

# HORIZONS



## PERSONAL TOUCH

The 'individual grants programme' helps the needy with assistance for education and healthcare

### WATER WATCH

A tech-savvy monitoring system is powering India's water mission

### DIVIDE DELETED

More than 30 million rural women have benefitted from Internet Saathi

### TO BEE MORE

A beekeeping project in Andhra Pradesh delivers sweet results for farmers





# EDITORIAL

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**E**ven when the giving is for an institution or an organisation, it is the individual that counts for most in any measuring of philanthropy and its outcomes. The 'individual grants programme' (IGP) of the Tata Trusts personalises this concept to the greatest extent while rendering financial support to the truly needy for education and for medical emergencies.

The cover story in the latest edition of *Horizons* profiles IGP and charts the changes that are enabling it to better serve people from different walks of life. Drawing on a legacy of benevolence that began with the setting up, in 1892, of the JN Tata Endowment, the programme has expanded as it has evolved and now reaches more individuals than ever before.

Our centre stage section is occupied by a trailblazing water-monitoring system based on the Internet of things network. This trailblazing solution will, if all goes well, soon be a crucial component in India's aspirational effort to provide tapped water in every rural home of the country by 2024. Sensors, software and other technologies are the levers here but the onus is on village communities to make a success of the initiative.

A variety of subjects and themes are covered in the collection of feature articles we have put together for this issue. The highlights in the blend are a story on how the Internet Saathi project has enabled some 30 million women in 20 states to become digitally literate, another on a water-centred initiative that is helping more than 9,000 farmers in Maharashtra, and a piece on the relief and rehabilitation programme undertaken by the Tatas for victims of the 2015 Nepal earthquake.

We have two illuminating interviews as well, the first with Ajay Mathur, director general of the International Solar Alliance, who talks about the revolutionary potential of renewable energy and the climate change challenge, and the second with social scientist Ravi Srivastava, who articulates his view on the social and economic path that could work best for India.

Offering more pointed perspectives are Deepika Sorabjee of the Tata Trusts on the nature and meaning of support for art and artists in these difficult times; Valay Singh and Niyati Singh on the criticality of reforming India's justice system; and Dr Abhay Bang, who pleads the case for tribal communities left in the lurch by the country's healthcare setup.

Last but far from least, in our photo feature we turn the lens on a beekeeping project that is bringing sweet rewards for a bunch of enterprising villagers in Andhra Pradesh.

Cheers to staying safe and keeping the reading habit going.

*Christabelle Narasimha*

*We hope you will help us make Horizons better with your valuable feedback. Please do write to us at [horizons@tatatrusters.org](mailto:horizons@tatatrusters.org).*

# CONTENTS

VOL 4 | ISSUE 2 | AUGUST 2021

## NEWS



### 06 SAFE PERIODS PUSH

Also, Spring recharge effort unfolds in Nagaland; Nutrition outcomes get a boost; IHF bolsters fight against TB and malaria; and more

## COVER STORY



### 08 IT'S PERSONAL AND IT'S SUPPORTIVE

The 'individual grants programme' of the Tata Trusts helps meet a variety of health and education requirements of those with no other recourse

## CENTRE STAGE



### 20 WATER WATCH

A technology-savvy measuring and monitoring system is poised to power India's ambitious goal of delivering tapped water at the doorstep for every rural household

## INTERVIEW



### 25 'THIS IS A REVOLUTION WAITING TO HAPPEN'

Ajay Mathur, director general of the International Solar Alliance, on harnessing renewable energy, climate change and the challenges facing the world

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## FEATURE STORIES

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### 30 DELETING THE DIVIDE

An estimated 30 million women across India have been enabled and energised by the Internet Saathi programme

### 34 HEALTHY HAVEN

Christian Hospital Bissamcuttack is a vehicle for community healthcare in Odisha's tribal heartland

### 38 SUNSHINY WAY

Renewable energy solutions at the village level are powering up the lives of farmers in four states



### 42 DIVERSIONARY TACTIC

More than 9,000 farmers in 229 villages of Maharashtra have been boosted by a water-centred breakthrough

### 46 A START IS BORN

The Nano Unicorn programme has enabled some 300 small entrepreneurs in Odisha to launch their own business

### 50 LENDING A HAND

The efforts of the Tatas have provided succour to survivors of the 2015 Nepal earthquake

## SHOWCASE

---



### 54 BEE-ING THE CHANGE

A beekeeping project has made success all the more sweeter for farmers in Chittoor district of Andhra Pradesh

## INTERVIEW

---



### 58 SOLUTIONS SEARCH

Social scientist Ravi Srivastava on social and economic development in India and migration during the pandemic

## OPINION

---



### 63 A PEOPLE'S PALETTE

Supporting art and artists in these tortuous times may mean an upending of the way the show has been run thus far

### 66 ESSENTIAL JUSTICE

It's critical to reform India's justice system — for the sake of country, community and equitable social development

## PERSPECTIVE

---

### 71 A TIME TO HEAL

India's tribal communities deserve far better than what the country's healthcare system has delivered thus far

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# NEWS

## A push for safe periods in UP, Jharkhand

The menstrual hygiene management programme (MHM) of the Tata Trusts has got a big push in Uttar Pradesh and Jharkhand, leading to a noteworthy increase in awareness levels at the community level in the two states.

In the year leading up to April 2021, the MHM programme has trained 12,955 women, 8,596 girls and 257 men and boys in Uttar Pradesh on the issue in an effort to dispel the stigmas attached to it. In Jharkhand, 7,737 women, 3,308 girls and 309 men and boys have been similarly sensitised.

The programme focused on empowering women and adolescent girls while building a conversation around menstruation. The initia-



An awareness session for rural women and girls on managing menstrual hygiene

tive was extended to cover schools and the larger community.

The programme rests on four pillars: intervention with women and adolescent girls through schools and community outreach, reaching out to adolescent boys and couples to educate them about menstruation, setting up of sustainable supply chain mechanisms for

eco-friendly menstrual hygiene products, and the safe disposal of sanitary waste.

The ignorance surrounding menstrual hygiene has become a graver risk during Covid-19. It was the seriousness of the situation that led the Trusts to step up the MHM programme across their project areas. ■

### IHF bolsters fight against TB, malaria

The India Health Fund (IHF), a Tata Trusts' initiative that works to help in India's fight against tuberculosis and malaria, has roped in two startups in a bid to bolster the country's defences against infectious diseases.

The artificial intelligence-driven TrakItNow Technologies and Stellar Diagnostics, are expected to strengthen IHF's mission to develop and deploy breakthrough innovations and align these with the objectives of the Indian government. ■

## Nutrition outcomes get a boost

The Tata Trusts will partner Procter & Gamble Health to advance the nutritional status of women and children in Krishna district of Andhra Pradesh. 'Yes to poshan' has been planned as a three-year collaborative initiative and will be executed in five villages of Krishna district.

Malnutrition is a complex public health problem which has inter-generational repercussions. According to a survey in Andhra Pradesh of women between 15 and 49 years of age, 58.8% are anaemic and 14.8% have a low body mass index, highlighting the need for pointed nutrition interventions.

Commenting on the initiative, Milind Thatte, the managing direc-

tor of Procter & Gamble Health, said: "This is a behaviour change programme that aims to complement the government's efforts by promoting diet diversity and addressing the challenges of limited or age-inappropriate diet among pregnant and lactating women and children below two years."

Rajan Sankar, senior advisor, nutrition, with the Tata Trusts, said: "Under 'Yes to poshan', we will endeavour in partnership with P&G Health to sustainably increase diet diversity. This programme will benefit from community involvement. The convergence of local government schemes and self-help groups will maximise its on-ground impact." ■

## Spring recharge effort unfolds in Nagaland

**M**ore than 11,000 households in 95 villages across 11 districts of Nagaland have become 'all-weather water sufficient' thanks to a Tata Trusts-supported initiative to achieve sustainable water security and enhance the resilience of vulnerable mountain communities to climate change.

Designed and executed by the North East Initiative Development Agency, an associate organisation of the Trusts, in collaboration with the Nagaland government, the project provides an innovative model of public-private partnerships.

Mountain springs are the life-line and the primary source of water for domestic and agricultural purposes in Nagaland. Demand and the need for water for drinking and agricultural purposes has increased in recent years. Despite the state receiving abundant rainfall, an



The project maps water sources

alarming depletion in groundwater and mountain aquifers have been observed in the region.

The springshed management project, launched in 2018 on a pilot basis, has concentrated on rejuvenating springs. As many as 105 springs in 95 villages have been rejuvenated so far. ■

## Tectonic charts new course in waste management innovations

**P**hool, Zeroplast Labs, Loopworm, Swachha Eco-solutions and MuddleArt have been adjudged the top five winning startups at Tectonic – innovations in waste management, a joint initiative involving the H&M Foundation and Social Alpha, the nonprofit startup incubator supported by the Tata Trusts.

The winning startups focused on developing technology innovations that enhanced the lives and

livelihoods of people working in the informal sector.

The winners were selected from more than 100 applications and were based on a set of criteria that took in technology innovation, impact, operational scalability and business sustainability.

“The winning innovations have demonstrated the potential to create impact and scale up across geographies, said Manoj Kumar, the chief executive of Social Alpha. ■

## CInI wins honour for education projects

**T**he Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts, has been awarded the platinum award at the 'master transformation conference' hosted by FGnC Consulting. The award was for CInI's outstanding efforts to boost educational outcomes among tribal communities.

CInI was able to tap some 700 volunteers for its projects, which reached 50,888 students and more than 2,000 teachers. This happened at a time when the coronavirus pandemic and subsequent lockdowns affected the education of tribal children. Being digitally deprived, most did not have access to devices or cellular networks, causing a gap in learning.

To overcome the challenges and to ensure continuity of learning, CInI launched several initiatives – among them a regional volunteering programme and the 'jhola library' – to enable digital lessons on YouTube for tribal children. Local leaders assisted the volunteers in contributing to the success of the overall initiative. ■

# It's **personal** and it's **supportive**

The 'individual grants programme' of the Tata Trusts helps meet a variety of health and education requirements of those with no other recourse. By Kishore Rathod

**S**mall steps can lead to big changes and this holds true for the Tata Trusts. Starting with loan scholarships in the late 19th century, the multidimensional and multi-thematic initiatives of the Trusts have come to span a wide spectrum of social development initiatives. A crucial – and personalised – component in this continuum of purposeful philanthropy is the 'individual grants programme' (IGP), which

supports the needy and the meritorious through financial assistance for medical and education requirements.

Like they have from the beginning, the business and philanthropic principles of the Tatas have been guided by the philosophy and vision of Jamsetji Nusserwanji Tata, the pioneer who founded the group. Education was of particular concern to the Tata patriarch and this quote of his on backing, and banking

on, talented students looking to pursue further education is illustrative: "What advances a nation or a community is not so much to prop up its weakest and most helpless members, but to lift up the best and the most gifted, so as to make them of the greatest service to the country."

The JN Tata Endowment for the Higher Education of Indians, set up in 1892, reflects Mr Tata's belief. The first of many



The individual grants programme supports deserving students from across the education spectrum

philanthropic endeavours by the Tatas, the Endowment's legacy has enriched IGP and the funding support it provides to individuals in two categories, for education needs and for health emergencies.

IGP has grown in size and scale over time (in 2018-19, it disbursed more than ₹1 billion to some 8,000-plus beneficiaries). Although disbursals dipped slightly during the pandemic, the programme continues to receive thousands of applications from people looking for financial help to pay for costly medical treatment and from students and institutions seeking monetary support for education.

### Sparkling scholars

The roster of those whom IGP has supported down the years includes some of the country's brightest minds. The JN Tata Endowment, for example, covers many of India's leading lights. There's Freany Cama – among the earliest beneficiaries – who went to Britain to study gynaecology and midwifery, and later luminaries such as KR Narayanan, the late president of India, astrophysicist Jayant Narlikar, Dinshaw Patel of the Memorial Sloan Kettering Cancer Center, New York, and Srikant Datar from Harvard Business School.

The Trusts have expanded IGP's reach to incorporate grants for individuals wanting to enhance their professional skills, spectrum grants for budding talents in sports and music, and even a grant for candidates keen on becoming commercial pilots. Also in the mix

## Backing that counts

The 'individual grants programme' supports those seeking monetary support for higher education and for medical emergencies

### Education



**4,000+** beneficiaries a year get financial assistance in a variety of categories...

- Grants for school and college fees
- Support for higher education
- Spectrum grants for sports and music talents
- Scholarships for undergraduate and postgraduate studies in select streams
- Pilot training programme for teachers and caregivers involved with special needs children

### Medical treatment



**2,800+** beneficiaries a year get up to ₹2 million each for treatment of cancer, kidney diseases, heart ailments, etc, at a network of government, charitable and private hospitals

is a pilot project to train teachers and mothers to care for children with learning disabilities.

IGP's disbursals for medical care helps patients unable to afford treatment of life-threatening diseases. Apart from supporting those who apply directly, the Trusts have also tied up with a network of hospitals that can endorse and recommend deserving cases.

For IGP, the intent is to deliver support in domains where other sources of funding are either not

available or are beyond the reach of disadvantaged individuals. The programme's disbursal process has been honed to ensure a comprehensive and, importantly, fair and humane approach to identify the meritorious in genuine need.

IGP is now looking to design better schemes with targeted outcomes in both health and education, even as it continues to impact the lives of thousands of individual beneficiaries. ■



Cricket time for students of Sunshine School in Navi Mumbai in Maharashtra

# Means for the meritorious

The education component in the individual grants programme enables institutions and ordinary students as well as talented scholars to pursue the path of learning

**T**he aptly named Sunshine School for Differently Abled Children started small, with just six children, back in 2006. By early 2020, the Navi Mumbai-based institution had grown to accommodate 107 students in the 3-to-24 age bracket. Then came an unforeseen challenge and Sunshine School

needed a friend, any friend, to help it see the light.

When the Covid pandemic struck, this school for children with special needs had to shut its gates and take its integrated education programme and therapy sessions online. Unfortunately, that led to a third of students dropping out. About 70 kids did

enrol online, but the lockdown's economic impact meant that as many as 30 of them could no longer afford to pay the fees.

“Even with a pay cut to our staff of therapists and teachers, we barely had enough funds to continue for three-four months. We would have had to close down,” says founder-principal

Paramita Mazumdar. The thought of abandoning the differently-abled children at a time when they needed the school the most was unbearable. The school reached out to the Tata Trusts' individual grants programme (IGP) for emergency assistance.

"The Trusts came as a godsend," says Ms Mazumdar. "Their support ensured the survival of the school. The Trusts assured us that our students would continue to get the nurturing they so badly needed." Coming in the nick of time, the IGP funds safeguarded the education of 70 students.

### Two deciding factors

The education component in IGP supports a wide array of beneficiaries who cannot afford the cost of education, from individual students who dream of higher studies to teachers learning how to engage with special-needs children, from professionals looking to upskill themselves to youngsters aspiring for a learning experience in the best universities. Two factors decide the 4,000+ recipients of IGP's education grants – merit and means.

The grant to Sunshine School was an outcome of IGP's recast focus over the past few years on the education of special-needs children. This is part of an effort by the Trusts to explore ways of catering to the requirements of children with diverse forms of learning disability. One of these has been to support the training of teachers and caregivers – though a pilot programme – of differently-abled children.

"We were consciously looking at underserved areas where the Trusts could step in," says Rukshana Savaksha, who heads IGP's education portfolio. "The Trusts have always been mindful of staying relevant to the need of the hour and that's why we strive

to incorporate different models of support within our overall theme strategy, while considering diverse education needs."

IGP's education component has an annual budget of around ₹360 million, about half of which goes towards scholarships for deserving



## Lightening the load

Having graduated from medical school as a dentist, Chennai doctor Rahul Raghavendra was keen on doing a master's with specialisation in oral and maxillofacial surgery. Unable to afford the high fees in Chennai, he took up a seat at the Bangalore Institute of Dental Sciences. The total fees of more than ₹2.5 million for the three-year course were still too high, and his father had to mortgage the family land to secure a bank loan.

That was when Dr Raghavendra learned about the Tata Trusts' individual grants programme and he applied for a scholarship. The application was processed, Dr Raghavendra appeared for an online interview with a subject expert, and soon a scholarship of ₹0.8 million was approved for a period of three years.

"I used to worry about finishing my studies and earning enough money to repay our loan but the scholarship has given us huge emotional comfort and our family land will soon be released from mortgage," says the young doctor, who has just completed his postgraduation and is set to begin his career as a medical professional. "My family and I will always be grateful to Tata Trusts for helping us at a crucial time in our lives." ■

students, including for higher studies in India and overseas.

The programme receives more than 8,000 applications from around the country every year. The challenging part is making sure the brightest and most deserving students benefit from aid, and IGP has been continuously refining its selection and administration processes to ensure this.

### Wealth of disciplines

IGP handles disbursements under a number of heads. The largest part of its funding goes towards scholarships, primarily for bachelor's and master's courses, with aspirants applying under 19 disciplines, including medicine, healthcare and neuroscience.

Apart from scholarships based on merit, IGP covers applications directly from individuals living in Mumbai and its suburbs under a scheme called 'means grant-direct'. Based on need (defined with respect to annual income), this scheme offers partial assistance to students from standard VIII up to graduation. The focus here is on families with lower



**“We were consciously looking at underserved areas where the Trusts could step in.”**

— Rukshana Savaksha, head, education portfolio, IGP, Tata Trusts

incomes and fields of study where students find it difficult to obtain education loans.

Grants to organisations such as Sunshine School are in a category called 'means grant-indirect'. Children orphaned by farmer suicides, children of commercial sex workers, street children and tribal children are supported under this scheme, and they are identified through select NGOs in Maharashtra who work with marginalised communities. The Trusts directly pay

a substantial part of the fees and the costs of textbooks, uniforms and travel of these kids.

IGP's engagement with special-needs children started with a request from the Mumbai-based Santosh Institute for Mentally Challenged Children and has now expanded into an initiative that supports 12 special schools in Mumbai and Pune.

The two 'means grant' schemes support students up to their graduation. Last year, even after a sharp decrease in the number of applications due to the pandemic, IGP supported 140 students directly and 485 students through the indirect programme, disbursing a total of ₹20 million for their education and other needs.

### A break for pros

Additionally, IGP backs mid-career professionals with enhancement grants that help them enhance their skills through training programmes, workshops and observerships. Aviators requiring funding to obtain commercial pilot licences are another set of beneficiaries. Meanwhile, the programme's spectrum scheme covers the needs of sportspeople, musicians and theatre artists, as also the training of teachers to manage children with learning disabilities.

IGP has evolved down the years to expand and amplify the support it extends in education. One factor has remained a constant, though — the needs and aspirations of the individual continue to remain the focus of the education programme. ■



About half of the budget for the education programme goes towards scholarships

# Where there's **hope...**

## Disbursals for medical emergencies under the individual grants programme help desperately needy patients get life-saving treatment

**S**he is a single mother of a young child, with a life-threatening heart condition, but Vijayalakshmi Kancharla is not a weak-hearted person by any means. For this resident of Guntur in Andhra Pradesh, the way forward for her was an open-heart surgery – there was no way Ms Kancharla could afford it.

That's when the individual grants programme (IGP) of the Tata Trusts stepped in to lend a hand, enabling Ms Kancharla to undergo the procedure at the Madras Medical Mission in Chennai. "The Trusts are my near and dear, my well-wishers and my family," says the grateful lady. "Their timely help allowed the hospital to take up my case on priority. Today I'm living a stress-free life with my child only because of this support."

Ms Kancharla is among the



**"There is a thorough evaluation... We want to be sure that every grant given is to a deserving beneficiary."**

— Kumar Chaitanya, head, grant finance and budgets, IGP

thousands of beneficiaries who have been accorded financial support for essential medical treatment and post-treatment expenses under IGP's medical emergencies programme. In 2018-19 alone, more than 2,800 such

grants were awarded, with a disbursement of over ₹500 million. The Covid pandemic put a spanner in disbursals last year, but IGP was still able to help some 1,300 people, with a financial outlay in excess of ₹320 million. These disbursals cover up to 80% of a patient's treatment and related expenses.

