INTERVIEW
Dr CS Pramesh on the cancer challenge in India and more

PERSPECTIVE
Bittu Sahgal pleads for the cause of our fragile ecosystem

FISHING AHEAD
A fisheries programme in Andhra Pradesh goes with the flow

STUDY TIME
Helping improve India’s education quotient is a priority for the Tata Trusts — and the results are showing
Schools and colleges in India have closed for the summer holidays and that provides a welcome break for students. But there are countless children in the country who have no concept of any such break, simply because schooling is not an option for them. Bringing these kids into the ambit of mainstream education is a task that governments, at the centre and in the states, have continuously striven to accomplish. Even with the best of intentions and all the resources at their command, they cannot do it on their own. Nonprofits, charities and civil society as a whole have to chip in — this is, after all, a shared responsibility — and that is where organisations such as the Tata Trusts can, and do, make a difference.

The cover story turns the spotlight on how the Trusts are lending a hand to improve educational standards in India, not just at the school level but across the board. The commitment of the Trusts to this cause is longstanding. Education was the subject of the first of the many planned and organised philanthropic endeavours of the Tata group. That was in the form of the JN Tata Endowment, set up by group founder Jamsetji Tata in 1892 to provide financial support for Indian students desirous of pursuing higher studies abroad. Much, much more of such support has followed in the 127 years since.

Evolved and nuanced, the manifold education programmes of the Trusts today involves students and teachers, children and adults, marginalised communities and specific geographies. Driving this effort is clear-cut intent and impactful implementation. Our cover story has anecdotal narratives about a few select initiatives to illustrate how this is unfolding on the ground.

This edition of Horizons has other offerings as well: the splendid work the nonprofit SEARCH is doing in Gadchiroli in Maharashtra; a project in Chandrapur, also in Maharashtra, to make the community more vigilant about child abuse; an inland fishing programme in Andhra Pradesh; a solar energy initiative in Odisha; and a venture to house the homeless in Surat in Gujarat. Additionally, the magazine features interviews with Dr CS Pramesh, director of the Tata Memorial Hospital, and Suresh Subramani, who heads the Tata Institute for Genetics and Society.

Our photo-feature has a cultural hue this time and it freezes the fabulous work of artists from a variety of disciplines. And to round it off there’s Bittu Sahgal on creating “a climate for positive change” to preserve and protect the biodiverse ecosystem of the only planet Homo sapiens can call their own.

Reading is good, they say, so do go on...

Christabelle Naravane

We hope you will help us make Horizons better with your valuable feedback. Please do write to us at horizons@tatatrusts.org.
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FEATURE STORIES
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PERSPECTIVE
A comprehensive new cancer care facility was inaugurated recently by Ratan Tata, chairman of the Tata Trusts, at the renovated Meherbai Tata Memorial Hospital (MTMH) in Jamshedpur in Jharkhand.

Established in 1975, MTMH is named after Meherbai Tata, the wife of Dorab Tata, the son of Tata group founder Jamsetji Tata. The hospital was developed by the Trusts in partnership with Tata Steel. The endeavour was supported by the Suri Seva Foundation and Tata AutoComp Systems.

Mr Tata, speaking on the occasion, said: “I have a great sense of pride in what we have inaugurated today. It serves the Tata Trusts dream of contributing a grid of cancer hospitals so that lives may be saved. The new facility is a wonderful new extension and we look forward to the contribution it will make.”

The wide-ranging expansion project took 12 months to complete and it included the construction of a new wing with 90 beds and state-of-the-art equipment. The old 40-bed MTMH was remodelled and a skywalk now connects the two wings of the hospital.

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### Parag wins global award

Parag, the Tata Trusts programme to promote reading among children through the development and use of literature in Indian languages, has won the 2019 ‘educational initiatives’ honour at the London Book Fair International Excellence Awards.

The awards, instituted in partnership with the Publishers Association, are a celebration of publishing and related activities outside Britain. The chair of the jury, Kate Harris of Oxford University Press, said: “The panel particularly liked the inclusive approach of the programme, which works with a range of partners and publishers to maximise its impact.”

Commenting on the achievement, Swaha Sahoo, who heads Parag said, “It motivates us to continue doing our best to nurture children’s literature.”

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### Helping hand for the elderly

The ‘Elder Spring response system’, a helpline service aimed at making the lives of senior citizens healthier and happier, was launched on March 27 in Hyderabad.

The initiative will be managed by the Vijayavahini Charitable Foundation, an affiliate of the Trusts, and will focus on providing care and support for senior citizens, rescuing those abandoned by their families, and supporting victims of abuse. Initially covering Hyderabad city, the initiative will be expanded to other cities and regions in the future.
Pathways of Hope, a monograph on innovative approaches in dealing with mental health issues in India, was launched recently by the Tata Trusts.

Conceived by Tasneem Raje, the book brings alive the inspirational stories of people who have battled and overcome mental illness to rebuild their lives and regain their dignity. These stories also illustrate the sterling work done by Udaan, the mental health initiative of the Trusts.

The programmes under Udaan include reforming the Regional Mental Hospital, Nagpur, and a large-scale community-based mental healthcare effort that involved screening the population of the entire district and linking them to services close to home. The initiatives have been undertaken in collaboration with the Maharashtra government.

The Tata Trusts will soon be launching ‘menstrual hygiene management’ (MHM) interventions to fight the negativity associated with menstruation and the indignity that millions of women and girls have to face in India.

The MHM interventions, to be rolled out in the rural areas of Karnataka, Gujarat, Rajasthan, Uttar Pradesh, Uttarakhand, Maharashtra and Jharkhand, will be implemented as part of the Trusts’ Tata Water Mission.

“Behaviour change is our primary objective with regard to hygienic menstrual practices in an environment that supports menstruation,” said Divyang Waghela, head of the Tata Water Mission, about the upcoming programme. “In addition to the training, we will facilitate women federations and local social entrepreneurs [through the initiative].”

The MHM programme has been split into two parts: school interventions and community interventions. While the community component will target menstruating women, the school programme will focus on adolescent girls. The broader goal is educate people about the subject and to provide a supportive sociocultural environment for women.

The Tata Trusts and Microsoft India have joined hands to help rejuvenate handloom clusters in the eastern and northeastern parts of India.

Microsoft India and the Tata Trusts, through their respective initiatives, ReWeave and Antaran, have been working to preserve traditional textile weaving forms and creating sustainable livelihood options for weavers.

“Through the partnership with Microsoft, we want to empower artisans and bring them up to par while making them competitive in the industry,” said R Pavithra Kumar, chief programme director, Tata Trusts, about the collaborative venture.

“We are focused on reviving some of the forgotten and fading handloom forms in India’s textile heritage,” said Anil Bhansali, the managing director of Microsoft India. “[This will also] help build a digitally inclusive society.”
An activity session in progress at the Bai Navajbai Tata School in Navaari in Gujarat
Yearning for learning

The principles of quality and equality are at the heart of the many-hued efforts of the Tata Trusts to enhance India’s education system.

What’s the thread connecting students learning mainstream subjects in madrasas (Islamic schools) in West Bengal, teenagers practising digital skills in Assam, toddlers going to anganwadis (child-care centres) in Andhra Pradesh, women becoming literate in Uttar Pradesh, and teachers honing their know-how in Maharashtra?

The answer is Tata Trusts. From broadening access to education and developing curriculums for training teachers to building technology-based teaching resources, the Trusts are driving a host of initiatives to make learning and teaching more effective for millions of children across India.

The mandate is clear. Education is the foundation for a nation’s socioeconomic development and, hence, a critical investment for the future. India has about 300 million children aged between 3 and 18 and the quality of education they receive in the present will decide if they can give wing to their dreams in the future.

To change India’s prospects, there has to be greater parity in access to education and better learning outcomes. This calls for children to be provided with the means to learn the right lessons in the right manner in language, maths, science and more.

A significant part of the Trusts’ effort is aimed at strengthening the government school system, the only option for the majority of India’s marginalised children. “We are striving for the overall development of children and their academic skills,” says Amrita Patwardhan, zonal head, North India, programme implementation.

Education has, in fact, been a part of the Trusts’ developmental mandate since their inception back in 1892, when the JN Tata Endowment was founded as a scholarship for young Indians wanting to go abroad for higher studies. Before that, the Tata family founded and supported the Bai Navajbai Tata Girls School in Navsari, Gujarat, which is more...
India’s literacy woes

Number of children enrolled as percentage of eligible population

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
<th>Senior secondary</th>
<th>Higher education</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.2%</td>
<td>80%</td>
<td>56.2%</td>
<td>24.5%</td>
</tr>
</tbody>
</table>

Total teacher shortfall

900,000
(including 400,000 elementary schoolteachers)

Drag in literacy rate increase

From 65% in 2001 to 74% in 2011

than 160 years old and one of the earliest schools for girls in India (see Early riser on page 32).

Since setting up that first school, the Trusts’ engagement with education has grown manifold. Today, their education portfolio supports 84 projects that impact a total of about 3.6 million students and teachers in 26 states and 145 districts of India. The numbers indicate the depth and spread of the Trusts’ commitment.

Over time, the approach to and direction of the education programmes under the Tata Trusts canopy have evolved. In 2014, the Trusts aligned their activities to focus on backward regions and communities. In 2018, they revisited their education strategy to find ways to achieve greater scale and impact.

“We want to deepen our conversations with nonprofits, convene like-minded entities around specific causes and create a strategy for convergence; this will help us achieve scale at the national level,” says Mr Salian. “The Trusts want to play a vital role at the fulcrum of the sector.”

Scale is critical

Scale is crucial given India’s burgeoning population and its young demographic. Over a quarter of the country’s 1.3 billion people are under the age of 14. That’s about 300 million children (roughly the population of the Unites States) who need a good education.

Yet studies show that India’s classrooms have fallen short in consistently delivering what they are supposed to — adequate learning. A 2017 survey covering some 2.5 million students, conducted by the National Council of Educational Research and Training, revealed that these students found it difficult to solve simple problems involving time and money, and that they were unable to read and comprehend as per their grade.

It’s clear that India’s students need better resources, that its teachers need to be supported in teaching more effectively, and that the government-led education network of 1.5 million schools needs to be lifted to a better standard. The country’s big numbers make this task extremely challenging (a 2018 KPMG report on learning outcomes in school education in India called it “insurmountable”).

Governments at the central
Spreading the education net

Through direct implementation and partnerships with state and central governments and NGOs, the Tata Trusts effort in helping improve education outcomes in India falls in four broad categories:

- Broadening access
- Deepening learning
- Developing teachers
- Strengthening systems

**Under these categories are...**

- **84** education projects
- Reaching about **3.6** million teachers and students
- Impacting **3,412** schools
- Across **26** states and **145** districts

**Beneficiaries of the Trusts’ projects**

- **51%** are women
- **94%** from backward communities
- **66%** below the poverty line
and state levels need all the assistance they can get to cope with this challenge and that is what the Trusts are doing with their multi-pronged approach to improving India’s education systems and outcomes.

“Almost all of our work is in the government school space but we are not looking at infrastructure building or service delivery, given that the government has significantly expanded the school base,” explains Ms Patwardhan. “But a large number of these schools have underprepared teachers.

“There are close to a million teacher posts vacant, mostly in the northern states. Enrolment rates have grown impressively, but important aspects of education, such as regular attendance and nurturing school environments where children learn and thrive, have continued to be a challenge.

We are trying to make a difference by addressing these quality-of-education issues.”

India’s patchy education system has left uncovered large sections of its populace. Lagging on human developmental indices, these sections include children from tribal, socially backward and minority communities, as well as illiterate women. The Trusts have focused on this aspect and their ‘broadening access’ vertical addresses issues that are more sociological than pedagogical.

**Literacy and beyond**

With women’s literacy it involves using education to not just help women communicate but also become more aware about health, finances and the like. With tribal communities, traditionally at a disadvantage because of their physical and cultural distance from urban centres, the Trusts have invested in improving the quality of teaching and learning by engaging with local education bodies. Migrant workers face a unique set of difficulties and the Trusts have tried to help here by working with district administrations.

“When we talk about the right to education, we need to consider communities that have particular needs,” says Ms Patwardhan. “The children of migrant and tribal communities are, typically, first-generation learners. They come from oral traditions and non-literate home environments, and often speak a different language than the one used in school. We need to equip the system and the teachers to deal with children from diverse backgrounds. We need to design learning systems tailored for them. And support has to go in tandem with accountability.”

Students at the Madrasa Ejaz-ul-Uloom in Kheta Sarai in Uttar Pradesh’s Jaunpur district have benefitted from the Trusts’ ‘madrasa’ improvement programme’
Learning material and resources are crucial in improving outcomes and the Trusts have been working to plug large gaps in this part of the education ecosystem through the ‘deepening learning’ vertical.

The majority of children studying in government schools only have prescribed textbooks as their reading material. But literacy research shows that learning improves when children have access to books that are interesting, preferably in languages that the child is comfortable with. The Parag initiative is an attempt to bridge this gap by creating books in regional languages, and setting up libraries where children are encouraged to read for pleasure.

Technology is a great enabler of scale in education, and this is a lever that the Trusts have used to good effect to create what Mr Salian calls “an environment for active learning”. The ‘connected learning initiative’ and the ‘integrated approach to technology in education’ programmes are examples of digital technology being employed to make learning visual and interactive.

