TATA TRUSTS

AUGUST 2023

HORIZONS

GENDER BOOSTER

Women are the principal protagonists in a string of programmes focused on the social and the rural

WAY TO GROW

An Axis Bank Foundation-Tata Trusts project in Odisha is turning the tide for once-struggling farmers

SCHOLARLY BENT

The Karta Initiative is enabling marginalised rural youth to attend college at top-notch institutions

INTERVIEW

Photographer Sudharak Olwe has trained his camera on people and issues crying out to be 'seen'

EDITORIAL

That women have it tough in India is a truth universally acknowledged. This is a subject commented upon routinely — with the pieties piling up when politics wades into the picture — and sought to be addressed through policies and programmes that have to do battle with the ogre that won't go away: prejudice. Be that as it may, what we don't hear enough of are the efforts being made to create better lives and a fairer world for women, much of these by women themselves.

Our cover story, I must happily confess, is biased in favour of a certain gender. It details a clutch of initiatives powered by women in the spheres of health, energy and livelihoods; the challenges they have overcome along the way; and the rewards, realised and in the pipeline, of their commitment and hard work. From watermelon cultivation in Ladakh to dairy farming in Maharashtra, from livelihood pursuits in Rajasthan to an assortment of innovative startup ideas, women show what is possible when they are in charge of their destiny.

In our centre stage segment, we track a livelihoods project that has brought together the Tata Trusts and Axis Bank Foundation in Odisha to support farmer families desperately seeking an income boost. This is a fine example of philanthropies pooling resources and expertise to help underserved communities help themselves. It also illustrates how the Trusts have made collaboration an important motif of their social development endeavours.

This edition of *Horizons* also features a mix of articles on programmes designed and implemented for maximum impact: the Karta Initiative's work to secure a college education of the highest quality, in India and abroad, for rural youth from underprivileged backgrounds; an endeavour in Assam to bring school dropouts back into the formal education setup; and a cancer care project in Jharkhand that has screening and awareness-building at the top of its agenda.

We have two personalities from very different fields speaking to us this time: meteorology maven Jatin Singh of Skymet Weather Services and acclaimed photographer Sudharak Olwe. Social documentary photography is a passion with Mr Olwe, who is no stranger to the Tata Trusts, as is clearly evident in our showcase section, which features a variety of images from programmes supported by the institution.

To round it off, there's Shloka Nath with a piece on the criticality of CSR funding for climate change action in India, and Ratna Krishnakumar on lending a hand to artisans looking for avenues to capitalise on their exquisite skills.

Chistabelle Noronha

We hope you will help us make Horizons *better with your valuable feedback. Please do write to us at horizons@tatatrusts.org.*

CONTENTS

VOL 6 | ISSUE 2 | AUGUST 2023

COVER STORY

6
PAVING THE WAY IN A WOMEN'S WORLD
The stronger sex is front and centre in a spectrum of programmes in the spheres of livelihoods, health and energy

FEATURE STORIES

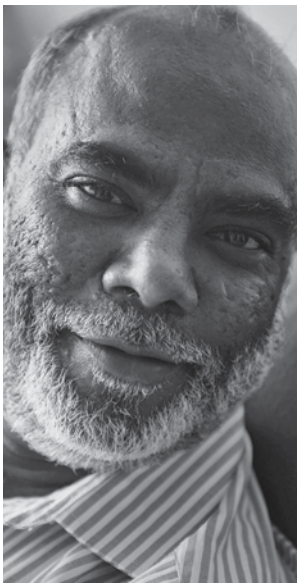
29
A SHARE OF CARE
The Jharkhand cancer care programme enables awareness, screening, diagnosis and treatment for a rural populace

33
CLASS COMFORT
Getting school dropouts back in the education system is the aim of an initiative targeting rural communities in Assam

37
CRITICAL CHANGE
A telemedicine-based model of emergency care is saving lives and cutting costs in six Telangana districts

41
SCHOLARLY BENT
Providing marginalised rural youth with a college education is the objective of the Karta Initiative

INTERVIEW



46
THROUGH THE LENS WITH EMPATHY
Award-winning photographer Sudharak Olwe talks about his work, his life and the camera's role as social changemaker

EDITOR
Christabelle Noronha
Email: cnoronha@tatatrusts.org

EDITORIAL TEAM
Philip Chacko
Gayatri Kamath
Labonita Ghosh
Shubha Madhukar

EDITORIAL COORDINATORS
Sonia Divyang
Nisha Swami

DESIGNED BY
The Information Company

SHOWCASE

52
IMAGE VILLAGE
Sudharak Olwe's photographs of the Tata Trusts' varied social development efforts showcase a world of people and emotions

CENTRE STAGE

58
WAY TO GROW
An Axis Bank Foundation-Tata Trusts partnership project in Odisha is turning the tide for 30,000-plus farmer families

INTERVIEW

64
SEASONAL DESPAIR
Skymet Weather Services chief executive Jatin Singh on the climate change conundrum and matters meteorological

OPINION

69
CLIMATE SUPPORT
Enabling CSR backing for nonprofits crafting inclusive climate-change solutions is essential for India's progress

PERSPECTIVE

72
CRAFTED TO DELIVER
Ratna Krishnakumar on the value of Paramparik Karigar's support for rural artisans seeking to express themselves

Cover image
A group of dairy-farming women from Udapur village in Maharashtra's Yavatmal district at a milk-pooling point

DESIGN
Shilpa Naresh
Abraham K John

PRINTED AT
Sahaya Print Services

CONTACT
Tata Trusts
World Trade Centre 1
26th Floor, Cuffe Parade
Mumbai 400 005
India

Paving the way in a women's world

Women make up nearly half of India's population but equitable access to the essentials of life — a good education, adequate healthcare and fruitful livelihood opportunities — are beyond far too many of them.

The scales are tilted and what is surely the stronger sex has been rendered weak by intergenerational, widespread and deep-rooted discrimination.

The numerous women-centric programmes of the Tata Trusts are an effort to battle the bias, to nurture inclusion instead of exclusion, to lend a hand by helping women help themselves. The rural reaches of India are the setting for a majority of these programmes, simply because that's where the need is greatest.

Our cover story tracks the progress of, and the impact made by, seven initiatives where women are the principal protagonists — as entrepreneurs, leaders and creators of their destiny.

These women have made a mark in the spheres of health, energy and livelihoods, carving out a space for their ability, hard work and commitment to find expression.

By Labonita Ghosh

Veena Bai of Sayra village (near Udaipur in Rajasthan), who had to drop out of school as a child, has found her calling, and her future, as a tailor

Dear dairy

An all-women group of milk producers in Maharashtra's Vidarbha region is breeding entrepreneurs in an area beset with agrarian distress

Rajkanya Kadam's family have been farmers for generations. But in recent years she and her husband have found they can't make enough from agriculture to feed and educate their children. Ms Kadam lives in Ternoli village in Maharashtra's Yavatmal district. This is a part of the Vidarbha region, which for decades has reported agrarian distress and suicides by debt-ridden farmers. In fact, the Kadams have also taken loans to keep their household running.

The couple always wanted to find another source of income, but never knew how. That changed in 2018, when the Indujaa Mahila Milk Producer Company (MPC) launched an awareness drive in their village. The idea was simple: to convince cash-strapped farmers and even the landless to take up dairy farming as a source of supplementary income.

Ms Kadam had no hesitation in joining Indujaa, an all-women company of dairy farmers. She purchased a cow to start her business, despite never having considered dairy previously, mainly because she didn't know how to find a market. "We would have to sell the milk outside the village and I was not even sure of the right price. Indujaa made it easy," says Ms Kadam. "With the team's guidance, I have learned to make my business profitable."

Ms Kadam's husband has joined her and they have added two more cows to the enterprise. "After starting the dairy business, our earnings increased and we have been able to repay all our loans," says the proud dairypreneur.

Rural milk mural

Indujaa is one of five MPCs under the Tata Trusts' dairy initiative, which has programmes in Rajasthan, Punjab, Haryana, Uttar Pradesh and Maharashtra. Dairy is seen as an underdeveloped area of the rural economy and the programme aims to show small farmers the benefits of dairying as a business. The Dairy Health and Nutrition Initiative of India Foundation (DHANII) was set up in 2016 to be the implementation and delivery arm of the Trusts for the initiative.

More than 100 million farmers are engaged in dairy farming in India and at least 70 million own two or three milch animals. The sector constitutes almost 5% of the national economy but is still not considered a profitable means of livelihood by many small farmers. This despite dairy being a recession-proof business. That became obvious during Covid, when dairy

Value in white

12,332 members in the Indujaa MPC

331 villages that the Tata Trusts dairy initiative operates in

696 members the MPC started with in 2016

41,000 litres of milk generated every day

A buffalo gets bathed in Udapur village in Maharashtra's Yavatmal district

boomed — while other businesses floundered — because of an increased demand for milk.

"When we started the dairy mission in 2016, we expected to help each beneficiary family get an income of ₹50,000-60,000 per annum," says Baljinder Singh Saini, regional manager with the Tata Trusts and head of operations with DHANII. "Today many of them earn in excess of ₹100,000."

DHANII is looking to reach at least 300,000 households through dairy farming by 2025. Indujaa has more than 12,000 members as of now and is growing continuously. "Dairy was identified as a high-impact subsector because income flow to households from agriculture is seasonal," adds Mr Saini. "Farmers get money at the end of the cropping season. On the other hand, milk sale from dairy provides regular income and is crucial to run household expenses."

The lack of enthusiasm for dairy farming has its reasons. India's dairy sector is plagued by some common problems: low productivity due to poor breeds, little or no veterinary services, and lack of knowledge about feed, cattle care and such.

"A large part of the sector is still unorganised," adds Mr Saini. "Though we have big milk cooperatives like Amul, they cover only 30% of the total market. About 70% of dairy farmers still don't have access to the organised market. Also, over 65% of the farmers belong to the smallholder category (owning one or two milch animals)."

MPCs have taken care of most

The Indujaa team with a dairy-farming family in Hatni village in Yavatmal district

of these issues. Indujaa, for example, offers farmers several kinds of services, from breed improvement (mainly through artificial insemination) and infertility management camps with suitable treatment, to fodder reinforced with cattle feed and a mineral mixture. Some of these services are offered at the doorstep of Indujaa members.

Indujaa also ensures education and training programmes for its members, as well as exposure visits to other MPCs, where they learn from peer dairypreneurs. The women producers are informed about the latest technology and field facilitators are employed to teach them how to use it. Additionally, MPCs facilitate loans to members through bank linkages.

Indujaa lends a hand with productivity enhancement for members who are not able to generate enough milk from their livestock. This is important for women entrepreneurs, who actually take care of the livestock (while men typically arrange for the fodder). MPCs run a 'ration balancing programme' that customises cattle diet based on health indicators, body measurements and specific needs. This enables productivity increases.

Getting on board

Indujaa, like the other MPCs, has a board of directors and a professional team hired to run operations. Ownership and autonomy rest with members, which ensures the best returns directly to the milk producers.

The most crucial service offered by Indujaa to its members is milk procurement, thereby providing a market for the farmers and eliminating middlemen. A few MPCs under the initiative have even launched their own products, such as ghee (clarified butter) and paneer (farmer cheese), by collaborating with local manufacturers.

"Since the farmers are members of Indujaa, they pour out milk twice a day, in the morning and evening," says Mr Saini. "They carry the milk to a collection centre that has been opened by the milk producer company [in this case Indujaa]." The MPC then pays the members on a 10-day cycle.

The system has changed Durga Shende's life. She had dreamed of financial independence but this unlettered wife of a farmer never got a fix on earning a little extra. "I could not complete my studies due to my father's limited income and I did not want my children to suffer the same," says Ms Shende, who hails from Galwa village in Yavatmal.

When the Indujaa dairy members conducted a meeting in her village, Ms Shende approached them for more information about the business process and its benefits. Since she did not have any milch animals, she took a loan from the local self-help group and purchased a cow.

Ms Shende has emerged as one of Indujaa's more successful dairypreneurs. She owns three buffaloes and three cows, as well as company shares worth ₹5,400. Her monthly income is about ₹15,000 and she plans to increase it. "As I began to fulfil my family's needs, I grew more confident about the work," she says. "Dairy and livestock management has, since, been the primary occupation of my family." ■

(from left) Phurbu Dolma, Sonam Yangdol and Padma Chonzom of Takmachik village in Ladakh with some of their bountiful yield

Sweet harvest

Women and watermelons are at the heart of a farming collective in Ladakh that has cultivated tasty success

The watermelons of Takmachik village in Ladakh's Sham Valley region have developed quite a reputation. "They are so sweet that people think we have added sugar to them," says Tashi Dolma, a Takmachik resident who grows the fruit. "But our watermelons are grown entirely organically, which is what gives them a different taste. There's no question of adding sugar."

The watermelon crop here is also bountiful, mainly because it is cultivated by many. Ms Dolma is part of a group of 10 women who have been growing watermelons as part of a group farming initiative introduced in the area in 2016 by Himmotthan Society, an associate organisation of the Tata Trusts.

Five self-help groups, comprising about 35 women, are involved in the watermelon cultivation in Takmachik. Each of these groups selects a fallow plot of land, leases it from the owner for ₹5,000-6,000, and starts growing watermelons. It's a long-duration

fruit — it takes from April to October to mature — and the women divide the farming tasks.

They plant the seedlings and take turns to water the crop, with two women attending to it every other day. Come harvest time and they get together to manage a bunch of tasks before taking the watermelons to the market to sell.

It's not unusual, in end-October, to see groups of women walking downhill with large plastic baskets and crates loaded with watermelons strapped to their backs. It's a difficult haul since some pieces may weigh up to 12kg. Ms Dolma laughs when asked how she copes with the weight. "It's worth it," she says.

Financial responsibilities are shared by the group: the cost of leasing the land and purchasing seedlings and the plastic mulching sheets that nourish the crop. The Trusts, through Himmotthan, have made these available at subsidised rates and facilitated a package of practices for the cultivators.

Proceeds from the sale of the watermelons are divided equally among members of the group. In recent years, when there has been a bumper crop — this is becoming common with improved farming techniques — Ms Dolma's group has managed to get around ₹65,000 for one harvest. About half of this is split equally and the remaining is set aside for future expenses, including 'exposure visits' to learn better farming techniques and such.