"The programme typically receives applications for cancer care, heart ailments and kidney disorders," says Kumar Chaitanya, head, grant finance and budgets, IGP. In recent years, the Trusts have included cochlear implants and children's therapies in their canopy of medical care (the programme has underwritten the treatment of more than 250 children for paediatric cardiac procedures in Mumbai alone).

IGP offers assistance to individuals who apply directly and also to patients recommended through a network of hospitals

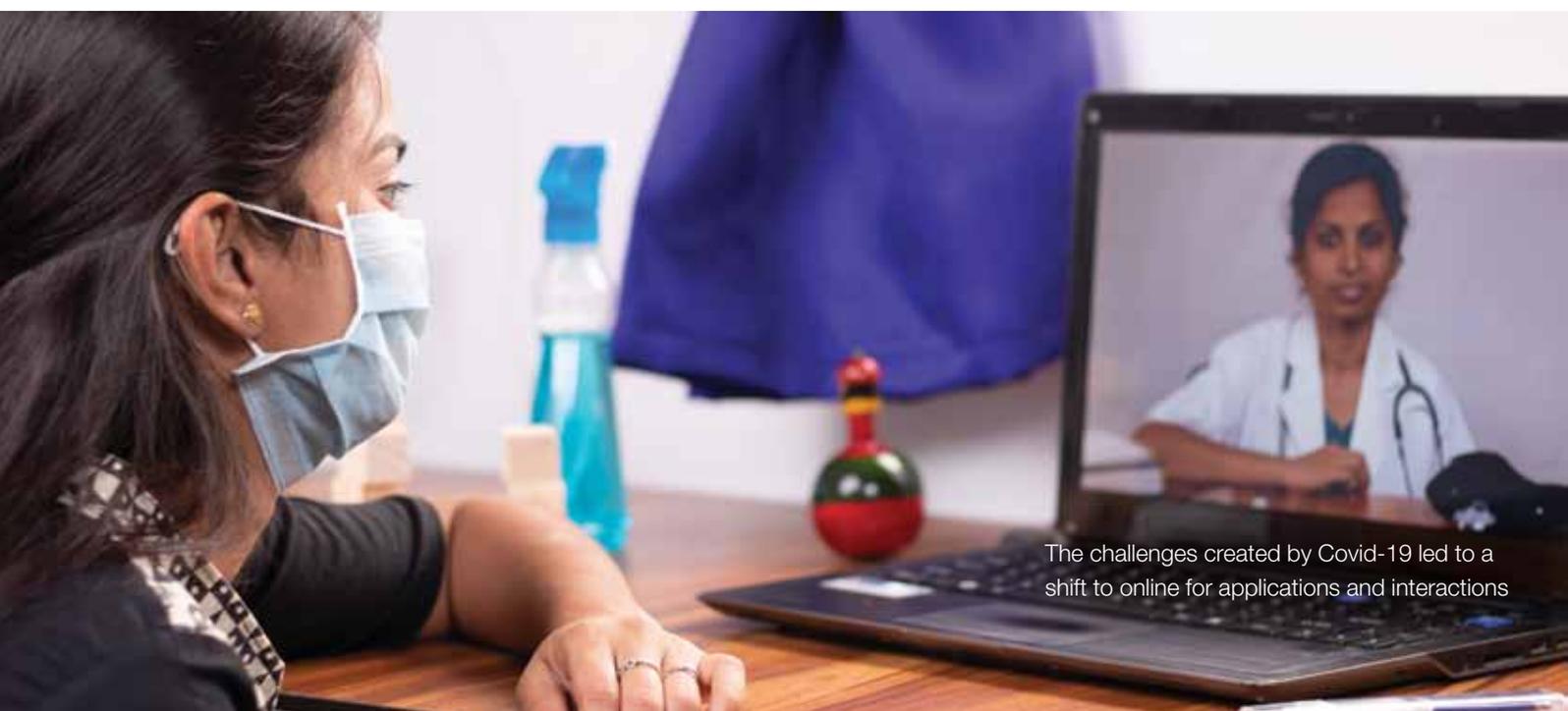
linked to the programme. Most of the beneficiaries come under the second category and the treatment cost is paid directly to the hospital where treatment is provided. Preference is usually given to beneficiaries receiving treatment in government, civic or charitable hospitals. If a specific treatment is unavailable in any of these, then a

grant for treatment in a private hospital is considered.

IGP has refined its screening process over the past few years. “The cases from linked hospitals are approved after a rigorous process of due diligence,” adds Mr Chaitanya. “With direct applications from patients, there is a thorough evaluation of all the

facts and parameters before a grant is approved. We want to be sure that every grant given is to a deserving beneficiary.”

The selection process for approval of a grant demands a dynamic evaluation of varying parameters and criteria: where the person is taking treatment, the beneficiary’s age and personal



The challenges created by Covid-19 led to a shift to online for applications and interactions

## Keeping it going

**W**hen Covid-19 disrupted the regular working of organisations, the Tata Trusts office shifted to work-from-home mode and the IGP medical team set about organising its workflow so that patients continued to benefit and there was no interruption in grant disbursements. The team quickly changed the method of paper and hard copies to accepting and processing requests via email.

However, the shift from physical to online confused many who did not have access to emails or were unaware of the transition. In addition, there was the pandemic-induced disruption at hospitals to contend with. Sometimes patients could not

reach their hospital or found that hospitals were treating only Covid patients. Procedures for ailments that were not life-threatening had to be deferred.

Applications began to pour in again as awareness grew of IGP’s new ways. Interactions and interviews shifted to phone calls and video meetings. With home and hospital visits being curtailed, the team had to rely on their experience to evaluate doubtful cases. “We adapted to the new normal, kept the work going and supported a number of beneficiaries,” says Kumudini Todankar, a programme officer with IGP medical. ■

income, the family's financial standing, the type of treatment required, etc.

In addition, there is continuous engagement with the applicant at all stages of the process, even post treatment, for feedback. The programme has a structured process in place that records the beneficiary's experience in the hospital and with IGP. This feedback is used to improve the grant-giving mechanism.

### Ring in changes

Recent changes include opening up the application window for more hours, providing funding to patients undergoing treatment — instead of reimbursing expenses later — and giving extra weightage to younger patients.

From acceptance and processing of applications to disbursement of funds and feedback from beneficiaries, every function of IGP has been fine-tuned to make it more efficient and effective. "We are bringing in technology to run our processes; this will not only cut the time taken but also augment our due diligence system," says Mr Chaitanya.

Another area of change has seen IGP go beyond its donor function to smoothen the process for beneficiaries. It works to align hospitals, counsellors and sponsors so that beneficiaries don't have to run around much. With its humane approach and technology-driven processes, IGP is primed to continue providing a healing touch to thousands of patients every year. ■



## Hearing and now

For Mumbai resident Aftab Sheikh, despair and disappointment used to be constants. His daughter Aiman (seen above) was born deaf and her disability was a source of constant concern. Despite being a man of limited means, Mr Sheikh was determined to do all he could to help his daughter get rid of the handicap.

He found a ray of hope when he heard about IGP medical's support for cochlear implants and applied for a grant. "I thought it would be very difficult to get funds from such a huge organisation," says Mr Sheikh. "To my surprise, the staff was very open and they helped with my documentation and processing."

Hearing loss affects millions in India and only some benefit from a hearing aid. Cochlear implants, especially for children, play a vital role in overcoming profound sensorineural hearing loss and in providing a lifetime's gift of sound. The challenge faced by the Sheikh family was in meeting the high cost of the implant as well as payments for hospitalisation and follow-up treatment.

The monetary support Mr Sheikh received from the Trusts greenlighted his daughter's cochlear implant surgery — at the Holy Family Hospital in Bandra, Mumbai — and Aiman was able to hear within weeks of undergoing the procedure. "The Trusts have given a new lease of life not only to my daughter but to our entire family," says Mr Sheikh. ■



# Roll call of brilliance

**For 129 years, the JN Tata Endowment has enabled some of India's brightest minds to pursue their passion for learning — and their dreams**

**V**inod Mudliar had just earned his engineering degree from Mumbai University and was getting ready for a corporate career when he was diagnosed with early-stage cancer. During the course of his subsequent treatment, the Navi Mumbai resident experienced firsthand the role played by counsellors in helping cancer patients cope with the disease. Impressed and inspired,

Mr Mudliar decided to change tack and pursue a career in counselling. Issue was, he needed money to get re-educated.

In 2017, Mr Mudliar approached the JN Tata Endowment (JNTE) for a scholarship to pursue a master's in counselling from University of Santa Clara in California, USA. After finishing the course — and now a certified counselling psychologist — he returned to India and co-founded

Inner Calling, an organisation that works on a range of concerns related to mental health.

Mr Mudliar is sure his objective of becoming a counsellor came true principally due to the support he got from JNTE. "Receiving the scholarship meant I could realise my dream of contributing to the field of cancer care and mental health," he says.

Mr Mudliar is among the 5,500-plus students who have

benefitted from the Endowment, set up in 1892 by Jamsetji Tata, the Founder of the Tata group. The earliest philanthropic undertaking of the Tatas, JNTE was born with a corpus of ₹2.5 million donated by Mr Tata. It's full name – The JN Tata Endowment Scheme for the Higher Education of Indians –

spelled out its mission to help mould talented young Indians to be of service to a nation seeking self-reliance and self-sufficiency.

The Endowment has stayed true to its purpose, enabling meritorious Indians to pursue higher studies at some of the best universities in the world. Mr Tata wanted the brightest

young minds in the country to improve their prospects through further education. As he said: "What advances a nation or a community is not so much to prop up its weakest and most helpless members, but to lift up the best and the most gifted, so as to make them of the greatest service to the country."

## Report card

The JN Tata Endowment has been helping young and talented Indian students pursue their dreams of attending institutes of international repute. Here are two recent examples of JNTE scholars who have excelled in their chosen fields.



### AMIN ALI MODY

Bengaluru, Karnataka

**Year of Award:** 2018

**Subject matter:** Master's in aerospace, aeronautical and space engineering from the University of Colorado, USA

Amin Ali Mody was selected to be part of the Mars Desert Research Station (MDRS) Crew 213, where research teams spent weeks in a simulated Mars habitat conducting studies. Crew 213 conducted research on medical scenarios in space and on Mars. The activities at MDRS included lectures from NASA flight surgeons and others, extravehicular activities, search and rescue, emergency scenarios, etc. The team also developed and launched a medical supplies delivery rocket, for which Mr Mody worked on structures and propulsion.

### TEJAS CHHEDA

Mumbai, Maharashtra

**Year of Award:** 2020

**Subject matter:** Master's in computer science from the University of Massachusetts Amherst, USA

Tejas Chheda started working as a graduate student researcher at the information extraction and synthesis laboratory at his university under Andrew McCallum, a renowned professor in the domain. The lab focuses on applied 'neuro-linguistic programming', a new approach to communication, personal development and psychotherapy.

Mr Chheda, who is hoping to publish a paper on his research findings, is currently working on machine learning in an internship with PayPal, the American online payments company.



The first beneficiary of funding support provided by JNTE was a woman, Freany Cama, who went to Britain in 1892 – funded by a grant of ₹10,000 – to study gynaecology and midwifery, and returned to become one of India’s first gynaecologists (there’s a hospital in Mumbai named after her).

The Endowment has continued playing the role of benefactor in the time since. Every year around a hundred ‘JN Tata scholars’ – among the brightest in their field of study – proceed to some of the world’s best educational institutions to pursue

higher education in a diverse range of subjects.

The sterling list of these scholars includes Ardeshir Dalal, a member of the British viceroy’s executive council, former Indian President KR Narayanan, nuclear physicist Raja Ramanna, astrophysicist Jayant Narlikar, and the architect Rahul Mehrotra.

Between 1892 and 2021, scholarships have been awarded to over 5,500 individuals in over 200 fields, covering more than 800 subjects and branches of specialisation. The Endowment’s eligibility norms ensure that only

candidates of exceptional merit pass through the gates.

“It is a purely merit-based scholarship,” says Ashlesha Lotankar, who is part of the team that manages JNTE. “We receive about 1,600 applications a year from students across India for about 100 scholarships.”

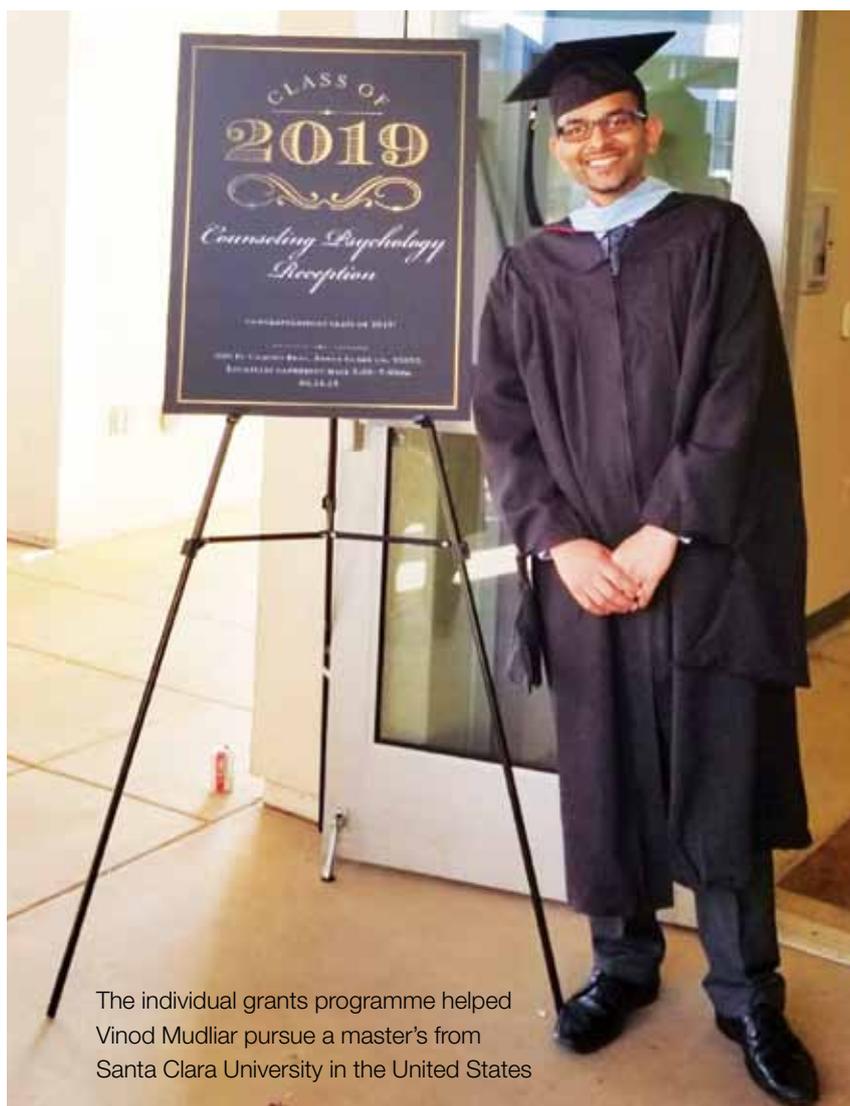
### Screenings, interviews...

The process from inviting of applications to final disbursement of funding happens in a seven-month cycle between December and July. Along with academic performance, the course and the institute the applicants have been selected to are considered during the two screenings that candidates have to come through. Then there is a ‘technical round’ of interviews by subject matter experts.

The subject experts are chosen from amongst the best education institutions in the country (such as IITs, NITs, IISERs, Tata Institute of Fundamental Research, universities in India), professionals, and even overseas institutions. “The Endowment has initiated the practice of inviting former JN Tata scholars as subject experts. Great care is taken to ensure a near-perfect match between candidates’ profiles and subject experts’ areas of specialisation,” says Ms Lotankar.

“The experts test candidates for proficiency in their chosen subject and, besides, we also evaluate the applicant’s sense of purpose and his or her consistency with the principles that the Endowment stands for,” adds Ms Lotankar.

A JNTE bursary, which can go



The individual grants programme helped Vinod Mudliar pursue a master’s from Santa Clara University in the United States

# A LEGACY AND A LEAGUE

The JN Tata Endowment at a glance



**1892**

year of establishment



**5,500+**

total number of JN Tata scholars



**200+**

disciplines covered



**100+**

bursaries disbursed annually



**₹1 million**

funding ceiling for candidates

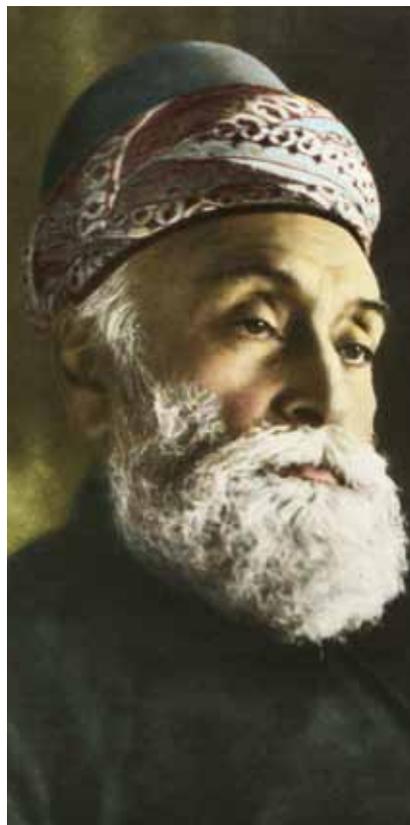
up to ₹1 million, is extended as a loan that beneficiaries have to repay over a period of time. “Jamsetji Tata believed this would instil valuable lessons in self-reliance,” explains Ms Lotankar. “The idea is to make the students feel a sense of responsibility towards their own education and to ensure a degree of accountability.”

“The repayment of every loan helps ensure that another deserving candidate is able to study abroad. Repayments are near 100%, with many of the students settling their loans much ahead of the prescribed period,” says JNTE’s Sandhya Jadhav.

## Newer fields in the picture

The scholarships cover a spectrum of disciplines, among them newer and little-known science and engineering streams. In recent times, JNTE has seen an increase in the number of students opting for newer fields of study, among them machine learning, artificial intelligence, environment engineering, biomedical devices design and even river-basin management, creative writing and dance therapy.