The Trusts’ interventions to build parity in education unfold through a combination of local partnerships (such as Kalike in Karnataka, which drives learning improvement projects in schools), or through direct implementation.
Priyanka Dalvi, a teacher trainer, at a workshop being conducted in Phulambri to help government schoolteachers improve their English-language skills.
(the engagement to improve curriculums in minority schools in West Bengal and Uttar Pradesh).

At a higher level, the Trusts have partnered the Indian government’s Ministry of Human Resources Development and the National Council for Teacher Education on a four-year professional development curriculum for teacher training. “We are developing courses for teachers that will help them absorb 21st-century skills and engage with children who are digital natives,” says Mr Salian.

Whether it’s the battle against ignorance or the journey to gain knowledge, India’s teachers need better tools for the job and digital technology can play a role here. The Trusts have collaborated with the central government to support the creation of an app that provides teachers with learning material. The ‘Digital Infrastructure for Knowledge Sharing’ (or Diksha) app will host videos and animated material that makes it easier to teach abstract concepts in maths and science. Every chapter in a textbook will have a code that points to a related video, which can be accessed by a smartphone.

Teaching is dependent on teachers and the Trusts have kicked off a series of interventions to ensure that they are supported with exposure to best practices. The teaching component is critical in the context.

Traditional teaching is dependent on good teachers and the Trusts work at multiple levels to improve ‘active learning’.

“Learning takes place at the teacher-child interface and we are working to build communities of teachers that can convene and learn from one another,” adds Mr Salian (see Language lessons on page 25).

The together way
The strength that the Trusts bring to the country’s education sector lies in their capability to gather together partners to tackle systemic weaknesses. Apart from interventions for schools and students, the Trusts are working to bring about change by engaging with state and central authorities.

“There is a significant education base that the government has built over time and we want to find ways to reinforce these existing systems,” says Mr Salian. The ‘badi parivartana’ project in Andhra Pradesh is an example of how this is panning out. Another is the work that the Trusts are doing to build capacities in the anganwadi network in states like Odisha and Rajasthan.

Anganwadis are early-childhood centres where children from three to five — vital development years — get their first taste of education. “Early childhood is a new area for the Trusts and the idea is to make the child school-ready,” says Mr Salian. “In Andhra Pradesh, we are looking at working with 1,000 anganwadis that are co-located in primary schools to improve the early education experience.”

India’s vast canvas of state boards, national boards and schools that are private, municipal or government-funded requires processes and frameworks that will help standardise learning. The Trusts are backing partners with solutions for improving school performance, as with the Adhyan Foundation, which has set up quality frameworks and school development indices. These serve as a feedback mechanism for principals and teachers.

The wide range of programmes under the Trusts’ education portfolio addresses a multitude of needs and challenges across the sector. Diverse in nature they may be, but they are united by the objective being pursued — helping India score higher than it has managed to thus far in the education examination. And children are at the heart of this endeavour.

By Gayatri Kamath
Not much studying happened here; we spent most of our time playing,” says Marsa Mundu, a fresh-faced 10-year-old at the government school in Surunda village in Jharkhand’s Khunti district. “Students often did not show up for class, teachers were irregular and the place wasn’t clean. That was then. Now our school is, and looks, a whole lot better.”

Marsa, a class VI student, is inclined to chuckle at queries that stump her but she is serious about the change that has swept over her little institution. “We have a library, a toilet and a kitchen garden,” she adds. “I can take books home to read and I have learned to play hockey.” Put it all together and it adds up to a big deal for Marsa, her village and the Munda community she hails from. ‘How it was’ and ‘how it is’ are recurrent themes in the story of what the ‘school transformation programme’ has wrought in the tribal heartland of Jharkhand. Every character in this story begins, dwells and returns — sometimes in a single sentence — to the before-and-after picture that informs an initiative which has benefitted 330 schools and their 35,000-plus pupils. (The majority of these schools are in Khunti and a few of them are in the Hazaribag and East Singhbhum districts of the state.)

What began as a pilot project in 2011, principally to advance reading among tribal schoolchildren, has
evolved to become integral to a community that has come to understand the importance of a proper education. Implemented by the Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts, the programme has unfolded in full force since 2015. The objective is clear and simple: enhancing the quality of learning and teaching in the region’s tribal-dominated government schools.

**Complementary blend**

Complementary components feed off one another in the initiative. A vibrant school environment, continual teacher training, effective school management committees (SMCs), learning assistants to help in classrooms, career support for deserving students, and more — CInI has gone the distance with an effort that is comprehensive and path-breaking.

The need for a programme of this nature was acute. With a literacy rate of 66.41%, Jharkhand is a laggard in education and it’s worse still in Khunti, a rare district where tribal communities comprise the majority of the populace. Improving learning outcomes at the school level is vital for these communities to climb out of poverty and ignorance.

The starting point for the programme is the school itself, the premises as much as the classroom. This involves setting up libraries, toilets and kitchen gardens — useful in feeding the ubiquitous midday meals scheme — the constitution of student councils and morning assemblies conducted by the children themselves, the provision of learning aids and exposure to computers.

The teaching part is central to the initiative and the challenge here is immense. There is an endemic shortage of teachers in Jharkhand’s government schools. Those who take up the position struggle to cope with the workload and, more often than not, are ill-equipped to do so. The Surunda school has two full-time teachers for its 146 students and that’s the common equation.

The state government has tried to deal with the lack by appointing ‘para-teachers’, who have to do almost all that is expected of regular teachers but are paid a lot less. The CInI initiative tackles the problem in two ways: by training teachers and through the appointment of learning assistants, chosen from within the local community by village councils.

The training of teachers is about building their capacities and their knowledge. This happens at the government’s ‘block resource centres’ (BRCs), dedicated spaces where a variety of approaches can be tried and tested. Sharing and learning are the watchwords at the BRCs. Teachers can access relevant learning material, interact with their peers and attend pedagogy workshops undertaken by experts.

The learning assistants — there are about 150 in the programme — have been invaluable in a situation where teacher deficits have undermined education outcomes. Their salaries are taken care of by CInI and their inputs are essential. At the school in Kudapurti village, for instance, there are no government teachers for the eighth, ninth and tenth classes. The gap is being filled by these learning assistants. That’s how it has been for more than six years and it highlights the difficulties loaded into the system.

Tanuja Prasad, a 26-year-old learning assistant at the government school in Chikor, has no doubts about the contribution she and her

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### Making the grade

The numbers in the ‘school transformation programme’ illustrate its scope and reach:

| 330 | schools |
| 35,000+ | students |
| 231 | libraries set up |
| 558 | teachers trained |
| 150 | learning assistants hired |
cohorts have made to the initiative. "There has been a world of difference at the school from the time I joined about 19 months back," she says. "There is a method now. Discipline and reading have improved, but the lack of teachers remains telling."

**Parental supervision**
The part played by the SMCs is even more crucial. Made up mostly of parents, these statutory bodies are the link between the community and school. They measure — and pressurise — the schools to live up to their promise by tracking the punctuality of students and teachers, the cleanliness of the institution, the quality of midday meals and, not least, the amount and efficacy of the learning that takes place.

The programme has brought the SMCs up to scratch and it could not have happened sooner. "Everything here has improved from how it used to be earlier," says Raja Daud Mundu, the president of the Surunda SMC. "The committee ensures that the teachers come to school, that classes are conducted properly and regularly, that our kids are getting the education they deserve."

Mr Mundu talks about the time when kids in Surunda went to school as a matter of routine rather than to study. Those days are gone but much remains to be accomplished. "Earlier, the teaching was erratic; that has changed. We want to make the school better. We need more teachers, one for each class, and we need better infrastructure. We are tired, frankly, of asking the government. We keep at it, though."

“We did not know much about how a school is run or about government schemes for education, but we do now,” says Sabina Mundu, a SMC member who is also from Surunda. “The community is more aware. We work to convince parents that their children should attend classes. But some villagers are poor and they need their kids to do the work at home or in the fields. There’s no getting around that.”

Phagua Pahan, president of the SMC in Kujrang village, is keen to...
Priyanka Kumari wants to play hockey for India — “That’s my big dream,” she says — and she could well do that if she keeps up the hard work she is putting in as one of those selected for coaching at the ‘regional development centre’ (RDC) set up in Khunti as part of the Tata Trusts’ education programme in Jharkhand.

Breaking through will not be easy for Priyanka, a class X student at the government school in Pellol. “I want my hockey to go hand in hand with my studies, but finding the balance is tough,” she says with a maturity beyond her 14 years. “And then there is work to be done at home as well.”

Priyanka is one of 30 girls and as many boys who have been fast-tracked for progress at the two RDCs — the other is in Simdega district — established by the Trusts to tap budding talent in a region with a rich crop in the sport. These kids are in the 13-15 age group and they were chosen after a rigorous selection process.

The Trusts also have a grassroots hockey initiative in the state that involves about 5,300 children from 79 tribal-dominated schools in Jharkhand, they organise interschool events and hockey festivals, and there’s a ‘training the trainer’ component, too, where coaches are picked after trials involving experts from Bovelander & Bovelander BV, set up by Dutch hockey legend Floris Jan Bovelander.

Hockey aside, the education programme in Jharkhand is triggering academic aspirations through an initiative for deserving tribal children from poor backgrounds. The ‘super 30’ scheme, as it is called, has 30 girls and 30 boys and they have been selected after a screening process. Class XI and class XII students, they are preparing — with expert help from the Avanti coaching centre in Khunti — to crack India’s ultra competitive national engineering entrance examinations.

Mary Shreya, a 16-year-old from Bazzar Tanr village in Khunti, is among the chosen ones and she is relishing the opportunity. “I want to be a mechanical engineer and I want to make it to the Indian Institute of Technology, Bombay,” she says. Why Bombay? “I’ve heard so much about the city; it would be perfect.”
emphasise the positives for the community. “Time was when this village did not think education was important, but today every child in Kujrang attends school,” he says. “That’s transformative and it has been brought about by the community through this programme. You see a child get ahead in studies and the motivation to have your own child do the same comes naturally.”

Out of the ordinary
Neeraj Pathak, the government teacher at the Kujrang school, puts what Mr Pahan is saying in context. “This is hilly country, a forest area, and the people here are backward, but the school itself is quite good given the circumstances. That’s not the norm for outback places like this. The learning assistant here is a big help. He’s a local and he knows the Mundari language, which means he can communicate with the children and get them on the way to learning Hindi.”

The Jharkhand state government’s education department is a willing and active partner in the programme, and its officials are keen to acknowledge what CInI has pulled off in Jharkhand. “The support we are getting has been commendable, as is the innovative nature of the work being done and the community mobilisation that is happening,” says Suresh Chandra Ghosh, the superintendent of education for Khunti district. “The main contributions have been in mitigating the teacher shortage, focusing on the quality of education delivered and in easing the language issue that teachers from outside the tribal belt face when coping with children who know only the Mundari language.”

“Enough cannot be said about this effort of the Tata Trusts,” says Vijay Kumar, the education extension officer for Murhu sub-district. “The standout feature of this programme is the focus on quality education. The intent is to match the child’s learning with the class he or she is in. It’s sterling work and their people on the ground are evidence of this. They believe that if something is worth doing, it is worth doing well.”

The proof of the pudding for the programme is in quantifiable outcomes and Khunti has scored high on the count. A recent central government survey of 117 ‘aspirational districts’ in India placed Khunti in second place on educational parameters. The Trusts and CInI, though, are not about to rest on such laurels. They are now advocating with Jharkhand’s education department to plug into the good practices generated by the programme and have them adopted across the state, by the state.

That could well mean giving children such as Supriya Mundu the opportunity to blossom. “I like coming to school, I like learning Hindi, especially the poems, and I like the computer classes,” says the 12-year-old student from Surunda. “I want to be a teacher when I grow up. I’ll get to read more then and I’ll read to the kids in class. That would be nice.”

By Philip Chacko
Dalit and tribal women in Uttar Pradesh are redefining their lives thanks to a trailblazing adult literacy programme

The statistics are appalling. Nearly 28% of India’s 1.35 billion citizens do not know how to read or write. That adds up to about 378 million unfortunates, handing India the dubious distinction of being the country with the largest number of illiterates in the world.

Adults constitute the vast majority of these people who have never had a chance to get educated, and women outnumber men by far. Try as they might, central and state governments down the years have — a few exceptions aside — struggled to change the situation at a quick enough clip. Supplementary efforts are critical and the need for civil society to lend a helping hand just as much so.

The Tata Trusts have been doing that and more for a long time now and among the most sustained and impactful of these interventions has been a women’s literacy programme that was seeded in 2002. Currently operational in the Lalitpur, Bahraich and Pratapgarh districts of Uttar Pradesh, the programme has enabled more than 60,000 in the state — and in Rajasthan, Jharkhand and Bihar — to lift themselves out of illiteracy.

Women from Dalit and tribal communities in rural regions are the primary target of the initiative, which has seen the Trusts collaborate with a clutch of nonprofits, chief among them Nirantar, a resource organisation working in the field of gender and
education. Nirantar provides support with teacher training, learning materials, quality control, monitoring and, not least, in tackling the perennial caste and social issues that plague India.

