faridabad, the



A mother with her family in the SOS Children’s Village in Faridabad

The Family Strengthening Programme helps vulnerable families take care of their children. It supports single women, widows and BPL homes.

talented young girl evidences academic prowess.

Poonam, a Class 12 student in the same school, is a budding poet and class topper. “I write a lot. My drawing teacher motivated me to write a poem. When I wrote my first book of poetry I showed it to the counsellor and village director and they had it published,” says Poonam. Her mother calls her an “orator, artist and poet”.

Rajni, a Class 9 student, is a talented Kathak dancer and wants to be a teacher or accountant when she completes her education. Many of Chandramouli’s older children are grown up and live on their own. One is a fashion designer and the other is becoming a lawyer, “I felt sad when they left home but they still come to see me,” says Chandramouli.

Village Director Amar Jyoti Sarmah is a father figure to the children. “I play the role of a parent with a modern outlook,” says Sarmah. He works closely with village counsellors and co-workers to ensure that each child grows up emotionally and physically healthy.

Changes in government policies, greater access to technology, social media, cyber abuse, and shrinking funds spelt the need for new directions.

The government has been successfully promoting the adoption of children below the age of six years so now children come to SOS villages when they are older.

“The challenges become different when we work with older children. For them to understand the concept of family and for us to work with them, there has to be a change in capacity building with our mothers. The training and support they need naturally changes,” explains Bansal.

It is a different world for SOS children, too. With increased exposure to technology and social media, they are growing up faster. This means that counsellors and co-workers have to be on their toes constantly to create greater

awareness about key concerns that affect the children’s lives.

“Cyber safety has become an important area of work for us. Now, at a much younger age we educate children about good touch and bad touch and how to keep themselves safe. We also help co-workers and mothers identify risks and prevent child abuse. The dynamics of how to keep children safe has changed from the past,” says Bansal.

What is encouraging is a growing partnership with government. An integral part of the recently amended Juvenile Justice Act is the promotion of group foster care and a culture of family-like care. Along with shelter and education, there is recognition that the social and emotional well-being of children be given equal importance.

SOS is working with several state governments to bring family-like care to grim child-care institutions. The organisation has run training programmes for government institutions in Telangana, Chhattisgarh and Meghalaya where they shared their childcare principles. ■

Samita’s World

by SAMITA RATHOR



PHCs and sub-centres aren't easy

POLICY ANALYSIS

By Ketki Shah & Nerges Mistry

SINCE the days of the Bhoré Committee Report of 1948, the public health community in India has vociferously advocated a comprehensive primary healthcare system. The National Health Policy of 2017 finally acknowledges the importance of such a strategy.

The new policy has identified the establishment of Health and Wellness Centres (HWCs) as the preferred way to deliver universal free comprehensive primary healthcare. Upgrading sub-centres and re-orienting Primary Health Centres (PHCs) to develop into HWCs was articulated by Finance Minister Arun Jaitley in his Budget speech of 2017-18 which committed to developing 150,000 HWCs in the country.

The HWC is also linked to the recently initiated non-communicable disease (NCD) programme which will initially tackle Type 2 diabetes mellitus, hypertension, cervical, breast and oral cancer and subsequently chronic obstructive pulmonary disorder (COPD). The Goliath issue of mental health is included. To tackle all of these, as well as the omnipresent Maternal and Child Health (MCH) programme at the 5,000 population level, the health centre is to be staffed with a mid-level provider (an AYUSH doctor), a public health nurse and a male multipurpose worker.

One key concept is that each family will be registered with the HWC. The primary healthcare team will be responsible for the health of its population. As a norm, the mandate of the new HWCs is to survey the local population, undertake primary clinical examinations/investigations and refer patients to higher levels of care. This will hopefully be combined with community awareness activities.

Though this initial part is clearly defined, relatively less is said about follow-up, important for chronic diseases. Setting up HWCs without strengthening referral centres and follow-up processes would lead to major hindrances in providing comprehensive primary healthcare.

This provision of comprehensive care will require additional skill building, continued supply of drugs and other items, effective information systems and a responsive referral system.

Introducing NCDs into the public healthcare system is being done on a district-wise basis. Around 109 districts have been identified in the first phase. An additional 109 will be included after two years. All districts of India will be covered in the third phase.

Training modules for primary care workers (ASHAs, ANMs), Medical Officers (MOs) and staff nurses are also nearly complete. A group of national-level trainees has been trained in the delivery of training modules at the central level and partially at the state level.

The rolling out of the NCD programme is highly ambitious on the part of the Health Ministry and one that is much needed in view of the NCD



An overcrowded hospital in Delhi. Several illnesses could be taken care of in rural areas if PHCs and sub-centres worked

The provision of comprehensive care will require additional skill building, supply of drugs and other items, effective information systems and a responsive referral system.

epidemics which India suffers from. However, are our needs matched by commensurate potential and preparedness?

SYNERGY AND MESSAGING

Despite such strong government commitment and assuming that additional financial resources are being made available, what are the desirable effects we hope to achieve? Have we created benchmarks? Further, benchmarks cannot be achieved unless ancillary steps are taken in environmental controls, urban planning, food security, water safety, social welfare programmes, employment, and so on.

The control of NCDs cannot rely on biomedical models that are upward-expanding expense spirals. Ancillary programmes need to be linked to action at community level, an important element of which is behaviour change communication that factors in poor literacy and wrongly entrenched nutritional practices. Innovative messaging, based on sound research that would create awareness and change lifestyles, are required.

FUNDS CRUNCH

The government's ambitious plan of converting 150,000 sub-centres into HWCs would require

strong financial commitment. However, there was just a nominal increase in the health budget of 2017-18 with no allocation specified for the HWCs. According to WHO estimates, to reach even two-thirds of the Sustainable Development Goals by 2030, an investment of 6.5 percent of GDP is needed. However, in India, public spending on health has remained stagnant at 1 percent of the GDP with minor fluctuations.

Many commitments have been made by the government to increase health expenditure. With the introduction of the National Rural Health Mission (NRHM) in 2005, India had envisioned an increase in public health expenditure to 2-3 percent of GDP by 2012. The Planning Commission had also committed to increasing public health expenditure to 2.5 percent of GDP by 2017.

The recent National Health Policy passed by the Cabinet has now furthered the timeline to attain this goal to 2025. The government has continuously failed to reach its target of increasing health expenditure.

With the current investment, will the government reach its target of upgrading 150,000 HWCs? Or will this scheme also sink into oblivion due to lack of adequate funds?

to upgrade

AKSHAY NAGPAL



TRAINING AND PERSONNEL

Human resource capacity at the grassroots is a major challenge currently. Training institutions for ANMs who, till now, are manning sub-centres, are grossly inferior and understaffed with no standardised training material.

The ANMs role as MPWs (Multipurpose Health Workers) is clear but inputs during training are mismatched with what they are expected to deliver beyond mother and child health. The current training programme does not equip the ANM with the skills to provide comprehensive primary healthcare. Additionally, if primary healthcare workers are to serve as “wellness” workers, their abilities to implement preventive strategies like behaviour change need to be strong. Communication skills and counselling are major gaps in their pre- and in-service training. The lack of a clear description of job responsibilities worsens the problem.

In-service training has its own dilemmas – time constraints, logistics, training material and pedagogy. A strong case exists for strengthening pre-service training by investing in quality education and innovative strategies to promote self-learning. Pre-service training should be supplemented by continuously orienting health workers on their changing roles. For continuing education and even for referral and follow-up, telecommunications using models like ECHO (Extension for Community Health Outcome) could be gainfully applied.

The second question is whether we are adequately staffed. The health sector, since 1947, has never

drawn up a blueprint for human resources needed by it. Numerous studies have highlighted the issues of manpower shortages and the unequal distribution of health workers.

Another major challenge is supportive supervision. In India, supervision tends to be authoritarian, control-based and limited to fault-finding. This focus has to change to improving performance and building relationships by helping to resolve problems and through positive feedback. Supportive supervision is essential to re-orient the skill sets of health workers to provide comprehensive primary healthcare.

Another overlooked gap is of skilled laboratory technicians. They are needed for numerous investigations to diagnose NCDs and for follow-up. The source of their training is vague and there are hardly any reports that vouch for their expertise and quality except perhaps in the field of tuberculosis and HIV. For NCDs, which rely on laboratory investigations, the importance of lab technicians cannot be overemphasised. Basic minimum qualifications need to be set for laboratory technicians placed at different levels of the system. This can only be done when it is decided which tests need to be undertaken at primary, secondary and tertiary levels. A white paper on strengthening of laboratories should also be prepared to address gaps in infrastructure, skills and analysis to meet the requirements of necessary investigations.

TRANSPORT, EQUIPMENT AND DRUGS

Currently, depending on the location, ANMs serve populations ranging from 5,000 to 30,000. Unless the worker-population ratios of the HWCs are rationalised, taking into account terrain, transport and the health conditions to be covered, there will be major gaps in service delivery and quality. Providing an NCD service would require visits to peripheral communities for monitoring and follow-up. Health care workers will need efficient transport facilities.

They would also require service equipment, much of which would need calibration and maintenance to adhere to quality requirements. There is a Biomedical Equipment Maintenance Programme in place but there is no feedback on its functionality and efficacy. Knowledge and requirement of equipment maintenance among primary healthcare workers is also perceived to be poor. Both these issues are at the heart of achieving correct diagnosis.

Procurement of items like gluco-strips or lancets is paramount for seamless activity of the HWCs. An efficient and proactive procurement system is therefore a necessity for post-survey activities, the lack of which would pose an ethical dilemma. One way to ensure procurement efficacy is to make sure that HWC staff are well-trained in logistics and stocktaking. However, central supply pools need to be responsive to peripheral shortfalls. Unfortunately, this has been the weakest point of the public health system. A study carried out by Marathe and Yakkundi (2017) in Maharashtra showed that despite the implementation of e-aushadhi, there has been no significant improvement in inventory management. It also noted the findings of the Directorate of Health Services (DHS) that only 40 percent of medicines indented by PHCs were

supplied to them.

As per the policy on NCDs, treatment will be carried out at PHC or at the district/block level hospital. For patients who do get stabilised as a result, it may be helpful for HWCs to be stocked with follow-up medication. This would minimise the inconvenience of travel for patients and encourage better adherence and treatment control. Therefore, the inclusion of a mid-level provider in the HWC team would be a helpful addition and bolster HWC capacity. If such a proximal treatment policy were to come about, maintenance of adequate drug stocks would be a mandatory requirement for prevention of treatment interruptions.

NO DATA, LOCALLY

The current health information system suffers from maladies such as inadequate data and use of information. The HMIS system is fragmented into different systems for different programmes and diseases with little interaction between them. This results in duplication of effort, wastage of time and data overload. ANMs spend significant time in documentation and reporting though much of it is not in real time. A study found that two-thirds of the ANMs’ time was spent on maintaining records. The data collected by the ANM is only used for reporting. It is seldom used by health workers to improve service delivery or local decision-making. This is because data is consolidated centrally and that makes it too late to be useful at local level. Feedback of data to primary healthcare workers is also not part of supportive supervision. Therefore, they see no value in data collection. Additional recording and reporting formats for HWCs without integrating with the current system would create another layer of work for the ANMs.

NEED FOR HEALTH CADRES

A future roadmap would need to inculcate learning from the 109 districts where the HWC and NCD programmes are currently unfolding. Such an assessment could be undertaken by the National Health Systems Resource Centre (NHSRC) and the ICMR to ensure quality and prevent duplication.

Pre-service training, especially for ANMs and ancillary cadres, must get the highest priority to cope with the complexities of multi-tasking. As more conditions like mental health, disabilities and other forms of cancer as well as trauma are added to the comprehensive healthcare package, knowledge and skill gaps of healthcare workers are likely to increase. The training programme should also focus on developing the right attitude to deliver primary healthcare.