There is something about being a JN Tata scholar and beneficiaries



**“What advances a nation or a community is not so much to prop up its weakest and most helpless members, but to lift up the best and the most gifted, so as to make them of the greatest service to the country.”**

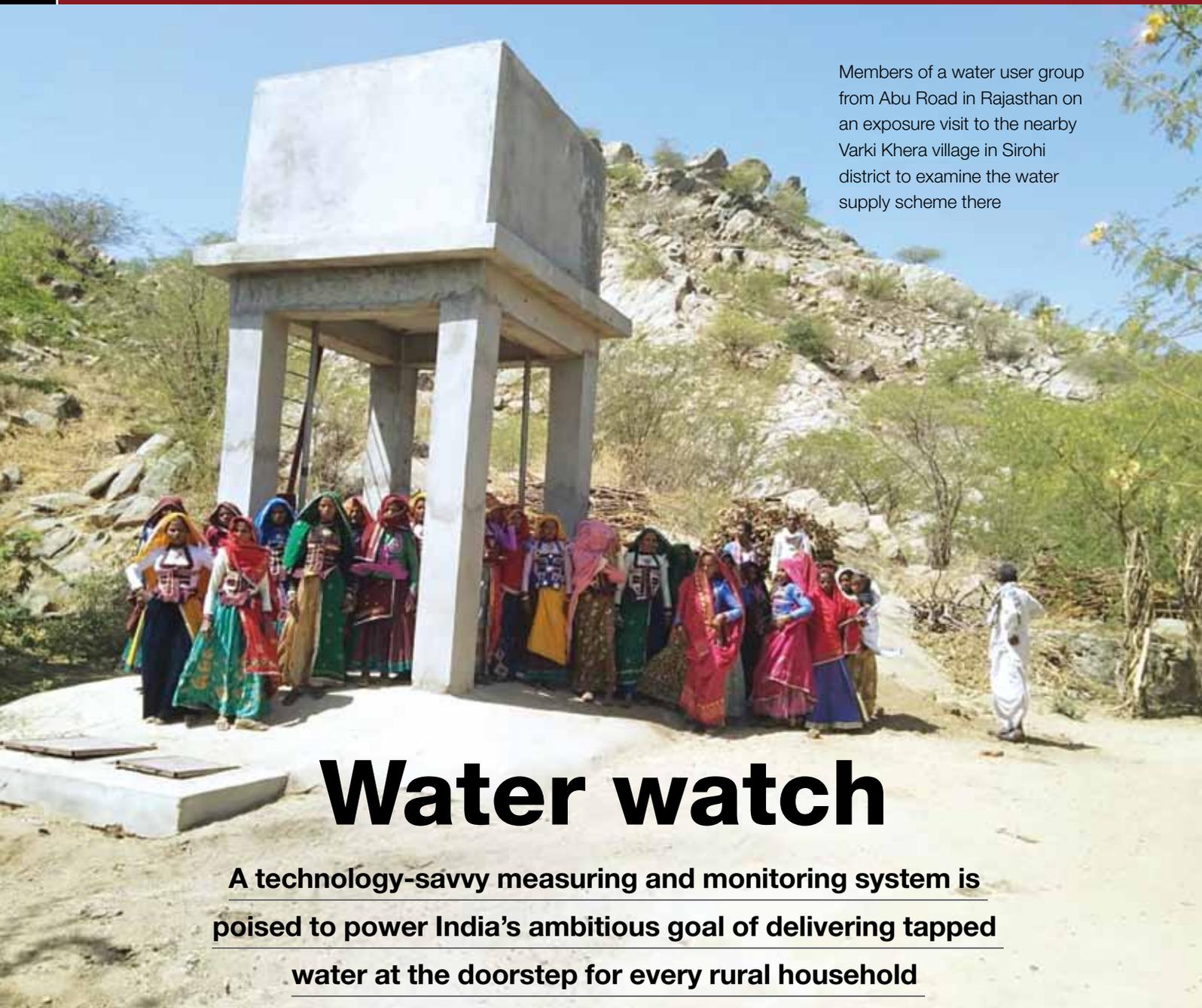
— Jamsetji Nusserwanji Tata, the Founder of the Tata group

take pride in it. The scholarship opens a world of opportunities that goes beyond immediate academic support. Importantly, it gives these scholars access to a network comprising achievers from various walks of life. “We have a dedicated alumni platform where we share the success stories of our scholars and enable interactions between members,” says Ms Lotankar.

JNTE keeps its community connected through a dedicated alumni website for Global Association of JN Tata Scholars as well as a newsletter called JNTE FAB for alumni members. “Besides achievements and success stories, we share information about the new developments here as well as relevant information across Tata group companies to keep our scholars updated,” says JNTE’s Swapnali Rane.

The Endowment’s biggest achievement has been its success in helping young Indians achieve their dreams and contribute to the larger good of the society. Many of them would probably echo what Mr Mudliar says: “I express my deepest gratitude to JNTE and I hope it continues to have an impact on many more aspirational students.” ■

Members of a water user group from Abu Road in Rajasthan on an exposure visit to the nearby Varki Khera village in Sirohi district to examine the water supply scheme there



# Water watch

**A technology-savvy measuring and monitoring system is poised to power India's ambitious goal of delivering tapped water at the doorstep for every rural household**

**T**he supply of safe and sufficient water for each and every household in each and every village of India before the end of 2024 – that may have seemed like a pipe dream even as near as five years back, but not so now. The reason is the Indian government's Jal Jeevan Mission (JJM), an ambitious, elaborate and cost-effective effort to deliver the elixir to rural homes across the country through tapped connections.

JJM is banking on an ecosystem of partnerships – between the central and state governments,

between public institutions, private organisations and civil society entities – to reach its daunting goal. The collaborative nature of the endeavour is evident in the making of an essential component that will determine the success of the Mission: a water supply measuring and monitoring system based on the much-touted 'Internet of things' (IoT) network.

Developed and deployed by the Tata Trusts and the Tata Community Initiatives Trust (TCIT), this 'smart water management' system has been

piloted in geographically and geologically diverse villages in the states of Uttarakhand, Rajasthan, Gujarat, Maharashtra, Jharkhand and Himachal Pradesh. There are 11 pilot projects in the programme and their purpose is to show how the monitoring mechanism can contribute to JJM's wider rollout.

The monitoring system employs sensors, software, electronics and the net – the technology elements of the IoT matrix – to capture, collate and transmit data on the quality and quantity of water available to

households in the chosen villages. Human intervention is minimal in a low-cost setup where a host of water-related parameters are tracked in real time: distribution, leakages, groundwater levels and purity, and community usage statistics.

The logic driving the IoT-based system is solid. The case for robust and reliable management and monitoring of India's increasingly scarce water resources has never been stronger. An estimated 30% of rural water supply schemes flounder due to poor maintenance and the inability to take speedy corrective action. Besides the waste of public funds, such lapses worsen the socioeconomic woes of rural families, particularly women.

### Pilot to prototype

It is expected that the pilot projects will provide a water-monitoring prototype that can be made operational through JJM in all of India's 660,000-plus villages. That would make this path-breaking solution – which kicked off in September 2020 – the largest of its kind in the world in terms of implementation scale and spread.

Flexibility is built into the IoT-based solution, which has been fine-tuned to function in areas with poor internet connectivity and a shortage of skilled personnel to run it. The villages in the programme are solitary units – save for Gujarat, where there is a cluster of villages – and they have been picked to account for assorted climatic conditions, water sources and availability levels. That explains hilly Uttarakhand and arid Rajasthan being put into the mix.

Provincial singularities aside, the initiative depends on widely prevalent methods of water management. “When the idea came up, the thinking was that this is already being executed in many urban areas and that we could transfer it to a rural setting,” explains Divyang Waghela, who heads the water, sanitation and hygiene portfolio at the Tata Trusts. “That’s where we started and then we examined the ground realities and the challenges at the community level.”

The community is central in the initiative and understanding the water needs of village consumers

was critical in the design and implementation framework arrived at by the project team. “In rural India the responsibility of managing water resources rests largely with *panchayats* [village councils] and they have limited resources and technical knowledge,” adds Mr Waghela. “Secondly, equitable distribution of water is just not happening in rural regions. We wanted to enhance the efficiency of water usage and make village communities the managers of the process.”

As with JJM as a whole, partnerships underpin the IoT-based system. It could not have

## Of all the things...

**T**echnology – affordable, durable and feasible for rural locales – is a cornerstone of the IoT-based solution. There are sensors to track and measure water flow, groundwater levels, water pressure and water purity. The IoT platform is integrated with a GIS (geographical information system) to enable a decision-support system for engineers and utility operators through automated alerts and analytics. To cite one big advantage here: predictive maintenance and grievance redressal happen fast and simple.

Given how rare a reliable internet connection is in the country's rural reaches, the project is engineered to function on LoRa, a networking protocol that offers long-range local wireless networks in constrained environments and meets IoT requirements. Erratic power supply is another persistent obstacle in India's villages and it has been dealt with by turning to solar energy (this is likely the first time in the world that a solar-powered IoT system capable of supporting hundreds of sensors has been developed).

There are two units in the IoT-based system, one for monitoring and the other for communications. These are sensors attached to the pipeline through which the water flows from its supply source. The gathered data is relayed every hour (or whatever the period set) to a central cloud server for analysis and action before being transmitted by SMS to multiple points. ■

A training session for water user group members in Bhoola village in Sirahi district



been any other way. “Water in our country, particularly rural water supply, involves multiple stakeholders and is a complex subject,” says Siddhant Masson, who leads the project from the TCIT side. “We have joined hands with village communities, water user groups and local NGOs for on-ground implementation. We have also collaborated with state government authorities, including their public health and rural water supply departments. We now have a common governance structure to ensure the system’s sustenance.”

Technology vendors, many of them from the startup space, are another vital part of the IoT solution. Finding the right fit was not always easy. “This system had to be developed at a fraction of its market price to keep it affordable, and we had to facilitate adoption and scalability,” says Mr Masson. “We had to work with our technology suppliers to maintain a balance between cost and feature richness. Several vendors backed out but we were finally able to secure our end-state solution.”

There were other roadblocks as well. “One of the challenges we

faced was to complete the pilots in the middle of the pandemic,” adds Mr Masson. “We had to use small windows of time to do our installations and test our system. We took it for granted that we would get easy access to grid electricity to power our IoT devices. That wasn’t to be and we ran into several bottlenecks. The decision to plump for solar power eliminated the dependency on grid supply.”

### Taking care of hiccups

Tampering, mainly by curious village children, and theft of the IoT devices were additional issues that needed sorting out. Protective gear and tamper-detection gadgets took care of these hiccups but ultimately it was the community that counted. “We believed that community mobilisation and education were crucial for the success of such a system,” says Mr Masson. “And the community took ownership of these assets.”

The proof of the pilot projects pudding is in its positive outcomes. Distribution problems — outages, leakages, low pressure, etc — have been rapidly resolved across the sites, officials and the community

now know about fast-depleting groundwater levels, villagers have begun using water more efficiently and responsibly, and administration officials and others are able to monitor and manage water quality and quantity remotely. “Our system has demonstrated high accuracy and uptime despite patchy network connectivity,” says Mr Masson.

Several states have been interested enough by the smart water management system to take it on board. Bihar is deploying it in more than 50,000 rural locations. Gujarat, Arunachal Pradesh and Haryana have started the process of embedding it in their rural water supply schemes, and Goa, Punjab and Sikkim are planning similar initiatives in the coming months.

Mr Masson’s pride in what has been accomplished thus far is palpable. “We are extremely glad we could deliver a high-fidelity IoT system within a highly constrained environment and at such a low cost.” The satisfaction level could climb to new highs as the rest of rural India cottons on to a water solution out of the ordinary. ■

*By Philip Chacko*

# ‘The Jal Jeevan Mission is everyone’s business’

It’s an implementation challenge as tough as it comes in a country such as India – providing assured water supply to every rural home by 2024 – but that does not faze Bharat Lal. Rather, the additional secretary and mission director of the Jal Jeevan Mission (JJM) appears to be relishing the responsibility of executing a project as aspirational as it is audacious.

With a budget of \$51 billion (about ₹3,814 billion), JJM is working at a gallop to realise its goal of ensuring that good-quality water in adequate quantities reaches all of India’s 660,000-plus villages. In this interview with *Horizons*, Mr Lal talks about the Mission and how it has geared up to execute the gargantuan task at hand.

## What’s your view of JJM and the IoT-based water monitoring system in it?

JJM is being implemented in partnership with the states to ensure that every household in our villages get an assured supply of potable tap water on a regular and long-term basis by 2024.

We are working to empower rural communities through the setting up of water and sanitation committees, popularly known as *pani samitis*, in each village to plan and operate water supply schemes. That means every village will have a



public utility managing supply to every household in that village.

There is an investment outlay of ₹3,600 billion over five years to provide tap water to rural homes, and we are disbursing about ₹300 billion a year to panchayats [village councils] to manage water supply. It is important, in the context, to measure and monitor this water supply in terms of quantity, quality and regularity. We have to do this in an efficient and cost-effective manner and that’s where the IoT-based system comes in.

A technical committee had been constituted to prepare a roadmap and the states are using the broad framework provided by it for planning, designing and implementation. Advances in

electronics, communication, data analytics, etc make it feasible to use IoT technology to share information and take remedial action.

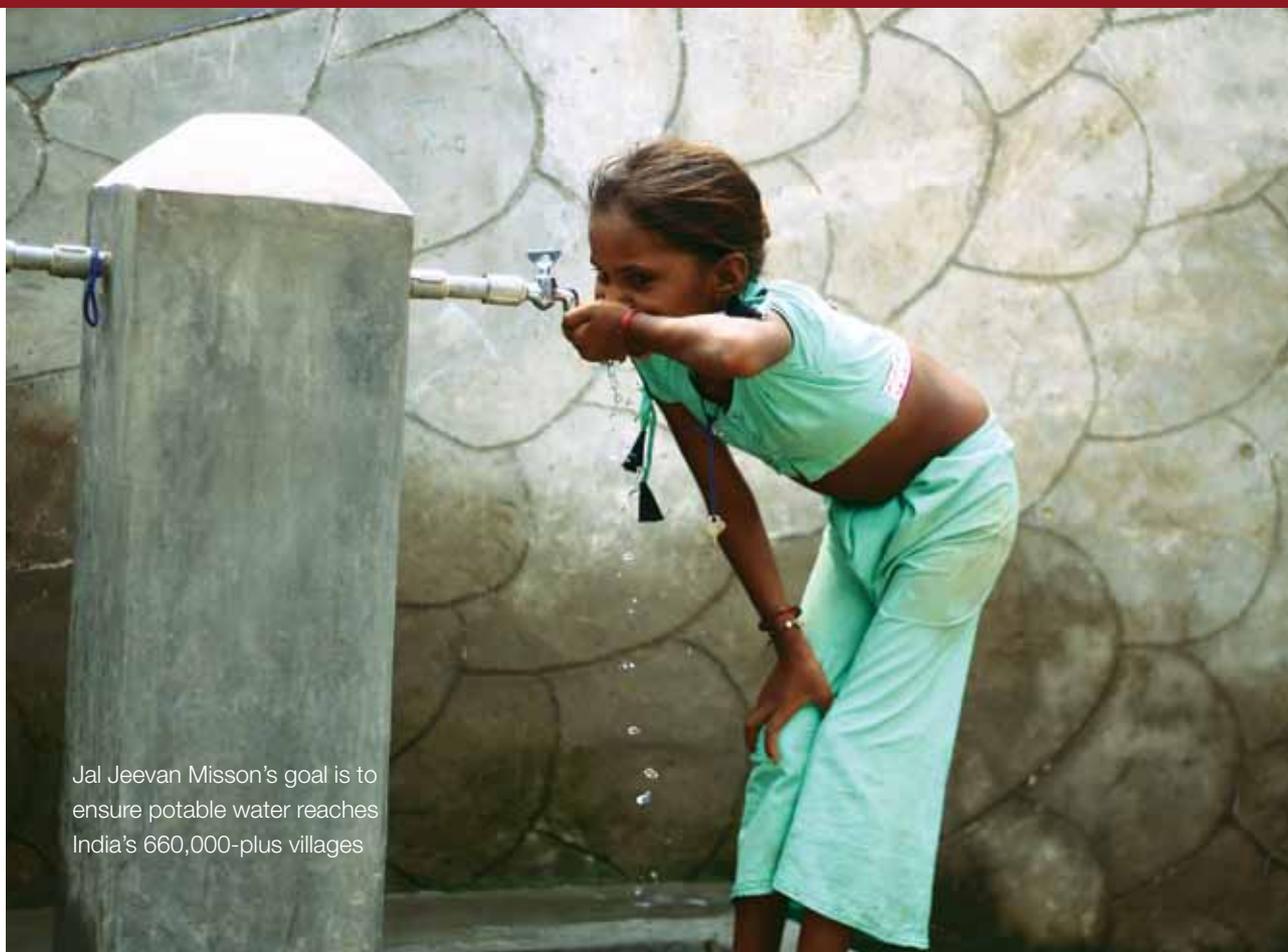
We had launched a technology challenge for manufacturers to develop a water supply monitoring system and we have picked 100 villages in eight states for field demonstrations by four solution providers. Meanwhile, some states – Gujarat, Sikkim, Haryana and Bihar among them – have started planning for such a smart system.

## How challenging is the goal JJM has set itself?

It’s quite challenging but there is a determination to accomplish the task. The central government is committed to achieving this goal and we have got tremendous support from everyone. That’s the reason we have made substantial progress.

When the Mission was launched in August 2019, only about 32 million households in rural areas (or 17%) had tap water supply. Today about 76 million rural households (39.4%) are getting tap water supply. That’s an addition of 44 million households in under two years, despite the disruptions caused by Covid-19.

Many states have advanced their plans to provide tap water connections to rural households before 2024. Goa, Telangana, Puducherry and the Andaman and



Jal Jeevan Misson's goal is to ensure potable water reaches India's 660,000-plus villages

Nicobar Islands have already achieved the distinction of providing tap water to every rural household. This has motivated everyone to achieve the JJM objective as early as possible.

The dynamics of water usage in India are interesting. Only about 7% of available freshwater is used for drinking and domestic needs, less than 10% of available water is used for industry and about 85% of water consumption is accounted for by agriculture. This means that any change in consumption of water in agriculture will have profound impact on water availability for domestic use and industry.

#### **How important are private-public partnerships in bringing such solutions to fruition?**

It is vital that every individual and organisation join hands for the cause of water. 'Building partnerships, working together and changing

lives' — that's the JJM motto. We are working at different levels with different partners to ensure that the Mission is everyone's business.

To that end, we have forged collaborations with civil society entities, NGOs, international agencies, various ministries and departments, state governments, academic and technical institutions and, not least, local communities. Most of the execution of the Mission is done by private sector players.

The IT revolution in India was led by the private sector and IoT solutions are being increasingly used in telecom, gas, electricity, etc with the participation of this sector. There is a huge opportunity with water as well. I'm sure the private sector will come up with various models for implementation and bring in the latest technology in sensors, data communication, storage and analytics.

#### **The expectation is that this IoT system will be adopted in rural areas across the country. Do you see that happening?**

Today more than 93,000 villages and 62 districts in India have the provision for tap water supply and in the near future a further 60,000 villages will have it. In another 100,000 villages, projects to provide tap water to every home are under implementation. That's the speed and scale of the work.

The central government is providing technical as well as financial support in deploying the necessary systems. With regard to the IoT solution, there is huge excitement about it among technology developers, entrepreneurs and innovators, on the one hand, and public health, engineering and water-utility officials and the general public, on the other. This solution will usher in a new era. ■

# ‘This is a revolution waiting to happen’

**Ajay Mathur** is doing his bit, and then some, to help with the global effort in achieving the daunting objective of net-zero emissions by 2050. The recently appointed director general of the International Solar Alliance (ISA) has a part to play as the world steps on the pedal to speed up the development and use of renewable energy, the holy grail in getting to the goal of a cleaner, more sustainable planet.

Previously the director general of the New Delhi-based Energy and Resources Institute, Mr Mathur has been a member of the Prime Minister’s Council on Climate Change and was the Indian delegation’s spokesperson at the 2015 Paris climate summit. He talks here to Christabelle Noronha about the challenges India and the world face in doing the right thing to cope with an emergency like no other.

*Edited excerpts from the interview:*

**India’s ability to reduce poverty without depending too much on fossil fuels will to a large extent determine the success of global efforts in combating climate change. How can that be made possible given our economic realities?**

The key issue is that a large amount of our energy-based needs are yet to be met. Whether it be for agriculture, lighting in homes or even for dental treatment, energy is essential. For all such needs, green applications provide power at a cheaper price than do fossil fuels. So, as far as the economics is concerned, the situation is good and getting better.

The key challenge in using green energy is the availability of such options: I should, as a user, have access to it, maintenance should be available and I should be able to pay for it in a manner that’s comfortable for me. But capital costs for solar electricity are much more than for fossil fuel electricity; that’s where the problem lies.

**Does India have the financial muscle to make these investments?**

If we go back 40 years to when the green revolution happened, we were very dependent on pumped water; it was the only solution. The problem then was the same: where will the capital costs for these pumps come from? Is



that a problem now? No, it is not, and why? Because banks started lending money. Similarly, as banks get used to lending for solar applications, we will see an increasing number of solar-based devices come into play.

Agricultural pumping powered by solar is easily available today and the prices at which you get them here in India are among the cheapest in the world. However, it is tougher to get a loan for a solar pump than it is for diesel-powered equipment. That's where access to finance comes in. Banks have to get used to the reality that risk assessments for solar pumps will be different.

**For all the immediacy of the climate change emergency in India, this is not a crisis that resonates with the public at large (it was a non-issue during the recent elections in multiple states). How much of a drawback is that in finding equitable solutions?**

Yes, climate change is a non-issue as far as politics in India is concerned, but urban pollution is an issue, the availability of electricity is an issue, water for farming is an issue. The challenge lies in providing answers that are free of fossil fuels and are renewables-based.