The intervention was first rolled out in Lalitpur and the choice was deliberate. The district had a literacy rate of under 30% when the programme started and it typified the feudal culture that continues to prevail in so many parts of the country. Not surprisingly, Sahjani Shiksha Kendra (SSK) — the entity created to implement the project — encountered stiff resistance from entrenched interests.

The programme has had to confront an overflow of challenges to get where it has. Gender discrimination is a systemic problem, especially for rural women, as is physical abuse. In the circumstances, an adult woman wanting to become literate is seen as an anomaly. “At the age of 35-40, their desire to study is often questioned and dismissed by the husbands,” says Archana Dwivedi, Nirantar’s director. “We had to work intensively with mothers-in-law as they are often the first point for permission seeking.”

**Double trouble**

Resistance also came from the community. Being a Dalit or a tribal is a double whammy for women who already have to suffer on account of their gender (in Lalitpur these women are not allowed even today to don footwear in the presence of upper caste folks). Once the family members and community were convinced, the next hurdle was hiring teachers.

Most of the qualified and available women teachers came from the upper castes and they were reluctant to even enter the Dalit and tribal colonies where the centres for the classes were being set up. Eventually the SSK team trained Dalit teachers for the job. Even those who had studied up to class V were taken on board.

After a basic test to evaluate their proficiency levels, the newly hired teachers were trained in adult education methods and teaching learning material (TLM) specially designed for the programme. Importantly, they were coached on the social and cultural sensitivities of engaging with Dalit and tribal women. “These aspects are non-negotiable,” adds Ms Dwivedi. “Teaching began when they were free of preordained ideas.”

The programme’s aim is to help the newly literate women examine their lives in the context of overbearing patriarchal norms and class and caste structures, and use education to effect social and economic changes. “We see education as an empowering process where rural women are able to question the everyday injustice and discrimination they face,” explains Ms Dwivedi.

The literacy centres are in spaces provided by individuals in their homes, by the village councils or even under a tree. The arrangements are simple: there’s a blackboard, TLM kits, mats for sitting and drinking water. Each centre trains women in batches of 20-25 in a basic level course lasting 18 months, after which they qualify for an advanced course that lasts a further 18 months. “Nearly 50% of them qualify for the advanced phase,” says Ms Dwivedi.

Classes are held daily and the women find time to attend between doing their daily chores. Attendance dips considerably
during the harvest season, when the women must help out in the fields. The programme typically lasts 36 months (or even more) in each location, after which the centre is wound up.

Results are tracked through a monthly review and training session for teachers. Additionally, a five-day refresher course, conducted twice a year, takes stock of the programme’s progress and equips teachers with new skills, content and instruction techniques.

The literacy programme has delivered on its key objectives, enabling the women beneficiaries to put their newfound language and numeracy skills to good use, from opening a bank account to claiming benefits under government social welfare schemes. The teachers also take the women to various government institutions and banks to familiarise them with their workings.

**Getting ahead**

Some of the women in Lalitpur who have completed the advanced course have even gone on to take up supervisory roles in projects implemented under the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA). Nirantar has trained 50 such women as MNREGA ‘mates’ and 20 of them have found regular jobs in the scheme.

One big reason the programme has been effective is that it does not use traditional textbooks. Instead, it encourages the women to relate their learning to their lives. Accordingly, Nirantar has developed primers for both teachers and their students, keeping in mind their social context and environment. “They needn’t start from scratch; they just have to formalise their existing knowledge,” says Ms Dwivedi.

Every centre also has a small makeshift library with visually rich books that encourage the women to read. With their improved reading and writing skills, the women have gained confidence to express themselves through stories and other writings, which then become the reading material for new learners.

The literacy programme has spread beyond Lalitpur to Bahraich, where it began in late 2016 and has grown to 75 centres, and Pratapgarh, where 30 centres have come up since its inception there in 2018. Gram Vikas Sewa Sansthan, an Amethi-based NGO, is the implementing partner in Pratapgarh (with technical support from Nirantar). In Bahraich the
programme is being directly managed by the Trusts.

**Literate and able**

The Trusts see the literacy initiative supporting other interventions where women play a central role, such as livelihood programmes involving self-help groups and projects in nutrition and children’s education. For instance, the literacy centres in Pratappur have become resource pools for employment in a local milk producer company created under Shwetdhara, a cattle-care programme that supports small and marginal farmers.

The core purpose of the programme, though, remains women literacy and what can be achieved through it. In Lalitpur, one of the programme’s beneficiaries is now the sarpanch (head) of her village while another has become a social activist. “Even daily wage labourers are no longer resigned to their fate; their understanding of the world has changed forever,” says Ms Dwivedi.

For the Tata Trusts, the immediate as well as the long-term counts. “We view this programme both in terms of its capacity to improve the agency of women and its instrumental value in promoting their participation in livelihood programmes, their capacity to engage with the schooling of their children, and take appropriate decisions on health, nutrition and the like,” says Ujjwal Banerjee, manager, education portfolio, the Tata Trusts.

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By Vikas Kumar

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**A life transformed**

When the Sahjani Shiksha Kendra opened a literacy centre in Neemkhera village in Lalitpur district in 2016, Meena (right), a 30-year-old Dalit woman from the Ahirwar community, promptly enrolled herself. Growing up, she had felt deprived of a school education as women in her community weren’t allowed to leave home. And now, given the unlikely chance, she was eager to grab the opportunity.

“My husband was embarrassed and did not want me to attend classes,” recounts Ms Meena. “His friends and other villagers kept asking him why I wanted to learn at such an old age. But she was determined, social pressures be damned, and began attending classes while her husband was away at work.

“Here I could share my joys and sorrows with other women, including my teacher. We developed a bond. We understood one another’s difficulties.”

Learning through games and activities was a refreshing break for Ms Meena from her humdrum existence. Through exposure visits, she and her classmates began to understand the workings of institutions like banks and hospitals, and also of government schemes that targeted them. Discussions on violence against women and the constant discrimination they faced at home and beyond led Meena to reflect on her own circumstances.

“Once, when my husband came early from work and saw me studying at the centre, he lost his temper. When I went back home, he beat me up,” says Ms Meena. “I was hurting and sad and did not come to the centre for a few days.” Her teacher visited her at home every day during this time and managed eventually to convince her husband to allow his wife to resume her studies.

Ms Meena has much to be appreciative about. “I have learned how to read, write and do calculations, and now I even help my children with their studies,” she says. “My struggles are not yet over, but at least I feel more confident because I can live my life without being dependent on others for everything.”
Nothing about Priyanka Dalvi appears to be out of the ordinary as she greets visitors at a small school in Phulambri town, about 100km from the historical city of Aurangabad in Maharashtra. But Ms Dalvi, a teacher at a government school, is exceptional — and the reason is the fluency she has acquired over recent years in the English language.

Ms Dalvi had a working knowledge of English but she was not comfortable speaking the language or understanding it with ease. That changed after Ms Dalvi joined a programme aimed at enabling schoolteachers in rural Maharashtra to become facile in the language.

Called Tejas (meaning brilliance in Hindi), this collaborative initiative involving the state government, the British Council and the Tata Trusts started in 2016 and it is changing the way English is taught and learned in Maharashtra’s hinterland. Now nearing the end of the pilot-project phase, Tejas has reached some 18,000 teachers thus far.

The upside here has been remarkable and the evidence unfolds when Ms Dalvi begins addressing a group of schoolteachers at the Phulambri function. The room is filled with schoolteachers who have been working in remote villages for long. Ms Dalvi speaks in English and the audience’s admiration for her becomes obvious.

It is rare to encounter a person with Ms Dalvi’s command of English in the settings of a rural school. It is not so rare in Aurangabad district, where Ms Dalvi...
and her schoolteacher colleagues have emerged as torchbearers in an effort directed at dismantling the hurdles English presents to those doing the teaching, as well as those looking to learn.

One of the earliest participants in Tejas and now a trainer herself, Ms Dalvi conducts her session almost entirely in English. Some of the teachers struggle to grasp what she is saying but Ms Dalvi goes the extra mile in ridding her adult wards of their discomfort. They, in turn, listen carefully to what she has to convey.

Getting their kids to be fluent in, or at least know, English is a commonplace aspiration for parents in India. More often than not, this is an aspiration too for those in the country’s rural regions, where the majority of schools are state-run and the primary mode of communication is the local language. The intent behind Tejas has been to change that equation.

The programme has been rolled out in nine districts of Maharashtra and its key objective is to bring about a systemic transformation in the quality of teaching English. The sessions conducted by Ms Dalvi and others plug into this objective and the results have been encouraging.

**Confidence booster**

“These sessions have increased my confidence and improved my English,” says Srikant Patil, a schoolteacher participant who has attended six of them. “I learned English in school but most of the learning came through writing, not conversing. The Tejas programme is changing that for me.”

Individual stories emerging from the Tejas classroom provide further encouragement. One of the schoolteachers who have benefitted from the project — she hails from isolated Gadchiroli — has been nominated by the British Council to attend an international conference in English.

Helen Silvester from the British Council points out that it is the winning formula of teacher engagement and learning communities that is responsible for the programme’s success. “The challenge for teachers globally is the distance between them and the education, initiative and practice involved,” she says. “What we are seeing here in Maharashtra is quite impressive and all indications are that Tejas is working well.”

Tejas works well because it takes in schoolteachers as well as students. “Many schoolchildren in India are good with English grammar but are reluctant to speak the language — and spoken English is the key,” adds Ms Silvester.

What started off in a small way in Maharashtra is now sparking interest in other Indian states and abroad, too. Gujarat is set to unveil something similar and so could Madhya Pradesh and several more states. The programme has also found takers in Romania, Nepal and Egypt.

In Maharashtra itself, the programme is poised to cover all 36 districts of the state. The goal is to train 48,000 teachers in about five years and, eventually, scale the number up to 100,000 teachers. The target is certainly achievable and one reason is that the initiative eliminates a big deficiency of the traditional train-the-trainer model, where trainers and teachers tend to lose contact, leading to poor outcomes. Tejas has been able to overcome this in a novel way.

Under the programme, the teachers form ‘face-to-face groups’ and digital communities so that they can practise their newfound skills.
“Our teachers get a total of 19 days of training over a three-year period and they get to meet one another every month,” says Ujwal Karwande, HOD English department, Maharashtra Academic Authority, a government body that aims to update and improve the quality of primary education in the state. “We have 750 ‘teacher activity groups’ (TAGs) and we will have 600 more of these once we scale up.”

**English has its day**

Among the techniques pursued under Tejas are the engagement of participants in games, having discussions in English, and observing one day in the week as ‘English day’ (where teachers and students follow an only-English rule in class). Additionally, there are speakers to deliver guest lectures and clubs to promote the language.

The Maharashtra government is enthused enough by the success of Tejas to extend the programme’s ambit to include private schools. Also on the agenda is a proposal to revitalise the government’s State Institute of English at Aurangabad so that it is equipped to support English training initiatives.

Be it starting early, as with schoolchildren, or catching up later than never, in relation to schoolteachers, Tejas is ploughing a crucial furrow in its bid to make English an ally in the early-education ecosystem rather than an unfamiliar creature forced upon everyone involved. The endeavour could not have happened sooner.

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**How ‘gilaas’ becomes ‘glass’**

Those who know the language well don’t think much about the knowing but English can be a tricky customer, to say the least, for people lacking the means to make it their own. This is especially true for those who have to ‘learn’ the language, as opposed to people who ‘pick it up’ in an English-rich environment.

English as a second language is not an easy beast to tame, even with a proper education on your side (evidence of this abounds in the poor usage of it all around us, whether in written word or spoken blather). The difficulty is compounded in India’s rural schools by a variety of factors, and this is where Tejas is trying to make a difference.

“I could not speak English fluently earlier, particularly in public,” says Apeksha Tai, a schoolteacher who has been part of the Tejas programme for about two years. “But now I’ve become more confident and that has helped my students learn the language better. My class II kids used to say ‘gilaas’; now they have got around to pronouncing it as ‘glass’.”

Ganesh Gore, a teacher in a village school with just 16 students, faced similar problems before he found a friend in Tejas. “I’ve been teaching near Phulambri for the last six months and, initially, I had a lot of trouble getting my students to improve their English,” he says. “Tejas has made things easier and I have been able to do my job. I talk to my students about simple stuff and I connect them to the language through everyday words.”

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*By Nithin Rao*
The traditional gets a touch of modernity

The ‘madrasa improvement programme’ has introduced progressive methods of teaching and participatory learning to children and their tutors in previously custom-bound schools in Uttar Pradesh

It may be a coincidence but the contrast is striking. Uttar Pradesh is among the lowest-ranked states in India on key educational indicators but it has the highest number of madrasas in the country. Steeped in archaic teaching methods that place greater emphasis on deeni taleem (religious studies) than on duniyavi taleem (mainstream education), these schools lag behind on several fronts.

Madrasa — the word comes from the Arabic language — originally meant any kind of educational institution. These days it refers almost exclusively, at least in the subcontinent, to Islam-centred schools. And that is reflected in their curriculum, which is not quite in sync with modern educational methodologies. Complicating matters further is the fact that madrasas tend to function in an inhibited environment that promotes rote learning.

Madrasas cater mostly to children from poor families, who typically stay here up to class V before moving to regular schools, or dropping out. That results in these kids missing out on learning opportunities, not to mention being ill-equipped for the higher education pie. The ‘madrasa improvement programme’ (MIP) of the Tata Trusts is calibrated to change this.