Fruitful avenues

Women's groups from **3 villages** in Sham Valley

Each group comprises **8-12 women**

Incomes of **₹60,000** to **₹85,000** in a harvest cycle of about six months

Benefits and risks

There are those who have done better still. A 12-woman group led by Phurbu Dolma, also from Takmachik, earned ₹85,000 from a recent harvest, selling the fruit at ₹50 a kilo. The rewards are attractive, but there are benefits as well as risks in watermelon farming.

Agriculture in cold, arid and water-scarce Ladakh, with its rocky soil, can be tricky. Families here either cultivate the hardy barley or buckwheat, depend on horticulture and the growing of apricots, or, in the case of a lucky few, own and manage orchards. High-value vegetables, relatively easy to grow in the plains, don't take root here.

"There is a shortage of water for irrigation because of climate change and the depletion of natural glaciers," says Samten Choephel, an

A group of watermelon cultivators with the fruit of their labour

area manager with Himmotthan. "Drawing water from melting sources is difficult which is why growing most crops here is tough."

The primary income of the majority of families is migratory work or tourism-related activities. "It's quite common to find large tracts of land left fallow for years in Ladakh," Mr Choephel adds. "With more people migrating for work, landowners can no longer find labour to plough and cultivate their plots. Often, they have no choice but to leave them unattended."

Sometimes the landowners themselves move out, especially if they are in government jobs, so they are happy to lease out the land rather than leave it unused. Given the context, watermelon farming is a fine choice. Although it takes many months to grow, the fruit requires little water, particularly when plastic mulching sheets are used.

"In a dry season, if we need some extra water, we set up a portable storage unit on the side of the field," says Phurbu Dolma. The long duration also means that the women farmers can continue to tend to their family holdings and orchards, even as the collective cultivation of watermelon continues.

Replication time

The success of this group farming initiative has led the Trusts, through Himmotthan, to replicate this model in other parts of Ladakh. Women-led self-help groups from three villages in Sham Valley are now growing watermelons.

"It is a new concept," says Konchok Dorjai, a cluster facilitator with Himmotthan. "We studied this group farming idea in 2016, so we have some experience. Once we saw some success in terms of the yields in Takmachik, and people's acceptance and skill, we brought other villages into the project."

The only thing preventing these women from growing at commercial scale is limited access to markets. "With more villages cultivating watermelons, we are hard pressed to find new markets," says Phurbu Dolma. "Earlier we used to bundle our produce into a van and take it to Khaltse market, 18km away, and we usually managed to sell everything. Now there are so many more watermelon farmers that selling our produce is becoming harder."

That said, Phurbu Dolma, Tashi Dolma and their co-cultivators can't think of doing anything else. Beyond the money pulled in, there's the camaraderie that group farming brings. Harvest time is a celebration, with the women converging on fields and spending the day cutting, sorting and weighing the fruit.

"They feel empowered having money that's their own, even though it isn't much," says Mr Dorjai. "It makes them feel proud." ■

Kali Bai of Malera village in Sirohi district has become a goat entrepreneur

Startup leg up

An entrepreneurship initiative in rural Rajasthan is enabling women to seize the day and the opportunities that come with it

It was a casual conversation that changed Veena Bai's life. That was when this resident of Sayra village near Udaipur in Rajasthan heard about a meeting where new income opportunities were going to be discussed. Ms Veena, who had dropped out of school after class V, knew she didn't have the skills for a specific trade. But she wanted to know more.

Ms Veena's family had only one source of income: the ₹6,000 a month that her husband earned by working as a mason. To make matters worse, she herself could not go out and work. That was frowned upon in her community.

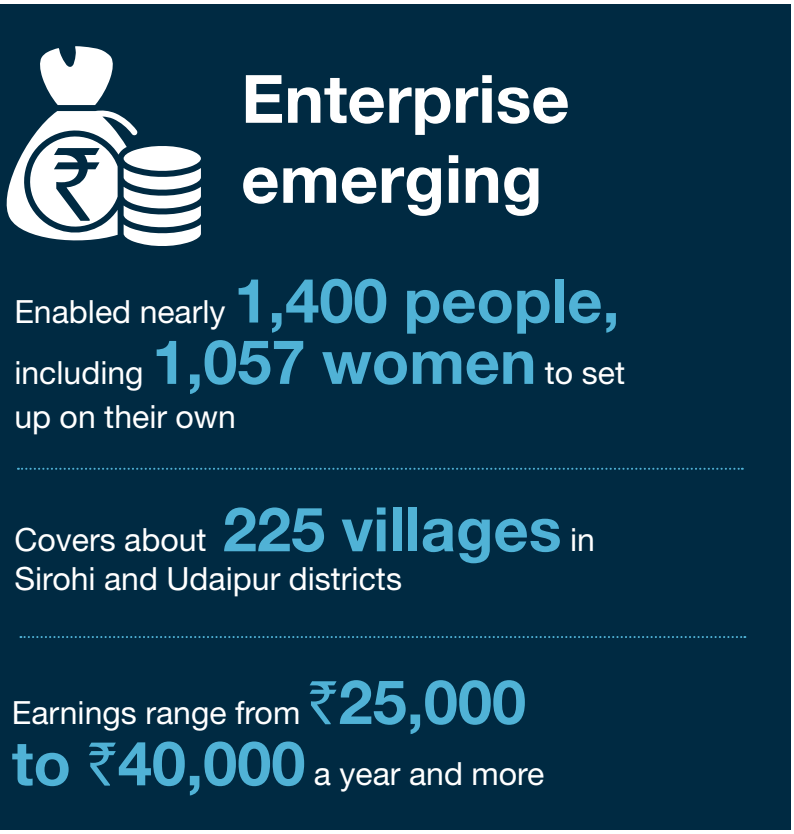
Ms Veena could not attend the meeting, which was organised by Centre for microFinance (CmF), an associate organisation of the Tata Trusts, but she heard about training courses being offered as part of an initiative to foster rural entrepreneurship in Sirohi and Udaipur districts. That's how she got to learn tailoring.

"CmF held a 15-day course at a nearby location for 25 women," she says. Sewing machines were set up in a large hall and the training ran from 10am to 4pm. Ms Veena used to stay back for an hour every day to practise further.

Once the training was over, CmF helped her create a business plan and set up a tailoring unit. "There are no ladies' tailoring shops in my village, so women started placing orders with me," Ms Veena says. During a recent wedding season, she earned ₹9,000 a month. "I have finally found a skill that has made me financially self-reliant."

Entrepreneurs can come from anywhere; they aren't the preserve of urban India. Tapping into that truth is the collaborative rural entrepreneurship programme in Rajasthan. It involves the Tata Trusts and CISCO Systems, with CmF as the on-ground implementer. Launched in January 2022, the initiative has lent a hand to nearly 1,400 entrepreneurs over a nine-month period. Among them are 1,057 women.

"This is an attempt to promote women entrepreneurship in a structured manner," says Malika Srivastava, regional manager (Rajasthan) with the Tata Trusts. "Many women in rural India are already working in the fields or as agricultural labour. Among them are many who want to augment their family income by doing something different. This programme is all about making that choice available to them."



Tailoring on top

An overwhelming number of women entrepreneurs in the two districts have opted for tailoring (458). Second and third in the list come goat-rearing (210) and poultry (201), followed by marketing enterprises, beauty salons and vegetable cultivation.

The initial goal of the programme was to secure income increases for 1,200 rural entrepreneurs (men and women) in 200-225 villages in the tribal belts of Sirohi and Udaipur. This by creating at least 700 entrepreneurs who would, once set up, earn an additional income of ₹30,000-40,000 per annum, and 500 entrepreneurs who would make between ₹25,000 and ₹30,000 a year as supplementary earnings.

The programme was seen as a means to pull farming families out of poverty, unemployment and backwardness. It worked so well that the numbers goal was crossed comfortably. The Trusts and CmF now want to replicate the success in other parts of the country.

As for the process in the project, each candidate had to go through a rigorous three-step selection to become an entrepreneur. "First, at the village level, we had meetings with self-help groups (SHGs) to understand what the women in their area were interested in," says Ms Srivastava. "If they wanted to increase their family earnings, we would ask what they had in mind or suggest options such as livestock rearing and dairy farming. Many women were keen on non-farm activities, so we advised them accordingly."

Step two was resource profiling to understand education levels, whether the targeted people would receive any support from their families and if they had previous training in any trade.

"When someone said she wanted to become a tailor and we found there were five tailors in her vicinity, we would persuade her to try something else," adds Ms Srivastava. "We couldn't have more than two tailors per village or one beauty salon per two or three villages." The trades are well distributed thanks to the screening and counselling efforts.

In the next step, the candidates were provided technical training by subject experts, with those in the

Badami Bai of Khuna Fali Gharat village in Sirohi district has become a poultry businesswoman

non-farm sectors undergoing a two-month apprenticeship with a local businessperson, called an 'udyog mitra' (trade friend). After this, each potential entrepreneur – with guidance from CmF and the udyog mitra – had to prepare a business plan, which included financing and marketing aspects.

Beneficiaries were given a nine-point primer and asked to consider the basics: who would their customer be, what would be their market segment, what was the USP of the business, etc.

Once the business plan was ready, and deemed viable, CmF helped the women with funds to set up their enterprise, mostly through SHG loans. When this was done, the entrepreneurs received digital literacy and accounting training to run their businesses better.

Komal Lal Chand, a resident of Abu Road block in Sirohi, has profited from the training and apprenticeship she has undergone. The young woman, who had always been interested in henna art, opened her own beauty salon last year after working with an udyog mitra, learning all about hairstyling, makeup and such.

"The business plan preparation and the accounting training gave me the impetus needed to start on my journey as an entrepreneur," says Ms Chand. "With home-based services, I started earning ₹6,000-7,000 a month; in the wedding season last November and December, I earned ₹40,000, enough to buy a scooter."

Ms Chand has received requests for beauty and styling treatments not just from the neighbouring villages, but from clients in Palanpur and Ahmedabad as well. "I want to open a salon in a big city like Ahmedabad someday," she says. ■

Besting the testing

An affordable blood sample-based diagnosis that tracks four vector-borne diseases promises to be a boon for rural communities

It was a devastating incident that shaped Binita Shrivastava Tunga's outlook towards her work.

The cofounder of Ameliorate Biotech, a Bengaluru-based science and tech-focussed startup, lost her 11-year-old niece in 2004. "She died because of a co-infection," says Dr Binita. "She had contracted both dengue and malaria but only dengue was detected from tests. The malaria went undiagnosed and we only discovered it after her post-mortem was done."

Dr Binita's niece lived in Hyderabad and was being treated at one of the city's best hospitals. "We lost her exactly seven days after the first diagnosis," Dr Binita recalls. The first report, indicating dengue, came in three days and treatment was started immediately.

Bad to worse

"But she just wasn't getting better. By the third day, her condition was so bad we had to shift her to another hospital," says Dr Binita. "By then her platelet count had dropped drastically and, because of the malaria, many complications developed. Eventually it was multiple organ failure that caused her death."

The tragedy had a huge impact on Dr Binita and her husband, Rashbehari, who cofounded

Binita Shrivastava Tunga checks the homogeneity of a blood sample

Sure shot

- Assured is a rapid diagnostic test (RDT) that can be used to detect four ailments in one combo kit: malaria (falciparum and vivax), dengue and chikungunya.
- Antigen-based test delivers 10-minute diagnoses with just a few drops of blood.
- May later have an AI component for quicker, more accurate results.

Ameliorate Biotech, which has been funded and supported by the India Health Fund, an associate of the Tata Trusts.

"We could have saved her life if the diagnosis had been done properly and the co-infection detected," says Dr Binita. Then, in 2007, an undiagnosed case of hepatitis claimed another member of her family. That's when Dr Binita decided to look for life-saving solutions. "The death of my niece was the main reason we ventured into early-stage diagnostics," she says.

Ameliorate Biotech has created an antigen-based test that can detect four ailments that have similar symptoms: malaria falciparum, malaria vivax, dengue and chikungunya. Called Assured — an acronym for affordable, specific, sensitive, rapid, equipment-free device — this test can generate results quickly and also flag co-infections. Launched in 2019, Assured is currently being tested at three government hospitals in Karnataka, Bihar and Andhra Pradesh.

The kit is simple. It requires a few drops of blood to be put on a 'buffer' (a solution) and, as with a pregnancy or a Covid home-test kit, lines will appear on a stick to indicate what the patient has contracted. "With an antigen-based test you can check a patient after just one day of fever," says Dr Binita. "With an antibody test, you may have to wait for seven days."

A quick diagnosis means the correct treatment can start immediately. And early-stage detection, as Dr Binita's family has learned the hard way, can save lives. One big advantage with Assured is that it is a combo kit.

"We are differentiating from our competitors in providing these tests in one single device," says Dr Binita. "So, if a person is suffering from two different infections at the same time, we should be able to diagnose them instantaneously instead of testing them one by one." The doctor will have the reports for all four tests at the same time.

Tackling co-infections is critical. Typically, if a patient tests positive for, say, malaria, the physician will start her off on treatment. But no one thinks to check if she has anything else. It's only when the result is negative that a battery of tests may follow.

According to Dr Binita, in India the prevalence of co-infections is higher than we think. "There are regions in Andhra Pradesh, Bihar and Delhi where co-infections are common. In 2021, reports from Delhi said that at least 35% of those diagnosed with dengue also had chikungunya," she adds. "Sadly, many of these co-infections go undiagnosed."

Assured advantage

Another advantage for Assured is that it doesn't require laboratory support or a fully equipped facility (rapid diagnosis ensures that there is no need to store blood samples). Nor does it need trained personnel to conduct the test; just someone who can draw blood. "We could have made it a home-test kit if a finger-prick of blood was enough, but that's not the case," adds Dr Binita.