If we invest in an electric car or an electric two-wheeler, we will be better off, because electricity is much cheaper than petrol. The city is better off because there is minimal air pollution, and the world is better off because of the reduction in carbon emissions.

**But how can these solutions be made affordable?**

If a farmer invests in a solar pump, it can become an electricity-generating device. The farmer can use it for the time he needs the water. When he does not need the water, the solar panels produce electricity that can be sold back to the grid and this becomes a source of income.

I think that innovative ideas such as this, which form the heart of the central government's PM-KUSUM scheme — which aims to provide clean energy to more than 3.5 million farmers — can help increase the demand for renewables-based products in the market. Yes, the equation will be different for different classes; the solar lighting implementation model will be very different from that for an electric two-wheeler.

**The silver lining amid the climate change gloom is the steep fall in the price of renewables, particularly for solar power. What are the positives here for our country and the world?**

The great advantage is that the vast amount of renewable-energy infrastructure for supply and use is yet to be built. It is estimated that roughly half to two-thirds of energy-using and energy-generating structures remain to be built. The drop in prices means that, just one year from now, we will possibly be in a situation where almost every solar application will be a cheaper option than its fossil-fuel counterpart.

That means people like you and I can actually invest in solar. We can

invest in renewables and get the same kind of benefits we would if we were using fossil-fuel systems. And we will be economically and environmentally better off. I come back to the point that the key challenge is access to finance. This is a revolution waiting to happen.

**You have been quoted as saying India's energy emissions are likely to plateau and then fall earlier than you previously expected, from around 2035 to 2025. What's the basis of your optimism?**

We are looking at a time period when the cost of round-the-clock electricity from solar is less than ₹5 per kWh, which is the current price for power from a new coal-based station. In 2017 we had expected that we would cross this figure of less than ₹5 by 2030-35. What has happened since is that the prices of solar electricity have fallen dramatically and today we are able to buy solar electricity, when the sun is shining, at around ₹2 per kWh.

With batteries, we are able to get electricity at ₹7-7.5 per kWh and, as early as next year, we could get it at ₹5 with a bit of luck. This means that going ahead there will be no case for a financial institution to fund a coal-based power station; solar-powered and battery-generated electricity will be cheaper.

There will certainly be an increase in coal-based electricity generation in the near future, till solar and battery installation reach scale, but once it is established that solar power and batteries can provide round-the-clock electricity at the same price or cheaper than coal, that's when investments in coal-based plants will taper off and we will see a plateauing occurring.

**Beyond fossil fuels and emissions, what should India's priorities be in mitigating the climate change risk? Are we on the right track in tackling deforestation, extreme weather events, coastal salinity and the like?**

There are right steps being taken in the face of the extreme climate change events affecting us. Cyclones in coastal areas, floods or droughts in inland regions, a dramatic rise in instances of urban flooding – these are consistent with the climate change crisis upon us.

To better address this crisis, it is important to put adequate tools in the hands of local administrations to enable them to control such situations before they start happening. That means early-warning systems, delivering water supplies in drought-prone places, designing urban infrastructure to enable, rather than stop, floodwater flow, etc.

**You were the Indian delegation's spokesperson at the 2015 Paris climate summit and you have just been elected as director general of ISA. What is the experience like of dealing with climate change and related subjects on the international stage, given the politics and the nationalism, the pulls and pressures, the negotiating and the bargaining?**

## Low carbon technologies: Four steps to success



LED bulbs



Efficient air conditioners



Solar power



Waste heat recovery



Key driver: Economic benefit



Second benefit: Climate change

Successful low/zero carbon technologies respond to a here-and-now need

This is a difficult question. On the global stage we see three different kinds of pulls. One is from those who want to make a change, an example being the European Union. Then you have the United States, where the Democratic party pushes for climate change action and the Republicans go the other way.

The second strand concerns West Asian countries. Whatever action the rest of the world takes is going to hurt the economies of these countries, given that they depend so heavily on oil exports to fuel their development plans. Then there is the third part, which applies to countries like India that are in desperate need for a lot more development. Non-availability of finance and technology shortfalls limit the action these countries can take.

Climate negotiations are essentially about bringing these three parties together. At the Paris summit, we were able to find a via media through which every country expressed what it could do on its own steam to mitigate climate change, and what it could do with international support. Rather than top-down goals, we were able to get people to commit, the big positive being that each participating country could promise something.

The process of trust and confidence and the process of upgrading your promises become a virtuous – instead of a vicious – cycle. You are not, then, fighting one another and running the risk of being in a worse space than before.



An inundated Kolkata street after a heavy downpour; climate change has led to an increase in extreme climatic conditions

**What's your best-case scenario of what can be achieved on the climate change front by 2035, globally and from the India perspective? And what's the doomsday picture?**

As far as India is concerned, by 2035 the electricity sector would have reached a point of steady decline in CO<sub>2</sub> emissions. Secondly, in the transport sector we should have moved towards 100% electric or hydrogen mobility sometime around 2035.

In the industrial sector, which is the toughest one, I expect that by 2035 commercially mature, non-carbon technologies will be available. We don't see much of that currently, particularly in the steel and cement sectors, where the largest amount of energy is used. That sums it up for the best-case scenario.

In the worst-case scenario, there could be a huge backlash from the coal sector and solar and battery systems could be unable to demonstrate economic and technical viability in providing round-the-clock electricity.

The thing that I fear most is that we become unable to transition on the transport side. On the industry side, my feeling is that this is going to be dependent largely on the amount of research and money that goes into new carbon-free technologies, in India and globally.

My doomsday scenario is this: if by 2035 we are not able to find solutions for the industrial sector, we would be saddled with CO<sub>2</sub> emissions that are at a similar level to today's, though on the decline.

**Climate activism comes in many shapes and sizes, some of it pushing the boundaries of legal protest. Where do you draw the line?**

That depends on the kind of organisation you are in, but we all have to accept that carbon-free technologies and applications are our preferred options. There will be places that hold out and there will be a need for activist movements – whether led by institutions or individuals – to rally against and counter these holdouts.

The guys who are not moving symbolise the status quo; there is so much vested interest in continuing with what they have been doing. I believe in showing and informing people that zero-carbon options are available and viable, making the case that growing volumes will make these options cost effective, and they will create jobs for our children.

**How can people at an individual level contribute best to save our planet?**

We are at the stage where our own choices do matter. I would like you to use an electric car, I would like you to use solar-based systems to provide electricity, I would like you to push your energy company to source power from green sources. These are some of the ways in which each one of us can contribute towards making the world a better place, a cleaner place, a more sustainable place than it is today. ■

***“Agricultural pumping powered by solar is easily available today and the prices at which you get them here in India are among the cheapest in the world.”***



Internet *saathi* Usha (right) from Adampur village in Rajasthan's Dholpur district, with programme beneficiary Raja Beti

# Deleting the divide

**An estimated 30 million women across India have been enabled and energised by Internet Saathi, a trailblazing digital literacy effort spread over 20 states**

**T**he year 2018 proved to be a watershed in Pinki Kumari's life. For a rural woman almost resigned to the reality that her place in the world was limited to her kitchen, Ms Kumari found her horizons opening up. She learned about digital devices, became comfortable with the internet and even began training newbies.

The catalyst for Ms Kumari's change of

course in life was Internet Saathi, a path-breaking digital literacy programme that was launched in 2015 through a collaboration between the Tata Trusts and Google India. "What I have discovered through the Saathi [or partner] programme has helped me transform my life," says Ms Kumari, who is based in Jind in Haryana. "I feel proud that I was able to step out of my comfort zone."

For Ms Kumari and an estimated 30 million women like her, Internet Saathi has been a stepping stone, and then some, into the digital world. And, as an auxiliary, the programme has done its bit in bridging the online gender divide in rural India.

“In 2015, only one out of every 10 internet users in rural India was a woman,” says Raman Kalyanakrishnan, head of strategy at the Trusts. “We felt that knowledge of the digital medium and the ability to use the internet would be a key skill for rural communities.”

Internet Saathi began as a pilot in five states: Rajasthan, Andhra Pradesh, Assam, Jharkhand and Tripura. Based on the train-the-trainer model, it aimed to create a cadre of digitally-literate women from rural communities who could, in turn, pass on their knowledge to others, thereby building a network through which digital literacy could be brought to the doorsteps of rural folks.

Some 1,000 *saathis* – women aged between 18 and 35 who had completed their schooling and were part of an ongoing community initiative – were trained during the initial phase. They were taught how to use a smartphone or a tablet, browse for relevant information on the net, and be aware of issues such as online security. The *saathis* also received soft skills training and were guided on how to educate others in their communities.

On completing their training programme, the *saathis* received three internet-enabled devices. Each of them was tasked with training around 600 women in two-to-four villages, including their own. The programme achieved its target of reaching 5,000 villages in quick time.

That was then. Internet Saathi has since those embryonic days gone on to complete two more phases and now has in its fold in excess of 83,000 *saathis* and nearly 300,000 villages in 20 states across the country.



Rohini Patil, an Internet *saathi* from Adulpeth village in Maharashtra's Satara district, displays her branded line of honey

## Golden gain

Everything that I am today is because of me becoming an Internet Saathi,” says Rohini Patil proudly. The 31-year-old from Adulpeth in Maharashtra has her own branded line of honey and retails around 700kg of the golden liquid in a year. As a successful businessperson, Ms Patil has come a long way.

“I was a housewife and was involved only with the matters of my house and family,” she says. “That was before I joined the programme in 2016 and learned how to use a smartphone and the internet.”

Ms Patil credits the programme with a transformation that is both personal and professional. “I have understood how to run a business and I have gained immense knowledge. And I am so much more confident.”

Ms Patil has also gone through Google's Accelerator Program, which taught her a lot about improving her business and she is now pursuing a diploma in beekeeping from a local college. The additional knowhow, she reckons, will help her grasp a future in which she sees herself setting up a new office and hiring more women.

The honey business aside, Ms Patil is kept busy in other ways as well. “People come to me seeking business-related advice. And I've been invited to colleges and functions to speak about my journey as an entrepreneur and as an Internet Saathi. My biggest achievement, though, is the knowledge that I now have.” ■

That's just under half the number of villages in India, another indicator of the spread and effectiveness of an initiative that has broken new ground in multiple ways.

### Changing lives

The full impact of Internet Saathi came alive when independent surveys revealed how the training actually changed lives. The first survey, conducted a year into the project, showed one in three targeted women having access to a smartphone and the socioeconomic impact this triggered in rural communities.

About 40% of women in the programme said that the internet had enabled them to find new skills that helped them earn a subsidiary income; 50% had learned new methods online on how to save

money; and 40% were accessing the net at least once a week, six months after completing the programme.

"We saw interesting progression in the way women used the internet and we tailored our content accordingly, determining which modules needed to be well-defined and which could be left flexible," explains Mr Raman. "The women were even checking what the weather forecast was or what information was available about a particular crop. These were interesting and encouraging insights for us."

An attendant benefit was the rising stature within their communities of the *saathis*. "People began respecting me a bit more after I did the programme," adds Ms Kumari. "They would take my advice more seriously and help me when I needed it."

A training programme for Internet *saathis* in Rajasthan's Alwar district



## STRONG SIGNALS



**30 million+**  
rural women reached



**298,000+**  
villages in 20 states covered under the programme



**83,300**  
*saathis* imparting digital literacy



**70%**  
women accessing the net for the first time via the programme



**2 in 10**  
women running businesses with revenues of ₹4,000+ a month

Shivkumari Khushwaha, a *saathi* from Rewa in Madhya Pradesh, has a similar story to tell. “I had a smartphone and people would come to me to learn how to use the net,” she says. “I assisted people in getting jobs at *anganwadis* [childcare centres] and that led to me gaining respect in the community.”

Bolstered by the positives, the Trusts decided to improve and expand the programme, to take it from digital literacy to digital livelihoods. That explains the setting up in 2017 of the Foundation for Rural Entrepreneurship Development during what was the second phase of Internet Saathi.

The objective was to set up a digital hub of earning opportunities that would support rural women setting off down the entrepreneurial path. The idea has matured to the extent that the *saathis* now function as digital service providers for financial products and services, digital education solutions and business-related upskilling.

There has been a cascading effect as well. Over the years, the *saathis* have started playing a vital role in community welfare while associating themselves with various local social development initiatives. They have helped increase awareness about health and nutrition, especially for pregnant and lactating women, contributed to water, sanitation and hygiene solutions, and brought menstrual hygiene issues to the foreground. Also, in these pandemic times, more than 60,000 *saathis* across 15 states have educated villagers on Covid-19 safety protocols.

### Down with gender barriers

From a social perspective, too, the programme has delivered change. Traditional gender barriers have been lowered and the *saathis* are now able to reach and teach more people. The upshot is that rural communities in the programme’s coverage areas have a better understanding



Ragini Kumari (right), also an Internet *saathi*, teaches the Madhubani style of painting to women in her village in Darbhanga district in Bihar

of how to utilise the net to gain knowledge and to scout for opportunities.

Well past the critical mass point, Internet Saathi has been powered by its own momentum even after the successful completion of the partnership between the Trusts and Google India in December 2019. This unique coming together has been an eye-opener for the Trusts team involved in the programme. “It taught us how to focus on scale and this complemented our knowledge of rural communities,” says Mr Raman.

The more fundamental learning, according to Mr Raman, is how access to the net can have a significant multiplier effect on the standard of life in rural communities. Whether in the form of enhanced incomes, improved awareness of healthcare, a better understanding of educational opportunities for children or employing more productive agricultural techniques, the net can be a force for change. Internet Saathi has shown how. ■

By Priyanka Hosangadi



Swasthya sevikas (health attendants) from 16 tribal villages at the MITRA Health Centre in Kachapaju village

# Healthy haven

**Christian Hospital Bissamcuttack is much more than a hospital — it is a vehicle for community healthcare and social development in Odisha’s tribal heartland**

“I never thought I’d make it,” says Govind Nayak as he recalls his traumatic experience of being stricken by Covid-19 in August last year. Seriously ill, he was brought from his village to Christian Hospital Bissamcuttack (CHB) in Odisha’s Rayagada district and put on respiratory support. Mr Nayak struggled for a month with the virus attack before recovering. When he was finally discharged, the hospital gave him a small farewell and wrote off a part of his bill. “I felt like I was reborn,” says Mr Nayak.

CHB operates in one of India’s most

remote and backward regions and it serves as the main centre of healthcare for the predominantly tribal communities living there. The wider area, known as the Kalahandi-Balangir-Koraput (K BK) belt, is ravaged by disease and destitution and mostly bereft of development, with the vast majority living below the poverty line. Education is scanty and village electrification is a relatively new phenomenon.

CHB stands out as a beacon of hope in this underserved geography, offering locals access to a range of medical services. That’s how it has been ever since Elizabeth Madsen,

a Danish doctor set up the hospital in 1954. The good doctor began by treating patients on the verandah of the local church, a far cry from the full-fledged tertiary hospital that CHB has grown to become.

“We have to be the best we can for everyone,” says 58-year-old John Oommen, CHB’s medical superintendent. “Despite being in one of India’s most deprived regions, we have been providing the best of healthcare services to some of India’s most marginalised people at a fraction of what comparable hospitals in the country charge.”

CHB is now a 350-member institution, with its own nursing college and a community development arm called MITRA (Madsen’s Institute for Tribal and Rural Advancement). The Tata Trusts have been long-standing supporters of the hospital, not least for its commitment to caring and community health, and the high standards it brings to the task.

The Trusts first joined hands with CHB in 2010 to combat malaria, which accounted for more than one-third of all deaths in the region. Conditions were perfect for the disease to thrive: dense forests that are breeding grounds for mosquitoes, low levels of health awareness, poor living standards, and minimal health resources and infrastructure.

### Combating malaria

MITRA and the Trusts collaborated on a community health intervention in the 2010-13 period to deal with the malaria menace. They were armed with a five-point plan to combat the disease: building awareness, providing mosquito protection aids, training communities in vector control and prevention of breeding, setting up infrastructure for early diagnosis and primary treatment at the village level, and monitoring and tracking of results.

The programme covered more than 150,000 people living in 630 villages,

spanning four districts of the KBK belt. Workshops were conducted across the region to educate village communities about malaria. Volunteers from 10 NGOs – selected by the Trusts and trained by MITRA – helped roll out awareness programmes. Mobile clinics and primary care points were set up in remote villages to facilitate early testing and diagnosis, especially in children.

Medicated mosquito nets and neem-based repellents were provided to villagers. ‘Mosquito proofing’, which involves netting of village houses to prevent mosquito entry was also undertaken. So well did this idea take shape that MITRA is now advocating for it to be adopted for nationwide implementation.

Over time, the programme’s efficacy fostered a people’s movement against malaria. The impact has been clear. In CHB’s catchment area of Rayagada



Dr John Oommen (wearing spectacles) conducts a session in Togapodhar village to promote science among tribal youth



Celebrations to mark the completion of 20 years of the MITRA Residential School in Kachapaju

## A friend for life

**M**ITRA, the acronym for Madsen's Institute for Tribal and Rural Advancement, means friend in Hindi. For the Kalahandi-Balangir-Koraput belt's tribal communities, the institute has been that and lots more.

Named after Elizabeth Madsen, the Danish doctor who established Christian Hospital Bissamcuttack (CHB), MITRA's community-focused efforts cover healthcare, education and livelihoods, and they have benefited more than 13,000 tribals living in 53 nearby villages.

MITRA, which was set up in 1990, has been involved in a variety of initiatives: village clinics, adult literacy and other education projects, tree plantation activities, training local youth in community healthcare, and malaria-control campaigns.

In 2000, MITRA set up M-TRU (MITRA Training and Resource Unit) to amplify its knowledge and experience in community development. M-TRU conducts training workshops in community health for NGOs, government bodies, etc. Roshni, another

successful intervention, targets adolescent girls and is all about personal health and hygiene. Over the years, these training programmes have helped doctors, healthcare workers, community leaders and others in multiple ways.

CHB's nursing school, operational since 1978, offers the auxiliary nurse midwife and general nursing and midwifery programmes for women. In 2018, the hospital set up a college of nursing that has a four-year graduate programme.

On a different tack is the MITRA Residential School in Kachapaju, which is operated and managed in partnership with 16 villages. The school has a curriculum rooted in tribal culture and the medium of instruction is the local language, Kuvi.

One of the school's standout pupils is Mitra Gogeranga. Born in a village that got electricity just five years back, she is now studying for her medical entrance exams. "I want to become a doctor and inspire other children in my community to dream big," she says. ■



Sister Jyotsna, a community health nurse with Christian Hospital Bissamcuttack, during a screening drive of tribal villagers

district, the malaria parasitemia rate in children below age five came down from 58.6% in 2010 to 15.9% in 2014.

Consequently, the mortality rate for children aged five years or under, for the same period, came down from 138.7 per 1,000 births to 92.7. Deaths after the onset of fever reduced from 3.8 per 1,000 people to 1.8.

### Expanding to good effect

The next big partnership between the Trusts and CHB got going in 2014 and this was to ramp up the hospital's facilities. The need for it was acute. As the only hospital offering specialised care in a 200-km radius, CHB was getting overwhelmed. Over a five-year period, CHB built new infrastructure and renovated the existing facilities on its 16-acre campus to emerge better equipped to cope with its care burden.

CHB now has a new OPD area, three new operation centres and an emergency care department. Alongside a raft of other refurbishments, the institution also improved its campus roads, sewage

systems, residential quarters and waste disposal mechanisms.

"Perhaps the revamp project was preordained," says Dr Oommen. That remark refers to the fact that less than a year after the new facilities were in place, Covid-19 hit India. CHB was able to create isolation centres and Covid care zones, and the Trusts pitched in with protection kits and guidance for a testing centre.

The enhanced setup that CHB can bank on has made Dr Oommen confident about the future. He believes the extended region will soon be able to shed its backward tag and he is quick to acknowledge the role of the Trusts in helping with the change.