Perhaps reliance on the existing cadres alone to tackle the breadth of disease at primary level is not wise. Either we completely restructure the existing public health nursing and ANM cadres into subspecialties that can serve as paramedical cadres, for example, dental hygienists, optometrists, palliative care, counsellors and so on, or we create separate paramedical cadres who can service areas based on local epidemiology. Mid-level skill building in prevention and curative care will reduce the load on higher-level health facilities and can even be perceived as a preventative area for curbing the severity of diseases and their complications. ■

*Ketki Shah is a public health researcher with the Foundation for Medical Research, Mumbai
Nerges Mistry is Director, Foundation for Research in Community Health, Pune*

Kashmir fears panchayat polls

PICTURES BY BILAL BAHADUR



Panchayat representatives demonstrate in Srinagar and demand total implementation of the centre's Panchayati Raj Act

Jehangir Rashid
Srinagar

THERE isn't any enthusiasm over the panchayat elections in the Kashmir Valley slated for 15 February. In stark contrast, five years ago, panchayat elections had roused much interest and many well-intentioned people had participated.

The reason is that both the former National Conference-Congress government and the present People's Democratic Party-BJP alliance did not empower panchayats at all. So, those who were elected feel they couldn't fulfil their promises to the people. They believe there is no point in standing for election unless the 73rd and 74th Amendments giving constitutional status to panchayati raj institutions are implemented in letter and spirit.

"Last time, the state government promised that necessary devolution of powers would be done. They assured the panchayats they would be fully empowered. But the government did not keep its promise. So what is the point of such a futile exercise yet again?" says Bashir Ahmed Malik, President of the All Jammu & Kashmir Panchayat Conference (AJKPC), Kashmir Province. "The government merely wants sarpanches and panches to become scapegoats and face the music from people who are opposed to any electoral activity in the state, especially in the Kashmir Valley."

The security of panchayats' elected members has been a serious issue. Around 20 panches and sarpanches have been killed or grievously injured in the past six years or so.

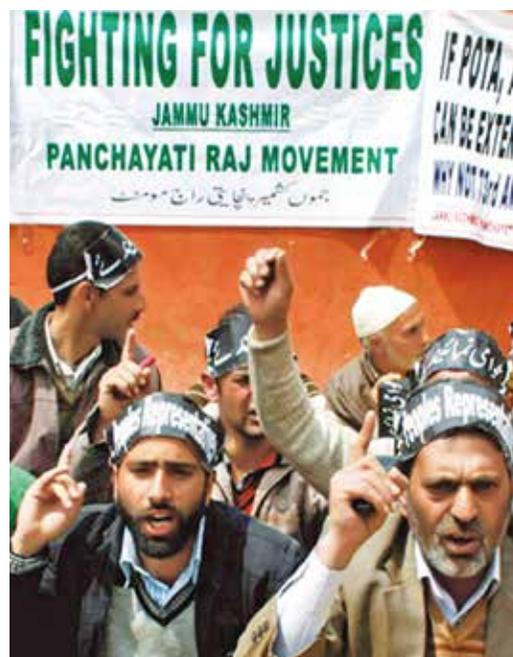
"I have no hesitation in saying that the Kashmir issue is a political issue and needs to be solved politically. Let the government come out with a meaningful dialogue process in order to resolve the

issue. Talks need to be carried on with the people who oppose the Constitution of India and not with those who swear by the Constitution," adds Malik.

In 2011, when panchayat elections were held in Jammu and Kashmir, 75-80 percent of the population participated. More than 30,000 panches were elected across the state. However, consecutive state governments did not extend the full benefits of the 73rd and 74th Amendments to the panchayats here.

The disempowerment of panchayats in the state has led to a feeling among people that panchayat elections are a mere ruse to receive funds from the centre.

Anil Sharma, President, AJKPC, asserts that those who stood for elections last time are unlikely to run for office again. "The soul of the Panchayati Raj Act



of 1989 has been taken out and right now it is a mere skeleton. The holding of elections in such a situation is a mere formality and the government just wants to shed its responsibility. No direct election of sarpanches took place in the last elections. Disempowerment of panchayats gave an opportunity to separatists following which they have asked the people to stay away from panchayat elections," says Sharma.

He adds that if elections were held in their real spirit then Block Development Councils would come up. He says District Development Board meetings should be chaired by the representatives of local self-government and not by ministers or legislators, as happens currently.

"Legislators belonging to the Upper and Lower Houses of the state legislature are expected to do bigger things. It is a pity that MLAs do work that is supposed to

be carried out by panchayat office-bearers like construction of drains and providing ration cards to people," points out Sharma.

Regional mainstream parties like the National Conference and the People's Democratic Party have been maintaining that since Jammu and Kashmir has its own Constitution, central laws cannot be applied automatically to the state. This contention is surprising since recently central Acts like the Goods & Services Tax (GST) and the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act have been applied to the state.

Malik says that empowerment is an issue with panches and sarpanches. But such empowerment can only be successful in a free and fearless environment. So the Government of India must begin talks with the separatists.

While separatist leaders like Syed Ali Shah Geelani, Mirwaiz Umar Farooq and Mohammad Yasin Malik have asked the people to stay away from the panchayat elections, militant organisations have issued threats. The largest indigenous militant outfit, Hizbul Mujahideen, has asked people to blind those who decide to stand for elections.

Sharma said that the morale of the people has dipped since the last panchayat elections as decentralisation of power did not take place. He added that enthusiasm and interest was lacking among people. However, he made it clear that his organisation does not support boycott of these elections.

Malik emphasises that people have lost faith and trust in the system and the damage can be repaired only if tangible measures are taken to solve the Kashmir issue. He said the government should fulfil its promise that a sarpanch would be like the chief minister of the panchayat. ■



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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PASSION FRUIT BOOM IN KERALA

From jams to juices and pulp, everything sells

Shree Padre
Kottayam

KERALA is on a honeymoon with passion fruit. Originally from Brazil, passion fruit has found fertile ground in the state after a government farm first began growing and processing it in a low-key way. Over the past five years, farmers, entrepreneurs and ordinary people have fallen in love with this aromatic fruit. Large sums are being privately invested in passion fruit, that too with no government incentives and subsidies or even any publicity by the agriculture department. Barring vanilla, perhaps no other crop has roused so much interest in so short a time.

Farmers find passion fruit easy to grow. Ideas like farming in collectives and clusters have taken root. An entrepreneur has started a business in helping people raise passion fruit orchards. Driving this upsurge in passion fruit is the agro-processing industry. There is money to be made from processing. A multitude of units has come up to produce squash, juice, jam and pulp from passion fruit.

Kerala's largest processor is Malnad Passion Fruit Products, which was started five years ago by three partners. Their first farm was in Puttady in Idukki district. Then they expanded to Theni in Tamil Nadu and now own 160 acres over both states.

Malnad Passion Fruit's average production is seven tonnes per acre. A small percentage of fresh fruit is packed and sold to Lulu's supermarket in Kochi. But mostly the fruit is processed and bottled at the company's unit in Kothamangalam. Squash is exported to the UAE and Qatar. Pulp in small cans is likely to be launched soon.

"Our semi-automatic bottling unit produces squash almost through the year," says Manoj M. Joseph, one of the company's partners. "We produce around 6,500 bottles of squash per day in 500 ml, 750 ml and one-litre bottles. We have 62 dealers across the state."

Interestingly, it was public sector agricultural agencies that first experimented with passion fruit for cultivation and agro-processing in Kerala. Malnad Passion Fruit got its staff trained at the state-owned Orange and Vegetable Farm at Nelliampathy in Palakkad district. Spread over 50 acres, it was the only commercial farm that cultivated passion fruit and made it into squash, jam, jelly, juice and pickle from the fruit's rind.

"We don't sell fresh fruit although there is demand," says Ajit, farm superintendent. "We process the fruit. Squash has very high demand. Bottles fly off the shelf. We sell a 500 ml bottle of squash for ₹100, which is cheaper than what private producers charge. In summer, we sell on an average 1,000 sip-ups a day. Frankly, we can't meet the demand."

The Plantation Corporation of Kerala (PCK), another public sector



A passion fruit orchard with concrete poles

Passion fruit is an eco-friendly job creator. A small passion fruit business, if you own land, doesn't need much investment and is relatively risk-free.

organisation, based in Kottayam, owns 25 acres. It began growing passion fruit in three different areas, three years ago. It, too, manufactures squash.

"The vines began yielding fruit from the first year itself. On one hectare we have planted 1,250 vines. At the rate of ₹100 per kg for fresh fruit, just calculate the first year's income. It's a neat ₹875,000. Deduct 40 percent as production cost. Which other crop yields so much income in the first year itself?" asks Justus Karunarajan, General Manager, Operations, at PCK. The plantation has been experimenting with pisciculture, duck farming, garcinia plantation and rambutan, but finds passion fruit the most lucrative.

Demand for fresh fruit is also growing. At PCK's 2.5-hectare farm in Mulliyar, where again mostly squash is produced, manager K.R. Vinod says people approach them for fresh fruit to send it to their relatives in the Gulf. This is just the second crop at the farm. "In the past two seasons, we made a neat ₹30 lakh," says Vinod.

"Passion fruit is becoming Kerala's number one fruit in terms of profitability," says Dr P.P. Joy, a scientist with Kerala Agriculture University (KAU). "It earns



Customers enjoying a glass of passion fruit juice at a juice bar in Kanhirapally in Kottayam



Ajit, superintendent, on the right, at the state-run Orange and Vegetable Farm in Nelliampathy with Yousuf, a former superintendent

farmers and processing units twice more than pineapple.”

MEDICINAL QUALITIES

What explains the rising popularity of passion fruit among consumers? It is, no doubt, aromatic. But the real reason is the fruit’s many nutritional and medicinal qualities, especially the belief that it helps dengue patients by increasing platelet count quickly.

Doctors recommend it and during the dengue season, the sale of passion fruit begins to spiral. Shops and fruit vendors around big hospitals start selling passion fruit. Fruit vendors, realising this, begin to stock it. “The fruit has a unique aroma, is a source of Vitamin C and has many nutritional benefits. Apart from dengue patients, people with high uric acid, diabetes or cancer consume passion fruit. This creates heavy demand,” says Karunarajan.

The leaf decoction of passion fruit is believed to bring down blood sugar. The fruit has antioxidants and richer reserves of polyphenols than other tropical

fruits such as bananas, lychees and pineapples. Extract of purple passion fruit peel is believed to help reduce wheezing and coughing associated with asthma, according to one scientific study.

Farmers find people turning up at their doorstep to buy passion fruit for family members who are ill.

Perhaps the biggest advantage for farmers is the creation of a local market by entrepreneurs for both fruit and juice. A decade ago, it was likely only the Nelliampathy farm and Mountain Fruits of Idukki (*Civil Society*, May 2014) that were making passion fruit juice. Today, there are more than a dozen small and medium units that are happily marketing the juice and fruit.

Caterers, too, have played a big role in introducing passion fruit to consumers. Joseph recalls that when they first set up their unit, they faced the dilemma of creating a market for their squash. “We decided to attract the attention of caterers. We contacted them, arranged a meeting, introduced our squash and gave them samples. In fact, we launched a five-litre pack specifically for caterers,” says Joseph.

Now passion fruit juice is a favourite at weddings, social functions and sports meets, thanks to caterers. Event managers always include it in their drinks list. No wonder the fruit’s popularity graph has risen exponentially.

GROW, CRUSH, SELL

Passion fruit is an eco-friendly job creator. A small passion fruit business, if you own land, doesn’t need much investment and is relatively risk-free. “You need to invest about ₹2 lakh to set up a *pandal* with concrete pillars on an acre,” says Girish P.K. of Kozhikode whose unit makes Nutrifruit passion fruit squash for export. He sells about 5,000 bottles to the UAE annually.

Three years ago, he travelled to Manipur to learn more about this fruit. He bought 15,000 passion fruit plants and sold many in Kerala with a guarantee he would buy back the fruit at ₹40 a kg. “As prices increased subsequently, many farmers aren’t giving me the fruits,” he complains. Girish has become a passion fruit enthusiast. He has taken pains to study its farming methods and teach them to farmers.

“The major investment is for the *pandal*,” says Johnny Joseph, another passion fruit entrepreneur. “Pest and disease issues do exist but these are manageable. My family and I undertake all major farming operations, including harvesting.”