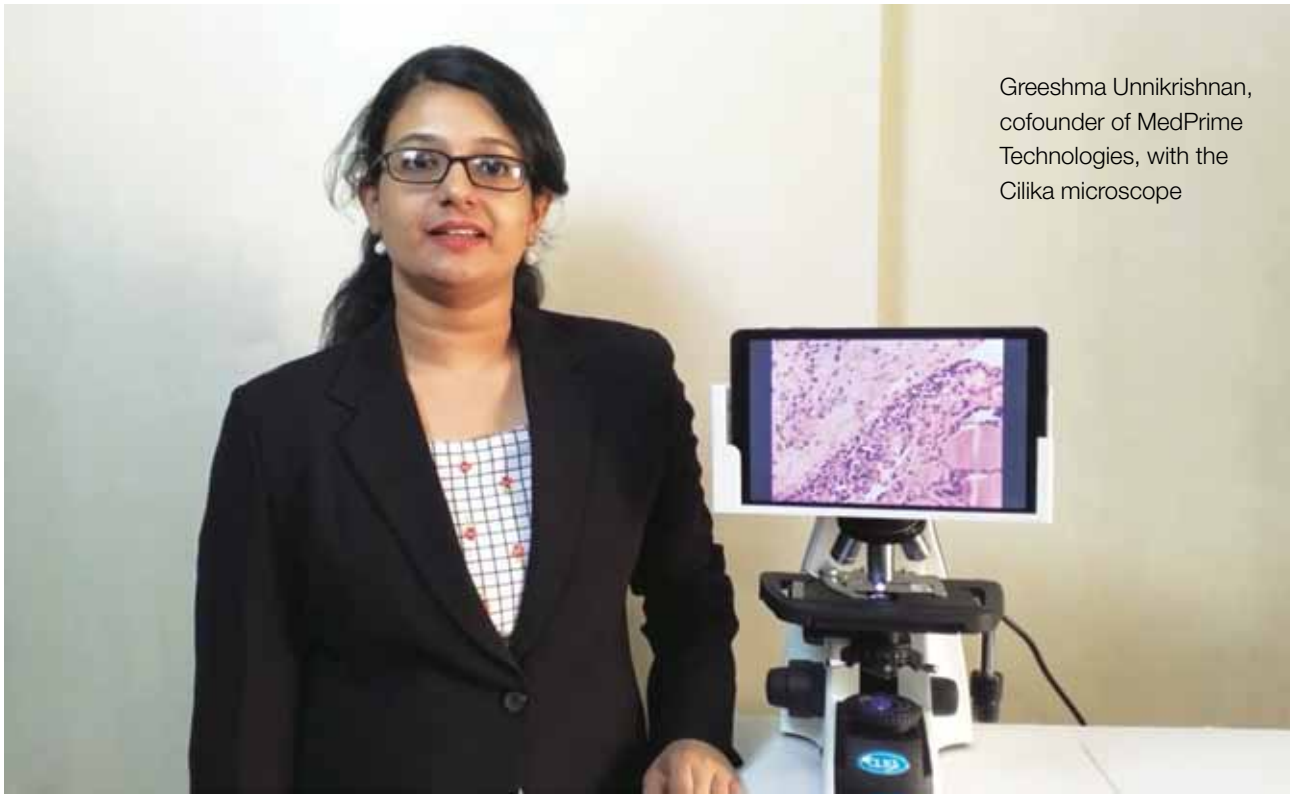
Assured is priced at ₹200 a kit, which is more than reasonable when

compared with alternatives. Private hospitals charge ₹700-800 for a malaria test and ₹1,500 for chikungunya. The combination of tests required for a thorough investigation may cost up to ₹3,000.

The price factor makes Assured a prime candidate for large-scale use in rural regions, particularly in remote healthcare centres. A 10-minute, multi-illness visual screening means patients get to know, during their first visit to the clinic, what they have (or don't). Also, this is beneficial for patients who live far away from a primary healthcare centre, saving them money and effort on a second or third visit there.

The Ameliorate team is trying to improve various aspects of Assured. Its sensitivity and specificity, for instance, so that it can deliver pinpoint diagnosis. Future kits may have an AI component that will make diagnosis even more accurate and quick. There is also a plan to broaden the platform to include other ailments, notably Japanese encephalitis and Zika.

"We can extend this platform technology to create a more robust 'fever panel' test that will look beyond the current vector-borne diseases to airborne and respiratory illnesses such as Covid and influenza," says Dr Binita. "There is a great need for that as well." ■



Greeshma Unnikrishnan, cofounder of MedPrime Technologies, with the Cilika microscope

Good looks count

The Cilika digital microscope could go a long way in the health sector with its imaging and transmission advantages

Raghunath Unni never quite appreciated, until a few months ago, the full benefit of the digital microscope he has been using for years. The pathologist, who heads MedHelix Laboratories in Kochi, received a biopsy sample that needed urgent diagnosis. "Our senior consultant works from a different location, and we often send her slides to view," says Dr Unni. "But she had gone abroad, and we had this complicated case that required her attention."

The consultant logged on, studied an image of the slide that had been forwarded to her, and offered her opinion. "It was an emergency case, and we needed the report in an hour or two," says Dr Unni. "As we had feared, it turned out to be ovarian cancer, which is sometimes difficult to detect."

Dr Unni was able to manage this entire process because of a digital microscope called Cilika. Created by the healthtech startup MedPrime Technologies, the microscope — which comes with an iPad attached — enabled Dr Unni to send high-resolution images of the sample to the consultant easily. Thanks to Cilika's technology, the consultant could remotely see exactly what Dr Unni and his team were looking at. In fact, the lab uses Cilika for a wide range of functions, from histopathology and cancer detection to blood smears.

"The most important thing about digital microscopy is that it enables telepathology," says Greeshma Unnikrishnan, the cofounder of MedPrime which is backed by Social Alpha, an organisation supported by the Tata Trusts. "You can remotely access and report on samples without having to physically handle them yourself."

Digital microscopy can

generate good-quality images and videos, and there is also scope of incorporating AI and machine learning. "At some time in the future, algorithms based on machine learning may assist in diagnosis using pattern recognition," adds Ms Unnikrishnan. Cilika is already halfway there with its tablet attachment.

The idea of a digital microscope came about as part of a project undertaken by Ms Unnikrishnan's business partner, Samrat Singh, the cofounder and chief executive of MedPrime.

While he was studying at the Indian Institute of Technology, Bombay, Mr Singh's mentor, Debjani Paul, received funding to create a portable system that would check for sickle cell anaemia. A mobile phone-based imaging device, with an algorithm to read blood samples, seemed an obvious choice. Mr Singh was tasked with working out the imaging aspect. The criterion was a high level of magnification so that red blood cells could be viewed, and the image could be captured on a smartphone.

Once fabricated and demonstrated to doctors for validation, Mr Singh's team began receiving encouraging feedback. That's when he and the founders of MedPrime, who were batchmates, realised that a similar system could help with other kinds of diseases and diagnoses. Perhaps a device with increased and variable magnification, more focusing and light options, and one that could be read on a tablet instead of a phone screen. The idea of the Cilika microscope was born.

Unlike traditional microscopes, the tablet attached to Cilika allows for more than one person to view the sample. It can even be projected on a larger screen. Cilika's patented design and TrueView technology ensure that you get the same results and viewing experience as that of traditional microscopes, with all the added benefits of digitisation.

Ergonomic as well

And one of the best parts? It is ergonomic. The user doesn't have to hunch over the microscope for long hours. Cilika allows him or her to sit back and study the sample on a screen.

Since the tablet can also capture images, Ms Unnikrishnan says this can be used to create a database of images. Tara Prasad Mohapatra, chief executive of the Bengaluru-based Asian Health Meter concurs.

Dr Mohapatra's company supports a primary healthcare centre (PHC) in a remote part of Tumkur district in Karnataka. "With Cilika, we can have online checkups and images being sent to experts all over the world," he says. "And a database will help reduce the disease burden in the rural areas."

For instance, malaria, filaria, dengue and chikungunya all have similar symptoms. "So, sometimes a doctor at a remote PHC, while waiting for tests results to come in, may prescribe a blanket cover of antibiotics, hoping that one of them will prove effective," adds Dr Mohapatra. "If we know exactly what the ailment is, we can start immediate and targeted treatment. This could save a patient's life and significantly reduce the body's resistance to antibiotics."

Additionally, with Cilika there is no need for a pathologist to be present at the PHC. It only requires a pharmacist or lab technician to prepare the sample, place it correctly under the microscope, capture an image and email it to a

Under the scanner

- The Cilika digital microscope comes with an iPad to generate high-resolution images.
- Crystal-clear image samples can be sent for viewing by experts in any part of the world.
- The microscope's images can be projected on to large screens, which makes it a great learning tool.

pathologist. This is helpful since suitably-trained staff may be hard to come by in peripheral hospitals.

Screen sharing applications can be used to live stream the sample to a pathologist anywhere in the world so that he or she can view and diagnose it remotely.

"Most path labs operate on a hub-and-spoke model," says Ms Unnikrishnan. "The samples are collected in some remote area and brought to the main lab, the hub. You will hardly find any pathologists in villages or districts; most stay in cities or towns." Transporting samples may lead to their contamination in transit. An accurate, magnified image eliminates such problems. The biggest advantage, Ms Unnikrishnan says, is the shortened turnaround time in reporting results.

The Cilika microscope being tested during installation at DY Patil University, Pune

Available at a price ranging from ₹100,000 to ₹890,000, Cilika can be made affordable, through government procurement, for cash-strapped district clinics. However, since its launch in 2017, private labs have been a major customer segment. Cilika is also widely used in medical colleges as a teaching aid. That's because the images it generates can be projected on a screen to be viewed by an entire lecture theatre.

No shortage of effort

"It was a huge effort to get to this point," says Ms Unnikrishnan. "We were an unknown brand and people were not familiar with the technology. Pathologists felt they might miss something if they moved away from the traditional microscope." Then, when a well-known chain of path labs began placing orders, a lot of customers followed suit.

Ms Unnikrishnan says Cilika may not have got off the drawing board as soon as it did had it not been for Social Alpha's seed support and its corralling of other investors to support MedPrime.

As for the future, Ms Unnikrishnan is certain about one thing. "Our microscope may have secondary uses, as a learning tool in medical schools or for young interns at labs, but our primary beneficiary will always be the patient." ■

The Rechargion team at the CSIR-National Chemical Laboratory in Pune

Power trip

Rechargion's sodium-ion batteries — safer, greener and longer lasting than their alternatives — could be a boon for rural India

In March 2022, a ship carrying a fleet of luxury cars from Germany to the United States, caught fire in the Atlantic Ocean and sank, taking with it millions of dollars' worth of precious cargo. The cause of the fire was said to be the overheating of a lithium-ion (Li-ion) battery in one of the electric cars being transported. After burning for days off the Portugal coast, the ship finally went down.

Manjusha Shelke, founder director of the startup Rechargion Energy, wants to help make sure accidents of this kind never happen. "We have instances of electric two-wheelers in India catching fire, even mobile phones," says Ms Shelke. "That's because people do not know the inherent issues with Li-ion batteries. They are volatile and, if not protected by proper thermal management systems, can burst into flames for several reasons."

Rechargion Energy, which has been funded and backed by Social Alpha, an organisation supported by the Tata Trusts, is trying to find an alternative to Li-ion. Years of research later, the company has found a relatively stable substitute in sodium-ion batteries (SIBs), which are safer and greener.

Ms Shelke and her team are working to set up a battery manufacturing pilot plant, with funding from Social Alpha and the central government's Ministry of Heavy Industries, and they expect the first lot of SIBs to be manufactured by early next year.

The farm equipment space would benefit from Rechargion's sodium-ion batteries

Longer the better

The Rechargion team wants to make the batteries last longer, so that they may be used in a variety of applications in agriculture and as storage units for power generated through wind and solar energy. That would be a boon for rural India. SIBs would also make electric vehicles safer and, in time, cheaper.

"We need more stable batteries in the push for e-mobility in India," says Ms Shelke. "In the same way, if we stress the need for more clean energy from solar or wind, we must have storage devices that can capture and preserve the intermittent energy generated by these sources."

Li-ion batteries, which can power multiple devices, are seen as somewhat unpredictable. But, according to Ms Shelke, there are few alternatives available in the country. There being no operational Li-ion battery manufacturing factory in India yet, the batteries are imported from China, which has a comparatively larger amount of lithium resources.

Recent reports that lithium has been located in Kashmir and Rajasthan are intriguing, Ms Shelke says, adding that it would still be a finite amount, and may not be enough to fuel the country's energy storage needs sustainably.

"Right now we are dependent on the Gulf countries and Russia for oil and fossil fuels," says Ms Shelke, "and we are dependent on China for Li-ion batteries. It's not a good situation for us." Self-reliance and independence from imports is a big part of finding an alternative.

Rechargion's research and work have shown that SIBs fit the bill. The main component, sodium, is easily available, says Ms Shelke, and the rest of the materials used in the battery are mostly surface elements, so no elaborate mining is required.

In terms of its chemistry, sodium ion is the closest to lithium ion, and both can be fabricated in the same factories. Also, while

Li-ion batteries need to have some charge before being reused (an electric vehicle battery cannot be allowed to run out completely), SIBs can be discharged completely before storing and shipping, which makes them safer. SIBs can, additionally, be recharged much faster than Li-ion batteries (depending on grade, they get to full power in about 15 minutes).

"Technically, SIBs can replace Li-ion batteries in any application," adds Ms Shelke, "and the lifecycle of SIBs is longer." Where Li-ion batteries last for 2,000 to 3,000 cycles of use, sodium batteries run for as many as 5,000. Depending on use, they could stretch for up to 15 years.

Such longevity would be useful in a farm setting. More important, says Ms Shelke, is the safety factor. People in rural India use lead-acid batteries in their equipment and as remote storage. These batteries, which are prone to leaks and melting, are extremely harmful to both humans and the environment.

Cheaper option

Farmers in India use a lot of diesel-powered equipment: tractors, generators, cutters and such. SIBs could, in the circumstances, replace diesel as a cheaper option. "We can potentially replace Li-ion batteries in any kind of farm vehicle or equipment," says Ms Shelke.

Perhaps the best use of SIBs are as power-capture units. Wind and solar energy can be channelled into these and preserved for later use. "That's one of the biggest markets for these batteries, as a 'grid storage' for renewable energy," says Ms Shelke.

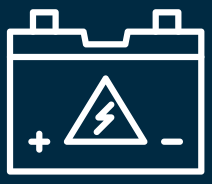
In remote primary healthcare centres with erratic power supply, they could save lives by enabling medical equipment or cold storage units to work continuously. In homes in both rural and urban areas, SIB packs can be used to decentralise energy, which means taking energy from the grid and storing it in a hub.

Says Ms Shelke: "Our SIBs would be particularly useful in rural India, where people are unwittingly using electric scooters powered by lead-acid batteries, not even Li-ion." The next possibility is home-based power storage solutions and, of course, farm equipment.