MIP, part of the Trusts’ wider endeavour to provide underserved and marginalised communities with better access to education, is being implemented in Varanasi and Jaunpur in Uttar Pradesh and covers a total of 50 madrasas and about 10,000 children.

Partnering the Trusts in the initiative are two local NGOs, People’s Vigilance Committee on Human Rights (PVCHR) in Varanasi and Azad Shiksha Kendra (ASK) in Jaunpur. Also on board are the management committees of the chosen madrasas — 30 of which are in Jaunpur and 20 in Varanasi — the teachers and children there and local communities.

Upgrading and modernising these institutions is the priority of the programme. That means bringing in contemporary curriculum standards and learning methods and materials to help madrasa students make the transition to regular schools. Long years of experience in running the programme and gaining the trust of the participating schools have enabled the Tata Trusts to fine-tune their approach.

The first phase of MIP began in Uttar Pradesh in 2005 and it targeted madrasas as well as government schools, the prime intent being to improve access to education in rural areas. From 2008 onwards, the Trusts partnered the nonprofit Nalanda to expand the initiative while enhancing implementation, coverage and resource support.

Going far and wide
Between 2013 and 2018, the programme was extended to cover madrasas in Bihar and Jharkhand in addition to those in Uttar Pradesh. During this five-year period, the initiative reached more than 45,000 students across the three states. Thus far about 100,000 children, the majority of them girls, have benefitted from MIP.

The focus in the current phase of MIP is on capacity building for teachers and backing them in adopting the latest pedagogy practices, with visually rich
ensures official support in the form of funding and the provision of teachers. The rest run mainly on voluntary contributions from community members, which puts them at a disadvantage.

Take the Madrasa Rizvia Rashid-ul-Uloom in the Bajardiha area of Varanasi. An urban slum, Bajardiha has a population of close to 250,000. There is only one government primary school here and it shows in Bajardiha’s literacy rate (around 62%). Of the 350 students at the madrasa, 245 are girls and this is typical of madrasas in Uttar Pradesh.

Low-income families look to textbooks and technological tools. However, the challenge in Uttar Pradesh is that it is one of the states that lags behind most in modernising its madrasas. There are an estimated 35,000-40,000 of these schools in Uttar Pradesh and only 19,000 have government recognition.

The ‘madrasa improvement programme’ is now operational in two districts of Uttar Pradesh, Varanasi and Jaunpur. The project numbers:

- 10,000 children
- 150 teachers
- 50 madrasas (30 in Jaunpur and 20 in Varanasi)

The programme uses a variety of methods to improve the learning levels of children and adolescents:

- Modernising madrasa educational systems and improving standards
- Mobilising the community and having parent committees
- Using technology for classroom teaching and to inculcate life skills
- Creating libraries and employing a project-based approach
- Providing training for teachers and implementation partners

Staying the course in Uttar Pradesh makes sense for the Trusts. This is a state that lags behind most in modernising its madrasas.
their boys to carry on the family profession — weaving is the mainstay in Bajardiha — and 50-60 of them drop out every year after class VIII. Teacher salaries range between ₹2,000 and ₹3,000 a month and many of them work for free. As a result, learning standards have suffered.

Urdu is the medium of instruction and the approach to subjects such as science is rooted in religious beliefs (pictures are not allowed in madrasa textbooks since they are proscribed in Islam). Improving the situation is, given these circumstances, no easy task.

The Trusts have deployed ‘madrasa facilitators’ who engage with teachers on a weekly basis, sharing new techniques and learning methods. “The objectives are many,” says Vivek Singh, a programme officer with the Trusts. “We want to encourage dialogue and discourse in the classroom, have subjects like maths and science be taught in an engaging way and ensure that children are treated better.”

The younger lot of teachers in the madrasas are the staunchest allies of the project. Several of them have had a more liberal education and that reflects in their outlook. Shabnam Shaheen, a 22-year-old Urdu teacher is one of them. “Four years ago, when I started teaching here, our children were weak in studies; hardly any of them were fit for high schools,” she says. “But the children have improved a lot now.”

Concentrating on children
The stressing of child-centric pedagogy and activity-based learning has been instrumental in changing the attitudes of students, and teachers too. “Earlier, the children were afraid to ask questions but the new methods are helping break down barriers between teacher and student,” says Rajeev Kumar Singh, project manager, PVCHR. “The freedom to ask questions, in turn, inculcates a reading habit among the students.”

In Jaunpur, which is in rural Uttar Pradesh, the programme is creating an even greater impact and the need for it is patent. The Madrasa Jamia Darul-ul-Uloom Hanfia in Tighara village operates out of a nondescript red-brick structure that opened two years ago with funds and land donations from the community. The improvements effected here through the MIP project have been a boon all around.

There are 119 students in the school and their parents have enrolled them there out of choice. “There is a government primary school here but its quality of education isn’t good, so people — both Muslims and Hindus — have been sending their children to this madrasa,” says Nisar Ahmed Khan, the founder of ASK.

Rehana Nisa, who moved her
eight-year-old son Asif from the PNGY convent school in Tighara to the madrasa, backs up Mr Khan. “The convent school had too many books and too little studies,” she says. “Here my son is doing well, especially in maths and English as the teachers put in a lot of effort.”

Opening up new avenues for the students is part of the MIP programme. The Jamia Darul-ul-Uloom Hanfia organises summer camps — previously unheard of — and they are open to everyone, not just students. No surprise, then, that parents are more than keen now to have their kids study at the school. “The demand is so high that we have had to turn students away due to lack of space,” says Abdul Hai, the manager of the school.

The transformation of the schools has been welcomed by the community at large. “The programme has certainly helped improve the overall education standards in the madrasas and their look and feel as well,” says Syed Tariq, the ‘chief custodian’ of the Jamia Darul-ul-Uloom Hanfia.

Libraries, teacher training, a project-based approach, varied learning activities and, not least, technology have made the transformation of the madrasas in the programme a reality. Less obvious but just as potent is the programme’s potential to liberate this traditional educational system from its past, and connect students to emerging opportunities in education and beyond. ■

By Vikas Kumar
Jamsetji Tata had on his side precedent and inspiration, if he needed any, when he got thinking about making education the subject of his maiden effort at planned and purposeful philanthropy.

That effort by the founder of the business house and charitable institution that bears his name resulted in the setting up, in 1882, of the JN Tata Endowment for the Higher Education of Indians. Not as well known is a venture from 24 years previously, more modest in ambition and scope but remarkable for its objectives and the milieu in which it was born.

The Bai Navajbai Tata Zoroastrian Girls’ School traces its beginnings to 1858. It was a time of ferment — the sepoy mutiny against British colonialism had burst forth a year earlier — and change was in the air. The old order had to give way and it did when Navajbai Tata, Mr Tata’s paternal aunt, established the school.

Navsari, the historical trading port in Gujarat where the school is located, was one of the places where the Parsi community, to which the Tata family belonged, sought refuge.
from roughly the 8th century AD following the conquest of their homeland in Persia by Arabs.

The school could not have come sooner, this being a period when the idea of educating girls was met with disdain, even scorn. Navajbai Tata thought otherwise.

Nestled in the heart of Navsari, just a few metres away from the birthplace of Jamsetji Tata, the school is one of the first institutions of its kind in India. Ms Navajbai had started with a traditional school where Parsi girls could learn stitching and craft and this would become the Gujarati-medium Bai Navajbai Tata Zoroastrian Girls School.

The school began with some 40 Parsi girls on its rolls and today, more than 160 years later, it continues standing tall. The Tata family and, later, the Tata Trusts have played a pivotal role in keeping this flame burning bright.

After initial support from various members of the Tata family, the school got its own dedicated source for sustenance and growth through the Bai Navajbai Tata Zoroastrian Girls’ School (BNTZGS) trust, set up in 1886. Since then, every stage of the school’s expansion has been made possible with backing from the trust, from the addition of a secondary school and new classrooms to latter-day modernisations.

The upgrading of infrastructure has gone hand in hand with other changes down the years. The school opened up its portals to girls of all faiths in 1953, it became coeducational in 2007 and, two years later, launched an English-medium section. The learning process at the school is supplemented by computer labs and smart classes and it also has off-classroom programmes in karate, aerobics and the like.

Best of facilities

“Our students have access to the best of facilities,” says Hitesh Parekh, the principal of the school’s English-medium section. “We stay abreast of advances in pedagogy and we are constantly striving for creativity in our students and in our teaching methodologies. Why stick to chalk-and-talk? We keep trying out something new.”

It’s an approach that benefits students most of all, like 14-year-old Ayan Shaikh, who has made a multimedia documentary on the school. The school is also proud of its academic results. “Our students have been doing well in the board exams and other competitions,” says Yasmin Patel, principal of the Gujarati medium section.

A Navajbai alumnus from the 1992 batch, Ms Patel joined the school as a teacher in 2008 and was appointed principal in 2015. The quality at both ends of the scale, from the learning to the teaching, explains the manner in which the school has kept faith with its legacy.

“The school has built up its reputation by providing good-quality education for its students,” says Burzis Taraporevala, secretary, BNTZGS trust. “Our trust has built a large corpus to fund the school’s operations and we also help when it needs funding for expansion.”

The Bai Navajbai Tata Zoroastrian Girls’ School is a shining illustration of how to ensure an equitable education for all. Breaking the shackles around the education of girls was the first step for an institution that has, with dedication and without fanfare, shown the way forward in the field of learning.

By Gayatri Kamath
In search of cures

The Society for Education, Action and Research in Community Health

has been a panacea for the tribals of Gadchiroli in Maharashtra

Chaitanya Malik has a busy practice and he attends to scores of patients every day, but he’s not your typical doctor. Choosing to work at the Maa Danteshwari Hospital in Maharashtra’s remote Gadchiroli district, among the most backward in India, Dr Malik’s patients are mostly members of the Gond tribal community of the area.

“It was a kind of reverse migration for my family and me,” says the 32-year-old Dr Malik, who chucked his job at a government hospital in Delhi to go where few doctors venture voluntarily. “I wanted to work in rural India after my post-graduation and Gadchiroli turned out to be the right place.”

The setting for Dr Malik’s labour is Shodhgram, or the ‘village of quest’, and he appears to have found what he was seeking. Dr Malik, who has been in the village for 18 months and has learned to speak Marathi during the time, is part of a multi-pronged initiative led by the pioneering Society for Education, Action and Research in...
Community Health (SEARCH).

Founded by Abhay Bang and Rani Bang, the famed doctor couple who have blended social activism and research with pioneering healthcare — particularly neonatal care — in a dirt-poor region, SEARCH has been at the forefront of a sustained effort that has won plaudits from the World Health Organisation and UNICEF.

The organisation’s efforts have reached 134 villages in Gadchiroli and benefitted more than 12,000 people. SEARCH has 48 ongoing tribal health programmes and there is also the Maa Danteshwari Hospital, set up by the Bangs to treat the underserved in an underdeveloped region. The Tata Trusts has since 2016 been supporting the initiative, which tackles a range of health issues in a geography that poses plenty of challenges.

Lagging behind
Gadchiroli lies in eastern Maharashtra, some 200km from Nagpur, and borders Chhattisgarh in the east and Telangana in the south. The majority of the populace here are tribals and they lag far behind on almost all economic and human development indices. Adding to Gadchiroli’s woes is a Maoist insurgency that has been raging for long years.

Gadchiroli’s residents are mostly impoverished and illiterate. The only thing they do not seem to lack for are health problems. Malaria, anaemia and tuberculosis are common, snakebites are everyday occurrences and, surprisingly enough, conditions such as hypertension, diabetes, stroke and back pain have been increasing in recent times.

There is one physician for every 5,000 people in Gadchiroli (the ratio is 1:1,500 for India). SEARCH, headquartered in a sprawling 45-acre campus in Shodhgram, works to ease the rush and institutions like the Maa Danteshwari Hospital are critically important in the context.

Dr Abhay Bang, who grew up in Mahatma Gandhi’s Sevagram Ashram, and Dr Rani Bang started out on their mission to serve the marginalised communities in Gadchiroli in 1985. Following a one-year course to study research methodology at John Hopkins University in the United States, they got SEARCH off the ground in 1987.

In the three decades since, SEARCH has worked on a host of health-related issues, primarily malaria, alcoholism, backaches, gynaecological problems and child mortality. A distinctive feature of the organisation is the place where it has struck roots.

Established in 1993 after extensive consultations with the Gond tribal community, Shodhgram is modelled on Sevagram and has been designated as a tribal village. It incorporates tribal design traditions and has a unique architecture and ambience.

The Shodhgram complex houses a 20-bed hospital, office and residential spaces, and an agricultural area. It also includes a guesthouse, a hostel, research and training facilities, a museum and a library with more than 10,000 books and magazines. The residential complex accommodates around 100 people and a new facility is coming up to meet SEARCH’s expanding needs.

Led by the Bangs, SEARCH
swears by the idea of community-based healthcare models, which are tested through research studies and made available by way of training and publications. Alcoholism, rife in the region, has been a continual concern for the organisation and this remains a key part of its work.

SEARCH launched a ‘liberation from alcohol movement’ in the late 1980s at the urging of local village women. The initiative soon developed into a mass movement with women and youth in 150 villages demanding prohibition in the district.