Joseph, who is from Mundakayam in Kottayam district, works in the Superintendent of Police’s office. Five years ago, attracted by passion fruit’s

beauty, he erected a *pandal* and planted a few vines. The vines yielded a bumper crop. Joseph began cultivating the fruit on his five and a half acres. He now runs a juice shop on the roadside near his farm and sells the fruit for ₹150 per kg.

Village Crush is another small unit run by Renu Sebastian of Kanhirapally. She lost her husband in a road accident seven years ago. Jose Jacob, who owns a nursery, showed her how to make passion fruit squash and helped her set up a juice stall at his nursery. In 2013, Sebastian used to sell squash made from 800 kg of fruit. This year she has made 5.5 tonnes of passion fruit pulp and is confident of selling it to caterers and hotels.

Then there is Elegant Enterprises, a fruit processing unit set up by K. Madhavan Kutty of Kodungallur in Thrissur district one and a half years ago. He sells passion fruit squash under the brand name of Naturaa. About a month ago, Jobin of Olivia Ventures at Malappuram started a fruit processing unit and is keen to produce passion fruit squash. Many more passion fruit squash units are in the pipeline.

Mountain Fruits has stored five tonnes of pulp this season to produce squash. But they source fruits only from high mountain ranges. George Kurian says fruits from the mountains taste much better than those grown in the plains.

KIOSKS AND COLLECTIVES

Several kiosks in cities selling *neera* (an extract from toddy palm) have switched to selling passion fruit juice blended with *neera* honey. Kiosks were actually closing down since *neera* production has declined due to white fly and drought. Vinod Kumar, whose NGO, Maithri, helped develop *neera*, came up with this novel idea and it has caught on. While *neera* used to be sold at ₹40 per drink, *neera* honey mixed with passion fruit juice is sold for ₹20.

An experiment in collective farming is also being tried out. Twelve members of the Mahathma Farmers Club, inspired by the government's Nelliampathy farm, invested ₹3 lakh and leased an 80-cent orchard in Tritala in Palakkad district in February 2015. The landowner provides water and 10 percent of the profit is shared with him.

The orchard yielded 1.5 tonnes of fruit the first year. The club earned ₹1.5 lakh. Says Harinarayanan P.K., associate coordinator, "Mohanan Vaidyar, a naturopathy and food adulteration consultant, advises eating one passion fruit every day as a preventive against cancer. Doctors in Thrissur recommend this to patients suffering from different ailments. Relatives of patients come from as far away as Ernakulam to buy our fruit."

Several households in Cherthala in Alleppey district have formed a passion fruit cluster called Harithasree. Families grow three to five vines on *pandals*. The fruits are pooled and each family is paid ₹40 per kg. The shop sells passion fruit juice for ₹40 per glass and fresh fruit at ₹70 per kg. If fruits are unsold, they are converted into pulp.

Satheesh Babu, cluster leader, says they grow the fruit, sell it, process it and consume it especially during weddings and birthday celebrations. "Being able to sell without needing to transport it is a boon," he says. A farmers' group in Mannarcaud has planted passion fruit in many households with the slogan "a passion fruit vine in each household". This trend has started in many parts of the state.

Sensing the demand for passion fruit and lack of farming knowledge among enthusiasts, agencies have sprung up that can develop passion fruit orchards for people. Abdul Shukoor K.P. of Kondotti near Kozhikode has started a company called Organic Kerala which, he says, has developed about 10 acres of orchards in the state. The company also offers farmers a buy-back agreement since it is keen to process the fruit.

R. Raveendran, an expert in organic terrace farming in Thiruvananthapuram, has hugely popularised passion fruit among households. He started growing passion fruit on half his terrace in 2008. "Till date, I haven't sold a single fruit," he says. "I gift it to people for propagation and to those who are ill. I also help people grow the fruit. Some of them are now earning extra income by selling the fruit for as much as ₹100-150 per kg."

MARCHING ON

The passion fruit craze is now spreading from Kerala to neighbouring Tamil Nadu and, to a lesser extent, Karnataka. Yusuf, former farm superintendent at the government-owned Nelliampathy farm, says that people are so keen to plant



R. Raveendran, an expert in terrace farming, with his passion fruit

Organic Kerala is a company that helps people to raise passion fruit orchards. It also offers farmers a buy-back agreement since it is keen to process the fruit.

passion fruit that farm labourers from Nelliampathy were invited to Theni and the Cumbum belt of Tamil Nadu to raise orchards there.

In Theni, R. Ramesh, an agro-input dealer, has started the Sree Vaigai Passion Fruit Association with his friends. The district has 5,000 acres of grape gardens. A few years ago, powdery mildew disease seriously affected grape cultivation. Farmers found themselves facing a deep crisis. Some of them wisely started using their *pandals* to grow bitter melon and bottle melon. But bad luck struck and the farmers didn't get good returns. Competition was stiff due to a glut in the market. Ramesh's group has now started popularising passion fruit farming on *pandals*.

"We have already planted passion fruit on 10 acres in different areas. People are keen to extend it to another 50 to 100 acres," says Ramesh, who is exploring marketing opportunities in Madurai and Chennai.

"In February we are convening a big meeting of farmers, buyers and scientists to create more awareness of passion fruit cultivation and to bring relief to the much aggrieved farming community," says Ramesh.

Tamil Nadu's climate, with less rainfall and more sunshine, is believed to increase passion fruit productivity. "We don't have something like a peak fruit season here," says Ramesh. "If you feed the vines, they go on fruiting. We use organic manure, bio growth regulators and stimulants to increase production." The longer warmer climate implies that Tamil Nadu can sell passion fruit during the off-season for a higher price.

Some farmers from Kerala are spreading passion fruit cultivation to Karnataka. Sebastian has a two-acre orchard at HD Kote near Mysore which has started fruiting. Joseph has planted vines on one acre taken on lease in Karkala for ₹1 lakh. These farmers are hoping to sell their fruit in Kerala since passion fruit is not very well-known in Karnataka.

OPPORTUNITY AND RISK

Passion fruit is a farmer-friendly crop. It has a ready domestic market and an export market. Farmers with little investment can set up a tiny processing unit. The vines yield fruit the first year itself. They don't need replanting for about four years and replanting is not expensive. Though the commercial growers can't wait for that to happen naturally, the fruits fall on their own. So farmers don't need to hire labour for harvesting. The pulp is protected by a thick rind and its quality remains intact for 10 days. Therefore unsold stock can be processed. Transport is also available. Most maiden growers of passion fruit are keen to scale up production in the coming years.

In Kerala, passion fruit starts flowering in April and May. The monsoon or post-monsoon season is considered the best time to begin planting. Manoj believes that in Kerala, September-October is the best time and in Tamil Nadu,



Kennedy Peter, a partner of Malnad Passion Fruit, with his company's range of products



Women extract passion fruit pulp at the state-owned Plantation Corporation of Kerala

Passion fruit has 3 colours



PASSION fruit's colour is a barometer of its taste. The fruit comes in three colours — purple, yellow and maroon — and four varieties. Yellow passion fruit is the most common. It is more sour and aromatic than the other two.

A purple passion fruit hybrid variety named Kaveri was launched by the Indian Institute of Horticulture Research (IIHR) decades ago. The Kerala Agriculture University (KAU) has also released a purple variety called 134-P. Purple passion fruit is less sour and less aromatic. A slightly larger maroon and yellow Brazilian variety has also recently entered Kerala's fields and homesteads.

Just six to eight Brazilian passion fruits make up a kilo as compared to 10-15 yellow ones. Juice-makers prefer the yellow passion fruit but also mix purple with yellow.

A sweet variety of passion fruit (*Passiflora ligularis*) is grown in Munnar in Kerala, Ooty and Kodaikanal in Tamil Nadu. This variety grows only in the high ranges. It is less pulpy and sour. You can cut the fruit and eat the pulp with a spoon.

Passion fruit seeds are also rich in polyphenolic compounds and deliver plenty of insoluble dietary fibre and magnesium. In Thailand, China and other countries, people eat the seeds with the fruit pulp. Kerala is belatedly realising the importance of passion fruit seeds. Malnad Passion Fruit Products and KAU's Ambalavayal Regional Agriculture Station now include seeds in their squash bottles.

Lulu's supermarket in Ernakulam and Bengaluru's malls are the main buyers of passion fruit. They stock the yellow and purple varieties and the sweet variety from Kodaikanal. "Demand is increasing because of the medicinal value attributed to passion fruit," says Ummer Mustafa who buys fruits and vegetables for Lulu.

February. "The growth is so vigorous in Tamil Nadu that vines start flowering in three to four months and fruits set by August," he says. Regular pruning in winter when vines are dormant is critical because fruits emerge only from new shoots arising from old canes.

But most newbie farmers don't realise that a deadly disease caused by fusarium fungi can strike passion fruit. Some years ago this disease had even destroyed passion fruit vines in the Indian Institute of Horticultural Research (IIHR). "It's a complex disease," says Dr B.N.S. Murthy, former head, Fruits Division, IIHR, and at present the Horticulture Commissioner of India. "A nematode attack on the roots makes it vulnerable to fusarium disease. A combination of both is dangerous. The yellow variety of passion fruit is a bit more tolerant to this than the purple one."

An effective remedy hasn't been found. "Identifying resistant or tolerant cultivars and grafting, using its root stalk, would be the best solution," says Murthy. Alternatively, a medicine could be researched to tackle the disease.

Another critical area for research is identification of cultivars with higher pulp content. "At present juice recovery is one-third or, say, 35 percent. I have heard people say that some fruits yield 45 to 50 percent, so we need to increase pulp extraction to this level," says Dr Joy.

Besides, passion fruit still isn't recognised as a crop by the Kerala government. "So bank loans aren't available for commercial cultivation," complains Girish P.K. "Seasonality is a bottleneck. We also need cold storage facilities."

Farming in clusters has its downsides as well. "An unhealthy competition has started," says Girish. "Small growers who can't always sell for a good price, settle for lower rates." So price fluctuations are a headache for other farmers and processing units.

Currently, India imports passion fruit pulp from Brazil. Large-scale industry is on the lookout for tonnes and tonnes of passion fruit, says Dr Joy. The area under passion fruit cultivation in Kerala is around 300 hectares and unlikely to cross 1,500 hectares since large expanses of land aren't available.

Large-scale industry has some disadvantages as well. Manipur, the epicentre of passion fruit cultivation, suffered a major jolt when a private processing company that was buying the fruit suddenly closed down.

"Passion fruit farming was going on nicely till 2008. We had about 320 farmers producing 400 tonnes," recalls L.B. Sinate, former member, National Horticulture Board, who played a big role in forming the Manipur Passion Fruit Farmers Association. "Suddenly, the company, Exotic Juices, stopped buying passion fruit. Lots of fruit had to be destroyed. We are trying to revive it. Sixty to 70 farmers are now growing the fruit and selling it for ₹18 to 20 per kg."

If the present trend continues there will be a surfeit of passion fruit in Kerala, so new markets will have to be explored. Since the fruit is relatively unknown in Tamil Nadu and Karnataka, a campaign to popularise it is needed. Also, agriculture departments must set up cold storage facilities so that passion fruit can be sold off-season. The department should also spread knowledge about pulp preservation.

The fall in rubber prices will motivate more farmers to switch to passion fruit. But most farmers just have basic knowledge of passion fruit cultivation. Agricultural scientists too haven't specialised in it. New farmers say they would like a video, a handbook with agronomic information, as well as a directory on passion fruit.

In Tamil Nadu, says Joseph, they were left mystified when their vines showed good vegetative growth but no flowering. Finally, they solved the puzzle. The problem was that large-scale pesticide use in the vicinity had killed all the pollinating insects, the honeybees. "We had to employ 80 labourers to manually pollinate the vines. We now rear bees in bee boxes to carry out pollination." However, according to Joseph, Tamil Nadu's dry weather, less rain and plentiful sunshine are better for the crop than Kerala's conditions.

Passion fruit still has many challenges to overcome. It's time to convene a Passion Fruit Fest in Kerala along the lines of the Jackfruit Fest and Pineapple Fest to give this fruit its rightful place in the sun. ■

BUSINESS

ENTERPRISE | CSR | ICT | GREEN TECH

Can a market in crop residues put an end to a burning problem?