Ms Shelke estimates Rechargion's SIBs will cost 33% less than Li-ion batteries. "Lithium iron phosphate-based batteries are the cheapest in the Li-ion category, and their cost is about $150 per kilowatt hour (kwH). We estimate that SIBs would be around $100 per kwH." With a lab prototype ready, Rechargion plans to roll out its product on track.

Social Alpha has stepped up, as it does for all its partners, with part-funding of the battery plant and helping the Rechargion team put their backend efforts, such as financials, in place.

"We are scientists and we don't know much about running a company," says Ms Shelke. "Social Alpha came in and put it all together for us. It is an amazing experience to be associated with them. We trust them blindly." Much in the way Rechargion hopes customers will view its SIBs. ■



Battery benefits

- Rechargion Energy's sodium-ion batteries (SIBs) are made from abundantly and locally available materials that don't require elaborate mining
- SIBs have the potential to reduce dependence on lithium-ion battery imports from countries like China
- These batteries can run longer than their alternatives and can act as capture and storage devices for solar and wind energy

Timing it right

Catching drug-resistant tuberculosis early and accurately is the objective of a startup with a diagnostic tool that could be a lifesaver

Tuberculosis (TB) patients, once diagnosed, are put on a first line of treatment that typically runs for four to six months. That's straightforward enough. The problem occurs when the patient doesn't respond to treatment because, more often than not, the TB bacteria may have developed a resistance to standard drugs. Left undetected, this could lead to organ failure, dangerously low immunity, even death.

Switching from first-line treatment of TB to the second involves a thorough investigation that can take months, precious time a patient may not have. Nagasuma Chandra, cofounder of the precision medicine and health systems startup HealSeq, understands this better than most.

For the last few years, Dr Chandra and her team have been working to devise a quick and accurate test that will do two critical things. First, diagnose the presence of TB in a patient in a few hours (a standard test takes between 12 and 24 hours). And second, figure out if the patient is not responding to first-line treatment and needs to be moved to the next. This second part, Dr Chandra expects, should take no more than two weeks, rather than the two-four months currently needed.

A HealSeq researcher analysing a blood sample

The TB testing tool fashioned by HealSeq, which is funded and supported by the India Health Fund, an associate of the Tata Trusts, will be a 'host RNA biomarker-based investigation'. This means it will be able to read signatures of RNA — or ribonucleic acid, a nucleic acid similar to the DNA in living cells — in TB patients just two weeks after they have started treatment.

The expression of these signature genes will help doctors identify if a patient is responding well or poorly to the initial treatment. Slow responders, sometimes referred to as drug-resistant patients, can then be put on the second line of treatment.

Detection code

- The HealSeq test for drug-resistant tuberculosis (DR-TB) is accurate, low in cost, easy to administer and quick with results.
- It ensures effective DR-TB treatment by reducing the time to diagnose drug resistance to two weeks.
- Once developed and approved, the test will be available at about ₹1,000, which is a sixth of the cumulative cost of the multiple tests that need to be taken during a typical TB treatment course.
- Turnaround time is 12 hours against the current method, which takes four-six weeks.

Tackling TB

"A TB patient is typically given a cocktail of drugs," explains Dr Chandra. "If the first line of treatment is not working, the drugs need to be modified. Picking the right cocktail, and quickly, is important because the drug-resistant bacteria may proliferate very fast."

Sometimes the first detection and diagnosis itself comes late because people take their time to go to a doctor. "You think it's a cough or fever that will pass," adds Dr Chandra. "By the time you reach the doctor, tests are ordered and the condition is diagnosed, you have already wasted a lot of time."

Drug resistance occurs for various reasons, the most common being prolonged exposure to certain antibiotics that makes the TB bacteria mutate and change their molecular structure. "Current drug resistance detection mechanisms cater only to the most frequently encountered mutations, even though various kinds of mutations are taking place," says Dr Chandra.

The best way to test drug resistance is by culturing, which means putting the bacteria in an antibiotic culture to see if it dies or proliferates. But this takes at least two months. "There is also the danger of samples getting contaminated, there are high costs involved, and the treating doctor may not get accurate feedback," says Dr Chandra. "Hence the delay in moving to the second line of treatment."

Meanwhile, because patients are up and about many a time, there is a big risk of them transmitting the disease. India has 1.93 million reported cases of TB, which is approximately 17% of the global burden. Only 3-4% of these cases are multi-drug resistant (MDR), but about 10% within this bracket are prone to relapses that can be lethal.

"While MDR transmission is a concern, we also have extensively drug resistant [XDR] bacteria," says Dr Chandra. "If that gets passed onto the community, it will be a big problem." For example, if ever-evolving bacteria becomes resistant to all antibiotics, what can doctors prescribe?

This means that if the XDR strain starts spreading through community transmission, there may be large-scale fatalities. "That

would be like going back to the pre-antibiotic days, where we didn't have any medicine at all for TB and patients just died," adds Dr Chandra.

The HealSeq test, besides yielding quick and accurate results, has the potential to benefit patients in a number of ways. The project team at the startup is trying to keep initial costs down to ₹1,000 or less. While still unaffordable for most people in India, this is less than the cost of a battery of tests needed for a conventional diagnosis.

Easy does it

Ease of use is another benefit. This is a blood sample-based test that a compounder at a rural healthcare centre can administer (all it requires is 2.5ml of blood). "The gold standard of detection is still a culture, but that takes time and must be carried out in a biosafe laboratory facility with trained staff," says Dr Chandra. "Without proper facilities, testing and diagnosis is a major challenge."

The HealSeq technology is now being considered for other kinds of ailments as well. In the pipeline, says Dr Chandra, are tests for a spectrum of TB ailments (extrapulmonary TB, for instance, which is hard to detect).

The ultimate beneficiary will, of course, be TB patients. Since the majority of them are treated at government-run centres, Dr Chandra hopes that once the HealSeq test has been rolled out, it will be included in the government treatment protocol and offered to a much larger group of patients.

A member of the HealSeq team works on a blood test and (left) Nagasuma Chandra, the company's cofounder

"It has to be proven to be effective and must receive third-party validation from various institutions," says Dr Chandra. "Once we manage to convince them of its efficacy and they see value in it, they will surely offer it to patients. That would be the best thing to happen for everybody." ■

A share of care

Spread over three districts, the Jharkhand cancer care programme enables awareness, screening, diagnosis and treatment for a largely rural populace

Screening for oral cancer in Kujram village in the Khunti district of Jharkhand

Once ignorant of it, Theblu Munda now has more than an inkling of what the beast is about. "I'm aware of the signs and symptoms of cancer, I understand the importance of early detection and screening, the risk factors involved and whom to reach out to at any sign of concern," says the 63-year-old labourer from Ajaigarh village in Jharkhand's Ranchi district.

Lalitha Kartik, a 48-year-old housewife who lives in the Lowadih locality of Ranchi city, had access to the same screening as Mr Munda. "The tests we had at the camp, these should be done from time to time because they are so crucial," she says. "Those with cancer in our area do get treated but they are mostly unaware of cancer-care facilities. They do now."

Mr Munda and Ms Kartik are two among 63,000-plus people who have been screened for three common cancers — oral, breast and cervical — as well as for diabetes and hypertension under a community-centred public health programme initiated in Ranchi district in February 2020 by the Ranchi Cancer Care Foundation (RCCF).

RCCF is part of the larger Tata Cancer Care Foundation (TCCF), which has been hard at work helping the central government and the state governments of Assam, Andhra Pradesh, Jharkhand, Karnataka, Maharashtra, Odisha and Uttar Pradesh in tackling what is a clear and present danger (more than 800,000 Indians are estimated to have died of cancer-related causes in 2022).

The centrepiece of the Tata Trusts' wider cancer programme is the 'distributed model of care', which comprises accessibility; high-quality treatment; affordability; and awareness, early detection and palliative care. The model

has flowered most extensively in Assam, where it is spread over eight districts and includes a network of cancer hospitals, day-care centres for diagnosis and treatment and a strong public health team for screening and awareness. The effort in Jharkhand is directed at, in time, replicating the Assam archetype.

The community is at the centre in the Jharkhand cancer care initiative, a collaborative endeavour involving the state government and the central government's National Health Mission. Screening, early detection and awareness drives — targeted principally at villagers and students — are of paramount importance in the programme. Diagnosis and treatment and training modules for frontline health workers, community health officers and doctors are also part of the initiative.

Currently operational in the districts of Ranchi, Seraikela Kharsawan and Khunti, the programme depends on partnerships with Jharkhand's health and education departments and with a spectrum of non-governmental stakeholders, among them philanthropies, self-help groups, private general practitioners and civil society as a whole.

Reaching out

The Tata Trusts' community-based cancer care initiative in Jharkhand has spread its wings to good effect since being launched in February 2020

63,000+
people screened for three cancers (oral, breast and cervical) and for diabetes and hypertension

10,200+
suspected cancer cases identified during screening and followed up with diagnosis and treatment (where required)

2,400+
frontline health workers, community health officers and others trained in cancer screening and awareness

580+
private-sector doctors trained in detecting cancer symptoms and managing patients

Shift in approach

Given that the going hasn't exactly been easy for the RCCF team, the progress made has been substantial. Some of that is down to changing tack when the ground situation so demanded, as it did in the aftermath of the Covid pandemic. "We shifted our approach from conducting screening camps only at [the state's] health and wellness centres to making it a hybrid model wherein we went village by village," says Nilesh Kumar, the district programmer with RCCF.

Bringing frontline health workers, community health officers and others in the state's official setup into the programme fold was vital. "Their support helped in organising the screening camps and increasing the attendance of villagers," adds Mr Kumar. "As for the community, they were receptive whenever we said the camp was for diabetes and hypertension; not so much if they came to know cancer screening was being done. That's why we started emphasising that these were general health checkup camps."

For those suspected of having the disease, time is of the essence in treatment. "We start follow-ups immediately and we have 'patient navigators' to guide the affected to hospitals for confirmatory diagnosis and treatment," says Mr Kumar.

The programme depends on three institutions for the treatment of patients: the Ranchi Cancer Hospital and Research

A community awareness session in Hesadih village in Ranchi district

Centre (RCHRC), an 82-bed facility established by RCCF and TCCF with support from the Tata Trusts, the government-owned Rajendra Institute of Medical Sciences (also in Ranchi) and the Meherbai Tata Memorial Hospital, Jamshedpur (this is managed by Tata Steel).

RCHRC, which threw open its welcome facilities in May 2023, is the programme's own, offering a range of cancer treatments, from chemotherapy and radiotherapy to surgical oncology. Affordability and quality of care are the hallmarks of the Centre, where charges for the poor are heavily subsidised.

The cost of diagnosis and treatment is often the biggest barrier to getting better for those suffering from cancer. The programme's exertions to cover the gap, mainly by linking patients to government health and insurance schemes, are a work in progress. "It's a challenge we are constantly faced with," says Mr Kumar, "and counselling by our patient navigators is critical in the context."

There's no doubting the contribution of the programme in aiding Jharkhand to cope with its cancer burden. "We have done well on the awareness front," says Mr Kumar. "Second, we have shown what quality screening is and how this can be done at the village level. And third, we have had a fairly forceful impact on the frontline workers involved in the initiative."

Problems aplenty

Anita Devi, a government community health worker in Ranchi, is realistic about the difficulties cancer patients have to deal with. "Proper facilities are not available in rural areas," she says. "Suspected cases are referred to the Ranchi centres but most poor patients are disinclined to travel that far for a variety of reasons. For many of these patients, their livelihood matters more than their health."

The training modules for frontline workers, community health officers and others are an essential feature of the initiative. These sessions, conducted in various villages in collaboration with the National Health Mission and district health

Community health workers (right) from Duli village in Khunti district being instructed about the documentation process for screening

authorities, have proven more than useful in providing an education on cancer to more than 2,400 health personnel working in rural reaches.

The Jharkhand cancer care programme began with nine staffers and the number has grown to 40. There are nine screening teams to conduct the camps: six in Ranchi, two in Seraikela Kharsawan and one in Khunti. These teams have their hands full and the going will get more intense in the years ahead.

"Help for patients with diagnostics, advocacy with the government and connecting the community to treatment centres — all of these have to be pushed," says Mr Kumar. "And we hope to see the state government taking ownership of the programme."

"We have had to overcome quite a few challenges to come this far with the programme," says Paul Sebastian, head, public health programme with TCCF. "Jharkhand is a big state and, once you leave the main cities, very rural. That makes things tricky. We have dealt with deficiencies of consumables, lack of privacy at screening sites and the like."

Dr Sebastian adds that the intent of the programme is to cover 15% of those in the 30-65 age bracket. "The state government is keen that our engagement is taken to a next level, which means covering other districts. We don't have the bandwidth to do that as of now, so we are planning to propose a technical partnership to help train frontline health workers in all of the state's districts."

The learning from the Jharkhand initiative and others like it has informed the Tata Trusts' evolving approach in cancer care. "We have come to understand that this cannot be a plug-and-play model," explains Dr Sebastian. "It needs to be tailored to a particular geography to suit the local culture and local requirements. I'm sure that we'll do even better going forward." ■

By Philip Chacko

Children display their drawings at a primary school in Ambari village in Assam's Goalpara district

Class comfort

School dropouts are back in the education system thanks to an initiative targeting rural communities in Assam

His father's untimely death in 2018 came as a shock to Sengprang Momin, then just nine. Struggling with grief and emotional turmoil, the lad from Derek Jongnapara village in Assam's Goalpara district cut himself off from his friends. The bereavement plunged the family into a financial crisis, Sengprang's private-sector school refused to take him back because his mother couldn't afford the fees any longer, and he missed classes for an entire year.

The opportunity to get back on track with his learning arrived for Sengprang in late 2019, when he came on the radar of the Tata Trusts' Assam state initiative (ASI) education programme, an effort to help out-of-school children like him. After speaking to his family members, the ASI team convinced Sengprang to participate in a 15-day motivational camp.

Mingling and engaging with his peers at the camp made a world of difference for Sengprang, who now studies in class IX at the Derek Higher Secondary School, a government-run institution where education is free. "ASI has given us hope," says Sengprang's mother, Pretisa Momin. "Without this project my son may never have got another chance to get back to his studies." Ms Momin wants Sengprang to become an army officer and, the way things are going, the prospect is far from distant.

Labour migration and abject poverty force countless children across Assam to drop out of school every year. The problem is more pronounced in rural areas, and it's here that ASI has made its mark. The programme has thus far enabled 1,237 children from four districts – Goalpara, Bongaigaon, Baksa and Nalbari – to resume formal schooling.