“The total value of alcohol sold in the district was about Rs200 million a year, whereas the government’s annual budget for Gadchiroli was just Rs140 million,” says Dr Abhay Bang. “We urged the government to impose prohibition in the district and women supported us in the thousands.” [In 1993, the Maharashtra government finally imposed prohibition in Gadchiroli but SEARCH surveys show that more than 40% of males in the district continue to consume alcohol, most of it illegally brewed.]

In August 2016, SEARCH began a collaboration involving the Maharashtra government and the Tata Trusts to launch ‘muktipath’, a district-wide tobacco and alcohol control programme. The aim here is to raise awareness about the ill-effects of alcohol and tobacco, create a social environment to reduce their consumption, and to rehabilitate addicts.

Muktipath has a five-pronged approach:
• community mobilisation through the creation of village-level committees comprising influencers and decision-makers;
• enforcement of prohibition and better implementation of the Cigarettes and Other Tobacco Products Act;
• mass awareness campaigns to drive home the ill-effects of alcohol and tobacco;
• de-addiction programmes to treat and reform habitual users;
• and creating recreation avenues for sports.

SEARCH currently has three clinics to treat alcoholics and this highlights what is a crucial facet of its work. “We plan to have such clinics across the district and we hope to provide services to about 4,000 people with addictive disorders,” says Arti Bang, a psychiatrist and a daughter-in-law of the Bangs.

Focus on infant mortality
Of greater import than treating alcoholism has been SEARCH’s long-running effort to minimise infant mortality in Gadchiroli, and it all began on a rainy day in 1993 when Dr Abhay Bang was at his home. There was a knock on the door and standing on the threshold were two women with a baby gasping for breath.

“I didn’t have an examination table at my house so they placed the infant on my bed,” recalls Dr Bang. “But before I could do anything, it stopped breathing and died right there on my bed. It was a shocking experience to have a baby die like that in front of me and to be unable to do anything.”

The good doctor’s first impulse was to scold the infant’s mother but then he heard her story. The woman’s husband was an illiterate alcoholic. She had lost her first child similarly and when the second became sick, she went to a local witchcraft practitioner. This provided no relief and that led her, finally, to seeking out Dr Bang.

The tragedy prompted Dr Bang to launch “an audacious experiment” — training women villagers to care for newborns like experts. Naturally, there was some trepidation before launching the intervention. Dr Bang consulted paediatricians from the All India Institute of Medical Sciences, Delhi, and other reputed institutions.

“They evaluated our programme for three days, at the end of which they concluded that the women who worked for SEARCH [there were about 30 at that point] knew more delivering a baby than many medical graduates,” says Dr Bang. “When we launched the scheme, infant mortality was at a high of 76 per 1,000 births. By the end of the third year it had come down to 30.”

SEARCH has gone on to replicate this initiative in other parts of Maharashtra and the central government has adopted it in five states. The success of what began as an experiment has fetched the Bangs several awards at the national and international level. Just as significantly, it has attracted budding physicians like Dr Malik to work for a cause that is as much social as medical.

By Nithin Rao
When gynaecologist Rani Bang first began researching the reproductive health of women in 1985, she was stepping into new terrain. “It was mostly about maternal issues and family planning,” says Dr Bang. “All the other components of reproductive health were missing. But my experience at medical colleges and district hospitals told me otherwise.”

Dr Bang soon learned that there wasn’t a single study on issues such as reproductive tract infections, infertility and cancer. After teaming up with her husband, Abhay Bang, and setting up SEARCH, she decided to undertake the first such study.

What Dr Bang found out was revealing: 94% of the women surveyed had suffered reproductive tract infections. On average, each woman had four types of ailments, yet a mere 8% had sought medical help.

During her interactions with women in Gadchiroli, Dr Bang realised that they could not visit a health centre every time they had a gynaecological issue. “So we decided to create a cadre of traditional birth attendants [TBAs]. It was a challenge but there was no other alternative.”

The TBAs led to a broader engagement with the tribals and their way of life. “At my camps I would tell them that I would teach them something about health if they taught me about the flora in the district,” says Dr Bang. “That’s how I got educated about the different trees in the region.”

Naturally, there were surprises along the way, like the time when a TBA told Dr Bang how a particular branch of a tree could be used to kill one’s husband. “I was taken aback,” she recalls with a laugh. “She told me that if her husband were to harass her or get involved with some other woman, she would use the branch to finish him off.”

Dr Bang’s documentation of her interactions with the tribal women, village healers and others led her to write a book Goin, which means ‘friend’ in the Gondi language. The book describes the relationship between tribal women and various trees.

Other discoveries led to other engagements. Dr Bang found that 48% of non-tribal married girls had pre-marital sex, although no one wanted to discuss it. She also had unmarried school girls approach her about problems relating to incomplete abortions. “I realised that when you talk to students, you have to discuss issues such as reproduction, adolescence and sex education.”

That got Dr Bang giving lectures on sex education to students and their parents. “People were shocked and reluctant to hear me initially. But now there is huge demand for such lectures and I’m invited to different parts of Maharashtra.”
`A healthy country is a richer country`  

CS Pramesh lists philosophy as one of his interests outside of work and that would surely help him rationalise the ups and downs of life as a cancer specialist. Director of the Tata Memorial Hospital (TMH), professor and head of thoracic surgery at the Tata Memorial Centre, and coordinator of the increasingly consequential National Cancer Grid (NCG), a network of 150 cancer hospitals in India, Dr Pramesh certainly can use such rationalising.

The societal implications of cancer and the means to battle the scourge are of particular concern for Dr Pramesh, among the most distinguished of the many fighting the good fight against what remains a relentless and deadly disease. He speaks here with Christabelle Noronha about cancer and the variety of subjects the treatment of it touches. Excerpts from the interview:

It’s getting close to seven years since NCG was established. Have the expectations from it been realised? What has been learned along the way?

When you look at the overall picture, NCG has far exceeded expectations but I wouldn’t make that an unqualified statement. In some areas we have progressed much beyond what we thought we would, but there are areas where we could have done better, where we encountered hurdles we did not anticipate. All said, the effort has been very, very fulfilling.

The attempt and the premise has been to standardise cancer care in India. However, given the way the grid has grown, it has expanded our vision significantly. We no longer look only at standardised care for patients but also at how we can help the centres in the network help one another with specific expertise and conduct collaborative cancer research. The number of initiatives that we have begun and their breadth have been remarkable. Where we have not done well is with data aggregation.

Which is the sphere where NCG has done well?

There are four spheres where we have done much better than we expected. First, we have made significant progress on standardising cancer care across India. Second, we have tackled the problem of multidisciplinary care and how this affects treatment. The third point relates to collaborative
research and the final aspect that has panned out really well is our ability to negotiate with outside agencies as a group.

**You co-authored a paper titled ‘Look beyond technology in cancer care’. In the context of India, where would you recommend looking, and why?**

We published that paper in *Nature* and the title was deliberately provocative. I am actually a big fan of technology, but the way medical technology is going, we need to take a look at two distinct and different aspects of it. First, the so-called technological advances in patient care, by which I mean more sophisticated radiation machines, more sophisticated adjuncts to surgery, increasingly newer molecules in chemotherapy and certain molecular tests that are supposed to improve outcomes in cancer treatment. This aspect of technology is what we spoke out against.

The reason for the criticism is that all of this is very high-tech and cutting-edge, which automatically gets interpreted — by both physicians and patients — as superior. Unfortunately, since it is better technology and gets equated with superior outcomes, people have embraced this without hesitation. The result is that treatment costs have gone up exponentially whereas the actual evidence on the superiority of the outcomes has been marginal, if not nonexistent.

**The paper also says that countries doing poorly on “cancer survival and mortality do so largely because of deficits at the political, economic and social level”. How can we even begin dealing with these deficits?**

I think these are major issues that we need to discuss. They are very, very big problems but at some point we need to make a start. And that start would probably be to identify that there is a problem. Based on the experiences of several countries, we now know that the ideal public expenditure on healthcare is about 6% of GDP. In the United States it is 18% and most of Western Europe would be at 10-11% but it is countries like Thailand — which is at about 6% — that have hit the sweet spot. Their outcomes are comparable to countries that spend two-three times more.

In India overall health expenditure is 3.5% of GDP but even that is an overestimate because public expenditure is at only 1.5%. So forget 18% and 12%, where is it even close to the 6% Thailand has got to? That’s the target we should be looking at and this can happen only through political will. Fortunately, there has been a change over the last three-four years; more and more political parties are beginning to realise that health should be a priority.

A healthy country is a richer country. The utopian standard of universal healthcare — which means that every citizen of the country should be able to access free healthcare — is getting recognised more and more. The World Health Organisation [WHO] has come out strongly in
favour of universal healthcare and that is adding to the pressure on governments around the world.

**Pharmaceutical companies haven’t exactly covered themselves in glory when it comes to cancer. If you had the chance to regulate pharma companies in the cancer-treatment ecosystem, how would you go about the task?**

That’s a very good question — and not an easy one to answer. Pharmaceutical companies need to find it viable to research new drugs and new treatment options, and at the same time make such treatment affordable to patients. But one thing we fail to recognise, and the pharmaceutical industry has failed to recognise, is that unlike with products like televisions or mobile phones, its ‘customers’ are at their most vulnerable, especially those who have been diagnosed with cancer and similar conditions.

The common reasons — I call them excuses — that the pharma industry gives to justify the high cost of their products is that it takes a lot of money to create or develop a drug. I don’t disagree with the argument, but I still feel that the final price of drugs that come into the market is unaffordable for the vast majority.

A recent WHO study showed that for every dollar the pharmaceutical industry invests in research and development it makes a profit of $14. That is an obscene level of profit. A 14-fold margin extracted from a captive and vulnerable customer is, to me, unacceptable and exploitative. Clearly, and there are enough examples to prove the point, the industry is incapable of regulating itself.

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**The grid is good**

The National Cancer Grid comprises...

- **171** member organisations and it includes...
- **150** cancer centres as well as research institutions, patient groups, charities and professional societies
- **650,000+** new patients are treated every year by these organisations

This amounts to...

- **60%** of India’s cancer burden
What role do you see for philanthropic organisations, nonprofits and civil society as a whole in lending a hand to ease the cancer care burden India is buckling under?

Philanthropic organisations have a vital part to play and one of the best examples of this is the Tata Trusts' partnership with TMH, which they set up 78 years back. That partnership has continued, the most recent example being our joint effort in establishing a cancer centre in Varanasi in remarkably quick time. I only wish we had many more such organisations.

What accounts for TMH’s standout achievements and reputation? What has it done right and why can’t similar institutions in India’s public health domain replicate the effort?

Of all the questions you have asked, I think this is the most difficult, and I probably will not be able to give a satisfactory answer. I believe we owe a lot to the heritage of this institution. TMH is a classic example of an organisation built not by concrete and equipment but by the quality of the people who populate it. And for this I credit every single employee who works here, from top to bottom.

I have been with several healthcare institutions and in many of them the final credit of a patient getting better goes to the doctor, which in an era of teamwork and team science is a big mistake. The difference with
TMH is that every nurse, every technician, every ward boy, every sweeper believes he or she is contributing to the end goal of patients getting better. I don’t know how this can be replicated elsewhere. Medicine in countries like India has an extremely hierarchical structure. Doctors are put on a pedestal and everyone else is subservient to them. It’s about time this outlook changes; doctors need to wake up to the fact that they would be nothing were it not for the teams supporting them.

Your primary clinical areas of interest are said to be the treatment of oesophageal and lung cancers and minimally invasive surgery. Why these streams?
These have been instinctive decisions for me. I cannot explain rationally why I made the choices I did, except that to me it’s challenging being in a field where outcomes are not great. It fuels hope that you could maybe help make these outcomes better. I find this a good in-between place to be, where the potential to improve is significant and you are in a niche area. That’s how I try to explain it to myself.

A cure for cancer appears to be as far away as ever. What hopes do you have that this elusive creature can be found in your lifetime? Or are incremental advances all that we can realistically expect?
The moment we start using terms like ‘finding a cure for cancer’ you get drowned in a lot of hype that is not justified. A more moderate term to use would be ‘to improve outcomes in cancer’. That is already happening in our lifetime and is likely to get even better in the near future. Between incremental advances and breakthroughs, what is likely to happen? I think both. You will have breakthrough discoveries which revolutionise how we treat cancer but the default option will be these small increments.

Cancer doctors must surely need a defence mechanism to cope with the patient distress that they encounter all the time.
Yes, cancer doctors do need a defence mechanism. Burnout rates among physicians treating cancer patients are several times that of any other medical speciality. That says a lot. You see physicians getting clinical depression because they are treating patients with cancer over and over again. Suicide rates are highest amongst cancer physicians, so it’s not a small problem.

I think each of us develops our own defence mechanism in our own way. One way I deal with this is to be sure that the treatment I suggest is based on the best evidence we have customised to the unique socioeconomic and cultural situation that a patient is in. I have come to accept that patients not doing well often has nothing to do with my competence or ability. I have learned this over time and it has stood me in good stead, primarily because you accept that just as your successes are not only because of you, neither are your failures.