Sonalika is helping bring stakeholders together to look for solutions

Civil Society News
New Delhi

INNOVATIVE mechanisation and a robust market in crop residues may just be the best ways of discouraging farmers in Haryana and Punjab from burning residues in their fields after a harvest, adding to air pollution in New Delhi and other northern cities in the run-up to winter.

If the residues could be collected and used as fodder or fuel or put back into the fields as mulch, farmers would be incentivised not to burn them as they prepare their fields for sowing the next crop.

Removing the leftover stalks of a crop of rice or wheat after a harvest can cost as much as between ₹2,500 and ₹4,500 an acre, which is expensive for farmers who are already coping with financial stress in a troubled rural economy.

But if local businesses were to provide machines for removing the residues and find ways of profiting from putting the residues to alternative uses, perhaps an enduring solution could be in sight.

It is not easy, but it is possible, says Lopamudra Priyadarshini, who heads the corporate social responsibility (CSR) initiatives of Sonalika International Tractors, a trusted manufacturer of tractors with a strong presence in rural India.

It is a Saturday afternoon when we meet, but Lopamudra is in her office at the company's rambling headquarters in south Delhi. In fact, she is just back from Chandigarh where she met officials of Haryana's Department of Science and Technology. She also travelled to Rajpura to see how L&T, the engineering major, has turned crop wastes into pellets at a demonstration unit for possible use as fuel in one of its power plants.

The crop residue burning problem is clearly top of the mind for Lopamudra and Sonalika as a company, which wants to contribute to alleviating air pollution in New Delhi and at the same time help farmers adopt progressive practices.

Sonalika has a significant presence and credibility



SHREY GUPTA

Lopamudra Priyadarshini: 'My job is to help the farmer'

Crop residues present a great opportunity to transform the village economy by taking waste and creating value from it and in the process solving an environmental problem.

in villages. It also runs a string of skill training centres. It is a catalyst for empowering rural people and helping them make the transition to better technology. The Haryana government has turned to Sonalika to help find a solution to the complex problem of crop wastes.

“Officials said use your CSR funds to set up a pellet making unit in a village. I said we don’t just want to spend our CSR funds. We want to find a sustainable solution,” says Lopamudra.

“We want to create a model in one village, which can then be adapted and implemented in other villages and problem areas in the whole state,” explains Lopamudra. “It is important to cover a large area because there is no single solution. Handholding of farmers has to happen in numerous ways.”

Currently, burning of crop wastes is banned and invites a fine. The courts have admonished the governments of Haryana and Punjab for failing to be strict with farmers.

But the problem is a complex one and farmers are helpless. They don’t have much time between the rice harvest and the sowing of wheat. The cost of removing the residues by using machines is an additional burden. There is also the question of what to do with the residues since not all of them are in demand as fodder. Turning them into mulch is good for the fields but there are costs and limitations here as well.

Lopamudra believes that government departments, banks, venture capitalists, the voluntary sector and industry should work in synthesis to help farmers deal with a situation that is way beyond their control.

“My job is to help the farmer. So, what I am trying to do is bring in various stakeholders who have the expertise to address the issue in a sustainable way,” says Lopamudra of the role that Sonalika has chosen for itself.

“The farmer knows to work in the field. He cannot be expected to bring in appropriate technology, set up enterprises and develop marketing strategies. Our competency in Sonalika, on the other hand, is in finding managerial solutions,” she says.

Looked at like this, crop residues present a great opportunity to transform the village economy by taking waste and creating value from it and in the process solving an environmental problem.

Crop residues can be turned into pellets for use as fuel, fodder and biogas. They can also be made into compost, biochar and slurry and given back to farmers for fertilising their fields and improving soil productivity. With mechanical support, the residues can be cut and retained in the fields as mulch.

Each of these options requires a sustainable model, which is possible if businesses can be built around them. The goal should be to handle the wastes at minimal cost to the farmer. Innumerable small enterprises could rent out machines, make bales of the wastes and warehouse them, add value by shaping them into pellets and generate biogas from the straw. In doing so they would take the load off the farmer and simultaneously provide local employment to young people who may no longer see a future for themselves on the fields.

“There is really no single solution. Solutions evolve depending on the need. Local entrepreneurs are best suited to find what works,” says Lopamudra.



Crop residues collected and made into bales



Pellets made from residues can be used as fuel



Once facilities are created and opportunities emerge, progressive farmers will begin to see the benefits of not burning their crop wastes and instead deriving value from them.

THREE MECHANICAL OPTIONS

In a broad way, there are three machines which can be used to deal with the residual wastes on a field as a farmer goes from harvesting to planting the next crop.

These are the Bailer, the Mulcher and the Happy Seeder. They cost a few lakhs of rupees each and no single farmer can be expected to block that amount of money. So, as mechanical solutions go, these machines need to be shared to be affordable.

The Bailer cuts the wastes and makes bales which can then be sold, mostly as fodder. The Mulcher cuts and spreads the wastes on the fields so that they serve as mulch and nourish the soil. The Happy Seeder plants the seeds of the next crop in between the stubble left behind from the harvest and over time the stubble itself becomes mulch.

The problem is that no machine has universal

Crop residues can be turned into pellets for use as fuel, fodder and biogas. They can also be made into compost, biochar and slurry and given back to farmers for fertilising their fields and improving soil productivity. Residues can be retained in the fields as mulch.

application. The Happy Seeder has received the most attention, but it has its limitations depending on the height of the stalks. Also, it won’t work if the next crop is potato and not wheat.

Farmers burn crop residue to prepare their fields for the planting of the next crop, mostly in the cycle of rice followed by wheat.

The farmers are mostly pressured for time between crops. Removing the residue is a cost involving the hiring of labour or renting of machines.

Burning the residue, for most farmers and particularly the smaller ones, is the cheap and easy way out. It has some benefits too like adding carbon to the top soil and killing off pests and weeds. On the other hand, there is the downside of micronutrients being destroyed by the burning. But, this is what the farmer can afford.

“Farmers need access to appropriate machinery and training to implement change to discourage burning,” says M.L. Jat, of the International Maize and Wheat Improvement Centre (CIMMYT), in the organisation’s official release. “Using crop residue in



A tractor takes away crop residue in bales

a sustainable and eco-friendly manner could benefit all stakeholders.”

But Jat points out that only 15 percent of rice residues can be used as fodder, fuel and industrial raw materials.

“Residues are of great economic value as livestock feed, fuel and industrial raw materials, but of the total rice residues produced in northwestern India, only around 15 percent can potentially be used for these purposes and the rest must be managed with in-situ management technologies,” says Jat.

CIMMYT has been working extensively with farmers and promoting the Happy Seeder as the answer to stubble burning. Jat’s research has been conducted in collaboration with the CGIAR research programmes on maize, wheat and food security in the face of climate change.

If this is so, a combination of entrepreneurial activities and improved in-situ agrarian practices



Burning stubble on fields

are needed to make farming more sustainable and put an end to the burning of wastes.

A huge responsibility rests with the government to create awareness among farmers. Financial incentives are also needed. It is also important to realise that multiple solutions and flexibility are required.

“We don’t have a readymade solution. Solutions will evolve depending on the need. This means working closely with farmers. Over time it will be possible to have dependable solutions which farmers can implement depending on what they plan to do. It could be mulching, baling or the use of the Happy Seeder,” says Lopamudra.

At the pellet-making unit in Rajpura, crop wastes have been collected from farms spread over some 300 acres and turned into pellets. The farmers have not had to do anything. It has all been done for them. As an experiment, such an approach may be fine. But, the true test of a workable system will be when farmers and local entrepreneurs join the dots.

There is also a need to quickly transfer technology and share learning. For instance, currently only the National Thermal Power Corporation (NTPC) is said to be successful in using pellets made from crop wastes as fuel.

Passing this experience on to other power producers will spur demand for the wastes and provide the opportunities that would attract small entrepreneurs who would in turn reach out to farmers.

The availability of machines will depend on financial support to entrepreneurs, who will also have to acquire the expertise for running and maintaining them. Or perhaps the servicing requirements could be an opportunity worth pursuing separately.

The possibilities are endless and there are indications that people already sense them. Lopamudra says when she was in Rajpura to see L&T’s pellet making, she was approached by representatives of a micro local unit who said they were fabricating machines to make pellets.

Lopamudra also refers to an outfit in Bathinda which has built a business model around using crop wastes to generate biogas, which it sells. The farmers pay the outfit for removing stubble and get compost and slurry in return.

Learning from such initiatives and promoting them for replication will be a challenge for which multiple partnerships will be needed. As with most environmental issues involving public health, the clock ticks loudly. Estimates have it that in certain months about 25 percent of Delhi’s air pollution comes from the burning of crop wastes in Haryana and Punjab. If another air emergency is to be avoided, time for effective action is running out. ■

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INSIGHTS

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The tyranny of the textbook



BACK TO SCHOOL

DILEEP RANJEKAR

I love the stretch that runs along the Bhimtal lake on the way to Almora and envy the people who live in a palatial bungalow that stands tall on the peak of the hill beside the wonderful lake. While passing through the usual congestion at Bhowali and looking at some fresh fruit in the numerous fruit shops on both sides of the road, something that my colleagues were discussing in the car caught my attention.

Having collaborated with government education functionaries at cluster, block, district and state level for a very long time, my colleagues have a close rapport with them and have no hesitation in freely discussing even sensitive issues. One of them, who is in charge of a district, was narrating a recent conversation with the District Education Officer (DEO). The DEO told him that during a recent visit to one of the schools, he had asked a teacher about his idea of quality education. The teacher replied that it was about completion of the textbook during the year. This response greatly disturbed the DEO and led him to discuss the issue with not only many more teachers in the school but also with other education functionaries such as the cluster and block resource persons. The scale, depth and extent of lack of clarity about quality education among those dealing with development of children on a daily basis shocked the DEO.

The DEO queried that if education quality is all about completing a 40-plus-page textbook during the year, what is the entire elaborate arrangement in the education department for? If teachers and education functionaries are so confused about the quality of education, how on earth can they work towards achieving quality? Some teachers even said simply that they had to follow the rules! The DEO questioned: Which rules? Who laid them down? Where do these notions about education quality come from? Have they heard of or read the national education policy or national curriculum framework? They did not have clear responses. The DEO was highly concerned.

If it is all about textbook teaching, the entire rigmarole that the nation goes through for 250 million children across 1.4 million schools is unjustified. The existence and working of several academic and administrative institutions such as

the National Council of Educational Research and Training (NCERT), the National Council for Teacher Education, the National University for Education Planning & Administration, the University Grants Commission, the All-India Council for Technical Education, the State Councils for Education Research and Training, the District Institute of Education Training, the Block Resource Centres and so on are unnecessary. Several programmes that the government announces from time to time such as continuous comprehensive

under each lesson in the textbook, as if that was the sole purpose of learning. Thus, the textbooks, rather than helping deliver the aims of education, were in fact moving the education process away from the goals.

During the past two decades, with the initiative of NCERT and the Central Board of Secondary Education (CBSE), the quality of textbooks has certainly improved. More and more states want to adopt NCERT textbooks. The lessons are better illustrated with pictures, and competencies that

SHREY GUPTA



Most teachers think education quality means completing the textbook on time

The fact remains that reducing the entire process of education to ‘teaching of textbooks’ is a cruel joke considering all the resources available.

evaluation of children, incentives for girl child education, promoting the education of children of disadvantaged parents and the like are meaningless if they are intended only to make children learn merely textbook lessons.

When we launched the ‘Assessment Led Classroom Reforms’ programme — titled the Learning Guarantee Program, we realised, with even greater force, the entire examination orientation of the current education system. We were troubled to find that the important process of child development through enabling children to realise their potential was reduced to simply preparing them to answer the five-six questions

would be achieved by teaching a particular lesson are defined right at the beginning of the lesson. However, the fact remains that reducing the entire process of education to “teaching of textbooks” is a cruel joke considering all the resources available. It is not only just depending on textbooks that is problematic, the way textbooks are used in our schools is equally dangerous.