Says Benny George, area manager for education (Northeast) with the Tata Trusts:

Setting the benchmark

1,237
students have benefitted from the ASI programme

38
motivational camps were organised for out-of-school children

373
days of teacher training were conducted to offer remedial support

64%
average performance improvement among students in language and maths

"All four of these districts face major challenges with regard to student dropout rates and learning outcomes. It made sense for the Trusts to launch an educational intervention of this kind in these districts."

Implemented by the Centre for Microfinance and Livelihood (CML), an associate organisation of the Trusts, the big goal of the programme was reducing school dropout rates by at least a quarter in the selected districts. Also on its agenda were retaining three-fourths of the targeted children in school through remedial support and pulling dropouts and never-enrolled children into government schools, Kasturba Gandhi Balika Vidyalayas and Residential Special Training Centres.

Pillars in the process

Village communities and teachers were vital pillars in the process. The ASI team created community platforms and worked closely with school management committees and mothers' groups to push the endeavour forward. Additionally, there was a capacity-building component for schoolteachers (through training workshops).

ASI worked exclusively with government schools, where the remedial need is highest. Fanning out across the project area, the programme team located dropouts by visiting homes and talking to family and community members. Motivational camps were conducted to convince children to stick with, or get back to, formal schooling.

Remedial classes for re-enrolled and poorly performing children were held on alternate days of the week. The young ones got extra help from 45 educational facilitators, who were tasked with monitoring 90 schools in the project area.

The role of these facilitators in improving the literacy and numeracy skills of students was crucial to the programme's success. Kandarpa Kalita, area manager for education at CML says that in many cases the facilitators had to start by teaching the absolute basics. These were children who could not even recite the alphabet (neither

in their native language nor in English). They needed plenty of support to catch up.

The requirement for such support was clearcut. "We had class V students who had to be taught the lower kindergarten-level curriculum," says Mr Kalita. "Although these students have still not caught up with the rest of their class at the end of three years, they now certainly have the capacity to do so."

The remedial process was not without conflicts, as schoolteachers were sometimes reluctant to send a child away from class every alternate day. This was where the teacher training workshops had an impact. Apart from giving teachers the tools to make learning fun for the kids, the workshops also drove home the need for foundational literacy and numeracy. The tutors were made to understand that teaching a child the nuances of grammar or advanced maths is meaningless if he or she is unable to recognise alphabets or numerals.

Literacy and numeracy

"Some of the children could add and subtract mentally or orally, but they could not do sums on paper because they didn't have an adequate grasp of numbers," says Mr Kalita, who adds that focusing on literacy and numeracy was essential to ensure that the children kept returning to class. "The teacher training programmes, meanwhile, helped teachers understand the value of building a bond with kids."

Launched in September 2019, the ASI programme was stymied by the Covid pandemic before it could get into full gear. The country-wide lockdown in March 2020 led to schools being shut until February 2022. This dealt a major blow to education especially, as many families were too poor to afford smartphones for their children's online classes.

Education facilitators working with the programme overcame this problem by

Schooling springboard

For his circumstances and the background he comes from, dropping out of school after class VI was seemingly inevitable for 10-year-old Sulman Ali (above), and a natural course of events as far as his hard-pressed family was concerned.

Sulman's father is a migrant factory worker in Kerala and his grandparents, who live in Chapatal —an underdeveloped pocket in Assam's Baksa district — were too poor to send him to school. Sulman's tender age was no bar to him joining the family vocation of cutting betel nuts.

That's how it would have stayed if not for the Assam state initiative (ASI) education programme. The ASI team convinced his grandparents to send Sulman to a 15-day motivational camp at Kalakuchi Lower Primary School. The experience encouraged him to get back into the formal schooling system and, with the ASI team's help, he enrolled at the Chapatal Middle English School.

Returning to school has transformed Sulman in more ways than one, in his behaviour, his sense of discipline, his confidence and his interests. Sulman's overall development has improved on every education parameter and he has made many friends. His family members couldn't be happier as they see the shy young boy coming into his own, and his prospects of improving his lot in life have never been brighter.

It's a lesson well learned by Sulman, his parents and grandparents and the community he belongs to.

An origami session during summer camp at the Kongkera Garo Middle English School in Kongkera village in Barpeta district

visiting student homes to conduct remedial learning sessions. The rapport they had built with the children in the preceding months came in handy. Initially diffident, the parents of these students became deeply involved in their children's studies (despite many of them never having gone to school themselves). "It was touching to see the pride on the faces of parents when their children began to read simple stories from their textbooks," says Mr Kalita.

Through determination and sustained effort, the ASI team succeeded in meeting, and in some cases exceeding, its objectives. An example of this is the improvement in learning outcomes of students attending the remedial classes. The team had set itself a performance improvement target of 50% for language and maths. The actual improvement has been 64% on average.

Leela Das, headmistress of the Kalakuchi Lower Primary School, is all praise for the ASI effort. "The remedial support through education facilitators is an excellent idea, and has worked very well for our children," she says.

Bringing the children back to school has been a fulfilling experience for the educational facilitators involved. Manoj Talukdar, a facilitator from Tamulpur village in Baksa district, is thrilled to get the opportunity to give back to his community. "The kids are benefitting from my teaching and every day I learn something new from them, too," he says.

While the ASI programme ended in March 2023, an expanded one is set to be launched in the near future. "We will cover more districts and schools in Assam. Our aim is to reintegrate 2,500 more out-of-school children into the education system," says Mr George. ■

By Kalpana Shah

Doctors at the district hospital in Sircilla and eICU faculty during their daily rounds

Critical change

A telemedicine-based model of emergency care is saving lives and cutting costs while catering to more than 1 million people in six districts of Telangana

Boddu Laxmirajam had suffered serious internal injuries after a heavy fall while working in his field. Semiconscious and battling for life, he was wheeled into the emergency-care facility at the district hospital in Sircilla in Telangana. All that stood between the 45-year-old Mr Laxmirajam and the possibility of death or permanent disability was a slender 30-minute window of critical care.

Acting swiftly, the doctors at the hospital performed an initial investigation, followed by an MRI (magnetic resonance imaging) scan that was guided by a neurologist at the Nizam's Institute of Medical Sciences (NIMS) in Hyderabad, 140km away. Based on the diagnosis, the doctors at the district hospital performed a thrombolysis procedure to break down the blood clots putting Mr Laxmirajam's life in danger. The four-hour operation was a success and Mr Laxmirajam was saved. "I felt hopeless initially but the doctors came to my father's rescue," says Mr Laxmirajam's son, Chandu.

The crucial role in getting Mr Laxmirajam out of harm's way was played by the Tata Trusts-supported emergency intensive care unit (eICU) programme launched in Telangana and being piloted at the Sircilla district hospital. Mr Laxmirajam is one of more than 4,500 patients to receive care under the initiative, which aims to improve critical health services in the state's rural regions.

Emergency connection

The eICU programme is making a healthy difference to Telangana's healthcare landscape

4,500+
patients served

1 million
people covered across 88 villages in 6 districts

8
peripheral hospitals (64 ICU beds)

60%
drop in patient referrals from peripheral to tertiary hospitals (for initial observations)

The Trusts provide techno-managerial support to the eICU initiative, which is backed by the Government of Telangana in collaboration with NIMS and the National Health Mission (NHM). Launched in 2021, the eICU programme covers eight peripheral hospitals with 64 ICU beds and caters to a population of nearly a million-plus people living in 88 villages in six districts.

High-quality attention

Besides being a life-saver for poor patients, the initiative has helped improve healthcare delivery in outlying areas by enabling access to specialty care and high-quality medical expertise. "Earlier, critical cases would be referred to tertiary-care hospitals in urban areas; this would delay treatment," says Sita Rama Budaraju, senior consultant, health, with the Trusts. "eICU has enabled peripheral hospitals to consult specialised doctors immediately, saving precious time."

The need for such an effort was acute. Telangana is one of India's fastest-growing states but parts of its rural healthcare landscape are barren, especially lacking in specialised and ICU facilities. Patients have to travel long distances to urban centres for treatment and critically ill patients would often miss the 'golden hour' window for medical care.

The eICU programme is designed to bridge this gap in emergency care. The model uses telemedicine to provide specialty expertise to patients in peripheral areas, reducing the need for long-distance travel and improving treatment outcomes. The programme also addresses the shortage of trained staff in peripheral facilities through 24/7 consultation via its platform.

At the heart of the eICU's approach is a hub-and-spoke model. The central hub at NIMS acts as the eICU command centre to support peripheral hospitals, which are the spokes. The hub has a dedicated team of consultants, senior residents, nursing staff and data-entry operators to deliver multidisciplinary support. The peripheral facilities, the 'first line of treatment' for

patients, are strategically chosen, based on their infrastructure and proximity to the nearest tertiary-care centre.

Technology plays a vital role in the eICU model and that's where the Trusts come in. Doctors at the hub and the spokes are connected by video conferencing technology that facilitates real-time patient evaluation. To allow the NIMS team to monitor patients remotely, pan-tilt-zoom cameras have been installed at each ICU bed. The model uses Medintegra software, customised as per the eICU communication protocol to ensure efficient data entry and management.

Training way

The success of eICU is dependent on the capacity building of health workers. NIMS has developed tailor-made training programmes to upgrade the knowledge of personnel at rural ICUs. 'Peripheral ICU upgradation and integration' training is conducted regularly to provide staff with insights into typical procedures such as tracheal intubation, cardiopulmonary resuscitation and central venous catheter placement. The training is reinforced through knowledge-sharing sessions and continuous medical education programmes conducted by the doctors at the hub.

Nitesh Kabra, a faculty member at the eICU hub in NIMS, says that the support of the state government and the Trusts has amplified the efforts of the doctors, nursing staff and technicians working at the hub. "It is a collaborative effort and a learning experience for the doctors at the spokes as well as here," he says.

Given eICU's ambitious scale, its implementation was not without its share of obstacles. The first was getting a buy-in from the healthcare personnel at the spokes. They had to be persuaded to participate in the programme and accept the support provided by doctors at the hub.

The second challenge stemmed from technological limitations. In the early stages, audio-visual aids proved to be unstable, hindering effective communication between the hub and spokes. However, alternative modes were quickly adopted to ensure seamless connectivity and information exchange. Quick and easy access to advice from specialist doctors helped tide over these initial hurdles.

Over the last two years, the eICU programme has produced strong results by making specialised healthcare accessible to patients in rural Telangana. Thousands of

Timely treatment

When 40-year-old Molluguru Anjaiah lost consciousness due to hyperglycaemia, fever and an infected foot, he was rushed to the government hospital in Zaheerabad in Telangana's Sangareddy district. Had it not been for the short distance to the hospital and the swift action of the doctors on duty there, Mr Anjaiah would likely have lost his leg.

Mr Anjaiah's condition put him at grave risk of brain damage from cerebral hypoxia (lack of oxygen supply to the brain) and sepsis caused by infection. These risks were dealt with thanks to the timely care he received at the Zaheerabad hospital, which is a part of the Tata Trusts-supported telemedicine-based emergency intensive care unit (eICU) network.

Mr Anjaiah's doctors counselled him and his family on the prognosis of his illness and necessary post-hospital care. "I am genuinely grateful for the tremendous efforts of the team to improve my health and wellbeing," he says.

Many critical-care patients in Sangareddy district have benefitted from the eICU programme. They get high-quality medical care and no longer have to travel far for treatment. The model has transformed the Zaheerabad hospital, says ICU specialist Nithin Kumar Jangam, and it has built up the confidence level of the staff there. "Earlier, we would refer all critical cases to other government hospitals," he says. "With the setting up of the eICU, the referral rate has decreased by 80-90%."

The eICU team at NIMS during a video counselling session with a high-risk patient and his caregivers at the district hospital in Kamareddy

patients across the six districts covered under eICU can now access a higher level of medical expertise closer to home.

Patient families get financial benefits as well. Easier access to emergency health services locally means a lower burden of the hidden costs associated with illness, such as wage losses and travel and stay expenses. Another benefit of the programme has been the easing of patient loads on larger hospitals. Since eICU's launch, patient referral rates from peripheral hospitals to tertiary hospitals have dropped significantly.

Additionally, the programme has helped improve utilisation of existing infrastructure at peripheral hospitals, which was low due to a dearth of trained staff. The model has also resulted in improved patient outcomes, with tertiary care centres reporting lower mortality and reduced length of stay.

The Telangana government is planning to upscale the eICU model to enhance its scope and reach. The intent is to establish 33 spokes, one in every district of the state, each with at least 300 ICU beds. Also in the pipeline is a strengthening of the hub by hiring more staff and upgrading infrastructure.

"We want to continue our knowledge exchange workshops and share upcoming research with the spokes. We want to bridge the healthcare gap in peripheral and rural areas," says Dr Kabra. That means a further cascading of medical expertise from urban to non-urban areas of Telangana and making healthcare more accessible. ■

By Poorva Chavan

A group of Karta scholars on a visit to Ahmedabad for a workshop

Scholarly bent

Providing marginalised rural youth with a college education at premier institutions in India and overseas is the objective of the Karta Initiative

Tejal Nikam, all of 20, is something of a trailblazer. Currently pursuing her bachelor's degree in literature and cultural studies at FLAME University in Pune, she is the first woman from her village — Wada in Maharashtra's Palghar district — to venture out for a college education. Graduation and a career await for Ms Nikam, and that's much different from the prospects of many of her former schoolmates, for whom formal learning will likely end when they complete class XII.

Despite having talent and drive, countless rural students in India are unable to pursue a university education. The reasons are many: low-resource households, lack of awareness about academic and career pathways, the 'digital divide' plaguing rural areas, and a poor grasp of English. Ms Nikam was able to overcome these barriers thanks to the Karta Initiative, a Tata Trusts-supported programme that has secured her a scholarship.

"Karta has transformed my life," says Ms Nikam, who is currently interning with an NGO in West Bengal. "I'm determined to prove myself worthy of their backing," she adds.

High on learning

600
students mentored through the Karta Initiative since 2017

30+
Jawahar Navodaya Vidyalayas and schools of partner NGOs are in the programme

55
Karta scholars have had access to a university education

Karta was incubated in 2017 by the Trusts to enable youth from marginalised rural communities to access high-quality university education. The programme is a collaboration with the Jawahar Navodaya Vidyalayas (JNVs), the nationwide chain of central government-run schools for students from underprivileged backgrounds, and also involves schools run by partner NGOs.