“Burnout rates among physicians treating cancer patients are several times that of any other medical speciality... Suicide rates are highest among cancer physicians.”
Keeping kids safe

The menace of child sexual abuse has been put under the spotlight in Chandrapur in Maharashtra and the effort has brought government officials, parents and teachers together.
The pilot project to reduce child sexual abuse was centred on Pombhurna in Maharashtra’s Chandrapur district. This first phase of the project spanned 10 months (February-November 2018) and its impact was substantial:

59 villages now have child-protection committees

76 schools use a ‘personal safety curriculum’ to educate children about personal safety and protection from abuse

126 police officials,
55 counsellors,
58 government staff

and 94 teachers have been trained to implement the Protection of Children from Sexual Offences Act

More than 22,000 children have been covered through the pilot project

Parents are now empowered to complain about incidents

The biggest challenge the team faces is the silence of those preyed upon, as well as their families. “More often than not, parents are reluctant to come forward with complaints,” says Ms Pimpleshede. It’s tough to pursue cases as victims are often pressured by their families to keep quiet, adds Mr Sakarkar. “Our job is to counsel them as well as the victim, and we urge them to file complaints.”

Safeguarding innocence

The big weapons in the fight to protect children are two acts in the Indian Penal Code: the Protection of Children from Sexual Offences Act (Pocso) and the Juvenile Justice (Care and Protection of Children’s Rules) Act. But the system requires victims to speak up before law and justice can be pursued. And that is where the Tata Trusts come into the picture.

In 2018, faced with a burgeoning number of child crimes, the district administration requested the Trusts for help in implementing Pocso in the region. That involved strengthening the system and mechanisms at the district level to respond effectively in protecting children.

The Trusts partnered the district administration and, in February 2018, flagged off a pilot project to make Chandrapur the first Pocso-enabled district in the state. The objective was to work with teachers, parents, district officials and other stakeholders to build awareness about recognising and handling child abuse incidents. It meant getting the community to participate in fighting the good fight.

The pilot project was conducted in the Pombhurna area over 10 months and its success has led to a second phase that is expected to be rolled out soon. A large part of the project was about engaging with the school ecosystem: teachers, non-teaching staff, students, parents and school committees. According to Mr Sakarkar, the pilot project has made a difference and many victims have now started to come forward and talk about what they went through.

The stakeholders were sensitised to the issue of child abuse, the laws that help
prevent it, and the ways to monitor, report and respond so that children remain protected. “Everybody should be aware about the laws covering offences against children,” says Mr Sakarkar, “and the Tata Trusts programme is essential in spreading this word around.”

Communication has been a key weapon in the war against child abuse and the prime intent was to get people to come forward, to open up. Getting people to discuss the issue was an exercise fraught with difficulties. “The major challenge was how to communicate the right message to parents about protection of their children from sexual abuse,” says Abhijeet Nirmal, programme manager, child protection and human trafficking, Tata Trusts.

It was addressed through multi-pronged reach strategy; the message was strategically developed in a way that no individual was pin-pointed and, child protection and well-being formed the core of the messaging. As child sexual abuse could occur within the family and also in school, along with skits and wall paintings, individual as well as group meetings were organised to educate parents.

“In the initial days we found that parents, fearing disrepute, would try to suppress incidents,” says Jagdish Raut of Janseva Gramin Vikas, the NGO that partners the Trusts in implementing the project in Pombhurna.

**Out with social fear**

To counter this social fear, public meetings were held in all 59 villages of Pombhurna. Parents were made aware of the need to talk to their sons and daughters. They were told that their children needed to be taught about what constitutes abuse, how temptations and lures are used, and why they should immediately tell their parents about any such incident.

“We set up groups, comprising children in the 7-to-14 age group, in all the villages,” adds Mr Raut. “We made them
aware about the dangers of allowing others to touch them.” There are 1,500 schools in the district and the NGO intends to work with all of them.

Schools were a big part of the sensitisation campaign. With sex education being taboo in India, not many in schools talk about the issue, says Parag Joshi, who works with the Chandrapur administration and whose job it is to ensure the implementation of Pocso in the district.

“The government has collaborated with the Tata Trusts and other entities to focus on students (both girls and boys) from standards I to X and make them aware about sexual and other abuse,” explains Mr Joshi. Village councils have been pulled into the project and villagers informed about how to file complaints.

There’s more in this fight against child abuse: district official taking an official oath to prevent child abuse, street plays on the subject being held in the villages, and posters and wall paintings to highlight the issue. Additionally, about 100 teachers from 73 schools in the villages have participated in child safety programmes.

**Concerted action**

Another protective measure taken by WCDD is urging parents to not give mobile phones to their children who are under 18. “Schools conduct checks of the bags that children carry,” says Mr Sakarkar. “And we have police vehicles going around school buildings to prevent perpetrators from targeting girls.” Officials also visit the red-light area in Chandrapur to interact with the children of prostitutes.

An important tool in dealing with child abuse is a toll-free number for youngsters (especially girls) facing problems. Priyanka Asudkar, the Pocso coordinator for Chandrapur district, says the 24-hour helpline gets a lot of calls, most of them from girl students talking about instances of abuse.

Among the perpetrators are teachers, neighbours and drivers. “Once we hear of a case, we immediately meet the victim and initiate action,” says Ms Asudkar. She refers to one instance where a village schoolteacher used to sexually abuse a student: “We spoke to the committee running the school, met the girl’s parents and convinced them to file a police complaint. The teacher was arrested.”

Besides awareness building and the helpline, WCDD plays another vital role – lending a hand to victims. The challenge, according to Mr Sakarkar, is that victims in the 13-18 age group are traumatised and often refuse medical inspection (under Pocso, only victims up to the age of 12 have to compulsorily undergo medical examination; older children have the right to refuse).

The effort has been to get everybody together. About 50 counsellors and more than a hundred police officials have been trained to help victims. Training sessions on reporting and response have been held for top officials at the district collectorate, the local courts and other official bodies.

The opening of the Pandora’s box on child abuse has had a healthy effect. Youngsters are now stepping up to join the battle. Harshada, a high school student, says that she and her friends have formed a group of 15 girls to raise awareness about possible attacks. “We brief the other students about the possible assaults that can happen in buses, other places and even in our homes,” she says. “Most of them did not know about these possibilities.”

The Tata Trusts pilot project has had tongues wagging in the best possible way. Awareness of child abuse is growing into a willingness to fight it and the heroes of this fight are Chandrapur’s ordinary citizens. ■

*By Nithin Rao*
Providing shelters for pavement dwellers, and a shot at a safer and more dignified life, is the aim of an initiative being rolled out in Surat.

Kiranbhai Solanki lives with his family on the pavement dividing the busy ‘bus rapid transport’ corridor under a flyover on Surat’s Varacha Road. The 25-year-old Mr Solanki, who works at a nearby tea stall, courts danger every day as buses whizz past his makeshift home but that does not seem to faze him. “I was born and raised on the pavement here,” he says.

Mr Solanki is one of 36,144 people — according to the official count — classified as pavement dwellers in Surat. That’s not a pretty statistic for India’s leading hub for

For Bhauben Solanki, seen here at her ‘home’ under the Varacha Flyover in Surat, sleeping and living in the open not only means being exposed to the extremities of nature but also running the risk of being robbed or run over by reckless drivers.
the diamond processing and textile industries and one of the fastest-growing cities in the world.

For millions of such people in India’s bustling cities, the basic right to a roof over their heads remains a pipe dream. Forced to sleep in the open and exposed to the extremities of nature, the risk of being robbed or run over by reckless drivers, these urban homeless, the majority of them migrants, have scant refuge.

Far from enough
There are 84,822 homeless people in Gujarat and Surat accounts for the largest chunk of them. The city has 28 night shelters, or \textit{ren baseras}, operated and managed by the Surat Municipal Corporation (SMC). The shelters, operational from 8pm to 8am, are far from enough in number and they can barely accommodate 10-12 people each. To make matters worse — and smelly — they are located above public toilets.

Plugging the shortfall in, and the shortcomings of, such spaces is the intent propelling the ‘shelters for urban homeless’ (SUH) project initiated by the SMC, which engaged the Tata Trusts in 2018 to help run these shelters in accordance with the guidelines prescribed by the Deendayal Antyodaya Yojana - National Urban Livelihoods Mission (DAY-NULM).

The idea is to set up a series of ‘model shelters’ across Surat, one for every 100,000 of the city’s inhabitants and each capable of accommodating at least 100 homeless. The objective is to provide, by 2020, succour and some measure of comfort to around 5,000 homeless migrants. In addition to the new shelters, the Trusts are also helping upgrade the SMC’s existing shelters.

The Trusts got started on the initiative — which is a component of their larger Surat Urban Habitat Project — by taking SMC officials on a trip to examine the effectiveness of a variety of night shelters in
the Delhi region. “The exposure and learnings from the visit gave us ideas on how we could design and operate large capacity shelters with enhanced services in Surat city,” says Gayatri Jariwala, deputy commissioner, SMC.

The first of Surat’s model shelters was thrown open in October 2018 and it was a vast improvement on the ‘ren baseras’, the most important being that it allows the homeless to stay through the day as well as at night. Technical support, capacity building and training the shelter’s residents on personal hygiene and health are among the efforts undertaken by the Trusts to maximise the impact of the project.

The work done by the Trusts in making the project a success has been much appreciated. “We have the infrastructure and the funds but that alone is not sufficient,” says M Thennarasan, the SMC commissioner. “The Trusts plays a key role in creating capacity, bringing the homeless into the shelters, and in sensitising the staff about their requirements.”

The challenges facing the Trusts and the SMC are many, and a few of them unusual. For instance, it takes convincing to get the homeless to leave their roadside dwellings. Mr Solanki, for one, prefers living on the pavement. Even through his wife’s pregnancy and within 48 hours of the child’s delivery, he chose to stay on at his Varacha Road dwelling, abutting the BRTS corridor. His ageing parents shift every night to a SMC shelter but he prefers to stay put. “The mosquitoes at the night shelter trouble my children,” says Mr Solanki by way of explanation. “Out here the open space and the breeze makes it comfortable.”

Many of Surat’s homeless think like Mr Solanki. The reasons offered are many: the shelters are located far away, street-side living means they are close to their workplaces, their belongings cannot be stored in the shelters, there are no rules to follow on the roads...

There are other reasons. Surat has more than 100 flyovers and bridges with pay-and-use toilets below them. These serve the needs of the homeless people quite well and the Tapi river flowing through the city provides easy access to water for their daily needs.

The project team has worked hard to get the homeless to shift to the shelters. Initially, members went each night to places where the homeless reside. These ‘rescue operations’ targeted the most vulnerable among them: migrant families living with children, adolescents, women and the aged. They distributed leaflets soliciting public support in identifying potential beneficiaries.

Worth the effort

The team’s exertions have borne fruit. The model shelter, with place for 158 people, is nearly full. Situated in Takli Faliya in the Umarwada area, it has bunk beds across three floors. Each floor has a reverse osmosis filter and cooler for safe drinking water, common toilets and bathrooms, and CCTV security cameras installed in the gallery, with safe deposit lockers allotted to all residents. Meals are organised by two local social welfare agencies. Breakfast is free of cost for about 50 people (priority is given to the handicapped, the ageing, the infirm, and children and pregnant women). Dinner costs just ₹10.

For some of the shelter’s new residents, adapting to its regimented environment has not been easy. Take 32-year-old construction worker Bhagwat Chavda, who is busy making rotis for his pregnant wife in the open space within the shelter premises. “My children and I eat the meals provided here but my wife needs home-cooked food,” he explains. “Our children are safe here, though.”
A space to be secure in

The spanking new permanent shelter at Takli Faliya in the Umarwada area of Surat is a ‘model’ facility in every sense of the word. The safety and dignity of those coming through the gates are primary concerns and it shows.

Potential beneficiaries have to undergo a screening process before being admitted. They are required to fill a consent form to relocate to the shelter and share their identity documents. This is often a challenge, even though many of the homeless have some form of identification.

The shelter management team obtains all the necessary information from new entrants: the street where they were living and for how long, their place of origin, the number of years they have been homeless, their family and medical history, their education, occupation and monthly income.

All of this data is recorded and maintained along with the person’s thumb impression and a photograph. “We want to ensure that all those who deserve get accommodation on a priority basis,” says Anubhav Garg, project manager with the Tata Trusts’ Surat Urban Habitat Project.

Running the shelter is an intensive operation and the staff here has to work round the clock. Emergencies, quarrels and the occasional bout of violent behaviour are par for the course and there have been instances of people being turned away or removed from the shelter.

“We have to be extra careful about who to accept into the shelter because we cannot be sure of their antecedents,” says Tarun Mishra, general secretary of Jyoti Samajik Sewa Sanstha (JSSS), the non-profit managing the shelter, which has a capacity of 158 beds.

“The priority is to accommodate families and senior citizens.”

For Bhagvat Chavada and his family, the shelter home offers safety, security and dignity.
The SMC has appointed Jyoti Samajik Sewa Sanstha (JSSS), a Delhi-based nonprofit, to manage the shelter and provide handholding care and support to shelter beneficiaries. That involves the upkeep of the facility, managing conflicts that often break out, and tending to the residents’ medical needs. The shelter management agency also organises health camps twice a month for the residents.

The permanent model shelter has delivered comfort, safety and security to those who desperately need it, but the sustainability factor of the project remains to be settled. While the SMC funds the running of the model shelter through the Gujarat DAY-NULM programme — and another permanent shelter is on the anvil — this approach may not be viable in the long run.