Once, while travelling in a state, we stopped at a school that was using digital learning resources developed by the Azim Premji Foundation. However, it was around lunchtime and the teacher dealing with computer-aided learning had gone for

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Liquor creates rural poverty

BHARAT DOGRA

DINDOLI and Khera Mewat villages are near each other and share many similarities. Both are in Sarsawa block of Saharanpur district in Uttar Pradesh, farming is the main livelihood and income levels are similar too. Yet there is a drastic difference in their happiness quotient. While the women of Khera Mewat say they are happy, those of Dindoli confess they are very depressed.

The reason for their grief is liquor. In Khera Mewat liquor consumption is low and money is spent on families' needs. But in Dindoli the women complain bitterly that the men spend their sparse earnings on liquor. Women have to shoulder the responsibility of running homes. Domestic violence is on the rise.

The culprit, say the women of Dindoli, is a liquor shop or *theka* located right in their village. It's very convenient for the men to have liquor available at their doorstep. Even children have started consuming liquor, cry the anguished women.

As a rule, women in villages say that the presence of a liquor vend in the village at once increases alcoholism. Such *thekas* may be auctioned ones with legal sanction or illicit shops where liquor is also distilled. The health of the men gets ruined, including of those in their prime.

Invariably, the precarious economy of many poor or even better-off households is rudely shattered. The education of children suffers and both women and little ones become the target of domestic violence. Several such villages become dens of bad characters.

Topri village in the same district was suffering a similar fate as Dindoli. Some well-connected men turned it into a big centre of illicit distillation and

sale of liquor. This village soon faced all the problems associated with liquor. Some men even died due to the severe impact liquor had on their health. Parts of the village became very unsafe for women.

The women of Topri decided to fight back. The village had some self-help groups (SHGs) of women and an organisation of farm workers and marginal

had to set up an organisation and we collected money to make this possible. Finally we succeeded."

Before this there was another, even bigger agitation against a *theka* in Pather village of this district which is still a major talking point in these villages. The liquor contractor here was a very powerful person who had turned his shop into a place where goons from nearby areas gathered.

Women and even schoolgirls felt very insecure. The liquor vendor did not hesitate to sell liquor to even minors and children with the result that the drinking habit started spreading among children, much to the alarm of their mothers.

The women here decided to ask the government to remove the *theka*. The movement continued for several months as the women, overcoming caste and religious divides, sat on a *dharna* against the *theka*. They did not shrink from their resolve even though the police beat them mercilessly and the contractor's goons threatened them time and again. The protesting women got help and encouragement from Disha and its activists. People

came from far and wide to extend support. Finally, the government relented and the *theka* was removed from the village.

Following this victory, people in several other nearby villages were inspired to remove illicit distillation and sale points from their villages. Raj Kumar, a leading activist of the Pather movement, says, "We helped them on the basis of our long experience but after that they essentially fought their own battle."

The government should realise how strongly women in remote villages feel about this issue and take policy decisions keeping in view the women's concerns as well as the health and safety of all villagers. ■



When men spend their earnings on liquor, household incomes decline drastically

farmers in which women were included. This made it easier for women to take a united stand on the issue. They went from one place to another to search for stocks of illicit liquor and inform the police. They met senior civil and police officials and took out protest demonstrations as well. The women were helped by influential social organisations, particularly Disha.

These efforts continued for about a year. Finally, the administration and the police took steps and the illicit distillers were driven away. As Roshan, a leading activist, said, "After this, the consumption of liquor in our village came down significantly." Reshma, a village woman, said, "For one year we had to struggle, taking great risks. We were told we

Continued from page 25

lunch — locking the computer room. The principal invited us into the Class 4 classroom where he was teaching. He had just finished teaching a lesson on the Deepawali festival. He asked one of the girls to read the lesson and encouraged us to ask questions of the students. From the way the girl was reading the lesson, I realised she had learnt it by heart. I asked her whether she could read the lesson without looking at the book and she said yes and went on to recite it accurately. The first sentence in the lesson was "Deepawali is a festival of lamps and it occurs in the Hindu calendar month of Kartik." So I wrote the first two questions on the blackboard: "What is Deepawali a festival of?" and "In which Hindu calendar month does it occur?" My colleagues and I found that not a single student could answer. The bottom line was that the children had gone through

the motions of studying the lessons without understanding the content.

Thus, the problem is not merely with the textbooks but with the limited way in which the textbook lessons are used in our education system. There is so much that could be covered in association with the content of each lesson. However, school after school and teacher after teacher are missing out on that. Even during professional courses, many of us realise that while considerable learning happens through the books, major learning happens through field exposure, the seminars, the conferences that we organise and, most important, the discussions among peers.

At school level, nothing prevents teachers and educators from taking the children to a nearby hospital or a government office or a factory or a police station or an agricultural field to provide

them a real-life experience of issues they can relate to. The learning and confidence-building that happens through a presentation of everyday experiences, or discussion of a particular national or religious song or poem is far richer than merely reading a lesson in a book without adequate discussion around it.

It is important to understand the context, purpose and genesis of textbooks and their limited role in educating our future generations. They were developed to make available a standardised way of dealing with the given subject through well-organised stories and other content that were mere vehicles or tools and not an end in themselves. The essence of education goes beyond particular tools. It requires teachers to deal with the process in a holistic and integrated manner. ■

Dileep Ranjekar is CEO of the Azim Premji Foundation

No Shylocks in MFIs



EVERYTHING MATTERS

RATNA VISHWANATHAN

THE bane of microfinance in India has been the perception of it being an exploitative business, one that charges usurious rates of interest from poor borrowers. From an optics perspective, it is a disastrous positioning of borrowers from low-income households and 'for profit' microfinance institutions (MFIs).

Right from the inception of microcredit entities, there has been strong criticism of high interest rates charged by MFIs. In recent years, this criticism has intensified. The common perception is that the unfortunate combination of profit-seeking MFIs, minimal competition and vulnerable borrowers has thrown up dangerous potential for exploiting the poor.

This is actually far from the truth. Today, with multiple entities lending to the same borrower base, there is a sizeable amount of competition that MFIs face. While MFIs are stringently regulated by the Reserve Bank of India (RBI) in terms of the lending framework — including size of loan, rates of interest, tenure of loan — and are banned from taking deposits, other entities such as banks, NBFCs (Non-Banking Financial Companies), and Section 8 companies lending to the microfinance sector do not have such restrictions. So we are in a peculiar situation where the MFIs take the rap for over-leveraging their borrowers but all kinds of entities are lending to the sector.

Perception is a key driver. All of us are aware of the oft-repeated line that perception equals reality. The MFI sector is never allowed to forget that once upon a time there was a state called Andhra Pradesh and a crisis happened there. I think there's a need to step back and understand why the NBFC-MFI sector exists as an entity. The population to which they provide credit comprises women, from low-income households, and all of them are provided unsecured loans. Until recently, banks did not lend to this sector because it involved low-value, high-volume transactions which meant a heavy

administrative load for the banks. The unmet need for credit was what prompted MFIs to move into this space.

There are arguments that say they did so because they derived the benefits of priority sector lending. Despite this, banks still lend to them at high rates of interest. The MFI borrows from commercial banks at rates ranging from 13 percent to over 18 percent. To hedge against the fact that they provide unsecured loans, MFIs put up cash collaterals to the bank so that the latter's interests are protected.

This is interesting since both entities are regulated by the same regulator. Ironically, the MFI sector has traditionally demonstrated NPAs of under one percent. And we all know where banks in India stand today regarding NPAs. It seems the poor value their credit more and understand the discipline of

full 10 percent. Within that 10 percent, they cover all operational costs and other expenses and have very slim profit margins which range between one to one-and-a-half percent. Unlike other financial service institutions, they are not permitted to take deposits by the RBI.

So, in effect, they end up with a fragile single-product model. Despite this, as of date, 80 percent of the industry is lending at 24 percent or less. Compare this to other entities which have started lending in this space today. Other institutions, such as banks, NBFCs, and Section 8 companies all provide credit to the same set of borrowers. With lower cost of funds, especially in the case of banks, where it is 6 or 7 percent, they still lend at 26 percent. Unlike MFIs, they have the benefit of a suite of products and this is portfolio diversification,

not mainline business. But these facts are not commonly known. Hence the NBFC-MFI becomes the poster child for high interest rates.

There needs to be recognition of this fact, particularly in an environment where the face of the financial services industry is changing fast. Today, banks are keen to acquire MFI businesses because it deepens their outreach with an up and running infrastructure. The essence of microfinance has been its "feet on street" model. The people connect is a large part of how this facility operates. But the uncertainty that riddles the sector creates anxiety. Technology, bank accounts and bank outreach do not take away the trepidation that the unlettered microfinance borrower has regarding approaching formalised brick and mortar structures.

The Business Correspondent (BC) of a bank is an agent at best, with barely any personal connect with the borrower. In the circumstances, it is the MFI that bridges that gap of last-

mile connectivity for financial inclusion. MFI executives are employees and not agents. Today, the NBFC-MFI sector has two-fold supervision. One at the level of the RBI, and another at the level of the Self Regulating Organisations (SROs) like the Microfinance Institutions Network (MFIN). Its framework is stringently regulated as are its interest rates.

There is a need for the larger body to understand the role and structure of the NBFC-MFI and to acknowledge its presence for the positive role it plays in bringing unsecured credit to vulnerable people. They are no Shylocks and the myth needs to be altered suitably. ■



MFIs end up with a fragile single-product model. Despite this, as of date, 80 percent of the industry is lending at 24 percent or less. Compare this to other entities that have started lending today.

repaying their loans more than institutions and High Net Worth Individuals. Despite this, India has one of the lowest rates of interest for microfinance loans, compared to other countries.

People I meet are all uniform in their opinion that MFIs charge usurious rates of interest. They say, whereas we can get a personal loan at 12 percent, MFIs lend at 26 percent. The understanding of this lies in the high cost of funds for the sector. The RBI permits a margin for MFIs of cost of funds plus 10 percent or 2.75 times the base rate of the five largest commercial banks based on asset size, which is revised every quarter, whichever is lower. With this formula, MFIs do not often derive the benefit of the

NGT puts real estate on notice



**FINE
PRINT**

KANCHI KOHLI

IN December the National Green Tribunal's (NGT) principal bench delivered a flurry of final hearings and judgments. The chairperson, Justice Swatanter Kumar, was completing his term and there were some crucial cases that required closure.

One related to the legal question of whether building and construction projects were exempt from stated environmental approvals and if the environment ministry's move to modify these was legally valid. In a strongly worded judgment on 8 December, the tribunal pronounced an important verdict.

Exactly a year ago, in February 2017, this column outlined how the real estate sector had been negotiating to not come under the purview of environment regulation since the early 2000s. When construction activity was booming, its impacts on wetlands, farms, groundwater and forested areas were clear and visible. Ensuring that projects required prior Environment Impact Assessments (EIAs) was considered important and the EIA notification was amended in 2004 to ensure this was made mandatory.

However, on 9 December 2016, the environment ministry allowed construction projects between 20,000 square metres and 150,000 square metres of built-up area to carry out construction activity without environment clearance or consents under air and water pollution related legislation. Instead, local authorities would grant integrated environmental conditions with the building permission and state governments would build these into existing building bylaws.

LEGAL CONUNDRUM

Such a blanket exemption of environmental approvals was unacceptable. It was challenged before the NGT. The tribunal combined five matters related to environmental approvals for building and construction projects and heard them through the year.

One interesting legal question raised in the application, while demanding the amendment be quashed, was that "ease of doing responsible

business cannot be in fact and in law the ground for making an amendment to environmental laws, as it primarily falls beyond the scope of the object and purposes of environmental laws in force. It is only a ploy to circumvent the provisions of the environmental assessment."

This is because the environment ministry had justified the need for the amendment on the grounds that it would promote ease of business and help the implementation of the Prime Minister's flagship 'Housing for All by 2022' scheme.

The notification was challenged because both the notification and the entire process prior to it "suffered from factual and legal infirmities".