To date, Karta has supported and mentored nearly 600 students from more than 30 JNVs in Bihar, Jharkhand, Maharashtra, Karnataka, Jammu & Kashmir, and Ladakh. This number is set to rise to about 1,800 by the end of 2023. Of the 600 students mentored, 55 students are 'Karta scholars' who have attended, or are at present attending, universities in India and abroad.

Karta means doer, a person who takes action, and it aptly describes the vision behind the programme. "Many of these students possess exceptional talent and zeal, but they lack the means to transition to universities," says Aparna Choudhary, chief executive of the Karta Initiative. "We are building bridges to facilitate this transition."

Noting the feedback from teachers and parents, the Karta team has piloted a project with class IX and class X students (this will be launched in all the schools in the programme), in addition to the already existing XI and XII class interventions. Karta

also reaches students as young as 12. "That's when youngsters start contemplating their place in the world and their aspirations for the future," says Ms Choudhary.

Multiple issues came to the fore: the overwhelming constraints the students faced, pressure from their families to start earning money, the absence of mentors and helpful networks to guide them, and soft skills gaps. Surprisingly, Karta had its task cut out in attracting students to the programme. What helped was its multifaceted approach and the resources it had to support students.

Mentoring support

A key component in Karta is its 'targeted access programme', where project officers work directly with partner JNVs to hold workshops and provide mentoring to enrolled students. "We help students map their skills and interests to available courses and we provide guidance on university admissions processes," says Jyotsna, manager, programme design at the Trusts (she goes by the single name). The scholars then receive intensive coaching, with the focus on critical thinking skills, analysis and comprehension.

To reach a wider target, Karta has developed a digital platform called Karta Connect. The platform offers valuable tools and resources to foster decision-making and skill-building in students. The Karta Connect app was preloaded on the 70,000-plus tablets distributed by the central government to JNV students in 2022.

Additionally, Karta offers an 'advanced digital literacy' programme, a self-paced online course that equips students in organising and analysing information to help them make more informed decisions about their future.

Then there's the 'Karta catalyst scholarships' — offered in partnership with Indian and international universities — which gives students the support they need to thrive at the college level. Full funding for tuition and living expenses, personal and professional development, internship placements and one-on-one mentoring are just some ways students are lent a hand.

Take the example of Vikas Kumar, an 18-year-old Karta scholar who hails from the underserved Musahar community in Bihar. Mr Kumar is currently studying political science at Ahmedabad University while also interning with the Tata Trusts in Rajasthan. Mr Kumar says that enrolling for the Karta programme has opened up avenues that he didn't know existed.

"Back home, we live on the outskirts of our village and don't interact with people from the higher castes," he says. "Here I'm in the same classroom as upper caste boys and those from wealthy families. Sadly,

Partnerships heft

A big factor in the Karta Initiative's success has been its ability to bring on board globally renowned institutions of higher learning. The Initiative's distinguished list of academic partners includes the University of Oxford, University College London, Edinburgh University, Queen's University and the University of Toronto, as well as leading Indian institutions such as Ashoka University, FLAME University, Krea University, Plaksha University, Ahmedabad University and Azim Premji University.

Some of the international partners have visited India to understand how Karta works, says Aparna Choudhary, the Initiative's chief executive. "We maintain deep and lasting engagements with the universities that collaborate with us," she adds.

Karta's academic partnerships have created a strong scaffolding of support for its scholars. For instance, the Canada-based Queens University is helping visiting scholars get their visas extended and even assisting them with job interviews. In order to build more such mutually beneficial collaborations, Karta plans to expand its collaborative canvas over the next couple of years.

many of my former classmates who chose not to enrol with Karta may have to take up daily-wage labour to survive."

Besides preparing youngsters, from the academic standpoint, to get into university, Karta's programme officers meet teachers and other officials on campus, even going so far as to ensure that students are well settled in their rooms. The project team prioritises the social and emotional well-being of its scholars, bringing them up to speed with societal issues they may not have been exposed to previously.

"We were made aware of feminism, body shaming, the LGBTQ+ movement, the importance of consent and other things we had never heard of," says Ms Nikam, adding that this has helped students become aware of, and form a view on, the issues of these times. Academicians from various fields, career counsellors and others visit to share their expertise and answer queries ranging from job opportunities to the state of the world.

Good mental space

Karta scholars have at least one weekly call with their allotted mentor and a senior scholar, as well as group calls with batchmates in different universities. Ms Choudhary explains why these weekly calls are necessary for the youngsters, who have largely grown up in deprived communities. "Overnight they are thrust into a big-city environment where everything — from clothes and food habits to accents and social niceties — comes as a culture shock," she explains. "The weekly calls help us know on a continuous basis whether the students are in a good mental space."

Ms Nikam says that these calls help her navigate awkward scenarios. Earlier, when her university classmates would eat out, visit pubs or go to multiplexes, she would cite her workload to excuse herself. "Now I frankly tell them that I'm broke and don't want to go," she says with admirable self-assurance.

Karta mentors provide guidance throughout the educational journey of the scholars. Mr Kumar, who wants to return to his village and mentor other youngsters, says that such support has been invaluable. "It's a blessing to be able to discuss options with someone educated, someone who has your welfare in mind," he says.

In addition to the mentoring they receive, each scholar also undertakes an annual internship that gives them early exposure to different sectors. This broadens their perspective and boosts their confidence as they travel and learn about the world around them.

A novel initiative like Karta cannot be without its challenges. The first is to persuade school students to enrol in the programme. After that the challenge is to keep them engaged and committed. Karta's small full-time team relies on a large network of volunteers, including JNV schoolteachers, who stay back in school for an extra hour or two daily to help students brush up on academics, learn to communicate better in English, do problem-solving, and have discussions on social and political trends (getting the teachers to put in extra hours voluntarily is not always easy).

Another issue is that sometimes parents are not willing to let their children leave the village. "Mobility is an issue, not just for girls but also for boys," adds Ms Choudhary. "It's practically unheard of for daughters to go away, all alone, to study somewhere far away. We have to visit the families and community leaders to persuade them that their child will be safe and looked after."

Despite the challenges, the Karta Initiative has gone from strength to strength over the past six years and is now looking to spread its impact wider. The

Karta scholar Shekhar Kumar, currently studying at Azim Premji University, with children at his ancestral village Bhagwatipur (in Bihar's Patna district), where he teaches during visits back home

team is in talks with the Union Ministry of Tribal Affairs to work with the government's Eklavya Model Residential Schools. These schools, started in 1997, cater to students from scheduled tribes residing in remote areas.

The Karta scholars will, in time, become part of the network and extend the initiative's reach. Shashank Malik, the programme and partnerships lead at Karta, hopes that as the initial batches of scholars visit their villages after graduation, the number of enrolments will rise. "When students see someone from their own village returning with a university degree and a job, it makes a significant impact," he says.

Karta has benefitted tremendously from word-of-mouth publicity. Following the programme's success, various state educational departments have requested the Karta team to help their students. "That's because they have seen how our students have progressed after just two years of being with Karta," says Ms Jyotsna. "Our qualitative skill building is pretty intensive. The ability to comprehend languages and handle situations, interpret data and work in teams are all skills that are needed today, not in the future."

Karta's long-range goal is to reach 3,000 youngsters in the next five years and to support 200 fully-funded scholars. Its vision is for the scholars to become changemakers and leaders who represent and speak for their communities and villages. After all, Ms Choudhary reasons, who better than these students to articulate grassroots problems and to propose and develop solutions for the betterment of their people? ■

By Kalpana Shah

Through the lens with empathy

The camera is **Sudharak Olwe's** identity, as is being a member of the Dalit community. Conjoining the two has led this award-winning photographer down a path that has come to define his work. Mr Olwe has made social documentary photography his forte, with a captivating canvas that captures the many-hued stories of those on the margins: a path-breaking series on conservancy workers; the realities of Kamathipura's sex workers and their environment, the tragedies of women victims of domestic violence, and more.

Empathy is embedded in Mr Olwe's images, the starkness and simplicity of which are enhanced by the black-and-white format he prefers. That's a fair distance from the news photography that Mr Olwe began his "accidental" photography career with, and it reflects a distinctive style of rendering made all the more exceptional by the compelling nature of the subjects he seeks to explore and expose.

Mr Olwe, who was bestowed with the Padma Shri honour in 2016, speaks to *Philip Chacko* about his photography and his life, about looking down the barrel of poverty to finding his place in the world. *Excerpts from the interview:*

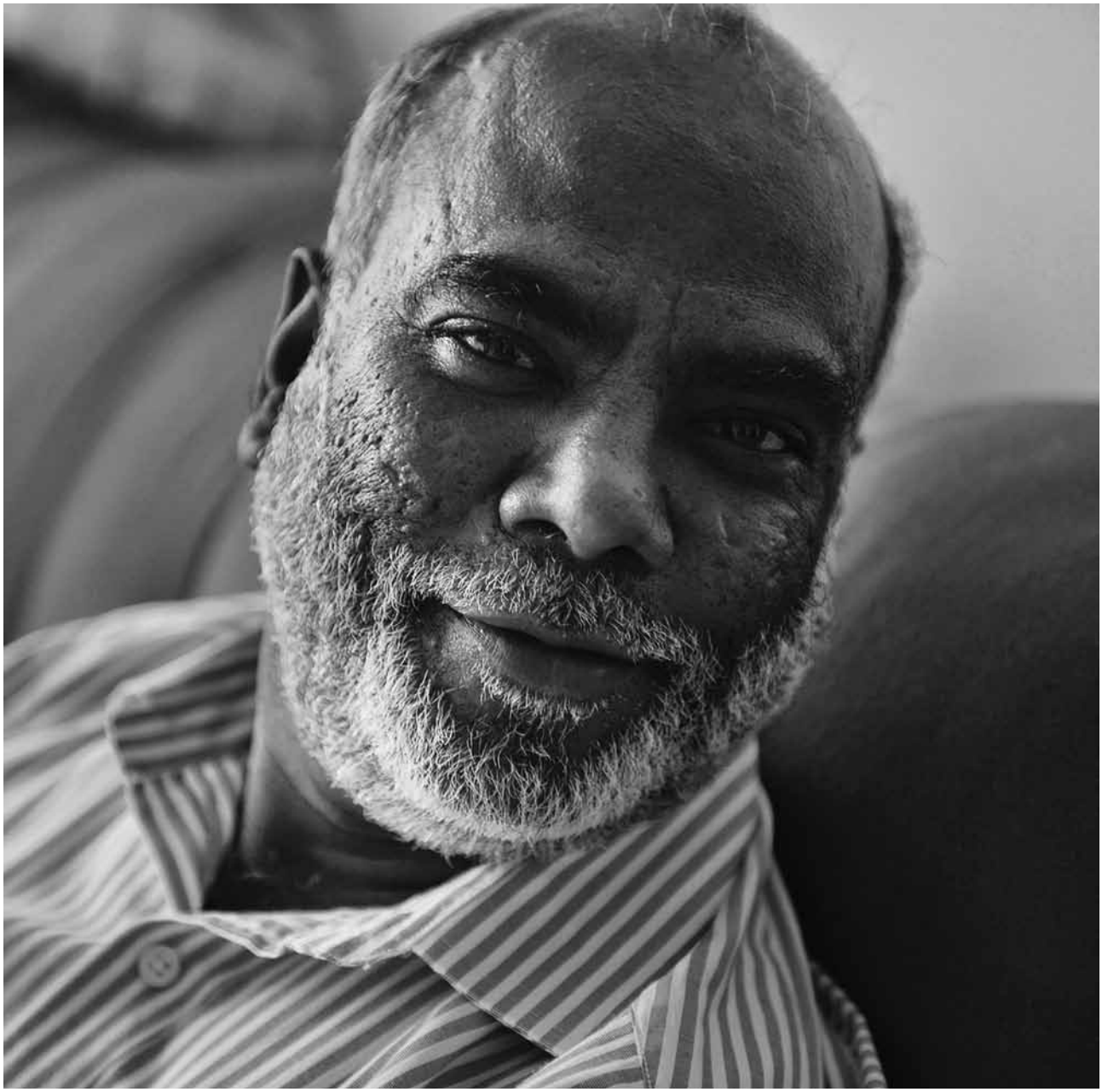
Lavani artistes at a show in Modnimb village in Maharashtra's Solapur district (2004). This image was part of an exhibition, The Circle of Tamasha, staged by Sudharak Olwe in Mumbai in 2023. Lavani is a dying folk dance performed mainly by lower-caste women.

What got you interested in photography and how did it become a career choice for you?

It was not a choice. I was 22 and doing my fine arts course at the Sir JJ School of Art. My family situation was not very good; I didn't have money even to buy the required course material. Now, I had opted out of a civil engineering course previously. Coming from a Marathi medium school, I found it very difficult to follow the English lectures there. Everything was too tough.

At JJ, one of my professors saw me struggling; he said, "You have to start earning something quickly." He steered me to the photography class at the college and he made sure I finished that (I had dropped out of the arts course as well by then). I didn't have a camera but I managed to clear the exams.

My father was an Ambedkarite [a follower of BR Ambedkar, the social reformer and political leader] and a poet too. There used to be a lot of



gatherings in my house with talk about social justice, atrocities and such. My father was the first of his generation to get an education. The fight against untouchability was raging ... there was so much happening. I certainly was influenced.

My family was more hard-pressed than ever after my father's passing. I started assisting Pradeep Chandra, a senior photographer living in our housing colony. Then I began freelancing for the *Free Press Journal* [*FPJ*, the Mumbai newspaper]. This was 1988-89 and I got paid ₹12 for every published photograph.

My first proper job was also with *FPJ*. Photography was not a passion at that point. It was all very accidental; I just wanted to earn some money to support my family. I never thought I would be a press photographer (my professor reckoned I would become a wedding photographer).

A victim of domestic abuse at her home in Chitrakoot in the Satna district of Madhya Pradesh (2004). Mr Olwe's series, Survivors of Violence, portrayed stories of women survivors of domestic abuse in different parts of India.

You began as a news photographer and that was more than 30 years ago. What was photojournalism like back then and how has it changed in the years since?

It has changed a lot. Photographers and journalists were respected in those days. There was a distance between the subject and us. We were never overpowering; the human emotion was important. We were ethical and empathetic, especially in situations of distress.

A lot of that is missing now, I think; the relationship between news and newsmakers is blurred. The digital age of news photography has created chaos. The police often are in confrontation mode. Respect and sensitivity are finished at this juncture. Earlier, sources of information and communication were limited; now there's too much of both and much of it is rubbish.