"More than a benefactor, the Tata Trusts have been our friend," adds Dr Oommen. "We are two like-minded organisations that have come together to generate ideas, to implement them and, thereby, to improve the lives of the tribal community here. It has worked brilliantly." ■

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*By Jairam Pai*



For Sarita Desai (right) and her daughter Ribika from Sakri village in Maharashtra's Dhule district, a biogas stove at home means less of drudgery

# Sunshiny way

**Renewable energy solutions at the village level are powering up the lives of poor farmers in four Indian states**

**J**auna Majhi uses words such as 'contented' and 'confident' to describe how she feels about being a farmer. That makes her different from the majority of Indians dependent on agriculture for a living, and there's a good monetary reason for it. The 36-year-old earns in excess of ₹100,000 annually by cultivating green chillies, bitter gourd, cauliflower and other vegetables on her quarter-acre plot in Gaduan village in Odisha's Keonjhar district.

Ms Majhi's happy state of mind is relatively new. Farming, for long the mainstay of Gaduan's women, used to involve weeks of hard labour with very little reward to show for it. Earnings were poor

because the land could be used for the cultivation of only one crop during the kharif season (when sowing is done ahead of the monsoon for an autumn harvest). "We had to put in backbreaking labour and the harvested crops earned us meagre incomes, barely enough to sustain ourselves through the year," says Ms Majhi.

Things started looking up for Ms Majhi in December 2018 when she and nine other members of the Biswa Marang Buru self-help group (SHG) decided to pool in money for a tilt at renewable energy. With the backing of a welcome supporter, the women installed a 3HP solar pump and that proved to be a gamechanger.

The solar water pump ensured better

water supply to irrigate the fields. Where earlier they could grow crops for only two to three months during the kharif season, now the women have the water to grow horticultural crops for nearly 10 months of the year. The increase in yield has led to consequent improvements in income levels. In 2020, the earnings of Ms Majhi and her SHG collectively stood at ₹457,000.

### Renewables for a better life

The solar water pump idea that brought about this dramatic change in the lives of Gadaun's women is part of the Tata Trusts' decentralised renewable energy (DRE) initiative. The programme banks on off-grid renewable energy solutions to enhance incomes and the quality of life of rural communities.

DRE systems are characterised by small energy-generation units that deliver energy to individuals or small groups of customers. Environmentally, socio-ethically and economically sustainable, these systems supplement the grid power

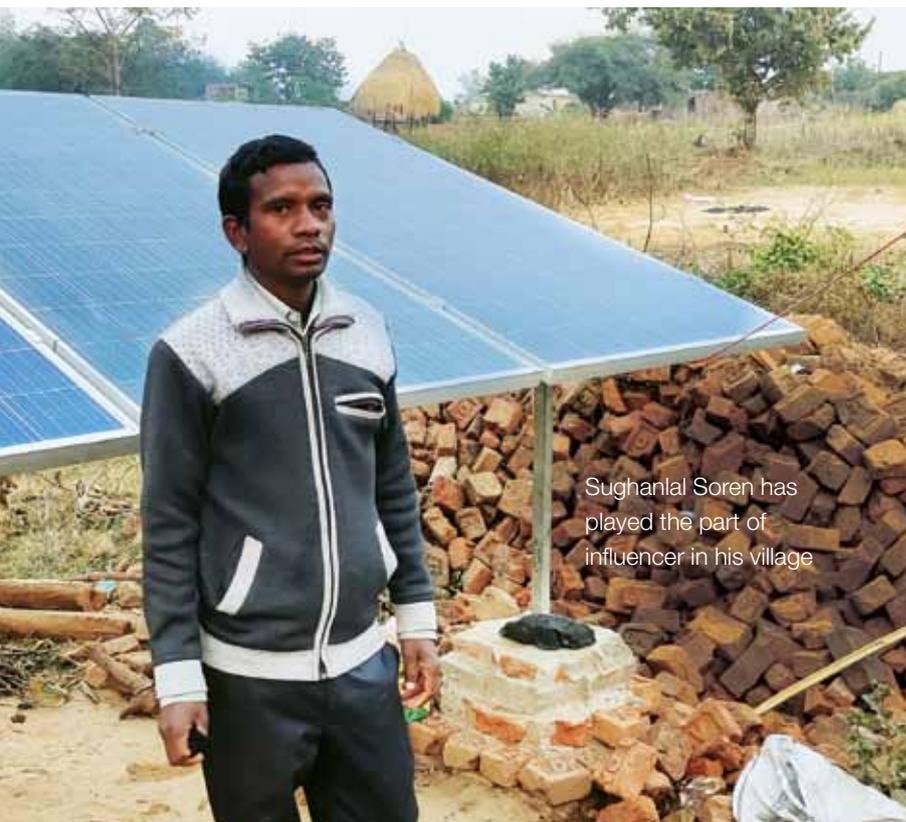
in villages with solutions than can be customised. The DRE way helps democratise energy access, reduce inequality and make communities self-sufficient.

Implemented by the Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Trusts, the DRE project has been rolled out across Jharkhand, Odisha, Maharashtra and Gujarat as part of the broader Lakhpati Kisan programme. Loosely translated as a farmer who earns ₹100,000 a year, Lakhpati Kisan has done sterling work in lifting tribal and other underprivileged communities out of abject poverty through agriculture-based livelihood interventions. Besides the four states, the project has been implemented in Rajasthan too.

“DRE acts as a ‘plug in’ within the existing value chain through the replacement or transformation of energy systems,” explains Ayan Deb, an area manager with the Trusts. “For instance, we look at replacing diesel pumps with solar-powered



A CInI staffer interacts with farmers in Kumbhalgarh (in Rajasthan) who have pooled resources to install a solar water pump



Sughanlal Soren has played the part of influencer in his village

## For self and village

**F**or the residents of Chanaro village in Jharkhand's Hazaribag district, a good profit was not a term easily associated with livestock rearing. Despite being just 20km from the district headquarters, livestock farmers here had a hard time finding veterinary support and medicines when their animals fell sick.

Sughanlal Soren, a resident of Chanaro, burned a hole in his pocket when he called a veterinarian to treat his cattle. It proved to be a wake-up call for the 45-year-old, who decided to shift track and become a livestock service provider with solar by his side. "This has helped me look after my own livestock as well as serve the needs of the villagers," he says.

Mr Soren decided to install a solar-powered vaccination chamber, a decentralised renewable energy solution promoted by CInI under the 'sustain plus' initiative. The vaccination chamber ensures the right temperature for Mr Soren to stock the livestock medicines and vaccines needed in Chanaro and nearby villages.

Investing in the solar-powered solutions has provided Mr Soren with a steady income. And the ready availability of medicines has encouraged Chanaro's villagers to take up livestock farming to boost their income from farming. ■

ones. The programme helps reduce recurring costs on diesel and electricity and farmers save valuable time as well."

CInI promotes the concept of agriculture production cluster, wherein pre-production, production and post-harvest to marketing are undertaken in clusters of contiguous villages. The DRE solutions act as a crucial accelerator and gap filler within the existing value chain and helps the villages to turn 'Lakhpati'.

To accelerate the adoption of DRE solutions, CInI has developed 'sustain plus', a platform to catalyse social, economic and environmental impact. It endeavours to scale DRE solutions and strengthen livelihoods for rural and tribal communities.

The main deal for sustain plus is replicating known solutions on the ground and at scale. "We spur collective action with a clear focus on capital aggregation, allocation, programme management and knowledge sharing across organisations and geographies. The focus is to scale up known technology solutions through innovative financial modeling and bringing in technology service providers to carry on services post installation," says Mr Deb.

### Solar serves every purpose

The DRE range covers a gamut of rural applications. The solar pumps that have made life easier for Ms Majhi and her SHG is one of the farm solutions in its basket. Solar energy is also used to create other applications, such as for vaccination refrigerators and carriers, cold storages, lighting and solar-powered drinking water.

Solar-powered cold storages — which reduce post-harvest losses and help secure better prices for produce — have proved to be a winner for farmers in Jharkhand and Gujarat, while sewing machines that run on solar have enabled many women in the programme to become self-employed tailors.

'Waste to energy' is another innovative



Villagers in Rajasthan inspect plans for a solar pump based water supply scheme

solution promoted under the programme. The project, which has been an income generator for women in Maharashtra's Igatpuri-Trimbakeswar subdistrict, involves collecting biogas slurry from individual farmers and, from it, producing phosphate-rich organic manure to replace the standard chemical fertilisers. Better for the soil and cheaper for farmers, this organic fertiliser push can become a bigger success if implemented on a larger scale.

While DRE comes with a host of benefits, there are challenges in scaling up. Harnessing solar power for rural development involves high capital investments. A solar water pump with capacity ranging between 3HP and 5HP is priced between ₹200,000 and ₹300,000, which puts it well beyond the reach of small farmers. That means arranging for finances from outside sources.

CInI has stepped in with support by devising financial models that make it affordable for beneficiaries. In the mix are grants, loans and available government subsidies, with loan products tailor-made for those in need of money to go solar.

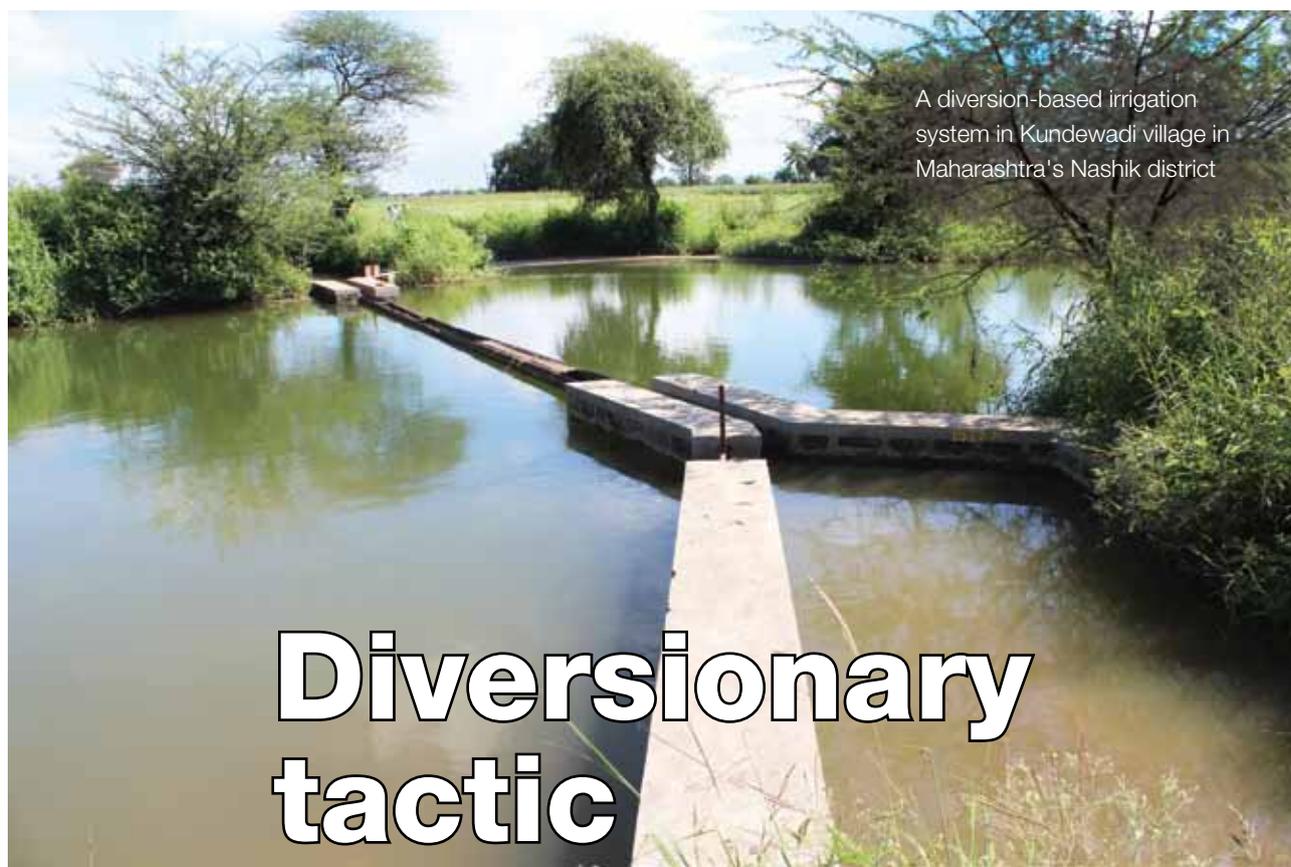
The greater goal is to foster an ecosystem that ensures the long-term sustainability of the solar solutions. And this goes beyond technical and financial aid to include ways and means of maintaining the equipment. The last is important because lack of service personnel for repair and maintenance was a stumbling block preventing villagers from taking the greener route.

One challenge that CInI has converted into a livelihood opportunity involves technology service providers. Local youth have been trained for the job, mainly for the upkeep of the solar equipment. This has turned out to be a win-win for the larger community. Youth from villages have found gainful employment and a steady source of income while the villagers who have installed solar solutions are assured of quality maintenance and service.

The DRE promise, ultimately, is about getting farmers and others in the five states where the initiative is being implemented to make the switch to solar. As Ms Majhi has discovered, there is a sunnier side to life. ■

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*By Samod Sarngan*



A diversion-based irrigation system in Kundewadi village in Maharashtra's Nashik district

# Diversionary tactic

**More than 9,000 farmers in 229 villages of Maharashtra have been boosted by a water-centred breakthrough**

**D**ogha More remembers the period when cultivating his farmland was laborious and frustrating. Water was the worry for the 61-year-old from Umrane village in Maharashtra's Nashik district, with lack of irrigation facilities and poor soil health forcing him to cultivate millets on his 1.5-acre spread. Low yields and paltry profits constantly left Mr More struggling to provide for his 10-member family through the year.

That was two years ago, a time when Mr More and his wife had to double up as farm labourers to try and make ends meet. Then a change of fortune fuelled by solutions focused on water — its availability, quality and conservation — showed Mr More and more than 9,000 farmers from 229 villages in Maharashtra's

Nashik and Ahmednagar districts the way to a better future.

Paving the path for Mr More and other farmers was the 'water resource development and management' (WRDM) initiative, launched and implemented by Yuva Mitra, a nonprofit, with support from the Tata Trusts and other stakeholders. There are three interlinked pillars in this programme: diversion-based irrigation (DBI), desilting of water bodies and strengthening water user groups under a sub-project called Jalsamruddhi (or water prosperity).

## **Security and self-reliance**

"The Trusts' overall objective is to promote water security by addressing supply and demand management of water and make villages self-reliant for their water needs.

The project with Yuva Mitra focused on reviving and maintaining existing water structures to ensure water availability for both drinking as well as irrigation purposes,” says Mallika Jagad, programme officer with the Trusts. “This partnership has strengthened our interventions in the water sector to create integrated and

sustainable livelihood options for the communities in our areas of operation,” explains Ajit Bhor from Yuva Mitra.

The DBI component, which took off in 2007 to revitalise the irrigation system along the Dev river, provided a simple and economical method to direct water from rivers and streams to adjacent cropping



Eknath Pawar, a beneficiary farmer from Sonambe village in Nashik, in his capsicum field

## Paucity to adequacy

The ‘water resource development and management’ initiative has helped more than 9,000 villagers in the districts of Nashik and Ahmednagar



**39,423**  
number of  
beneficiary  
families



**229**  
villages  
in the  
programme  
spread

## The impact

- **Desilting** has enhanced water storage capacity, improved groundwater levels and made nearly 6,500 acres of barren land fertile
- **Diversion-based irrigation** has revived canal systems, increased the area under cultivation and upped farm productivity
- **Water user associations** have been instrumental in making villagers aware of their rights and responsibilities, rules and regulations



Mandabai Shelke, from Sinnar Vajivaran village in Nashik district, is among the farmers who have benefitted from the WRDM programme

areas through an elaborate network of canals and sub-canals.

Some of the canal systems in the region were developed during the British colonial rule in the late 19th century. Neglect and lack of awareness about their importance had rendered these systems defunct over the years, resulting in a decline in groundwater levels and ecological degradation. Under the WRDM programme, 22 canal systems have been revived along the Dev and Mahalungi rivers, benefitting some 4,000 farmers in Nashik's Sinnar subdistrict.

But DBI by itself was never going to be enough. Silting had reduced the storage capacity of the water bodies in the two districts and this was a problem that had to be settled. Jalsamruddhi, launched as a pilot in drought-prone Sinnar, saw desilting being carried out at 51 dams in 31 villages in collaboration with the district administration.

### **Community counts**

The success of the pilot led to Jalsamruddhi being extended to other subdistricts of Nashik and Ahmednagar districts. A total of 285 sites were cleared of silt under a project that has been an excellent example of public-private partnerships, with the community placed at the heart of the solution.

Desilting the water bodies was no easy task. It required effective planning, a good understanding of topography, mobilising the community and working within a tight budget. Farmer meetings were convened to convince people about the idea and its objectives, and desalination committees comprising farmers were made central to the planning, execution and documentation of the work undertaken. The Tata Trusts' support in providing excavators and funds for maintenance enabled speedy desilting process in the villages.

The desilting work served another cause. The excavated silt, rich in nutrients, more than suitable for cropping, was unloaded in barren farmlands to improve soil fertility. The health of thousands of acres of farmland was restored and this was a boon for nearly 6,000 farmers, Mr More among them.

Besides soil fertility, the reused silt helped in recharging the groundwater table. Setting up 'water user associations' (WUAs) in each village have been critical to the success of the WRDM initiative. WUAs are at the forefront in spreading awareness about managing water resources, educating local communities about their responsibilities with regards to water, repairing and maintaining water infrastructure, and establishing each village's legitimate rights over water use.

### **Covid 19 spanner**

While WRDM has met with considerable success, there have been challenges aplenty in keeping the programme on solid ground, from delays in government approvals to having villagers take ownership of the water bodies. Adding to these challenges was the Covid-19 pandemic, which threw a spanner in the works. But success has been secured thanks to the concerted efforts of everybody involved, not least Yuva Mitra.

The results have been a thirst quencher, with improved groundwater levels, easy availability of water for irrigation and, consequently, an increase in productivity and land prices as well. "Our farms now give us income throughout the year and my family does not have to work as daily labourers anymore," says Mr More. "My grandson is in standard VII and I'm sure he will not have to leave school and work as a labourer to support us." ■

*By Poorva Chavan*



A 'water literacy' meeting in Sonaj village in Nashik district

## **Success by association**

**W**ater rights and the rules and regulations governing water utilisation used to be things the residents of Tisgaon in Nashik district were ignorant about. Not so now.

The village has a water body fed by the Tisgaon dam right at its doorstep, but people here had to face frequent and acute water shortages. While their neighbouring villages managed to reap three harvests a year, Tisgaon's residents struggled to secure even one. The reason: insufficient water to irrigate their fields.

As part of the 'water resource development and management' initiative — backed by the Tata Trusts and implemented by Yuva Mitra — Tisgaon's villagers were mobilised to form a 'water user associations' (WUA). Typically such groups are set up in places where farmers get an assured supply of water from big dams or canal systems. To make them work, villagers have to take ownership of their water resources.

A typical WUA comprises up to 15 committee members, including women representatives. These associations have been formed in 61 villages under the programme. Their primary responsibility is to draw up a water resource development plan that identifies the water resources. Water and agricultural needs are then assessed and the modes to fulfil these pinpointed.

WUAs were the fulcrum in undertaking the desilting process of existing water bodies, a crucial component in the programme. A committee with a director on board was also constituted to help villagers claim, use and manage available water effectively.

Yuva Mitra strengthened the WUAs through training on rights and responsibilities, rules and regulations. The nonprofit's labours soon started yielding results and a good example of this is Tisgaon, where villagers, led by the local WUA, started standing up for their legitimate rights and stopped the illegal drawing of water from the dam. ■



Ajit Mohanty, who operates an electrical and plumbing business, at a construction site near his village, Chatrapur, in Odisha's Ganjam district

# A start is born

**The Nano Unicorn programme has enabled some 300 small and micro entrepreneurs in Odisha to launch their own businesses and find the road to success**

**B**andana Pal did not fancy working for anyone. “I wanted to run my own business,” says the 31-year-old from Kantabanji, a town in Odisha’s Balangir district. Nothing unusual there, except that her middle-class family, with a jobless father and a homemaker mother, needed the secure income a regular job would bring. Ms Pal went one better with a little help from the outside.