Viability on the agenda

“These permanent shelters cannot be made sustainable without a revenue model,” says Damodar Mishra, a senior programme manager with the Trusts. One solution mooted is to bring corporate entities and other organisations to the project. Another is to get beneficiaries, especially those staying for long periods, to contribute for the shelters’ upkeep.

The expectation is that the sustainability part will be sorted out in time. Meanwhile, there are other facets being dealt with. The social and economic uplift of beneficiaries is a core purpose of the project. That explains the effort underway to provide residents with jobs, supporting those who are street vendors and linking them to government social security schemes and the formal banking system.

Interventions of this kind are expected to better integrate Surat’s homeless migrants with the mainstream, enhance their livelihood options and, crucially, enable them to live a more dignified life. “Every city has its haves and have-nots but there shouldn’t be apathy for the latter,” says Mr Thennarasan. “We should not leave them behind in our progress.”

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By Vikas Kumar
Forward with fishing

The ‘open source fisheries’ project in Andhra Pradesh, Jharkhand and Maharashtra is swimming with the tide to provide succour for communities on the margins

Summer’s not quite at high noon but it’s sweltering even in the shade and Meesala Bangaramma is in no mood to consider what lies ahead. The present is what occupies the thoughts of the 42-year-old mother of four from the Kondadora tribal community in Kodikallavalasa village of Vizianagaram district in Andhra Pradesh — and that is panning out the way she had hoped.

“I don’t like thinking about the future but I’ll soon have some extra income and that should be a boon,” says the straight-talking Ms Bangaramma, one of 55 beneficiaries from her village who are part of an inventive livelihoods initiative aimed at increasing the earning capacity of people in dire need of a helping hand.

The ‘open source fisheries’ programme of the Tata Trusts promotes what is known as inland culture fishing and it has enabled some 22,000 households in Andhra Pradesh, Jharkhand and Maharashtra to improve their lives and — Ms Bangaramma’s outlook on tomorrow notwithstanding — their prospects as well.

Piloted in 2016, the programme is now in its third phase and the Trusts have roped in a clutch of partners for the effort, primarily the respective state governments.
The initiative began and has found the greatest success in Andhra Pradesh, where it is being implemented in collaboration with the Centre for Aquatic Livelihoods - Jaljeevika, a nonprofit that specialises in developing inland fishing for small and marginal farmers.

The majority of the beneficiaries in the project are fish farmers who grow their produce in cages, or pens, that sit in water bodies that come under the state government’s fisheries department. In the allied activities component of the project are nurseries that deliver fish seed (baby fish used to populate the cages and water bodies) and feed — there are some 1,000 of them, 600 in Andhra Pradesh alone — pond-based agriculture, the growing of vegetables and fruits on embankments, and the rearing of poultry.

**Suite of solutions**

The fish growers are brought together under cooperatives and their produce is aggregated to fetch the best price in the market. Preceding all of this is the training, technical and otherwise, that the beneficiaries receive. Low-cost cages, third-party evaluations and surveys to understand how and what the involved communities have gained are also part of the programme.

About 70% of these fish farmers are from tribal communities and the only means they had previously to make a living was by selling forest produce, mainly firewood, or working for daily wages. Fishing was not a foreign proposition for them, given that they lived near water bodies, but doing it in the scientific and ordered manner — the culturing and growing of it — was a discovery. That, though, did not translate into an immediate embrace of the fisheries programme when it was introduced.

The natural suspicion that villagers in India’s hinterlands have of outsiders kicked in at the time the Tata Trusts first came scouting for opportunities to seed the initiative. Anxieties were allayed and the villagers convinced after a few groups were taken on an ‘exposure visit’ to the Dimbhe reservoir (near Pune in Maharashtra), where an inland fisheries project has been thriving for years.

The exposure visit settled some of the challenges that confronted the programme in its early days, but there were others that had to be dealt with. “The learning journey has been long and difficult for us,” says Karthik Ramesh, a programme manager with the Trusts who has been with the initiative since its inception. “It was abstract in the first year and there were many gaps. We had to go through a lot of co-creation with the government, the community and our partners to arrive at solutions.”

The teething troubles were understandable. “We had secured a mandate to work on fisheries as a livelihoods theme but nothing beyond that; it was a blank slate,” adds Mr Karthik. “We began by building our knowledge of this space, by building relationships with the government, the community and civil society organisations.”

From pilot to prototyping to scaling up, the programme has come through the grinder to find its feet and discover the path ahead. It has had to cope with expected problems, and the bizarre too. For example, in Andhra Pradesh’s Anantapur district a rumour emerged that the cages were polluting the drinking water of the area. Then there was the incident in Vizianagaram where a disgruntled local poisoned the fish in the cages.

“The community’s strength and dignity helped us overcome these issues,” says Mr Karthik. “They told us: ‘We understand the problem is not with the fisheries or the fish. The programme works and its logic works.’ They were willing to take the risk.”
Rich catch

Eco-friendly and economically viable, the open-source fisheries programme began in Andhra Pradesh in 2016 and has been implemented over three phases in two other states, Jharkhand and Maharashtra.

Andhra Pradesh
18,000+ households
30,000+ acres of water bodies

Maharashtra
2,000+ households
1,000+ acres of water bodies

Jharkhand
2,000+ households
1,000+ acres of water bodies

Objective — to reach
200,000 households by 2021
Mr Karthik also has appreciation for the help rendered by the state governments, particularly in Andhra Pradesh.

The key point in calibrating the programme for success has been the setting up of the seed nurseries, the lack of which could have undermined the entire enterprise. “If you look at fisheries or any kind of agriculture in general, the seed is essential,” explains Mr Karthik. “We didn’t know the specifics of this in the beginning but we knew it would be a problem procuring them from elsewhere. Our intervention on the nurseries has been critical.”

Seeking support

The objective of the open source fisheries programme is to reach 200,000 households by 2021. To make that possible the Tata Trusts will need the state governments they are collaborating with to step on the gas. “We cannot get to that figure by ourselves, and that was never the intention,” says Mr Karthik. “But we can with the government and other partners by our side, because then you can scale up rapidly.”

Andhra Pradesh, where it all began, remains the showpiece of the programme. “That’s where we have been longest,” says Mr Karthik. “We had the luxury of time and we could afford to make a few mistakes. That’s not how it has been in the other two states, where we have had very different challenges. For one, there isn’t the same sort of basic fisheries infrastructure.”

Ultimately, it is the livelihood element that scores highest in the project. There are two categories of beneficiaries here. People with other sources of income — from selling firewood or working for daily wages — generally pull in about ₹70,000 a year. Those dependent solely on fishing earn in the range of ₹100,000 and ₹200,000, and even more.

That’s welcome income for everybody involved, and testimony to how far the programme has progressed. “No one knew about cage-culture fishing when we began here in 2016,” says Padmakar Bojja, who heads the programme in Andhra Pradesh. “We mobilised the community through local self-help groups. We made them aware and we gave them all the necessary training and support.”

Pakki Ratnalamma, a 39-year-old tribal who also hails from Kodikallavalasa village, is trying to make the most of such support to climb out of scarcity. A mother of two kids, Ms Ratnalamma’s only source of income used to be the meagre bit she earned from selling wood scavenged from a nearby forest, and that’s how it has been for her people for as long as she can remember. It’s different now.

“My hope is that my children can make a better life for themselves,” she says. ■

By Philip Chacko
Sunny side shining

A sustainable solar energy project is transforming the lives of vulnerable tribal communities in one of the most impoverished districts of south Odisha

Auxiliary nurse and midwife Chanchala Majhi and her colleague Basanti Behera distinctly remember the day three months back when 30-year-old Jagyaseni Nayak was brought to the Kerpai primary health centre (PHC) in Odisha’s Kalahandi district, one of the poorest regions in the country. It was about 10 at night and Ms Nayak, writhing with labour pains, had been rushed from the neighbouring village of Kachalekha.

It was crisis hour at the remote health centre, located in a hilly region about 13 km from the main road. This was the first time Ms Majhi and Ms Behera, 23 and 22 respectively, had faced such an emergency but they and their support staff managed to deliver the baby.

On Ms Nayak’s side, and to her
advantage, was a bright new ally: the renewable energy system installed by the Tata Trusts as part of a larger programme to provide electricity to vulnerable tribal communities in Odisha. The solar rooftop system installed at the Kerpai PHC ensured that it can function perfectly well at night and provide additional medical services.

The residents of Kerpai, Kachalekha and their surrounding villages are benefitting in spades from the decentralised renewable energy solution that the solar systems deliver. Simply put, they are the cornerstone of the Trusts’ energy intervention in the region and they are benefitting a host of tribal folks.

The inmates of the Kasturba Gandhi Girls Hostel in Kiapadar, about 25km from the Kalahandi district headquarters of Bhawanipatna, are among these beneficiaries. Here, solar-powered lights have helped students study for longer hours and they have got some of the darkness out of their lives.

“Earlier we had to depend on torchlight or kerosene lamps to go to the toilet even,” says Namita Majhi, a class VIII student who lives in the hostel. Access to dependable electricity supply has been an enabler and a catalyst for socioeconomic development in the area, especially for those from tribal communities such as Ms Majhi.

**Transformation tack**

Launched in 2015, the programme is part of the Tata Trusts’ South Odisha Initiative, an omnibus programme that aims to transform the districts of Rayagada, Kalahandi and Kandhamal, low on almost every social development indicator.

The energy interventions are linked with healthcare, education and livelihoods and are focused on the Thuamal Rampur subdivision, chosen because it fares poorly in terms of human development indicators and also on infrastructure and economic development. The belief was that if the initiative could succeed in such a backward area, it could be replicated in other districts of southern Odisha.

The Trusts, along with their associate organisation Livolink Foundation, have collaborated with the SELCO Foundation, a nonprofit, to implement the project. “Our aim is to invent, create and implement solutions that push people permanently out of poverty by using sustainable energy,” says Roshan Mascarenhas, senior programme manager (operations) with SELCO Foundation.

The priority is to find cost-effective and optimal lighting solutions since grid connectivity is rare in Thuamal Rampur. The energy programme’s impact has grown beyond lighting, with solar power emerging...
as a lever for economic development. For instance, 28-year-old Kaibalya Rana, a traditional potter from Karlasuda, has been successfully using an electric-powered potter’s wheel supplied by the Foundation to augment his income and reduce the drudgery of his work.

The Tata Trusts energy intervention is not limited to providing renewable energy solutions, either, the aim being to ensure sustainability. “The reasons for the inaccessibility of energy could vary from technical and financial to social barriers,” says Mr Mascarenhas. “The interdependence of technical, social and financial aspects have to be understood to bridge the gap and ensure the financial feasibility, technical viability and social sustainability of the intervention.”

That is easier said than done. Finding
financial assistance, for example, proved to be a Herculean task for the villagers, with one bank after another turning down loan applications for solar products. While the institutions were ready to finance income-generation activities within specific timeframes, bankrolling renewable energy was a bridge too far (for reasons ranging from fear of defaults to lack of credit history and documentation requirements).

To overcome this, the Trusts and the Livolink Foundation formed joint liability groups (JLGs), consisting of five-to-eight households. This made it comfortable for banks to process and disburse loans while enabling easy repayments. SELCO Foundation also provided a risk fund to the banks, comprising 50% of the total loan amount sanctioned in addition to the primary security for the loan. Despite this, only one nationalised bank has come forward to offer loans.

**Tribal and bankable**

The tribal communities, many of whom were associating with formal banking systems for the first time, have vindicated the cautious trust reposed in them. Says Mr Mascarenhas: “Till March 2019, 472 loans have been sanctioned. About 91% are standard assets, which means the beneficiaries are repaying the loans regularly.”

The venture’s success has proved, yet again, that poor communities are bankable. “This project has dispelled the notion that sustainable technologies are unaffordable for such communities,” explains Siddharth Gahoi, area manager, Tata Trusts, who oversees the energy initiative.

The project has, additionally, shown the efficacy of developing ecosystems that ensure the long-term sustainability of solar energy solutions. Such solutions are not the preferred choice in remote areas, mainly due to quality issues and the lack of supply chains, spare parts and trained technicians.

Under the project, village youth with a basic education have been trained in partnership with local nonprofits. These ‘solar saathis’ (or solar companions) are responsible for installing new lighting systems and maintaining old ones.

For the villagers of Thuamal Rampur, long forced to live without assured electricity supply, the advent of solar-powered solutions signals a new dawn. The sun, it appears, can well be a mother lode of sustainable energy solutions for rural India and its most needy communities.

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By Sanod Sarngan
Preventing, in the subtlest of ways, mosquitoes from transmitting malaria — that tops the strikingly cutting-edge agenda of the Tata Institute for Genetics and Society (TIGS), a collaboration between the University of California San Diego (UC San Diego), the Tata Trusts and the Bengaluru-based Institute for Stem Cell Biology and Regenerative Medicine.

The Institute, which is also based in Bengaluru, has two arms, TIGS-India and TIGS-UC San Diego, and there’s more on its plate than helping eradicate malaria. By employing the latest in genetic research and technology, TIGS is aiming to address some of the most pressing public health and agricultural security issues confronting India and the world.