You said you had no particular passion for photography when you started…

There were no cameras around when I was growing up. I hail from rural Maharashtra and, settling in Mumbai, everything was new. This was the post-liberalisation era and there was plenty of change in the air. I had to survive and the camera provided me the way. I had tried engineering and fine arts; photography was the last call.

What drew you to social documentary photography and what made you pick the subjects that you did?

My years in journalism and my identity as a Dalit gave me an inside perspective on news and the space therein: who gets it and who doesn't. The marginalised, mainly Dalits and tribals, are excluded from this space. I felt strongly about the discrimination and that fuelled the idea for my first social documentary series.

For a five-year period from 1995, I was photographing celebrities and the like constantly. That meant Bollywood parties, people walking in at midnight sporting dark glasses, lots of food and drinks, big cars and the heavy scent of perfume. I began wondering about the whole setup.

I was with the *Times of India* in Mumbai then and there was this sweeper at our office. I got talking to him. He was a Dalit, a member of my community, and he asked me to come to his place and see how he and his people lived. I visited his home and that was the spark for my first series, In Search of Dignity and Justice.

The series was on conservancy workers and for a year I went every morning and did my shooting. Nobody had photographed them like that before: cleaning drains, picking up sludge and slime, human excreta, garbage, medical waste ... and with no protection. It was inhuman.

These workers died young because they drank so much. Many died – and continue to die – inside gutters and drains. There was no respect, no dignity to their job. People knew somebody was cleaning their filth, but

A conservancy worker sweeps the overbridge adjoining Chowpatty beach in Mumbai (1999). In Search of Dignity and Justice, Mr Olwe's remarkable series, focuses on the lives and miseries of these workers, the vast majority of whom belong to the Dalit community.

nobody had 'seen' the conservancy worker. And there was so much of a caste angle to the whole thing.

I connected with my subjects and they with me. The celebrities I photographed could not have become my friends or invited me to their homes. It was different with the conservancy workers; I had full access, I could go to their humble houses, sit and eat with them, be friends with them.

The starkness of your social documentary images … what made you take this route in terms of style and rendering?

This is a method that I've developed over time. I choose black and white when the subject matter demands intensity and emotion. I do not want any colour to distract from that. I seek to convey the pain my subjects carry in them; I want their images to stay in the mind.

The difference between my work and those of others is, perhaps, that I identify with my subjects. As a journalist I was detached and neutral; as a social documentary photographer I take a stand. Whether it's Dalits, women or anyone else who faces oppression, I feel I can understand their pain and misery because my community has been discriminated against for thousands of years. It hurts so much. Imagine a Dalit riding a horse being killed for that, or for keeping a moustache.

Did you alter this style with the Kamathipura series and the one of women forced to endure abusive relationships?

I altered it a little bit because I was covering women, not just Dalit women. Caste is less important in such a context. Women are discriminated against to a great extent in many parts of our country. We are ignorant as a society and that ignorance should go. My social documentary images are about getting people to at least look.

What kind of ethical issues should social documentary photographers — and news photographers as well — be conscious of? Are there boundaries that are best not crossed?

There is a very thin line here. When I started doing social documentation I used to call seniors like Raghu Rai and Pablo Bartholomew for advice on this and that, but then I learned my own ethics lessons. Everybody wants to tell their stories, but there has to be understanding, mutual respect and a connect.

Above all, there has to be trust between photographer and subject, most so in social documentation. You are an outsider, of course, and you need to see that barrier. The critical factor is the subject. You have been given access to their lives and their homes. How can you be insensitive?

Much of your work in social documentary photography is in black and white. Why not colour?

I believe black and white is more powerful when showing inequality and injustice. Black and white carries on for a longer time; it lingers. I wanted my message to be stark and clear. Also, I was shooting in black and white partly because I come from the monochrome era.

Oftentimes it's the subject matter that defines the treatment. Conservancy workers in colour would be an abomination, I think. Colour takes away an important aspect of the emotional connect I try to forge. My photographs are not exotic; they are more realistic and immediate.

How has social documentary photography evolved in India and where do you see it going from here?

It's coming up now in India. It has taken time to take root because of things like financial support, equipment and photography education. All of that is changing and a lot of photographers are doing personal stories and framing social subjects, but there's still a long way to go.

What happened previously was that we had these photo essays, where the editor or the newspaper owner decided what was worth carrying. Then a few photographers started funding their own projects, telling their story the way they wanted to. That's how the photographer's point of view came into the picture.

Social documentary photography has become a valid and powerful tool the world over. It changes perspectives more potently than written narratives can. An image of a malnourished child, for example, can move the administration or a philanthropy in an instant.

The world learns from these images; it's documentation, it's archival. There are a vast number of issues in India that need such documentation; we don't lack for subject matter. But you have to find them and make them visible for our governance structures, our courts and our police.

"The celebrities I photographed could not have become my friends or invited me to their homes. It was different with the conservancy workers ... I could go to their humble houses, sit and eat with them, be friends with them."

You have worked as a professional and an artist in two dissimilar, but similar, photographic formats, digital and film. The

With his parents and aunt making for a not-too-enthusiastic audience, Mahesh Rathod — a Dalit youth who was assaulted by upper-caste men for wearing a gold chain and shoes — plays the *dhol* at his house in Mehsana in Gujarat (2015).

advantages of digital are obvious enough, but surely there is something to be said for film.

Beautiful images happen when you shoot with film. You shoot but you don't know what you're shooting unless you develop it. What you see and how you respond has to be smart. With digital you don't have to be as focused. You keep shooting and you can get a 1,000 images, most of it crappy.

With film you only have the 35 frames. It's your eye; it's the man behind the camera and his seeing has to be intense; you have to be a thinking photographer. With digital that thinking has stopped because you shut your mind. You miss 'the decisive moment'.

Photography Promotion Trust [PPT], the nonprofit you founded, has been working to make a difference in the lives of marginalised communities. How challenging has that been?

We started PPT for the children of conservancy workers because I wanted to give something back. I had worked with them, won awards and travelled the world as a result. We started with a batch of 20 conservancy children in 2007 and we ran the programme for 10 years. Seven of those kids are professional photographers today.

We wanted to break that chain of son following in father's footsteps and becoming a conservancy worker. The purpose was not so much to make the children photographers, but to make them aware of their situation, their histories. And photography is a very strong language for that.

How do you view the idea of photography as an art form? What makes an image a work of art?

That's an impossible question to answer but I'll try. In my way of thinking, it's art if it reaches people and makes a difference. ■

IMAGE VILLAGE

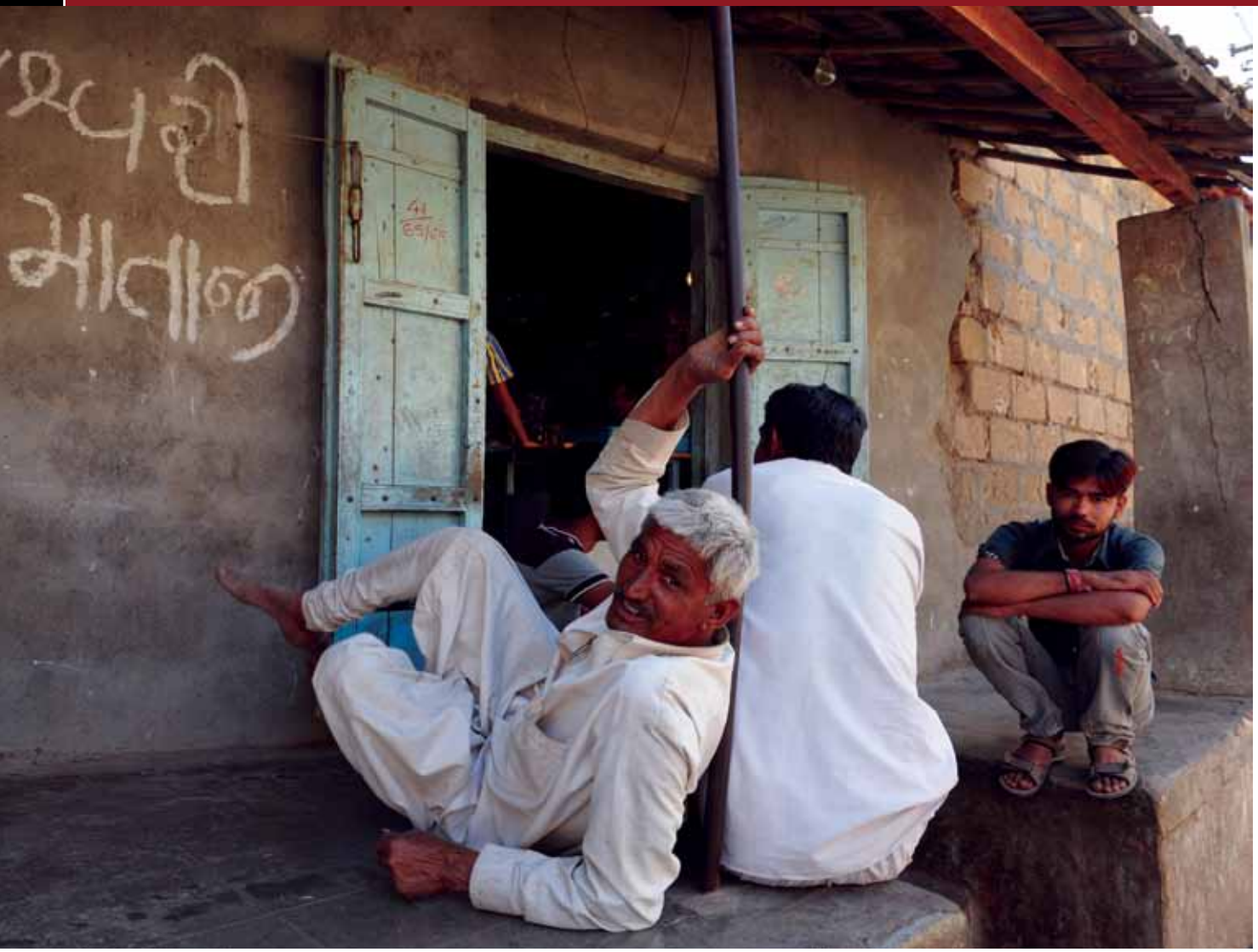
Sudharak Olwe has a connect with the Tata Trusts that stretches back 18 years. The acclaimed photographer's first social documentary series — the breakthrough In Search of Dignity and Justice, which frames the lives and tragedies of conservancy workers — was supported by the Trusts. Mr Olwe has, in the years since, chronicled a variety of social development programmes backed by the Tata Trusts across India: in health, nutrition, education, livelihoods and more.

A community health worker with a family in a village in Jharkhand (2011). The children of this area were boosted by a nutrition initiative targeting *anganwadis*, government childcare centres that play a vital role in ensuring healthy village communities.

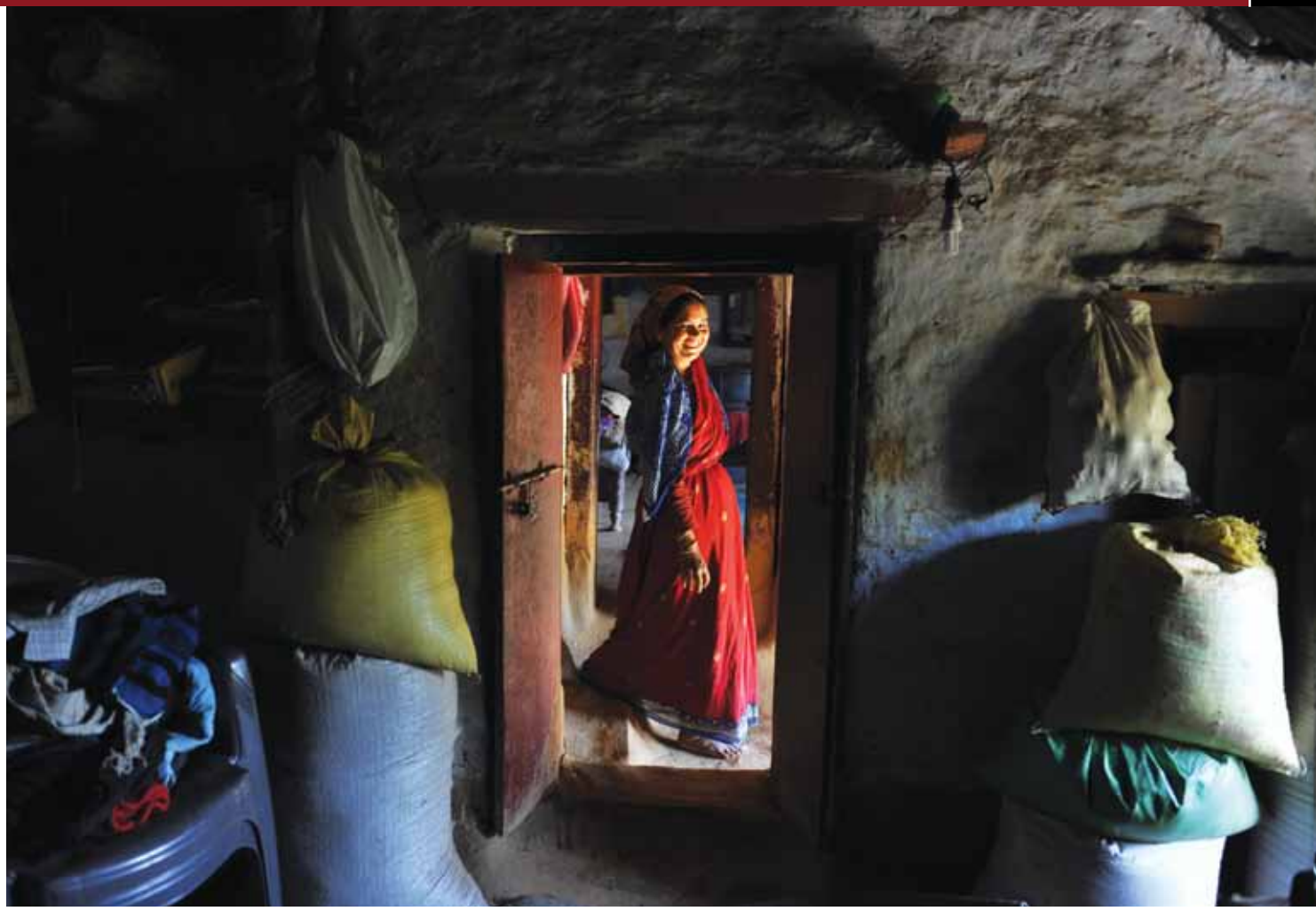
Women from a tribal community (above) in a village in Maharashtra's Nandurbar district (2013). The children of this community were part of a school programme to improve learning outcomes and to promote sporting talent. **Time for** some dancing at a gathering of women in Alwar in Rajasthan (2012). The project here was all about enabling women and girls to get ahead.