Ms Pal, the proprietor of a tailoring business, is one of more than 300 small and micro entrepreneurs from Odisha who have received training and financial support under the Nano Unicorn programme to set up ventures where they are the boss. Self-employment is the credo for Nano Unicorn, which is being implemented in collaboration with the Odisha Skill Development Authority by Tata Strive, a

skill development initiative operating under the aegis of the Tata Trusts.

Tata Strive focuses on skilling youth from economically stressed backgrounds and Nano Unicorn, launched in 2019, is a shining example of the commitment it brings to the task. The path taken by Ms Pal to reach a point where she pulls in about ₹15,000 a month typifies the project's approach and outcomes.

Ms Pal completed a vocational training course in sewing from the Bhawanipatna Industrial Training Institute (ITI) and then attended a 10-day 'mini MBA' programme – as it's called – before receiving repayable finance to establish her tailoring shop. Talent and the ambition to back it up have stood Ms Pal in good stitching stead.

### Setting up powerfully

Ajit Mohanty, a 33-year-old from Chatrapur village in Ganjam district, has relied on similar attributes to go further still. He had done an ITI course to learn the electrician trade and was already earning when he heard about Nano Unicorn. Mr Mohanty seized the opportunity, pooling the loan amount and his savings to launch an electrical and plumbing sales and service centre.

"I wasn't confident about my business earlier but it's different now," says Mr Mohanty. "The Tata Strive training programme enabled me to become more professional in my outlook, and then there was the financial backing I got to start my enterprise." Besides earning in excess of ₹600,000 a year, Mr Mohanty has been able to provide employment to four youngsters. He is not inclined to stop there. "I dream of becoming a big contractor with more than 10 to 15 workers in my business."

Not many in the Nano Unicorn initiative have done as well as Mr Mohanty, but they all have found a firmer footing

with their vocation and their future.

Kamalika Roy has translated her flair for fashion into a growing business in designing and sewing dresses for women; Kartikeswar Bhuyan operates a manufacturing unit for decorative lighting panels that he sells and rents out for



Bandana Pal, who "wanted to run my own business", at her tailoring shop in Kantabanji, a town in Balangir district

weddings and other events; and Sumati Badaik has crashed a male bastion to set up a refrigeration and air-conditioning unit.

The criteria for candidates looking to enter the Nano Unicorn programme are simple. Applicants have to be above 18 (and preferably under 35) and they should

have qualified from a government ITI or skill development institute. Weightage is given to people with business ideas that can lead to employment for more youth.

The training module in the programme concentrates on building a sustainable enterprise. There are capsules on the basics of business, on financial and legal matters and, not least, a dash of life skills education. The big objective of Nano Unicorn is fostering entrepreneurship – and through that additional jobs – for the less well-off in rural India.

Besides the training and the loans, the programme provides applicants with references and connections that can cement and expand their business. This kind of entrepreneurial network is commonly found in urban centres but almost completely absent in rural regions. Nano Unicorn is an effort to help correct the imbalance.

### **No banking on credit**

The loan amounts are modest – up to ₹100,000 – but there's no understating their importance in an environment where institutional financial support is difficult to access. Banks are notoriously slow, if they are willing at all, to lend money to small and micro businesses, and the reality is worse in rural areas. These 'performing assets' do not seem to merit the leg up they deserve.

"Not many banks provide loans easily," explains Ameya Vanjari, who is part of the leadership team at Tata Strive and has been closely associated with Nano Unicorn. "Small and micro entrepreneurs face huge problems in getting that initial credit. It's different once you have the business up and running, and that's what we enable."

There are sundry issues as well that undermine entrepreneurship in the hinterland: the dearth of startup ecosystems of the kind that thrive in some



The Nano Unicorn programme has enabled Gayatri Giri to set up a beauty parlour

Indian cities and precious few structured training programmes for youth, particularly for those outside the mainstream education system.

Tata Strive has since its setting up in 2015 been working to change this situation. “Right from inception, our effort and our mission has been to foster entrepreneurship and community-based enterprises, while enabling jobs alongside,” explains Mr Vanjari. “In Nano Unicorn we started with 49 ITIs in Odisha to create a mechanism whereby we can spot potential entrepreneurs and nurture them. Starting this year, we are reaching out with this opportunity to students of other ITIs and polytechnics.”

### Accommodating canopy

A variety of businesses have found space under the initiative’s canopy, from beauty parlours and clothing outlets to grocery shops and even a unit that makes hand sanitisers. The training programme goes beyond the usual to assist beneficiaries with legal and regulatory procedures.

“Being an entrepreneur in India is easier said than done; you face all kinds of hassles and our training has been crafted to help people deal with these,” adds Mr Vanjari. “We handhold and mentor these entrepreneurs. Once they are fairly well established, they come back to the programme and guide new entrants.”

There are several positives in the Nano Unicorn story, the most prominent being the success it has bred. “We have many small entrepreneurs running profitable businesses, earning well and creating employment opportunities for others,” says Mr Vanjari. “This is heartening to see but we want to scale up and replicate this programme in multiple places. We see a lot of opportunities for that across rural India.” ■

By Philip Chacko



Rahu Bhoje at the grocery store he established through the programme

## And now in Nashik

Similar in concept to the Nano Unicorn initiative in Odisha but dissimilar in its details, the Tata Strive entrepreneurship programme in and around Nashik in Maharashtra banks on the network spawned by Sahyadri Farms, a farmer-centric company that is prominent in the region, to help small and micro businesses get off the ground and establish themselves.

Launched in early 2020, this effort to seed and support rural entrepreneurship in Maharashtra has a 10-day training module that runs along the lines of the Odisha programme. The loans disbursed here are of a lesser order, the pool from which applicants are drawn is wider and the ideas that get crystallised into business ventures are centred on agriculture and its requirements.

“The big difference is the kind of businesses we nurture,” says Ameya Vanjari of Tata Strive. “Many of these are supported by the value chain of Sahyadri Farms and the inputs it seeks: agricultural machinery, seed nurseries, poultry and goat farming, facilities for preserving vegetables and fruits, etc.” Such an ecosystem provides the necessary support and encouragement to these young entrepreneurs.

The demographic is also different in a project where Sahyadri provides the infrastructure to run the business and market linkages as well, with funding support coming from Tata Capital. The plan is to scale up and bring 3,000 budding entrepreneurs into these programmes in Odisha and Maharashtra over the next two years. ■

Chamasingh in Nepal's Bhaktapur district was among the places devastated by the earthquake



# Lending a hand

**The extensive relief and rehabilitation efforts of the Tata Trusts and the Tata group have provided much-needed succour to survivors of the 2015 Nepal earthquake**

**T**he year 2015 will remain etched in the collective psyche of Nepalis. It was a time of catastrophe as two horrifying earthquakes over a span of 20 days left the country in shambles and its people devastated.

The first quake, 7.8 in magnitude and with its epicentre 80km to the northwest of the capital Kathmandu, hit on April 25. This was followed by a second quake 17 days later, measuring 7.3 in magnitude and in the area between Kathmandu and Nepal's border with China.

The two quakes left destruction all

around, killing nearly 9,000 people and injuring three times as many. More than 600,000 structures in Kathmandu and nearby towns were either damaged or reduced to rubble and about 2.8 million people were rendered homeless. The total economic cost of the earthquakes was pegged close to \$10 billion.

The Nepal calamity brought the Tata Trusts and the Tata group together in a well-calibrated effort to lend a hand to the stricken. This was the first time the Tatas had set out to organise relief measures in a country other than India, but that did not

deter the team put in charge of relief and rehabilitation operations.

“The sheer extent of the catastrophe and the widespread destruction it caused required an immediate response, initially as part of rescue and relief efforts, and then to rehabilitate survivors,” says Arun Pandhi, director, programme implementation, at the Tata Trusts.

It helped that the Tatas had a disaster response framework in place. In 2014, a year before the Nepal quakes, a dedicated disaster management team had been set up as part of the Tata Sustainability Group (TSG), with the mandate to coordinate a unified Tata response to disasters. In times of disasters, this team helps coordinate the work undertaken by volunteers from different Tata companies.

### Team for the task

The TSG disaster management team was among the first to reach Nepal in the wake of the quakes. Its mandate was three-fold: extend support to ensure wellbeing, organise the distribution of relief material and set up shelters for survivors.

The team assembled in Nepal and was soon neck-deep in work, distributing relief kits to the affected, providing trauma counselling to families and delivering wholesome food to prevent malnutrition and reduce the risk of disease. The food part was crucial.

“With roads and supply lines disrupted, there was a shortage of food material,” recalls Tam Lal Pokharel, area manager with the Trusts and a member of the disaster relief team. “Even where food was available, people were often forced to cook in unsafe conditions, close to open drains or garbage pits.”

The Trusts set up a community kitchen to provide food to the survivors in relief camps. For this they partnered the Bengaluru-headquartered non-profit,



## Multifaceted support

The relief and rehabilitation endeavours comprised humanitarian assistance in the immediate aftermath of the calamity and, later, help in rebuilding infrastructure



**12,500+**

people supported through outreach



**48,000+**

patients treated at medical camps



**1,500+**

families provided with trauma counselling



**1.4 million+**

meals distributed to the needy



**7**

quake-resistant school buildings constructed



**8**

health posts set up to cater to about 10,000 rural population



Students at the Kupakanya secondary school in Balephi participate in an activity to promote good hygiene practices

## Back to schooling

**F**or Pema Lama, a standard IX student from Shree Marming Secondary School in Nepal's Sindhupalchok district, going to class was something she had started to detest. It got worse after the 2015 earthquake brought down the school building. Pema and some 200 others like her had to study in makeshift classes put together with tin sheets and bamboo poles.

"Our school was destroyed and everything was lost, including our library and the science lab," says Pema. Shortage of funds and space constraints meant only a bare minimum of classes were conducted. The fun part of school life — games and library sessions — was gone.

Close to four years after the quake, Pema and her schoolmates have finally got a new building to continue their education in, with Shree Marming

among the seven schools reconstructed with support from the Tata Trusts.

The new school buildings are quake-resistant and they have separate toilets for boys and girls, hand-washing stations, waste collection pits, etc. The improved ambience has led to a rise in attendance. "Absenteeism is negligible now," says Netra Prasad Timilsena, principal of the Shree Jalpadevi Secondary School.

The training sessions conducted as part of the water, sanitation and hygiene project have helped improve the general health of the students and the school staff. "I am confident that this programme will not only improve health but also lead to better learning outcomes for our students," says Phul Bahadur Tamang, principal of the Shree Kupakanya Secondary School. ■

Akshaya Patra Foundation, which runs India's largest midday meal programme. For effective local implementation, the Trusts roped in Siprodiyan Sahayata Sanstha, the corporate social responsibility arm of Siprodi Trading, the biggest distributor for Tata Motors' vehicles in Nepal.

A huge kitchen in Kathmandu valley

provided meals for more than 9,000 homeless families. Over time, the kitchen served in excess of 1.4 million meals to survivors living in 17 shelter camps set up in Bhaktapur and Kathmandu districts. The Trusts team ran the kitchen successfully for three months.

Running the kitchen was a tricky task

and keeping the supply chain running the toughest challenge.

“Nepal was new territory for us and we could not entirely replicate what we knew from managing similar operations in India,” adds Mr Pokharel. “The food menu had to suit the Nepalese palate and local cooks had to be hired. In fact, local resources were the key for us.”

With immediate relief measures taken care of, the Trusts team moved to the next phase: rehabilitating the survivors. Sindhupalchok, among the districts worst affected by the quakes, was ground zero for this component of the endeavour, with the focus on rebuilding public infrastructure, specifically schools and healthcare centres.

### Schools and health centres

Seven new quake-resistant school buildings have been constructed in Sindhupalchok, on sites that had been little more than debris. The new schools will provide a safe learning space to about 2,600 students and more than 10,000 individuals will benefit from the health centres. The team has also reconstructed eight health outposts, one in Sindhupalchok and seven in Dolakha.

Alongside the building of infrastructure, the Trusts also rolled out a water, sanitation and hygiene programme in the schools of Sindhupalchok to improve child health. The team also set up *anganwadis* (childcare centres) and libraries. “The intent was to provide a completely new set up for the children and to bring about change,” says Mr Pokharel.

It’s been over six years and the reconstruction efforts in Nepal are still continuing. “While designing the programme we estimated that three years would be sufficient to complete the targeted activities,” explains Mr Pokharel, “but approvals in Nepal and India took considerable time and there were delays because of monsoons and bad weather.”



Activity time at the Shree Marming School in Sindhupalchok district

The Trusts’ rebuilding activities were initially concentrated in towns and urban areas and this meant that work in the remoter parts of the country took time to take off. That’s the reason the Trusts are extending their engagement in Nepal. With additional funding support, construction and education support activities in five additional schools are on the drawing board.

The relief and rehabilitation efforts have made a difference to the lives of those the Trusts have tried to support. For Niraj Timalisina, a student from Shree Kupakanya Secondary School in Sindhupalchok, the new school building and the improved education standards offer a chance to build a better life. “We feel comfortable and secure now,” he says. ■

By Samod Sarngan

# BEE-ING THE CHANGE



Biddika Simmayya,  
from Seethampeta  
village in Chittoor,  
with his honeycomb

**It began in Andhra Pradesh's Kurnool district back in 2017 as a pilot project in beekeeping and has progressed to a point where the money from the honey has benefitted nearly 3,000 farmers. With support from the Vijayavahini Charitable Foundation, an associate organisation of the Tata Trusts, these farmers have banded together to create a high-quality product: Aranya-Pure Chittoor Honey. Now centred in Chittoor district, the initiative enables beneficiary families, most of them from poor backgrounds, to earn ₹300-400 for a kilo of honey. Their hard work is comparable to that of the bee itself, a marvellous flying machine that is among the world's most industrious and efficient creatures.**



Midde Lakshmi checks the queen bee and the egg strength in the colony. As the only female with fully developed ovaries, the queen bee plays a vital role in the hive. She lays lots of eggs and produces the chemical scents that help regulate the unity of the colony



Ruby Selvi (extreme left), Puliganti Geetha, Midde Lakshmi, Bommi Venkatamma and Mesha Rajeshwari, beekeepers from the Venkatagirikota area of Chittoor, have formed a farmer producer organisation and are members of its board



The bees are reared scientifically and best practices are followed along every step of the way. In the Narayanavanam area seen here, the bee boxes also help in pollinating the mango trees of local farmers



R Venkatesh, a beekeeper from Palamaneru, inspects a beeswax sheet to ascertain the health of his colony



Puliganti Geetha uses a smoker as she prepares to harvest honey from the hives. The smoke wards off the bees, allowing the beekeeper to harvest the honey in relative safety



Ruby Selvi uses a honey harvester to secure the sweet gold from the beehives. Being part of a farmer producer company helps these women — also seen are (from left) Puliganti Geetha, Mudde Lakshmi and Nimmaka Devamma — get a better price for their produce

# ‘Every country has to find its own unique solutions’



Being a social scientist in these discordant times is not, contrary to what some may believe, cause for despair. It is certainly not for **Ravi Srivastava**, currently director of the Centre for Employment Studies at the Institute for Human Development in Delhi. One big reason, perhaps, is the canvas he gets to work on — India, with its overload of social issues and societal dynamics.

Labour and employment, agriculture and rural development, migration, the informal sector, and land reforms — Prof Srivastava has covered a lot of ground over the course of a career that has seen him serve at the Jawaharlal Nehru University, Delhi, and at the Institute of Development Studies, Jaipur, while also being involved with several national and global organisations.

A prolific writer and researcher, Prof Srivastava speaks here with Philip Chacko about the state of social development in pandemic-hit India, migration and its changing patterns, and the path of social and economic development that may work best for the country.

*Edited excerpts from the interview:*

**How much of a hit has social development as a whole taken in India due to Covid-19? How far back has this pushed the country on critical human development indices?**

The pandemic’s impact on social development in India can be compared, in a way, to the impact of AIDS at its peak on the African subcontinent, and maybe it’s even worse. If you look at incomes as a proxy for employment and living standards, they have probably declined for close to 90% of households in one way or another, and the decline is very, very sharp for the bottom 70%. That means up to 350 million people could have been pushed below the poverty line.



In Dehradun in Uttarakhand, migrant labourers returning home during the first wave of the Covid-19 pandemic

There has been a huge impact, as well, on the health front for different sections of society, particularly in the second wave. In education, there has been a limited shift to online but what stands exposed is the digital divide that has resulted in so many children being left out.

Inequality has increased during this period; income inequalities have increased and so have regional inequalities. States with superior social infrastructure and policies have been better able to withstand the fallout of Covid-19. Kerala, with its social infrastructure and community structures, stands out in this regard. Tamil Nadu has not been too far behind and Odisha, among the poorer states, has shown more resilience.

**The pandemic has exposed our health setup and our education system is in about as much a mess, and these are the two building blocks of social development. What should India's priorities be in coping with the challenges here?**

What has happened is that in a number of spheres we have followed mainstream development models and the trajectories of developed countries. We have not looked closely enough at the pattern of historical transition in these developed countries. We moved rapidly towards privatisation in health and education without correcting the weaknesses in our public health and education systems.

Despite having excellent policy frameworks for education and health, we pursued policies that were detrimental to both, and these stem from the 1980s. We started moving in the opposite direction without correcting the distortions in our public systems and this has created a great imbalance.

***“The reality of people moving to (areas) where higher wages are offered has to be welcomed. It reduces disguised unemployment and it lowers the pressure on agriculture to provide employment.”***

**There are those who say that just pumping in more resources is not going to be a big help, but surely that is where you must begin if your spending on health is barely over 1% of GDP?**

Essentially, in order to get to a universal health system, you have to start at the bottom. This is not a question of funding but about how the system is set up, how doctors are oriented to provide quality care and how the whole governance apparatus operates.

**How different is the rural-to-urban migration phenomenon in India from the pattern seen in now-developed countries?**

Mainstream development economists like myself see the rural-to-urban migration as a good thing. That’s because, in general, economies of scale are rare in rural and agricultural areas, and average productivity is lower. The reality of people moving to higher productivity areas, where higher wages are offered, has to be welcomed. It reduces disguised unemployment and it lowers the pressure on agriculture to provide employment.

Industrialisation in every country has been fuelled by rural-to-urban migration, the industrial revolution in Britain being an example. Those migrants lived in deplorable conditions for centuries before their condition gradually improved. Now, the difference between that pattern of migration and what we are seeing in India is that ours is not one-way migration. It is not temporary or permanent migration but circular migration, to a large extent.

The nature of livelihoods in industrial and urban areas is such that informal work dominates. People have seasonal access to employment and employers generally provide only subsistence wages. In the circumstances, survival means having a foothold in urban areas and going back home to rural areas, where at least part of the family is. That explains why labour circulation has become an important feature.

**How does this kind of migration affect migrants and their families?**

Firstly, without migration in some form or the other, you cannot envisage urban or industrial growth – absolutely not. I think last year, for the first time, the urban middle classes and industrialists came to recognise this when migrant labour fled cities and industrialised areas in large numbers. It is then that we understood how critical these people were to the growth and sustenance of urban centres.

Migration of this kind is taking place in a situation where rural and agricultural livelihoods are declining and people are, in a sense, forced to move to urban areas. The employment being created there is of poor quality. Data shows that migrant labourers in urban areas work for an average of 11 hours a day and, of course, most of them do not have any social security. Clearly, this sort of a workforce and this sort of migration not only has implications for migrants and their families but also for industrial growth and productivity.

**What's the optimal way to address the challenges facing the country's informal sector, which provides the vast majority of jobs to Indians but struggles to get the attention it deserves?**

The Indian informal sector comprises roughly about 85% of the workforce. Meanwhile, a large part of those who work in the organised sector are informally employed; they don't have a permanent job and they don't have social security. Overall, including agriculture, this sector makes up a little less than half of the country's GDP.

Broadly speaking, the informal sector is the core of India's economy, but since we insist on looking at economic growth top down, we rarely ever consider the bottom 50-70% of economic activity. What we need to do is recognise the role of the informal sector and give it adequate room and space to grow and to formalise over a period of time, not through penalties but through incentives that will make the transition possible.