Suresh Subramani, the global director of TIGS — and a molecular and cell biologist with exceptional credentials — speaks here to Christabelle Noronha about the year-old Institute, the state-of-the-art work it is concentrating on, and a field of study that has come of age in a hurry.
What are TIGS's priorities and objectives?
TIGS was created as a partnership between two sister institutions, TIGS-UC San Diego and TIGS-India, with the goal of propagating outstanding research, capacity building and training that banks on the latest genetic technologies to address healthcare and food security in India. We want to do this in a socially conscious and ethical manner, which is why we chose to call it the Tata Institute for Genetics and Society.

TIGS-UC San Diego is at the front lines in developing the latest technologies and most of the applications emerging from that will be done by Indians in India, in an Indian institution for the benefit of India. You can view the San Diego entity as the engine that creates the technology and then trains people and transfers that technology free of cost to the centre in India.

Tell me something about the areas of work the two institutions are involved with.
There are the standard rules of genetics and I would like to equate these to the standard rules of gravity. Now, suddenly, some new technology emerges that enables you to break all those rules and you have the ability to turn gravity on and off — what’s happening with genetics is as significant as that. With the technology we are working on, we see an opportunity to tackle global problems that affect almost every human being.

The first one of these problems is vector-borne diseases. If you take only the mosquito, it has been called the most dangerous organism on the planet. We at TIGS have an opportunity to try and find one more tool to eliminate malaria — and we are talking about ridding the planet of malaria.

If you can tackle mosquitoes, you can tackle insects that destroy crops or create beneficial things that can help deal with, for instance, resistance to antibiotics, the cost of which is estimated to range from hundreds of billions of dollars to trillions of dollars. These are the global problems TIGS is taking on and we want to use India as a platform to show that the talent and the brains exist here to pull this off.

You keep saying “we have this technology”. What is this technology?
The technology has to do with having the ability to edit and manipulate the genetic material in any organism. When you edit a gene or put a foreign gene into an organism, it qualifies as a genetically modified or genetically engineered organism. Much of the underlying basis of this technology is the ability to take the genetic material and change — meaning edit — it, and then engineer it in such a way that it can be used for a beneficial purpose.

DNA sequencing, population genetics, gene editing and gene drives are alien terms for most people. Could you please explain...
why, as the experts say, advances in genetic research are so crucial for our world?
The basis of the natural beauty and diversity in living organisms is the genetic material that is stored in them in the form of nucleic acids. This genetic material contains the master plan of any given organism, from yeast to human beings. It is also the repository for mutations or changes that enhance our ability to do things. Why some people have a particular disease and others don’t is written into their DNA.

Gene editing, recombinant DNA and the like are tools that allow you to take the DNA sequence that came naturally and manipulate and modify it. The potential to deliver such benefits is especially clear in healthcare and in agricultural production. Of course, in the process you can also conceive of nefarious uses of such technology but that’s a separate point.

How did the collaboration with UC San Diego happen? What attributes do the two partners in the venture bring to the table?
Three essential features made this happen. One, the outstanding science and technology capabilities that exist in UC San Diego; two, the visionary philanthropy of the Tata Trusts; and three, the power of collaboration, meaning the ability to create two institutes and to partner entities here and around the world to achieve our goals.

The collaboration component stands out. This technology was first developed in fruit flies and then applied to mosquitoes. People from all over have come together and today there is this international team that includes experts from India. The time is ripe for the technology to grow by

Researchers at the Bengaluru-based TIGS, which works with technology that can help tackle global problems
leaps and bounds and that makes it exciting to be part of the endeavour.

As a field of study, genetics has had to face the ‘sinister science’ flak for long. Is that changing?
I want to distinguish technology as a tool from who uses it or how it is used. A hammer can drive a nail into a piece of wood or it can be used to harm someone. Similar is the story with genetic engineering or recombinant DNA or gene editing. The tool itself is revolutionary and there is always a balance between knowing what good can come out of it versus how it can be misused.

The biopharmaceutical industry was valued at $192 billion in 2015 and the figure is estimated to reach $392 billion by 2021, so the technology is certainly having a phenomenal impact. The crucial thing is to be transparent, to listen, to debate and to try and find solutions and not brush aside any concerns that may be there.

That’s why the ‘society’ part is so important. We want to ensure the ethics of it and also the balancing of the cost-benefit ratio.

A Chinese researcher recently claimed that he had helped create the world’s first ‘genetically edited babies’ — and the news has shocked everybody. Should we be shocked?
I think it is appropriate that we be shocked. The reason for the shock is that it is not clear what this person did. He talked about it in a conference and he made certain claims, but people still don’t understand what he did and how he did it, so the whole aspect of reproducibility was not there. This kind of experimentation with humans is banned and the whole story suggested a rogue scientist at work.

Does civil society know enough about the ethics of this science?
I would say no. It is the job of the scientist to explain to people what the consequences of a given technology may be. Some of the information would be technical, so you have to make it understandable for the people most qualified to raise issues or concerns. You have to bring different stakeholders into the debate: governmental agencies, public interest groups, the scientific community, etc. None of the answers to some of the ethical questions are in black and white.

How does the state of genetic research in India — and its outcomes — compare with what is happening globally? In which areas can we do better?
India has had a long history and legacy of training brilliant minds, yet the country is lagging behind in several areas. One reason is that India invests very little in science and technology. Two, in the biological sciences and genetics, many advances have been enabled by dramatic changes in instrumentation and technology. We don’t develop such technology or
any such instrumentation. Third, the average Indian is risk-averse and that’s a handicap. Having said that, I still believe India can make a mark in genetics. We have the potential at this point in time and the window to capitalise on it.

Where is the world headed with genetic research and what can it actually deliver? What kind of breakthroughs can we expect over the next five years, and in the longer term?

The field of genetics has been turned on its head thanks to gene editing technology. The biggest opportunities with gene editing are in healthcare and in agriculture. You can also use the technology to, for example, enhance biodiversity by getting rid of invasive species that exist in particular pockets around the world. These are the changes that will happen in our society, and this is only the beginning.

Your effort is directed at eliminating the mosquito’s ability to cause malaria. What are the chances that you will, in the process, kill the mosquito as well?

If the question is about killing the mosquito, we have been doing it for a long time. People accept implicitly that mosquitoes are being killed and no one is complaining about it, so I want to put this in context. What we are aiming to do is make one species of mosquito incapable of spreading the malaria parasite. That mosquito will still bite — the female of the species, that is — but it won’t give you malaria.
All for art

India’s rich cultural heritage sets the stage for the support the Tata Trusts extends to those engaged in performing, visual, literary and other art forms. Featured here are examples of institutions and initiatives that have benefitted from such backing.
Ninasam

Students of the Sri Nilakanteshwara Natyaseva Samgha (Ninasam), based in Heggodu village in Karnataka’s Shivamogga district, perform at the annual festival of the institution. Ninasam was founded in 1949 by a group of theatre enthusiasts that included the late KV Subbanna, the renowned dramatist and Magsaysay Award winner.
Brahmaputra Raga Jazz

A guitarist performs at an event organised by the Brahmaputra Raga Jazz project in New Delhi. The project, presented by Banyan Tree, aims to nurture young musical talent from the Northeastern states of India. It provides exposure for musicians, encourages experimentation and the blending of Indian classical music with indie and folk forms.
**Project Inspire India**

Budding musicians in Mumbai receive training as part of Project Inspire India, an initiative of the Shankar Mahadevan Academy. The project endeavours to make music a “household conversation” while giving expression to the artistic talents of children and young people from marginalised backgrounds.

**Dhrupad Sansthan**

Students from the Bhopal-based Dhrupad Sansthan perform the Dhrupad, the oldest form of Hindustani classical music to have survived in its original form. The Sansthan documents, archives and researches this exquisite stream of music and the Tata Trusts support the institution by giving fellowships to 20 of its students every year.
Kattaikuttu Sangam

Kattaikuttu performers from the Kattaikuttu Sangam (above) render the ‘Draupadi vastraharan’, a scene from the Mahabharata, the ancient Indian epic. Kattaikuttu, traditionally performed by males, is a form of rural theatre that is widespread in the northern and central parts of Tamil Nadu in South India. A young performer (right) readies for a performance at the Kattaikuttu Gurukulam, a school run by the Sangam in Kanchipuram in Tamil Nadu. The Gurukulam, started by P Rajagopal and his wife, Hanne De Bruin, provides artistic training in theatre, instrumental music and make up.
January 2001: It is three in the afternoon and a brisk breeze whips my hair as I stand behind the prow of the Project Tiger patrol boat. I am making my way along the blue-green waters of the Netidhopani river in the Sundarban Tiger Reserve, having chartered the day’s course on a large map a few minutes earlier. It can get surprisingly bright on the water in the Sundarban; even with sunshades on the river’s shimmer has me squinting. Happy to be alive, I see a dragonfly and a common wanderer butterfly navigate the strong wind to bisect the trajectory of our boat, 100mts from shore. Pulling on a windcheater against the cold, I marvel at the magic of nature that gifts such fragile creatures with their flying capabilities.

About 250mts ahead of our vessel, I spot a floating log. We are moving against the current about 30mts from shore; I watch the log in a disinterested way, waiting for it to drift closer to our boat. That never happens. Instead, I begin to notice that it is moving at a 90-degree angle to us... and to the powerful current. Strange! At a distance of 150mts, I peer through my binoculars and see a small round shape, certainly not a log. It takes me a full 10 seconds to realise that a childhood dream has come true. There before me, in flesh and blood, is a wild tiger, phantom of the Sundarban.

The still largely impenetrable mangrove swamps and forests of the Sundarban — ‘beautiful forest’ in Bengali — are home to the largest contiguous population of swamp tigers in the world. Remote and tangled as this vast region of tides and trees is, the delta, stretching between India and Bangladesh and watered by the Ganges, Brahmaputra and Meghna rivers, has been whittled down over the centuries as people claimed land for agriculture and timber for construction and fuel.

While much is gone, much abides, including the iconic tiger and its preferred prey: deer, monkeys and wild pigs. That said, all is not well in this the largest of the world’s estuarine forests, also home to crocodiles, sharks, dolphins and more. Despite legal protection, the Sundarban, like virtually every other wilderness in India, is threatened by projects seeking to boost the economy, even as that existential threat, climate change, looks on course to destabilise both the ecological and economic stability of India.

Why protect the Sundarban?
What does this great forest actually do for people? For centuries the Sundarban has served as an enormous sponge-like buffer against the often-savage storms and tidal surges of the Bay of Bengal. It is a refuge for countless and, in many cases, rare species of flora and fauna. It is an astonishingly productive marine nursery that feeds much of South Asia. The Sundarban is, essentially, a green cathedral for nature-
starved humanity. Now, in the era of climate change, scientists add that it offers the planet the greatest service of all: the sequestration and storage of carbon.

Little known to most, this 10,000 sq km of mangrove forest, through its multi-pronged ecological services, has unobtrusively been the key to the food, social and economic security of India and Bangladesh, thus playing the role of an infrastructure of inestimable value.

The same holds good for virtually every natural ecosystem on the Indian subcontinent. Yet the rate at which we are destroying our natural assets by turning them into cities, dams, mines, roads and commercial plantations, for short-term economic gains, continues apace. Such human actions are accelerating climate change while depleting the availability of fresh water and eroding the ability of the soil to feed our people.

Put simply, GDP growth for the sake of growth has begun to compromise India’s food, water, health, economic, social and ecological security. Clearly, we need a new breed of pioneer-practitioners to work assiduously at the critical tri-junction of economics, biodiversity and climate change.

The way forward

An India that has positioned itself globally as reformist and modern must learn to be more nimble and adaptable. In his capacity as a board member of the Sanctuary Nature Foundation, Lord Nicholas Stern of the London School of Economics recently put the issue of development and environment in sharp perspective. In his words, “the economy is a wholly-owned subsidiary of the environment”.

Seen in this light, the most effective
way forward for India’s 1.3 billion people over the next decade is to create diverse and large-scale livelihoods where positive outcomes can be measured through the regeneration of natural ecosystems across the subcontinent. Along coastal India this would, for instance, involve nurturing and restoring sand bars, corals, mangroves, mudflats, beaches and the littoral vegetation that thrives behind these bulwarks that protect the land from the fury of the sea.

Such natural infrastructure offers current and future generations their best chance to overcome the increasingly harsh impact of climate change being manifested in the form of extreme climatic events, and the deteriorating condition of our air, land and water resources.

Fortunately, we have not yet reached the point of no return. Earth’s biosphere is made up of a mosaic of self-repairing and self-replenishing life-support systems. Economists use a host of complicated indices to monitor and measure the health of the economy. Biologists use the presence or absence of plants and animals to gauge the health of ecosystems — upon which all economic edifices must inevitably be built.

The presence of the tiger indicates that the forest in which it lives is doing relatively well; conversely, a decline in tiger numbers might indicate that the forest ecosystem is in decline. Similarly, the presence of large animals such as sharks and whales in the ocean indicates that the marine food web is alive and well. The same holds true for all the grasslands, wetlands, lakes, rivers and aquifers that have sustained civilisations down the ages.

Since the beginning of life on Earth, every single species has managed to survive only by adapting to the environmental circumstances that provided them with their unique niche. It would do Homo sapiens well to take a leaf out of this tried and tested survival manual and adapt to Planet Earth’s environment, instead of trying, inexpertly, to shape it in our own image.

The Sundarban, home to the single largest population of tigers in the world, has forced the felines to adapt to survive in the harsh environment of the mangrove forest. Photo: Niladri Sarkar