IMPORTANT PRINCIPLE

The 53-page NGT judgment is a point by point analysis of how the environment ministry's



The NGT has quashed the environment ministry's exemption to real estate projects from EIA norms

December 2016 amendment significantly dilutes the provisions of both the EIA notification of 2006 and its parent legislation, the Environment Protection Act, 1986. The principle of international law that the tribunal applied here was the 'doctrine of non-regression' which enforces the premise that 'environmental law should not be modified to the detriment of environmental protection'.

Interestingly, the judgment makes a broader observation while arguing why this principle is so important. Today, it says, "environmental law is facing a number of threats such as deregulation, a movement to simplify and at the same time diminish, environmental legislation perceived as too complex and an economic climate which favours development at the expense of protection of environment."

The judgment then emphasises the 'precautionary principle' and concludes that it is the cornerstone of environmental jurisprudence in the country. This issue is important for the December 2016 amendment because the conditions listed by the amendment are not comprehensive and "are only a tick-box exercise taken by the project proponent

without any prior environment assessment process." This is especially so when it comes to the impact on ecologically sensitive vulnerable areas.

The NGT judgment, while regarding the amendment as retrograde, says that it takes regulatory oversight back to the pre-2004 scenario when there was hardly any environmental scrutiny. This is a problem because the reason construction projects were brought under the EIA process was because local bodies had failed to comply with environmental norms.

Before drawing final conclusions, the judgment relies on the observations of the Comptroller and Auditor General (CAG) in 2016 which also state that urban local bodies had not performed on environmental grounds. Therefore, by such devolution of powers, the ministry failed to fulfil its statutory responsibilities. It also brings up the

recommendations of the Kasturirangan Committee set up by the ministry in 2012 specifically to review the notification's applicability on the building and construction sector.

LEGAL INFIRMITY

One fascinating question the judgment dealt with is whether the ministry's notification is legally valid in the first place. The notification was amended using the provisions of Section 3 and Rule 5 of the Environment Protection Act (EPA), 1986, that allows the government to prohibit or restrict industrial activities and processes. The EIA notification is therefore subordinate legislation under the EPA and extends itself to reducing the scope of two other

pollution control laws related to air and water.

"This lacks legislative competence," concluded the NGT as EPA clauses do not permit an amendment which says that building and construction projects of a certain size are exempt from securing consent that is mandatory under two other laws, that is, the Air Act, 1981, and the Water Act, 1974.

What is interesting is that the judgment does not uphold the argument that Housing for All should not have been the justification for such an amendment. In fact, the judgment concludes that the object of the notification is laudable. But it should not get defeated by business, economic profitability with reference to 'ease of doing business', which ironically was the other objective cited in the preamble of the amendment.

The final result of year-long litigation is that the environment ministry has to review its 9 December 2016 amendment, which now stands quashed. Given the legal infirmities and the principle of non-regression the NGT judgment has emphasised, there is no other option for the ministry now. ■

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LIVING

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Small film rivals blockbusters

Mayurakshi is about an elderly father and his son

Saibal Chatterjee
Kolkata

ON 29 December, the final Friday of 2017, a minimalist father-son drama starring Soumitra Chatterjee and Prosenjit Chatterjee opened in multiplexes in Kolkata and other cities of India. It was a week since the release of the big-budget espionage thriller *Tiger Zinda Hai* and West Bengal's most expensive film ever, *Amazon Obhijaan*, based on a popular Bibhutibhushan Bandopadhyay adventure novel.

Amid all the noise generated by the big two, the understated Bengali-language *Mayurakshi*, a poignant, intense tale of a middle-aged techie who has to rush back to Kolkata from Chicago to be by the side of his ailing 84-year-old father, quietly made its way into the hearts of filmgoers, especially in West Bengal. In the course of its multiple-week run, it held its own against the pair of blockbusters.

The success of the film was a pleasant surprise for many, including writer-director Atanu Ghosh, an experienced Bengali entertainment industry hand. "The film does have two of Bengal's biggest movie stars, yet the response to *Mayurakshi* was completely unexpected," he says.

"I did definitely hope that the film would earn appreciation but did not imagine that it would pull in the crowds too," adds the filmmaker who has three earlier features to his credit — *Angshumaner Chhobi* (2009), *Takhan Teish* (2011) and *Rupkotha Noy* (2013) — all of which are markedly different in tone and tenor from his latest effort. Just as significantly, the new film is a marked departure from norm in the context of contemporary Bengali cinema as a whole, which is dominated by detective thrillers, adventure yarns, wordy melodramas and pedestrian comedies.

"I am aware that *Mayurakshi* is a film that marks a clear shift in approach and treatment to storytelling in the context of my earlier work," says Ghosh. "It isn't as plot-driven as my first three films. It is far more cinematic." That, however, isn't the only distinguishing feature of the film. The content and the purity of approach to it, too, set it apart from the crowd.

Ghosh harnesses low-key methods to spotlight the workings of the mind of a retired history professor, Sushovan Roy Chowdhury (Soumitra), who is in the first stage of dementia and



Atanu Ghosh, director of *Mayurakshi*



Prosenjit and Soumitra in a cafe scene in *Mayurakshi*

'I did definitely hope that the film would earn appreciation but I did not imagine that it would pull in the crowds too,' says Atanu Ghosh, director of *Mayurakshi*.

slips in and out of cognitive dysfunction.

His bewildered and alarmed son, Aryanil (Prosenjit), nursing the emotional effects of two failed marriages, tries, in the course of five days, to come to grips with the old man's fluctuating moods.

Although Aryanil has been away from home for a long time, he is deeply attached to his father.

But the long absence has induced a situation in which the old bond is severely tested. As snatches of memory and allusions to past incidents return to the equations, the son reconnects not just with his father but also with his own self. *Mayurakshi* plays out not as much through external action as through inner tugs and pulls. It works because the director executes a difficult theme with impressive restraint.

What sets *Mayurakshi* instantly apart from the recent crop of

Bengali films is its deliberate pace and subtle narrative style. Neither verbose nor melodramatic, it keeps its focus firmly trained on the layered relationship between a widower who is losing hold of his faculties and his only offspring who is up against a personal crisis that threatens to halt him in his tracks. Aryanil's state of mind is revealed only through the means of nuanced suggestions as he tries to balance his filial duties and the pressing demands of his professional commitments.

Mayurakshi has struck a chord in West Bengal for obvious reasons. In a state where there probably isn't a single middle-class home from where young people have not gone out to other parts of the country and the world in search of greener pastures, it isn't uncommon for ageing parents to be left to fend for themselves or depend on paid housekeepers. It obviously isn't a happy situation — an inevitable fallout of the steady economic decline and shrinkage of opportunities in a part of India that once was a hub of commercial activity.

A housekeeper, Mallika, played by National

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Award-winning actress Sudipta Chakraborty, is an important character in the story. She is the woman who has looked after the professor in the absence of his son and is aware of his every need and impulse. But the only person the old man seems to remember is a student named *Mayurakshi*. He still waits for her to return and therein lies the crux of the film. The son's emotional struggles, it becomes clear as



Stills from the film



the film unfolds, may be linked to the plight of the absent woman.

Ghosh is quick to dismiss the suggestion that there might be autobiographical elements in *Mayurakshi*. “Yes, my own father, a professor of applied physics, was a victim of dementia, but the character of the son in the film is not me,” he says. “I don’t believe in telling my own personal stories in a film. It would not only be too self-indulgent, I might also get unnecessarily bogged down emotionally.”

Various aspects of the old professor’s responses to the stimuli around him have, however, been drawn from real-life experience and knowledge. Ghosh talks in particular about an acquaintance who suffered dementia relatively early, at the age of 62 or 63. He kept insisting that he was a doctor who had to discontinue his medical practice because he had sold the house from which he ran his clinic. “He had indeed sold his house, but he was an engineer, not a doctor,” says the director.

The dementia-afflicted fictional character in *Mayurakshi* — Soumitra Chatterjee’s masterfully modulated performance adds layers to the man on

the screen — is somebody who, despite his declining mental health, is in perfect physical condition. “He does not look infirm in any way,” says Ghosh. “He is upright and his gait is straight. So there is no way of telling that there is something wrong with him.”

So the veteran Bengali actor, famous the world over as Satyajit Ray’s alter ego, uses minor facial twitches and a faraway gaze to convey the inner turmoil of the character. The screenplay provides him with the aids he needs to enhance the impact of the interpretation. Prosenjit, in fine fettle, serves as an admirable foil to the seasoned performer.

The two actors hit a high in a standout scene in a cafe. Arynil asks the father what coffee he would like to order. The older man, instead of specifying his choice, directs his son’s attention to a young couple talking animatedly behind a glass partition. He suggests that every moment in life needs a background score. He intones a euphony — he does not need words to convey his exuberant mood. “This moment in the film,” says the director, “was conceived by music composer Debojyoti Mishra. “It is minimalist but communicates a whole world of meaning.”

That description could well apply to the film in its totality for it does not use music in the conventional way in which songs,

instrumental strains and chatter on a radio show underscore the unseen and unarticulated. All the voices and songs in the background are diegetic — emanating from sources that are visible within the scenes or whose existence is suggested by the characters themselves.

“The radio plays an important role in the film because I know for a fact that people slipping into dementia are attracted by it. They are generally repulsed by television because it is too intrusive,” explains Ghosh. The old man in the film has no patience for newspapers either because they only carry ill tidings.

“It is one particular voice that is on air for an hour every morning that Sushovan has a preference for. And that is the voice that plays in the background in many sequences and that is the voice that he responds to,” says the filmmaker.

Atanu Ghosh possesses a distinct voice and sensibility, the sort that Bengali cinema could imbibe more of in order to break free from its uninspiring ways. Could the success of *Mayurakshi* be the beginning of something dramatic? ■

Kali has got



Entrance to the Dandakaranya Eco Park in Dandeli

Susheela Nair
Bengaluru

THE trip to Uttara Kannada began with a wildlife escapade to the Kali Tiger Reserve. Our ride in a four-wheel drive vehicle through the reserve’s moist deciduous and semi-evergreen forests was exhilarating. The Kali Tiger Reserve is known for its perennial lifeline, the Kali river and her tributaries, the Kanneri and Nagajhari. The river crosses varied terrain, changing character at every twist and turn: angry and ferocious at times, serene and tranquil at others.

The river sustains not only the park’s varied flora and fauna, it is also a lifeline for thousands of villagers living in its proximity. Tourists visit this reserve for its many attractions like the roaring Virnoli rapids, the splendid Supa Dam, the sinister Syntheri Rocks, the Nagajhari viewpoint and Siroli Peak, the highest point in Uttara Kannada. With diverse outdoor activities on offer, such as trekking, birdwatching, wildlife viewing, mountain biking and canyoning, the Kali Tiger Reserve is a popular rendezvous for outdoor enthusiasts.

The dramatic landscape shelters a rich reserve of wildlife. Although famed for the elusive black panthers, sighting them always involves a bit of luck. Though opportunities were plentiful for sighting barking, spotted and mouse deer, sloth bears, gaur, wild dogs, civets, bison, jackals and langur, we did not spot a single elephant. Besides giant flying squirrels, the trees are home to a variety of colourful birds. Driving through the forest, we

it all: river, rocks, forests, wildlife

SUSHEELA NAIR



passed wild boars disappearing into the undergrowth, and a sambar stag looked curiously at us from a bush. As we sat with our eyes glued to the landscape, we sighted a herd of gaur which stood still with their white stockinged feet and gazed at us. But the elusive gaur disappeared at the sound of our vehicle.

Back at JLR's Kali Wilderness Camp, lunch was followed by a siesta and a refreshing cup of tea in the evening, before we set out for a four-kilometre coracle ride down the Kali which curves past Dandeli town. Drifting at an unhurried pace, we spotted a mugger sunning itself on a protruding rock in the river. Startled by us, it splashed into the water. We sighted hordes of the great hornbill and the Malabar pied hornbill raucously roosting in branches and bamboo clusters along the banks of the river. At sunset, the riverside comes alive when the feathered species are at their chirping best. We found some winged creatures deftly circling in the sky, while others flew in a pattern, all heading to roost. I sighted weaverbirds painstakingly crafting their tear-shaped nests, cattle egrets on the riverbank, and cormorants flapping their wings after a dive. Grey langurs with their young ones were hopping from tree to tree, hooting softly.