**Between agriculture, the services industry and manufacturing, between the informal and formal sectors, between skilled and unskilled, what should India be aiming for to generate employment for its people, now and in years to come?**

The cream of India's economy, which is the large organised sector, will never be in a position to absorb our growing labour force, the reason being that as this part of the economy grows it also gets more and more capital intensive. And now, with artificial intelligence, robotics and all technology coming into manufacturing, these changes are going to become sharper.

Employment will continue to be generated, for sure, either in labour-intensive sectors (which is the informal sector) and the part of the production sector that is at the bottom of the pyramid (small and medium enterprises). The informal sector and small and medium enterprises have the potential to generate adequate employment in order to absorb the additional workforce. But the sad truth is that our policies have not paid adequate attention to one or the other.

Historically, our policies were designed to reserve a part of the economy for the small-scale sector and the informal sector. However, such reservation by itself was never going to be enough. We did very little to incentivise the growth of these sectors, which is why they remained stultified. This state of affairs got worse from the 1990s onwards with liberalisation, when we shifted more rapidly towards the precepts of a mainstream economy and we said, "The bigger the better."

We de-reserved the space for small-scale industries and we also eliminated the minimal services that were available to promote the informal sector. Consider, for instance a labour-intensive sector such as garments and apparel. About 80% of employment here is in the informal sector, a large component at the household level. What we needed to do was upgrade the entire value chain of the business but we concentrated on the very top. Consequently, China's share of the global garments trade,



India cannot afford to turn its back on the public education system

***“...we cannot impose the mainstream model of growth on the Indian economy because our reality is very different, our resource base and skill base are very different, and we are dealing with a world that is very different.”***

once roughly the same as India's, is 10 times as much today. Even smaller economies like Bangladesh and Vietnam have overtaken us.

**What about your hopes of India being able to employ all these people coming into the workforce?**

There has been a remarkable setback to employment in India. Underlying this is the capital-intensive nature of our exports and manufacturing services. Our policy framework has demolished jobs in the informal sector and the small-scale sector, and the pandemic has dealt a near deathblow to the two. The outcome here has been a significant loss in employment and in manpower and labour resources. There has also been a tremendous loss in terms of the declining participation of women in the labour force. Getting back to even reasonable growth in employment is going to take a long time.

We should look at our human resources and fashion strategies of growth that are built around them. Every country has to find its own unique solutions, and these have to be context- and resource-specific.

**Why does the development question so divide people, from political ideologues and academics to economists and social scientists? How do you find a balance?**

When we moved towards liberalising the Indian economy, it was vital and necessary because we had stayed too long in protectionist mode. But in embracing liberalisation we also embraced the basic precepts of the Washington Consensus and, therefore, those of mainstream economics. We started emulating, in relatively quick time, the pattern of economic organisation that came to exist in the United States after many centuries of transition.

We can't be like 17th-century England or 18th-century America, for sure, but we also cannot conflate various eras of structural change, as we are seeing with the Indian economy. In this country we are actually living through a stage where the patterns of the first industrial revolution are overlapping with those of the fourth. We have people with no means and no technology living at subsistence level and we have, alongside, industries that bank on robotics and artificial intelligence.

What we need to recognise is that we cannot impose the mainstream model of growth on the Indian economy because our reality is very different, our resource base and skill base are very different, and we are dealing with a world that is very different. We have to evolve our own pattern of growth, our own model of development. There has to be divisions and there will be divisions, but it could be a healthy division.

**Do you sometimes despair of being a social scientist in India?**

Our job is to understand realities and to advice or offer the best possible analysis that we can at any given time. As a social scientist, you cannot control social or political dynamics. ■



The Qutb Shahi Heritage Park in Hyderabad was restored by the Tata Trusts with the support of the Aga Khan Trust for Culture. Images courtesy the Aga Khan Trust for Culture

# A people's palette

There are many paths to pursue while supporting art and artists in these tortuous times, and this may mean an upending of the way the show has been run thus far

**T**he arts make us whole; they are what endure in civilisations, the intangible that brings life to life.

This is true and one emphatically endorses the rhetoric, but we are at a time when the majority of people in the world cannot even dream of bringing that enhancement to their barely sustainable lives. In the Global South, this is the starting point for philanthropies working in the arts.

A report released earlier this year by the nonprofit Sahapedia states that India's Ministry of Culture has been allocated an average of 0.11 percent of the central government's annual budget over the last decade. This is the reality that informs how the trickle of funds available for the arts is

optimally utilised, how we design programmes and who we design them for, and how we can invest in small, strategic steps that lead to giant realisations.

People and infrastructure are the pillars here. Art is a human construct and practitioners need infrastructure to flourish. Enabling systems are needed to allow for passions, pedagogy and practice to determine lasting expressions.

Currently, in terms of funding, the focus seems to be on the outcome — the event — and the majority of funding is consumed here. This includes festivals, panel discussions, digital output and art products. While one could argue that these are necessary, it cannot be as skewed as it



**Deepika Sorabjee** is head, arts and culture, at the Tata Trusts.

has become, where the cost of actually allowing an art form to flourish is compromised for the 'market'. How should we refocus our attention and why?

Sir Ratan Tata and Sir Dorab Tata, two of the founders of the Tata Trusts, were keen aesthetes. Mandated in their wills to do so, the Trusts have been consistent supporters of the arts in India. In a period as tumultuous as 2020-21 has been, what does it mean 'to support the arts'? Why do we need to in a country where the bare necessities are still out of reach for so many?

In the performing arts, the nature of Indian dance and music, while remaining the same in training and practice, has

undergone seismic changes in the last few decades. Moving from private gatherings and temple grounds to proscenium stages, with ticketed audiences, business patronage and an altered reception of the art itself, a dependency has grown to meet 'market' demands.

Footfalls, ticket sales and sponsorships – metrics that often eschew the quality of art for the acceptance of particular art forms by particular audiences at particular venues – have become the overriding points when any programme is considered. This has resulted in a gradual erosion of inclusiveness in access for struggling performers as well as less-advantaged audiences.

### Investing in people

Establishing an emerging art form or helping preserve a dying one is effectively achieved, as we have seen at the Trusts, when programmes invest in people – teachers and students – over a sustained period of time. Pedagogy supported at institutes has seen students with the Tata Trusts fellowships emerge as professional performers. The pedagogues themselves (practitioners, gurus, teachers), thus, exponentially increased the presence of the practice to its highest degree and, simultaneously, established it as a thriving art form.

The Trusts have never been in thrall to the event, preferring to concentrate on integrity of instruction and sustained support over long phases to establish a critical mass of practitioners. While funding comes easier for art education in school, it is at the tertiary level, where standards are falling or don't exist at all, that urgent support in restructuring curricula or bringing in professional training anew is required to cultivate excellence.

The Trusts' support for conservation across built heritage, art conservation and



India can be the global university for ground-up conservation, given the country's millennia worth of cultural material, believes Ms Sorabjee

film preservation has shown us the challenges that each throws up — whether it be with the paucity of conservators, lack of requisite laboratories and standards in art and film preservation or, for that matter, governance and training that needs revitalisation, as in the case of built heritage.

India can be the global university for ground-up conservation, given our millennia worth of cultural material. But, sadly, there is little structured training with long-term aims of establishing labs or training courses in specific materials. Indeed, awareness among officials and the lay public is fuzzy about what conservation really is.

Through programmes that the Trusts have pioneered, either with funding or design, we hope to show by example the way to not only create a cadre of specialised professionals within the arts but also the economic driver that the arts can be, for both government and the private sector.

The impact of digital technology has been felt across the board in the arts, in conservation, the performing arts, art education and craft. As the pandemic shut down performing venues, exhibition spaces, institutions and sites, the further shift to digital was swift.

The rush to the digital stage, however, has brought to the fore the deep inequities inherent not just in the arts; how economics, education, region and gender can impact access to participation in this digital world, as well as how some programmes cannot have a digital life. Much like doctors who have to be hands-on with their patients, conservators, too, have to be onsite to attend to their patients: buildings and objects.

For so many of us, there was this abundance of art — film, literature and music — made available for free or for an affordable fee. But this required access to

basic equipment, data packages, language or just the permission to partake of it all. It was universal, unfolding across continents, and left us all deeply reflective about the way forward.

It is not easy, especially in countries like India, with deep social and economic divides and diverse languages and customs, to frame inclusion strategies; somebody is bound to be excluded. It must be acknowledged that in now privileging the previously left out, the current actors in the art world may have to sit out some time themselves.

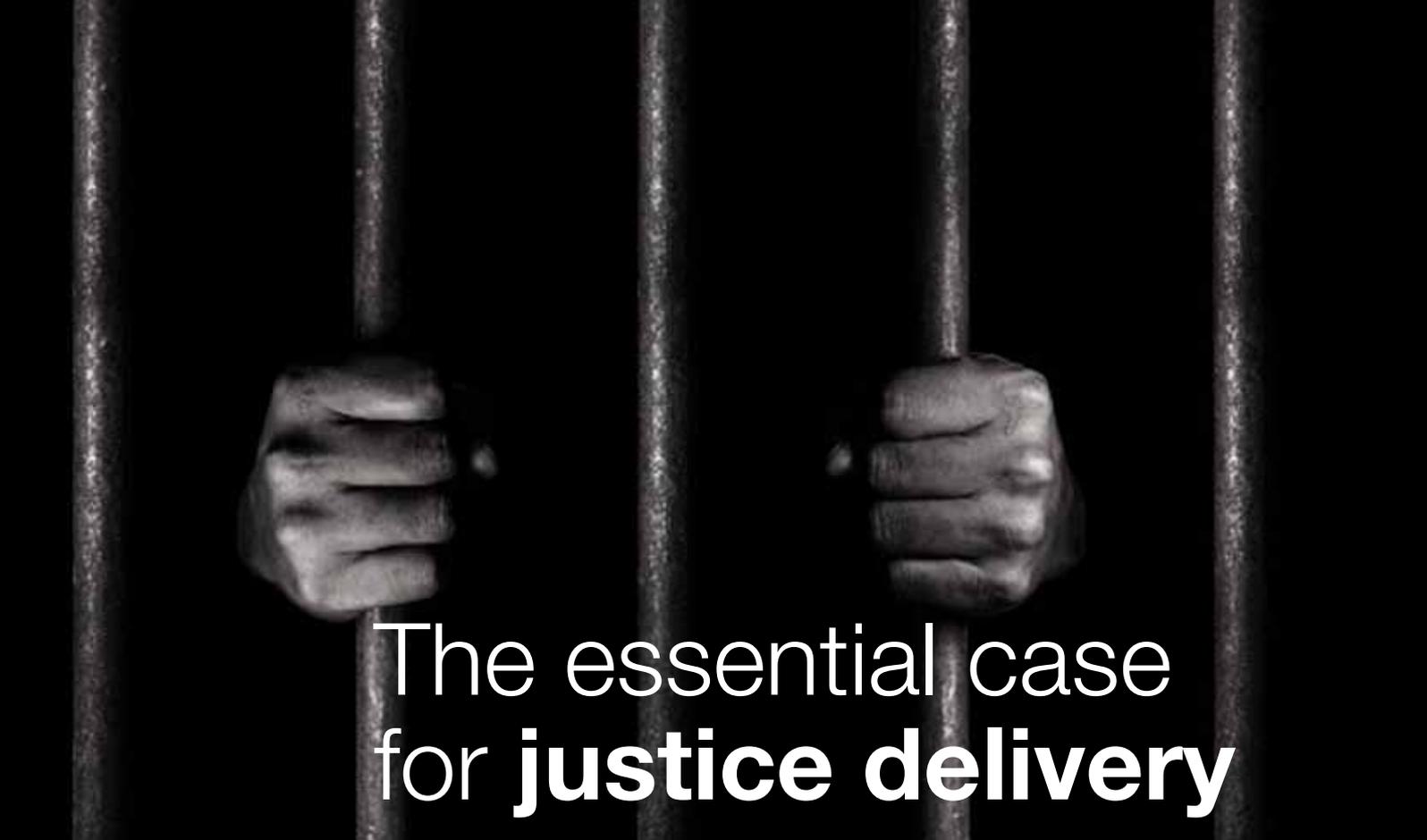
### **A new way beckons**

To feel the struggle of understanding art in another language, sharing programmes between institutions as funds get scarcer, supporting certain regions over others, investing in infrastructure in the arts rather than events — there are many strategies to pursue that may mean upending the ways in which the show has been run thus far.

As the focus shifts to the collaborative efforts of the Global South, it should be ensured that the ‘souths’ in these ‘souths’ are handed the reins. For too long has a certain elite within the ‘souths’ themselves perpetuated the inequities they call out.

Finally, in a country like ours, where art forms exist in abundance, these differences and traditions must be celebrated. Scaling up here has no meaning if that means dilution of differences to suit a universal palate.

The arts in our country cannot be thought of either as one whole or a particular craft blindly scaled up. We need to go back to the drawing board and build the infrastructure, a task that may not be as alluring as a quick-fix art product or event, but one that will more robustly sustain the future of art. ■



# The essential case for **justice delivery**

It's critical to reform India's justice system — and urgently — for the sake of country, community and equitable social development



**Valay Singh** (above) is the project lead and **Niyati Singh** the lead researcher of the India Justice Reports, 2019 and 2020



**A**n unspoken victim of the Covid-19 pandemic, one ailing even before the crisis struck, was India's justice system. The sudden and unprecedented emergency upon us has further exacerbated the inability of the system to deliver, even as the need for fair, accessible and efficient justice has increased manifold.

There has been little public clamour regarding the approach to the lockdown, the reduced functioning of our judiciary, the abuses committed by the police, or the vulnerability of prison populations held in overcrowded enclosures across the country. Viewed as a necessary evil in extraordinary circumstances, the normalisation of violations becomes inevitable. This must not be allowed.

The delivery of justice, as an essential service, is guaranteed through the constitutional promises of 'equality before the law' and 'the protection of life and personal liberty'. As a sovereign function

that cannot be undertaken by any other actor; it is the prerogative of the state to ensure access to justice. Every government, therefore, is duty-bound to provide an impartial, efficient, responsive and accessible justice system to all.

The ability to function effectively during a time of national crisis such as the pandemic lies in working out practical measures at every level and using available spaces and people to their optimum, while minimising the risk of exploitation and harm.

As the second wave of Covid-19 rages through India, it may appear counterintuitive to press on the importance of justice as an essential service. However, justice institutions serve not just those who find themselves directly enmeshed in the system, but also the larger purpose of peace in the community, trust in governance, equity in development, socioeconomic growth and overall prosperity.

Across the world, development

practitioners have realised that the absence of access to justice, equity and equality thwarts development and compromises the path out of poverty. That's the reason for goal 16 of the United Nations' Sustainable Development Goals, which falls under the rubric 'peace, justice and strong institutions'.

The Tata Trusts have worked continuously and for long to improve the quality of life of individuals, particularly the vulnerable and marginalised. Since the pandemic hit, such efforts at amelioration have redoubled.

In 2018, backing up the belief that justice and rule of law are the cornerstones on which the ability to meet socioeconomic developmental endeavours are based, the Trusts supported a unique ranking of India's states on their capacity to deliver justice.

The India Justice Reports (IJRs) 2019 and 2020 rely entirely on publicly available, official data to rank these states based on assessments of the four pillars of the formal justice system: police, prisons, judiciary and legal aid.

### **Tracking and measuring**

The reports measure the level of budgets, human resources, infrastructure, workload and diversity available to these pillars. Importantly, it tracks trends to objectively measure the intention of each government to improve justice delivery annually and over a period of five years.

The intent behind the IJR idea was to create a universal tool that could assist policymakers and official functionaries, particularly at the state level, in plugging gaps in the delivery of justice and enable the engagement of all stakeholders in the effort.

The expectation from any government in times of normal functioning is the fulfilment of demands made by its people

— better infrastructure, improved healthcare and education, access to safe drinking water and a clean environment, among others. To complete this list, we must add improved access to fair and efficient justice.

As the recently released second edition of IJR spotlights, India's justice system has retained its deficiencies even as the country grapples with the devastating second wave of the pandemic. Our findings show that the overall pathologies from the previous report (IJR 2019) have little changed.

Vacancies persist across the board in all subsystems, ranging from 9% to 42%. Of particular concern is the lack of medical staff in prisons. This has gone up by 6 percentage points since 2016 to touch 41%.

With shortfalls that, on average, stand at 30% for high courts and 25% for subordinate courts, the appointment of more judges is a no-brainer. Also, the dearth of senior personnel able to manage courts is showing. Court managers with experience and specialisation will free judges from administrative tasks and leave them to what they do best — adjudicate.

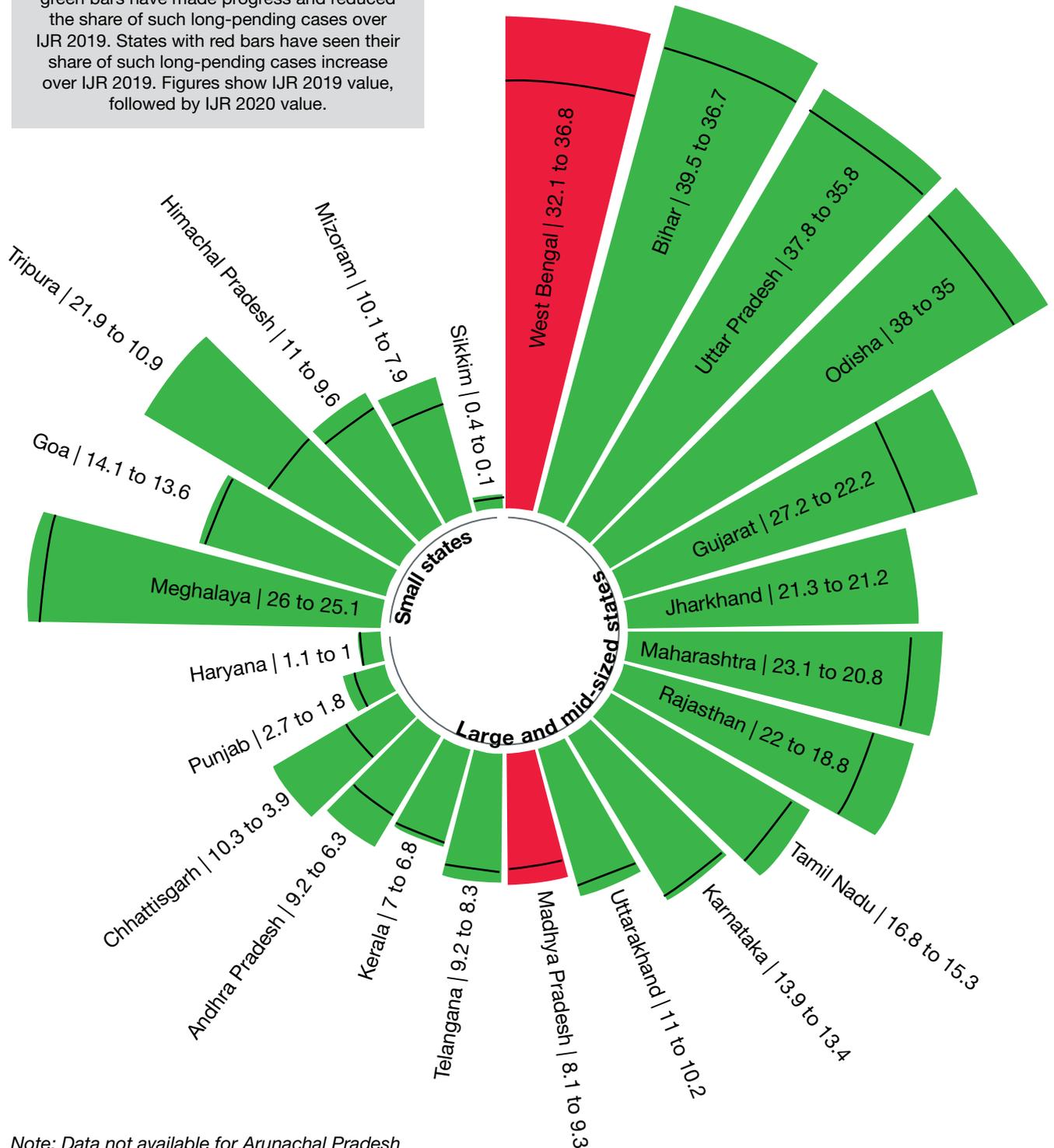
States continue to show scant desire to increase expenditure on prisons; the stated objective of becoming reformatory institutions remains stillborn. The caseload, combining as it does with paucity of judges, poor supporting infrastructure and low budgets, shows an accelerating accumulation. Over 2016-17 and 2018-19, cases went up by 10% in the high courts and by 5% in subordinate courts.