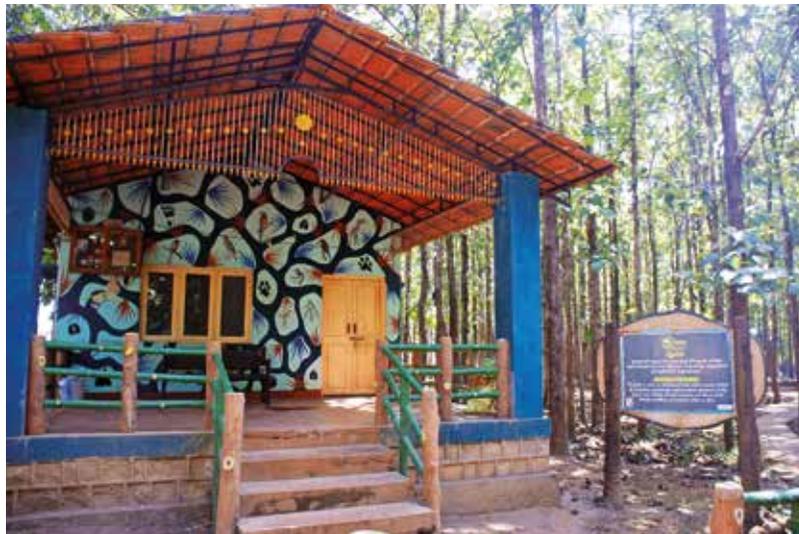
The next morning a vehicle ride for about an hour followed by a trek brought us to Syntheri Rocks, an idyllic picnic spot, 22 km from the forest gateway right in the heart of the forest. With the Kaneri river, which originates in the Western Ghats in Supa taluk, gushing by, this awesome monolithic granite structure is a beautiful sculpture by nature. Wild animals come here to quench their thirst.

Countless years of erosion have worn away the rock, creating huge caves and crevices at the water line. We gazed at the hundreds of birds and bees which have colonised the innumerable nooks and crannies in the rock. The water at the foot of the fall looks deceptively harmless but is treacherous and deep with whirlpools.

On our way back, we stopped awhile at Dandakaranya, a natural forestland transformed into a sprawling eco-park in the heart of the town. The park teems with deciduous, semi-deciduous and evergreen species with signboards bearing their botanical descriptions as well as 63 species of birds. The highlights include sculptures of characters from popular Hollywood animated movies and Indian cartoon characters. The Kulagi Timber Trails Camp and the Anashi Evergreen Camp in the sanctuary merit a visit. The camps, a successful eco-tourism venture of the Karnataka Forest Department, offer tented accommodation amidst sylvan surroundings, jungle safaris and nature education. Make sure you visit the herbarium, its well-stocked library and the nature interpretation centre with a small museum.

The forest abounds in trekking trails and picnic spots. Molangi, 10 km upstream from the camp, is one of them. One can trek, camp along the river bank and river raft at Molangi. Equally fascinating is Sykes Point, named after the British officer who discovered the area while working on the Kalinadi

SUSHEELA NAIR



A log hut in the Kulagi Timber Trails Camp

SUSHEELA NAIR



Huts and hammocks at JLR's Kali Wilderness Camp

hydel power station in the valley. From this vantage point, the view of the Nagajhari merging with the Kali, the deep gorges, verdant foliage and the sunset is simply marvellous. Another must-see is the Nagajhari viewpoint overlooking the Dandeli valley, which is equally enchanting.

Our trip culminated with whitewater rafting on a stretch of the Kali at Dandeli. We experienced the thrill of the rapids and sprays of whitewater and experienced the varied moods of the Kali at every turn. The rapids range from thrilling rough-and-tumble drops to enchanting, long stretches of the tranquil river at Dandeli. Along the Kali, we passed bizarre rock formations, wild orchids, dozens of hornbills and a solitary crocodile. The adrenaline rush and stunning scenery with occasional wildlife spotting made the experience simply superb. ■

FACT FILE

Getting there

By road: There are daily luxury buses to Dandeli from Bengaluru, Goa, Belgaum, Karwar and Dharwad/Hubli.

By rail: Dharwad station is 52 km away.

By air: Two and a half hours from Goa.

Where to stay: JLR's Kali Wilderness Camp, Kulagi Timber Trails Camp, or Anashi Wilderness Camp run by the forest department.

RANDOM SHELF HELP

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

The ivory tower elite

By Anita Anand

NAYANTARA Sahgal's fiction is about India's elite responding to the crises engendered by political change. She is one of the first Indian women writing in English to receive wide recognition.

In 1986, she was awarded the Sahitya Akademi Award in English, for her novel, *Rich Like Us*. In 2015, Sahgal returned the award, protesting against what she called "increasing intolerance and supporting right to dissent in the country", following the murders of rationalists Govind Pansare, Narendra Dabholkar and M.M. Kalburgi, and the Dadri mob lynching incident.

Sahgal's new novel *When the Moon Shines by Day*, is a potpourri of her life, political beliefs, and the world she inhabits, composed of writers, artists, human rights activists and liberal book discussion *wallahs*, and those like her. Described as a "dystopian novel of our times", it harks back to Nazi Germany, Mussolini's Italy, Pinochet's Chile and Nehru's India — times dominated by ethnic cleansers, ruthless dictators, enemies of free will and speech, democracy and justice, and those who fight for modern democratic ideals.

And, in the present times, and closer to home, there are lynchings of Dalits, Muslims taking on

Hindu names, demolitions of homes and urban settlements, and disappearances (of books and people).

The protagonists in the novel are four women, brought together by a book club. One promotes the arts; another works to protest against the violation of the rights of the poor and disenfranchised; the third designs garments for pregnant women; and the fourth is a Member of Parliament.

Their circle consists of writers and painters who are wronged by the righteous Hindutva brigade. Books disappear, galleries are bombed, and art work destroyed in front of their eyes and noses. They despair and discuss the horror around them and the writing on the wall of the worsening times to come.

However, in Sahgal's story, in India, as in dystopian times in other countries and eras, life goes on. Atrocities come and go but side by side, so do five-course meals in elegant restaurants, accompanied by the finest whiskies and wines.

The novel ends with a dramatic turn of events during a function hosted by the Directorate of Cultural Transformation, which is behind the harassment of artists and writers. Dalits have left dead cows and their various parts to rot by the *shamianas* in protest. Three hours later at a hotel the protagonists dine together. The wine is ordered,

and their choice of a starter is between a vichyssoise and shrimp. Life goes on.

Sahgal's pulling together of historical events from the mid-1930s till now feels like a forced confluence of the experiences of nations and people. However, the topics of conversation and concerns are what I am privy to in drawing room and dinner conversations, especially in India. Well-meaning middle-class men and women, with their hearts in the right place, all fond of the good life. Well-schooled in India and abroad, conducting their lives in the English language, privileged and established. They fear the loss of their privileges, their freedom of expression, and the hard-fought freedom (by their ancestors) from colonial masters. Armchair radicals.

Sahgal's novel is a mirror of her own life, in many ways. She grew up in a political family, during historic times. Born in 1927, she is the daughter of Vijaya Lakshmi Pandit, Jawaharlal Nehru's sister. Vijaya Lakshmi, active in the Indian freedom struggle, was jailed in 1946. Post-independence, she was part of the team representing India at the United Nations. She also served as a member of India's Constituent Assembly, was the Governor of several Indian states, and India's ambassador to many countries. ■

Anita Anand is author of, most recently, Kabul Blogs: My Days in the Life of Afghanistan and Cholo Kolkata.



When the Moon Shines by Day
Author: Nayantara Sahgal
Speaking Tiger
Rs 399

Bittersweet life of a feminist

By Anjana Basu

THIS is a world that today's feminists would find hard to relate to, though it still exists in the heartland of India. Lakshmibai Tilak tells the story of her marriage to the poet, Narayan Wamanrao Tilak, a man preoccupied with his principles, ruled by his temper and characterised by frequent disappearances.

The book, *Smritichitre*, published in 1934, was one of the first Marathi autobiographies and proved an instant hit. Shanta Gokhale's is the first complete translation of Lakshmibai's work and captures the liveliness of the fearless narrator.

From the beginning, Lakshmi's world was dominated by the whims of men. Her father broke down after his father was hanged by the British in 1857 as a rebel. His breakdown was expressed through an obsessive hatred of anything he considered pollution. This was extended to coating money with cowdung since it had come to him from unclean hands and beating his daughter if her sari touched the grain sacks. Outsiders were not allowed into the house and women who went out had to bathe before they returned. Lakshmi was frequently

beaten until finally she moved into her aunt's house — luckily, her mother had promised to give her firstborn to her sister who was childless.

Lakshmi then came under the patriarchal rule of her father-in-law, a man who in a fit of temper had kicked his wife to death. What would today be considered attempted murder was then allowed to go unpunished. The death of his mother affected Lakshmi's husband, Wamanrao, who became in many respects reclusive, expressing his emotions through verse, which he often then tore up. Though he was an erratic husband and much older than her, he refused to set Lakshmibai aside, even though his father asked him to. He kept her as his wife, despite losing two children, both sons. That is why, Lakshmibai writes, she loved him, even though he flung her down the stairs for laughing at him when she was seven months pregnant and even though he kept disappearing.

Wamanrao was also among the first of his community to convert to Christianity and that decision resulted in a five-year separation from Lakshmibai. However, Lakshmibai too grew disenchanted with the corruption she saw in

Hinduism and converted — this despite the fact that both she and her husband came from Brahmin families.

The narrative traces her growth from a naughty child to an 11-year-old bride to a woman who tired of the discrepancies between castes and drank water from a sweeper's home. She learnt to read and write and even managed to complete her husband's poem on his conversion after his death, scrawling words with matchsticks. She became an activist, managed a women's hostel and fought for the rights of women with the same frankness with which she told the story of her life.

Lakshmibai refers to her husband formally as 'Mr Tilak' throughout the narrative, dutifully not mentioning him by name as good Indian wives are supposed to. However, she is very conscious that the story is about her and her relationships and she never once allows her husband to take centre stage.

Despite poverty, deprivation and abuse, Lakshmibai retains her sense of humour while being short of money and food and surrounded by men and women with intolerable egos. ■



Smritichitre
Lakshmibai Tilak
Translated:
Shanta Gokhale
Rs 650

A paradise for butterflies

Atreya Vedic is a unique park and herbal garden



Nirmal Sawant in her luxuriantly green park raised over the years

Derek Almeida
Panaji

FAR from Goa's beaches, within its forested interiors, there is a butterfly park with aromatic gardens of spices and herbs as well as an astrological plant park. Atreya Vedic Farm is roughly 55 km from Panaji and while the drive along National Highway 748 is a breeze, one hits rough roads entering Ponda, thanks to the construction of a flyover that stretches for over two km. What follows is a smooth journey up to Mollem, where the farm is located. A board, which can be easily missed, announces that one has to make a turn. You get onto a *kutch*a road which twists and turns before reaching Atreya Vedic Farm.

Waiting for us is Nirmal Sawant, who once represented the Cumbarjua constituency in the Goa Assembly and served as minister in the Pratapsingh Rane government over a decade ago. She is apologetic about the not-so-visible board, but assures us that a member of the staff is always positioned at the turn to guide guests to the farm.

After drinking a brew made from lemongrass, ginger and cinnamon, we walk through the butterfly park. It was opened in 2008, chiefly to attract students. "The right time of the year to be here is June or September when the place is swarming with butterfly species," says Sawant, who is also the chairperson of the Mhadei Bachao Abhiyan, an organisation fighting a legal battle to prevent diversion of water from the Mhadei to Karnataka. "The southern birdwing butterfly or *Triodes minos* is abundant in June. We had to take several measures to attract butterflies," she explained. "First, we had



In June and September the park swarms with butterflies



to grow nectar-bearing flowering plants. These are scattered in the park and around the farm which covers nearly four acres."