Two years of uncertainty and lockdowns have severely undermined the ability of the system to cope. Given the situation with the pandemic, the justice system may be in an even weaker position to deliver services to ordinary people in the months to come. This is an imminent crisis that needs urgent and immediate addressing.

## Comparing lower court pendency

In 21 of the 24 states ranked here, cases pending in subordinate courts for more than five years have decreased in the last two years. However, in eight states such cases still amount to over 20% of pending cases. The green and red bars signify the extent to which the share of cases pending over five years in subordinate courts have either reduced or increased in states, compared to IJR 2019. In West Bengal, for instance, the share of cases pending over five years has increased by nearly 5% to reach 36.8%.

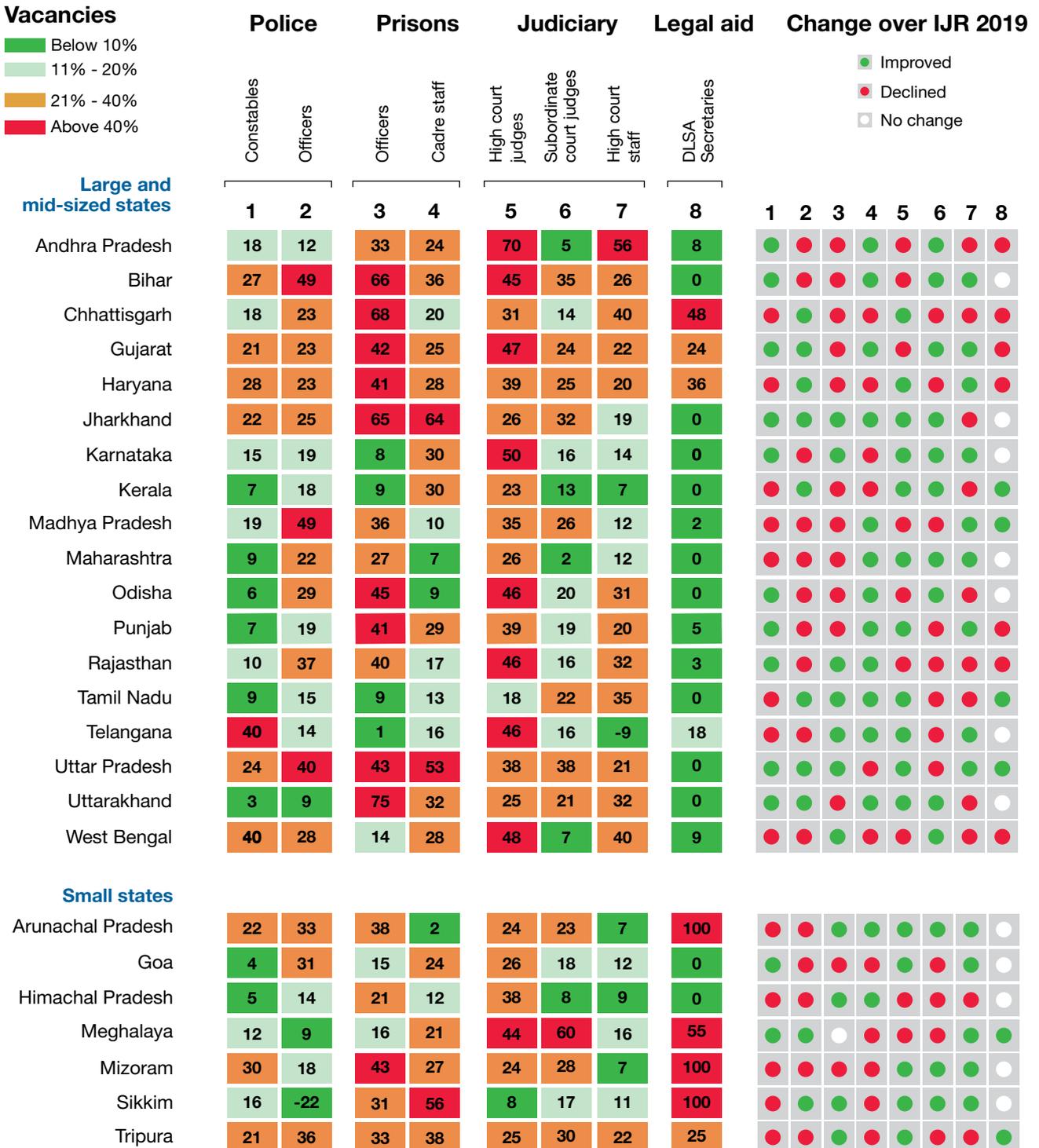
The bars show the share of cases pending in subordinate courts for five years. States with green bars have made progress and reduced the share of such long-pending cases over IJR 2019. States with red bars have seen their share of such long-pending cases increase over IJR 2019. Figures show IJR 2019 value, followed by IJR 2020 value.



Note: Data not available for Arunachal Pradesh  
Data source: National Judicial Data Grid

# How do states fare on vacancies?

We looked at vacancies on eight key personnel counts across the four pillars. Many states, of all sizes, have vacancies that exceed 25% of their own sanctioned strength. The chart pinpoints vacancies across the four pillars and maps the performance of states in relation to IJR 2019.



Data as of January 2020 (for police), December 2019 (for prisons), 2018-19 (for judiciary) and 31 March, 2020 (for legal aid). Source: Bureau of Police Research & Development; Prisons Statistics India; Court News, Supreme Court of India; National Legal Services Authority

Infographics courtesy the India Justice Report.

The public health emergency has brought to light the ailing nature of other systems of the state, which are unable to guarantee that every citizen is entitled to expect under the Constitution. But there is light at the end of the tunnel, though.

### **A conversation with citizens**

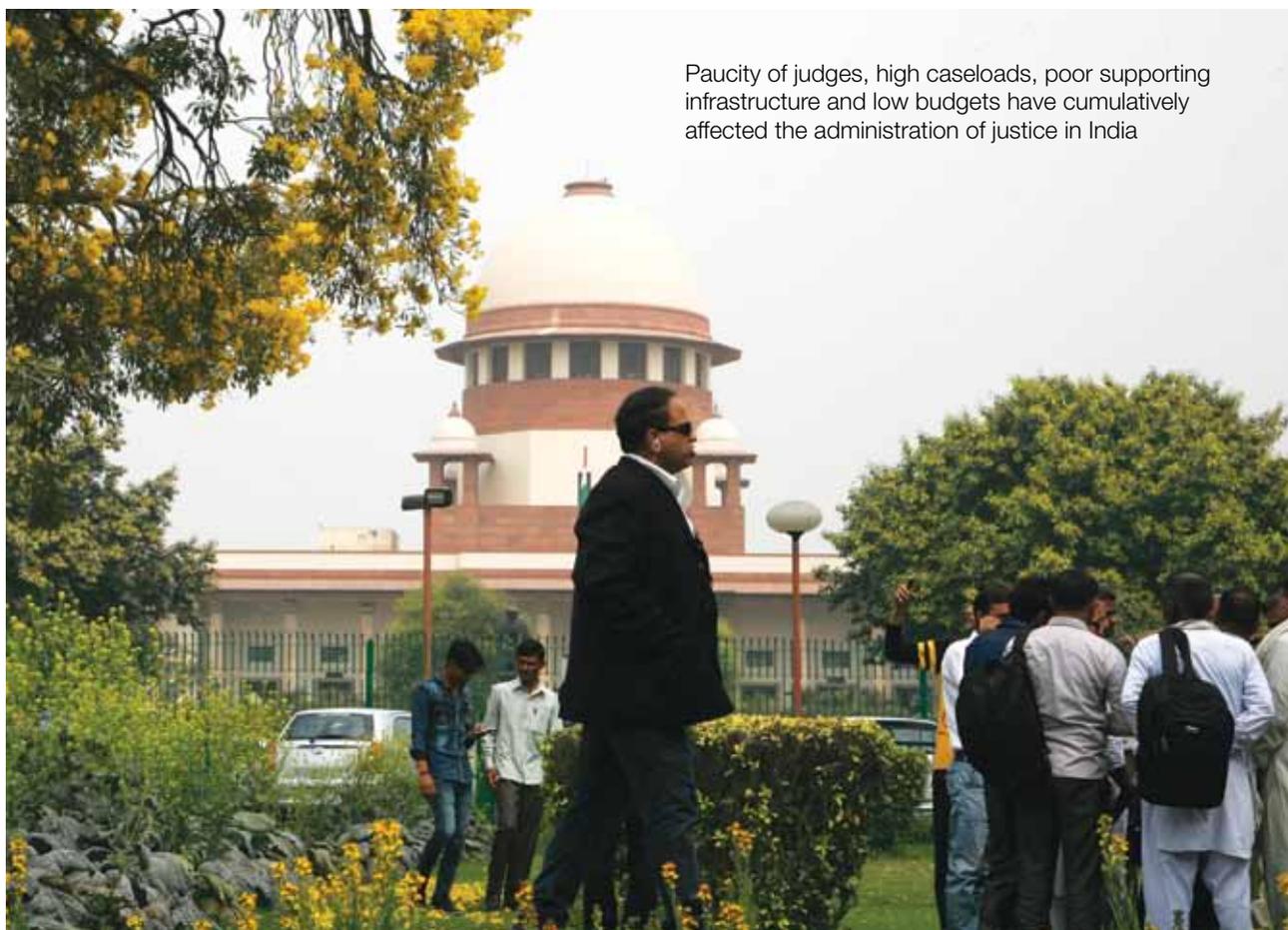
As the Supreme Court has noted, the pandemic should be viewed as an opportunity, albeit unfortunate, to reform the justice system. This could prove a chance to ignite a conversation with citizens on what needs to be done – and can be done quickly – to improve the system; a veritable reset button to shift towards upgraded justice delivery.

Our justice reports facilitate this discussion by offering recommendations to states. There are low-hanging fruits that can

be easily plucked, and the process of doing so will signal the intention to provide a free, fair and efficacious system. Meanwhile, innovations such as increasing the use of technology will create new habits that break away from old practices and work to fix this imperfect structure.

The realisation of all social goals, health and livelihoods included, cannot progress without the assurance of an effective system of justice delivery, one that is easily available to all. If we do not move forward and reform what has remained broken for years, injustice will remain a bitter pill stuck in the public craw. This will eventually lead to the demise of the rule of law and democracy itself.

The declaration of justice services as undeniably essential is the first step in ensuring that all rights, legal and beyond, are upheld. ■



Paucity of judges, high caseloads, poor supporting infrastructure and low budgets have cumulatively affected the administration of justice in India



A village health volunteer conducts a blood test in Odisha's tribal-dominant Kalahandi district

# A time to heal

India's tribal communities deserve far better than what the country's healthcare system and its policymaking have delivered thus far

**T**he Constitution of India recognises the special status of tribal communities – the scheduled tribes, as they are called – and provides safeguards to protect their rights and culture. There are 705 tribes, about 104 million tribals in total (8.6% of the country's population) and they are located in 10 states and in the Northeastern region.

The numbers are sizeable and these are our fellow-citizens, but India's tribespeople have remained on the margins – geographically, socioeconomically, politically and in the national psyche. From the mainstream perspective, tribals

are “those semi-naked wild people who live somewhere in the forests and mountains, and who sometimes appear in the news because their children are malnourished”. Such views damage the tribal cause.

Though it has long been suspected that tribals have poor health indicators and unmet needs, healthcare for them has been neglected. The terrain and environment in which they tend to live, unique social systems, different cultural norms, diverse disease prevalence and higher mortality rates place tribals at a considerable disadvantage.

Not surprisingly, healthcare in tribal areas is an unsolved problem. But how



**Dr Abhay Bang** is a physician and public health researcher who works in the largely tribal district of Gadchiroli in Maharashtra

would the nation know? No separate data on tribal health has been maintained and that has meant a blissful unawareness of the health of tribal people.

The Government of India recognised that it needed to view the health of tribespeople as a serious and special concern and that led to the formation, in 2013, of an expert committee constituted jointly by the Ministry of Health and Family Welfare and the Ministry of Tribal Affairs.

The task before the committee was to provide answers to two questions: what is the present status of health and healthcare in tribal areas and why the gap, and what should the roadmap for the future be to close this gap rapidly.

The expert committee's report – Tribal Health in India: Bridging the Gap and Roadmap for the Future – reveals that tribal people suffered from a 'triple burden of disease'. First, maternal and child health issues and communicable diseases; second, the rising burden of noncommunicable diseases such as hypertension and cancer; and third, mental health problems and addiction.

Though the health status of India's tribals has improved significantly over the past 25 years, they are worse off when compared with other social groups. For example, child mortality in the under-five segment among tribal communities declined from 135 per 1,000 people in 1990 to 57 by 2015. But that's still one-and-a-half times higher than that for the non-tribal population (figure 1).

### Most malnourished

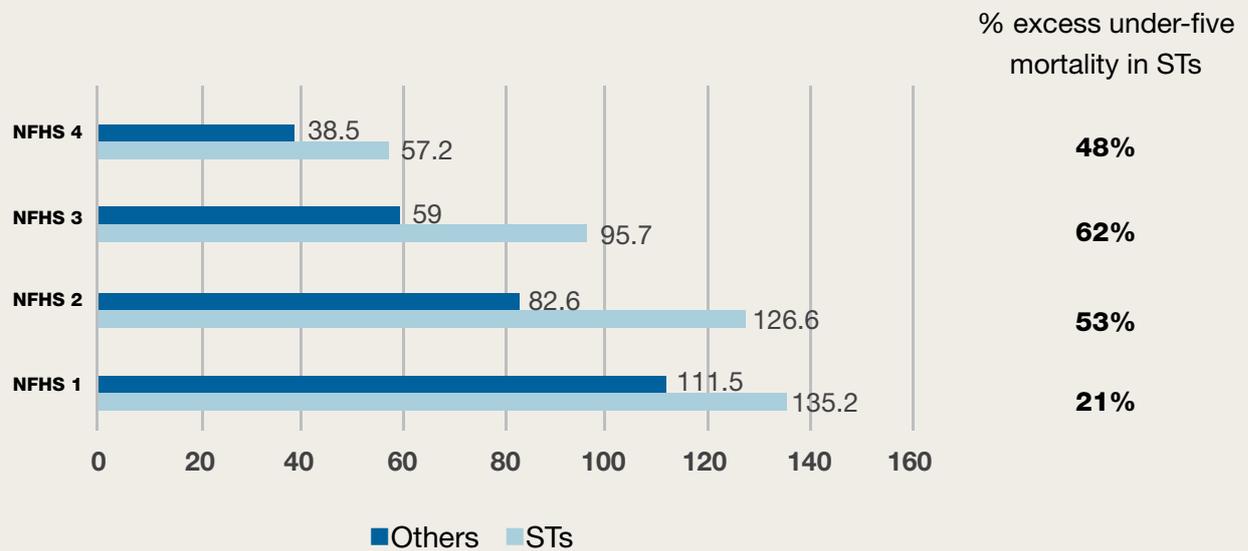
The percentage of underweight tribal children has come down from 54.5% in the National Family Health Survey (NFHS-3) conducted for 2005-06 to 42% in NFHS-4 (2015-16). But, compared with other social groups, tribal children continue to be the most malnourished.

The number of underweight tribal children is almost one-and-a-half times that of children in the 'others' category. Increased malnutrition and child deaths are reported time and again from tribal pockets across the country and the issue is discussed regularly in state legislatures. To little avail.



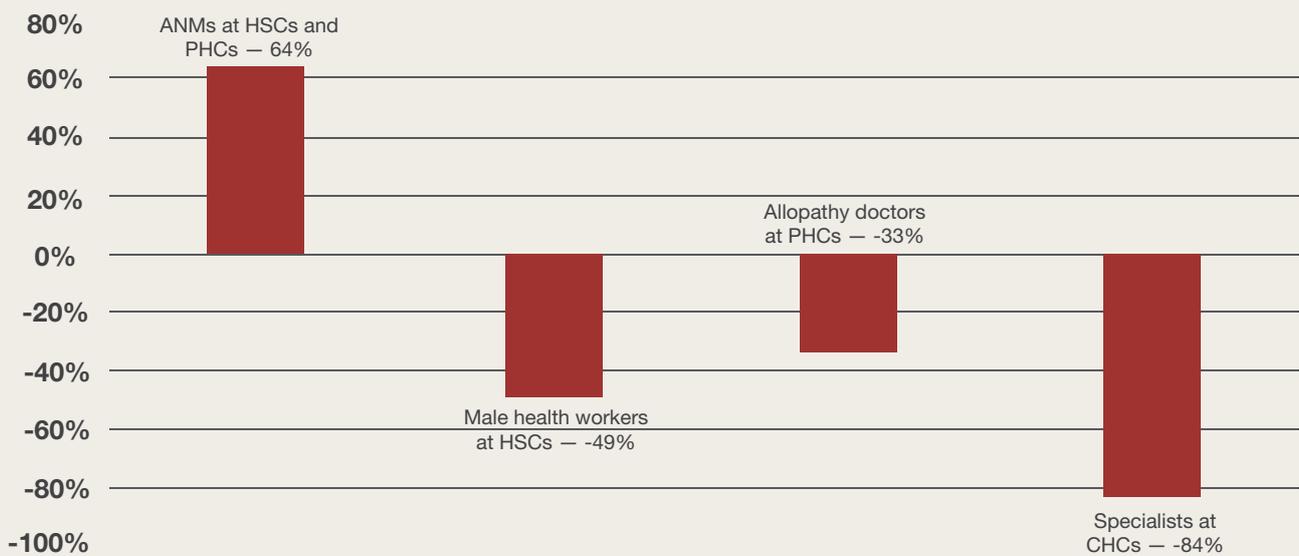
A malaria-awareness campaign in a tribal village; nearly half of the malaria burden in India is borne by tribals

**Figure 1: Comparison of under-five mortality among scheduled tribes (STs) and others\* during the past 25 years**



\*Others comprises the population excluding STs, scheduled castes and other backward communities

**Figure 2: Human resources for health – surplus/deficit percentage in tribal areas of 10 states**



ANMs: auxiliary nurse midwives; PHCs: public health centres; HSCs: health subcentres; CHCs: community health centres

Calculations based on the Rural Health Statistics data, 2017

\*Ten states / UTs with sizeable ST population: Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Rajasthan



Tribal children at school in the Nuapada district of Odisha

The tribal population carries nearly half of the burden of malaria in India and tuberculosis is three times more common among them. As the committee found, healthcare services in tribal areas, apart from being deficient in number, quality and resources, suffer from major design problems, mainly their inappropriateness to tribal society and lack of participation by the tribals themselves.

#### **Dependent on public healthcare**

Nearly 50% of outpatient visits by tribal people are to public health institutions and more than two-thirds of hospitalisation cases among them are in government facilities. The comparable proportions in the 'others' group are 18.5% and 34.5% respectively. This proves that tribal people, when they seek external healthcare, depend heavily on publicly funded ones.

What this signals is the need to strengthen public health facilities in tribal areas and to ensure that these are run by qualified and sensitive health functionaries, professionals who treat

their patients with respect. Unfortunately, that is rarely the reality.

The expert committee report identified the principles of tribal healthcare and proposed an objective: that the health status of India's tribals be brought on par with the rest of the population over the following 10 years.

With universal healthcare and universal health assurance being accepted tenets of government policy, the committee recommended that, in the spirit of the constitutional promise to the country's tribal people, the implementation of these two should begin with the tribal population.

The roadmap suggested includes a healthcare delivery pattern and governance structure, and the necessary human and financial resources. The good news is that within the limits of the guidelines laid down in the National Health Policy (2016), it is possible to finance tribal healthcare, provided the central and state governments actually adhere to these guidelines. The question is if they will. That would be a test of India's inclusiveness. ■