The second step was to identify a variety of plants which were favourable for caterpillars. "Each species of caterpillar chooses a unique plant to inhabit and these were identified in the forest while some had to be transported from Bengaluru." A trip to the farm in the middle of the winter is not recommended as butterfly numbers soar with warm weather and a

few days of sunshine. But despite this we were able to spot quite a few species and even leaves on which eggs had been laid.

The idea of a farm came up as early as 1984 when it became known that around 100 acres were available for sale. Around nine buyers got together and divided the land, owned by one Madhavrao Dessai, with the Sawant family purchasing 36 acres.

"About three years later my brother decided to grow local medicinal plants which were widely used in the first half of the 20th century," says Sawant. "We had a supervisor named Sambhaji Gavandi who had passed Class 12 (Science). We had released an advertisement in Kholapur and he responded. He planted around 90 varieties of herbs and about 100 trees and this area was christened 'Charak Vatika'."

One day, the students of Ponda Education Society arrived for a tour of the medicinal plant garden, but failed to complete it owing to the length of walking involved. "We then decided to shift a part of the medicinal garden closer to the central area of the farm where the restaurant is also located," she said.

As we continue talking, a busload of Russian tourists arrives for lunch and a tour of the place which has plant names and descriptions in Russian and English.

For city dwellers, the idea that trees can affect your spiritual mood might seem a little far-fetched, but at Atreya Farm this is a firm belief. "As a child I was interested in astrology and I discovered that each zodiac sign is linked to a particular tree," explains Sawant. This gave birth to the astrological plant park which has 12 platforms arranged in a circle with the associated tree behind each. With the melodious sound of 'Om' wafting in the air, this is a place for meditation and relaxation.

Income for the farm comes from sale of coconuts, areca nuts, pepper and other spices, and from visitors who are charged around ₹400 to 500 with meals. A tour of the farm costs around ₹200 per head. Foreign and domestic tourists, picnickers, students and locals are frequent visitors to the farm which remains open even in the monsoon months.

Speaking about problems due to pests, Sawant says, "There was a time when I used to keep a basket full of guavas on the table for tourists. Today, none are available thanks to rampaging monkeys. Apart from that we also have to protect the farm from wild boar." Installation of solar fencing has kept wild buffaloes out.

Although she was advised by the faculty of an agricultural college in Maharashtra to kill a monkey and hang the carcass in full view, Sawant has refused to do so. "Killing animals disturbs the spiritual ambience of the place," she says.

The farm is part of the spice circuit which is firmly on the tourism map. Despite this, the Sawant family has resisted the temptation to completely commercialise the property, preferring to keep entry fees low and refusing to crack deals with taxi operators who demand a hefty commission. ■



**AYURVEDA
ADVISORY**
Dr SRIKANTH

Tackling heartburn

OUR stomach produces acid to digest the food that we eat. This is a regular and natural process. Whenever we consume food, cells within the lining of the stomach pump acid to start digestion. The problem occurs when these cells produce large amounts of acid, more than the stomach needs. When this happens, the person will suffer from 'acidity' or 'heartburn'.

Occasional complaints of heartburn (a burning sensation in the chest) can be managed with minor lifestyle and dietary modifications suggested below. However, if heartburn is very frequent and disturbs your routine, then you must consult your doctor.

DIET & LIFESTYLE REMEDIES: Begin by avoiding food and drinks that trigger heartburn. For example, these are: ● Tea, coffee, carbonated and alcoholic beverages ● Processed and fermented foods ● Oily, salty, spicy and sour foods ● Avoid using mustard, green chillies, garlic, ginger, onions, tomatoes and vinegar in cooking. ● Avoid sesame (til), horsegram and curd. ● Include more fresh fruit and vegetables like bananas, pomegranates and papaya in your diet. ● Include boiled potatoes and bananas in your meals. Both help in reducing acidity. ● Don't lie down immediately after a meal. You should try and go to bed only three hours after your meal. ● Avoid wearing tight-fitting clothes. They tend to put more pressure on the abdomen, leading to acid reflux and causing heartburn. ● Avoid stress and anxiety. ● Yogasanas such as Vajrasana, Bhujangasana, Pranayama (Shitali and Shitkari) may be helpful.

HOME REMEDIES: Here are a few simple preparations you can make at home to get relief from heartburn. The ingredients are easy to find and probably lying on your kitchen shelves. ● Mix equal parts of powdered fennel (saunf), licorice (mulethi) root, basil (tulsi) leaves, and coriander (dhania) seeds. Drink half a teaspoon of this mixture with half a teaspoon of powdered sugar candy (mishri) 15 minutes before lunch and dinner. ● Lemon juice provides quick relief in cases of nausea and bloating.

● Consuming one teaspoon of amalaki powder (amla) with honey daily helps to avoid acidity. ● Drinking coconut water or water boiled with cumin (jeera) seeds or barley water regularly will help avoid symptoms of heartburn. ● Half a cup of freshly extracted ash gourd juice (lauki) on an empty stomach is helpful. ● Boiled ash gourd pieces with some jaggery (gur) helps to relieve burning sensation in the stomach. ● Boil one teaspoon of triphala powder in 100 ml water until it reduces to 50 ml. This hot decoction taken with a little honey gives relief from symptoms of gastritis. ● Chewing about half a teaspoon of fennel seeds aids digestion and helps in relieving heartburn. ● Fresh buttermilk (should not be sour) with a pinch of asafoetida (hing), a quarter of a teaspoon of fried cumin seed powder and a quarter of a teaspoon of finely chopped fresh ginger and coriander leaves with rock salt for taste (sendha namak) also provides relief. ● Make a powdered mixture of equal parts of sugar candy (mishri), fennel, and green cardamom. Whenever you experience heartburn, mix one teaspoon of this in a glass of cold milk and drink.

MEDICINE: In severe cases of heartburn, any of the following combinations may be helpful:

COMBINATION 1: ● Himcocid SF (Himalaya) or Madiphalarasayana (Imis Pharma / Baidyanath) — two teaspoons, thrice daily, before meals. ● Yashtimadhu (Himalaya) — two tablets twice daily after meals. ● Gasex (Himalaya) — two tablets, thrice daily, after meals may be included in associated complaints of bloating/ flatulence.

COMBINATION 2: ● Drakshadikashayam (Kottakkal / Vaidyaratnam Oushadasala) — two teaspoons, twice daily, with six teaspoons of boiled and cooled water on an empty stomach, twice daily. ● Sutashekararas (Baidyanath/Dhootpapeshwar) — one pill, twice daily with milk. ● Avipattichurna (Kottakkal / Vaidyaratnam Oushadasala) — half to one teaspoon, twice daily, with water.

COMBINATION 3: ● Amrutottarakashaya (Kottakkal / Vaidyaratnam Oushadasala) — two teaspoons, twice daily, with six teaspoons of boiled and cooled water on an empty stomach. ● Kamadugharas (Baidyanath) — one pill, thrice daily. ● Sooktyn (Alarsin) — two tablets, thrice daily, after meals.

Amlant tab (Maharishi Ayurveda) — one tablet to be chewed three to four times daily, after meals.

The right diet and lifestyle must be strictly followed to avoid relapse. ■

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

A clean sweep

KANTA Kharse sits in a small stall in Dilli Haat with an assortment of brooms laid out before her. Women shoppers mill around as she explains the many uses of her brooms. "This one is a laptop broom, this here a carpet broom and that one there is to clean your window grills," she says briskly. "No bargaining, please."

Kharse's neatly made brooms, it seems, can sweep away dust from any nook and cranny. She is a member of the Dastkari Haat Samiti and is here at their annual *mela* to sell brooms made by her Self-Help Group (SHG), the Mahalakshmi Swarg Sahayta Samoh, consisting of 20 women. "We have some 118 broom designs," says Kharse proudly. They were helped by the



National Institute of Women, Child and Youth Development with funds and technique. The brooms are made of *khajoor* (*phoenix dactylifera*) grass gathered from forests surrounding their village in Mandla zilla of Madhya Pradesh. The forest department has been helpful, says Kharse. The women are part of a joint forest management committee and have community rights to forest produce.

Kharse has received an award from the government of Odisha. She has also visited Dubai to sell brooms there at a crafts fair organised by the Government of India.

"I earn around ₹40,000 which, after deducting my expenses, is equally divided amongst members of my SHG," says Kharse. "But we need much more marketing support to double our income." ■

Address: Kanta Kharse, Pindrai, Mandla Zilla, Tehsil Nainpur, Madhya Pradesh-481776 For sales enquiries: 8462932340

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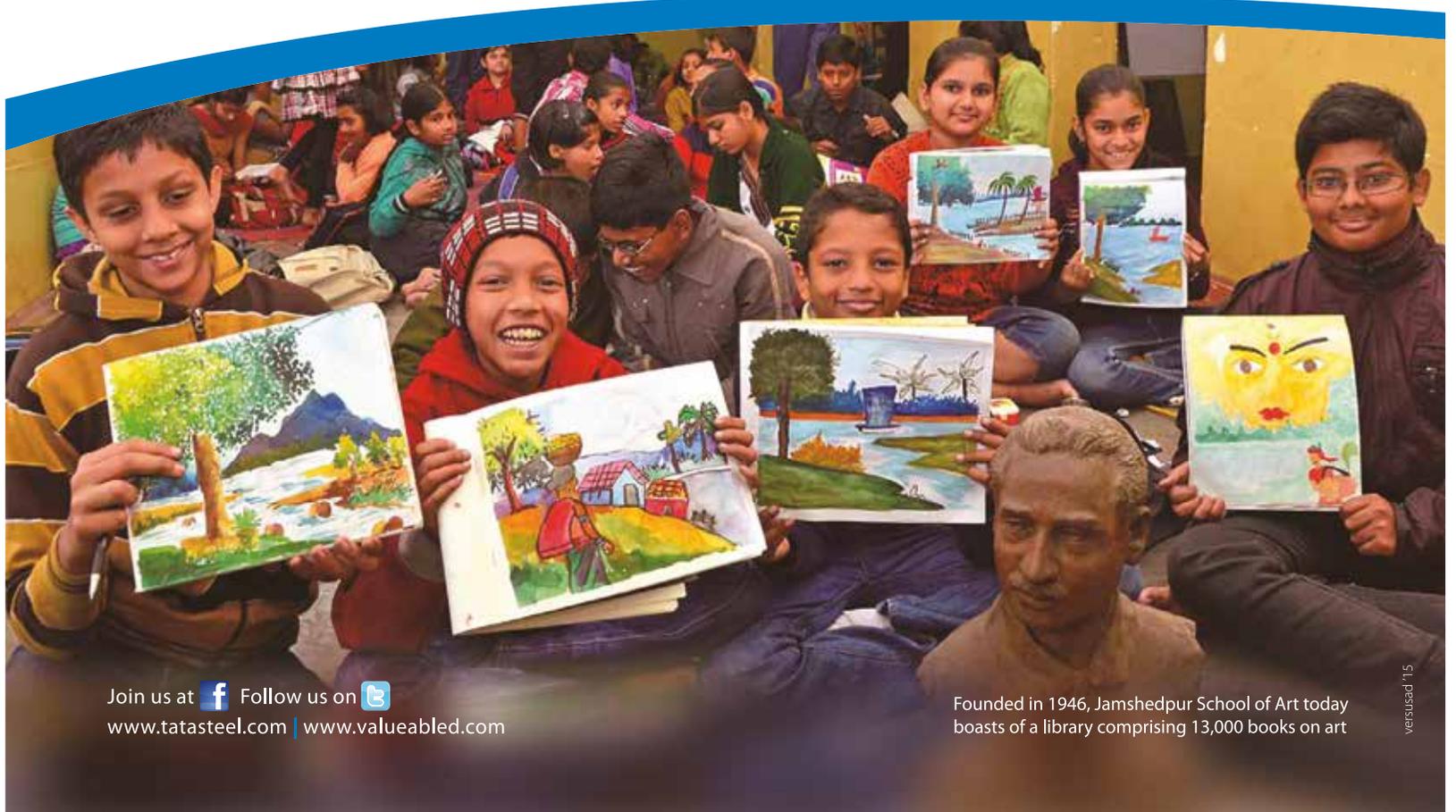


SHAPING THE FUTURE

Education - the key to a sustainable future

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