(clockwise from top) **A health** worker oversees a baby being weighed — under a nutrition initiative — in Delwara in Rajasthan's Rajsamand district (2007). **Children at** a crèche in a village in Odisha's Keonjhar district, where parallel water and sanitation and health projects were being run (2012). **JRD Tata** (foreground), the late chairman of the Tata group, with Ratan Tata, who succeeded him in the position. This photograph was clicked (for the *Indian Express)* by Mr Olwe at Bombay House, the Tata headquarters, on the day Ratan Tata took over as chairman (March 25, 1991).

Women weavers (above and below) from a village near Bongaigaon in Assam (2012). The effort here was to empower local women — to continue their education, to pursue work opportunities and to speak up against domestic violence. The cycles were provided to the women to help them move about for their business needs, mainly to fetch raw material for weaving.



A village square scene (above) near Mithapur in Gujarat, where a water conservation (and salinity ingress) programme has taken deep roots (2012). **Patients and** their carers, from a mental health initiative based in Chennai, at a beach outing (2015).



A woman (above) at her home in Pithoragarh, a town in the Kumaon hills of Uttarakhand (2012). She is one among many who have been provided a leg up by an endeavour that supports mountain communities with livelihood options. **Hapless villagers** take the tough way to their destination as they cross a river in Jharkhand's Latehar district (2012). A community radio project that champions social issues in the state highlighted the need for a bridge here to ease the woes of the area's locals.

The board of directors of Sakam Sindur Farmer Producer Company, which is based in Harichandanpur in Odisha's Keonjhar district

Way to grow

A livelihoods project in Odisha, involving Axis Bank Foundation and the Tata Trusts, is turning the tide for 30,000 farmer families once on the edge

When you have a family of 12, it's always a stretch to provide well for every member. That's what 40-year-old Damodar Hansda and his wife, Mandoi, had to deal with all the time. Their mud hut accommodated the couple's four children, four nieces and nephews, and Mr Hansda's elderly parents as well. There was never enough room or food.

The Hansdas, who hail from Panabahali village in Odisha's Jajpur district, used to cultivate paddy and work in a nearby railway yard, earning about ₹60,000 a year, nowhere close to what was needed to even live by. "We were hard-pressed to make ends meet," says Mr Hansda. "My wife and I would always talk about finding ways to increase our income, but we didn't know what else to do."

Then, in 2015, staff from Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts, visited Mr Hansda's area and explained to farmers how they could generate more money from their modest land holdings. "We went to Harichandanpur in Keonjhar district to see a drip-farming project that we could adopt," adds Mr Hansda. "We came back and, with CInI's support, created a water asset and began using drip irrigation in our fields."

Mr Hansda soon started growing bitter gourd, while continuing to cultivate paddy. And he branched out into rearing goats. What all of this has wrought is remarkable: the Hansdas now earn more than ₹200,000 a year.

As with so many families in rural India, the first priority for use of the increased income was a proper house. "I replaced my mud hut with a brick-walled home with a proper roof," says Mr Hansda, who has also purchased a motorcycle. And he's not resting on his gains.

"I'm planning to do drip farming on another plot of land."

The Hansdas are one among some 11,000 families in Odisha who are part of the Lakhpati Kisan livelihood programme. Launched in 2015 by CInI in Jharkhand, Maharashtra, Gujarat and Odisha, the initiative aims to bring 101,000 rural households from across India out of poverty — and irreversibly so — by diversifying and enhancing their sources of income. Farmers become *lakhpatis* when they start earning at least ₹120,000 per annum for several years.

In search of scale

"In Odisha we expect to help at least 30,000 farmer families become *lakhpatis* in the next five years," says Ganesh Neelam, zonal head, central and east, with the Tata Trusts. "We now have Axis Bank Foundation [ABF] as a key partner in this endeavour and, with their support, we want to see how we can scale up the initiative."

CInI is the anchor in the programme while the Trusts and ABF provide monetary support. The Trusts' partnership with ABF started in 2019. In the first phase of the collaboration, ABF supported the Trusts-run Lakhpati Kisan projects in Rajasthan, Gujarat, Jharkhand and Uttarakhand.

"The idea behind the partnership was to see how community ownership and empowerment could be strengthened, along with ensuring sustainable livelihoods in these four states," adds Mr Neelam. "ABF backed the programme in four states for four years and, when it got over a year ago, they were more than happy to look at Odisha."

CInI started with Harichandanpur in Keonjhar district, where a cluster of 20-25 villages was targeted. The programme has now spread to Mayurbhanj district as well. "Entering a new geography brought its own challenges, and opportunities as well," says Santanu Dutta, the CInI team leader in Odisha. Convincing farmers who had cultivated only paddy for generations to do something more was a tough task, as was winning community acceptance.

"We spent a lot of time with the community to make them understand how we could work closely with them. Other than agriculture, the locals were dependent on migration, either to distant cities or to the nearby steel plant, where they often got difficult and dangerous jobs. It brought them money, but it was hard labour."

Jump to the present and the circumstances of the communities in the programme have improved substantially. They have got deeper — and wider in terms of spreading their bets — into agriculture, while adding allied livelihood options such as livestock rearing to their income-generation bag.

Podhi Majhi of Kusumjudi village in Harichandanpur was sceptical initially about branching out, though her family had reason enough to do that. Her husband, Dokhino, worked as a labourer and the Majhis also sold forest produce. They made barely ₹40,000 a year from both.

"We lived in a state of constant

Cultivating bitter gourd has fetched good returns for Chilgi and Lapa Tuti from Debihudi village in Keonjhar district thanks to their local farmer producer company

Animal husbandry has been a boon for Dokhino and Podhi Majhi, seen here at their home in Kusumjudi village in Keonjhar district

financial insecurity," says Ms Majhi. "Then CInI told us about the benefits of 'income layering' and the various opportunities available through the Lakhpati Kisan initiative. They organised awareness sessions, training programmes and arranged field visits to show us successful examples in other villages. They convinced us with their knowledge and expertise."

The Majhi family now makes between ₹120,000 and 150,000 a year. About 80% of their income comes from commercial vegetable cultivation, an improved paddy crop and livestock rearing. They continue to sell forest produce and Mr Majhi still works as a labourer. But these days he can afford to stay home when he wants, and work on his farm instead.

For Natha Gagrai, 25, of Rugudipanga village in Keonjhar, the most persuasive part of CInI's exertions was the 'exposure' trips to the nearby Tarajhar and Kataghati villages to see drip-irrigation projects. "We spoke to farmers there and learned how their lives have improved," says Mr Gagrai. "After that, I was more than ready to do this."

Firmer financial ground

Mr Gagrai's reward, down the line, is an annual income of ₹244,000 from high-value vegetables and a side business in poultry. His family of four is on firmer ground than ever before.

Built into the Lakhpati Kisan programme is an important entity called the farmer producer company (FPC). This collective facilitates various benefits for farmers in the form of services, from finding good quality seeds and saplings — increasingly being grown in polyhouse nurseries in this area by local entrepreneurs — to introducing superior farming techniques and equipment, and improving crop management in general.

The FPC, importantly, ensures market linkages and a fair price for cultivators by eliminating the notorious middleman. It operates like a corporate body, with its own board of directors and a well-defined agenda.

The real success of the Lakhpati Kisan programme is to be seen on the ground and families like the Gagrais and the Majhis are testament to that. "The programme has been a boon," says Ms Majhi. "We have a stable income and can afford better food, education for our children and necessary healthcare. We feel more secure about the present and more hopeful about the future." ■

By Labonita Ghosh

‘We want our funds to go a long way’

Axis Bank Foundation (ABF) has strengthened its partnership with three associate organisations of the Tata Trusts to jointly support sustainable livelihood interventions: Collectives for Integrated Livelihood Initiatives (CInI) in Jharkhand and Gujarat, Centre for microFinance in Rajasthan and Himmotthan Society in Uttarakhand. While these partnerships have run their course, ABF maintains its association with the Trusts through a livelihoods programme led by CInI in Odisha.

Dhruvi Shah, executive trustee and the chief executive of ABF, talks to *Labonita Ghosh* about how complementing contributions, commonality of vision and agility with funding makes for the best and most efficient partnerships. *Excerpts from the interview:*

How has ABF’s association with the Tata Trusts been?
Our partnership with the Tata Trusts has evolved naturally. During our conversations we realised that we share a common vision and goals towards the uplift of rural communities.

This alignment is evident in our partnerships with the Tata Trusts and their associate organisations. We understand the grassroots community issues and we have feasible ideas that can be implemented. This collaboration enables us to effectively manage the communities and sustain the efforts over a long period of time.

Our initial association with the Trusts began in 2018, where we merely acted as a financial contributor to the ‘Transform Rural India Foundation’. However, our relationship has grown significantly since then. In our

current and third collaboration, we are not only financially supporting but also actively participating in co-creating the programme with the Collectives for Integrated Livelihood Initiatives (CInI). While our resources are going directly to CInI, our conversations now revolve around maximising the efficiency of these resources and jointly developing the action plans and mechanisms for rural India and its ecosystem.

What do you see as the challenges in development work for rural uplift and livelihoods?

There are quite a few challenges. There is a significant lack of knowledge and capacity among the people to work towards the future they aspire to. Additionally, limited resources and a lack of access to them, poor healthcare, underdeveloped public infrastructure, and weak institutions and governance cause hindrances in their progress to achieve their goals. Sometimes people know what to do and sometimes they don't. At times, even if they know what to do, there are no resources available to achieve it.

Madhe Gagrai of Rugudipanga village in Keonjhar district has benefitted from exposure trips to nearby villages to learn about farming techniques

For example, I need water for agriculture and there is sufficient rainfall in my village, but I lack the knowledge of how to preserve and manage my water resources. At times like this, all it needs is a little thrust from outsiders like us who can bring our willingness, knowledge and resources and put it to work for the community.

How impactful has ABF's work with the Trusts been?

There are several ways to look at this. First, let's focus on ABF and the Tata Trusts collaboration to empower CInI. When resources come together they can be deployed to accomplish more. But how these resources can be brought together and used efficiently — that is what we and the Trusts facilitate for CInI. That's one level of impact the two funders have achieved together.

The second relates to how this collaboration allows CInI to expand its efforts in serving the community. Our funds are catalytic and this is another point of similarity with the Trusts. We both have the same approach: to use our money as a catalytic support mechanism. Can we leverage further funds from the government, from the state rural livelihood missions (SRLMs), or even from the community's own resources? Can we leverage from other, smaller donors whose funds are sometimes fixed?

Last, we need to see how we can use our funding, which is assured, for a long period of time. This long-term assurance of funding that ABF and the Trusts provide gives an implementing organisation like CInI the freedom to focus on their core mission without the constant need to secure financial support. This stability enables CInI to effectively deploy resources, channelise synergies and serve the community better. It gives CInI the time and focus to concentrate on execution. That's how formal collaborations help bring in efficiency.

A collaboration such as the one between ABF, the Trusts and CInI works exceptionally well due to the combination of our individual and complementary approaches. It also unifies philanthropic and CSR [corporate social responsibility] capital towards a common purpose and a larger goal. This synergy enables us to create a more significant impact in society.

Do you provide inputs on how the on-ground programmes should be structured?

There is a lot of cross-learning which often occurs during our partner meets. These partner meets and cross-learning events serve as a platform for sharing best practices, exchanging experiences

and challenges, and collaboratively devising context-specific solutions that can be implemented across diverse geographies. We have 37 other partners and there are ample opportunities for exchanging each other's learnings and insights.

Does ABF facilitate banking or microfinance through Axis Bank?

We don't provide banking services directly through our bank but we do facilitate them in collaboration with state rural livelihood missions [SRLMs] and the local bank in the area. With SRLMs and the Jan Dhan Yojana [the central government's financial inclusion programme] gaining traction, everybody has a bank account today. So it's no longer just about having an account, but more about having money to put in it, which is where our role comes into play.

Our training and capacity-building programmes enable skill sets and technical capabilities for developing a basket of livelihoods, micro-enterprises and community collectives. Furthermore, our work fosters the growth of community resource persons [CRPs] and promotes women's leadership, while also establishing stronger market connections that result in greater value for produce and services. CRPs and community collectives serve as the foundation of our interventions.

The focus in your partnership with the Trusts is livelihoods. Have you felt the need to also look at initiatives in, say, education or the environment?

Mandoi and Damodar Hansda of Panabahali village in Jajpur district with the trophy they won for having the highest income in the Lakhpati Kisan programme

It is all inter-connected. We believe that livelihoods, by itself, encompasses a wide scope. We have identified several exclusions in our own work that need to be addressed. For example, our collaboration with artisans has been limited, and we have only recently started engaging with the most impoverished communities. These limitations are not intentional; they occur because of the way a particular project is initially designed.

When your livelihoods strategy revolves around natural resources management, how do you cater to the needs of individuals who are landless and often find themselves left out? Ideally, you take a detour and start bringing them back into the fold by tweaking the design of the programme. But for accomplishing that, you should have the agility to do this.

You may suddenly realise that artisans have no place in your funding model, prompting the need for a change. It is important to incorporate foresight and hindsight into our projects and this can only be achieved by actively listening to the community. Impact needs to deepen and broaden.

Moreover, you cannot just focus on livelihoods without considering water, land and forests, biodiversity and various other ecosystem components. It all happens together. While we don't talk about climate change as a primary mandate, we actively work on helping communities adapt to its effects. This involves building their capacity for climate adaptation, developing contextual coping strategies and leveraging traditional knowledge to design localised solutions.

There is natural resources management, skill building, empowerment and so many other things that, if addressed, will contribute towards creating sustainable livelihoods. ■

‘We don’t have proper seasons in India now’

Jatin Singh is never under the weather and that, perhaps, is because he’s always striving to get on top of it. Matters meteorological are a preoccupation with the founder and chief executive of Skymet Weather Services, the Noida-based weather forecasting company in the business of tracking phenomena that’s getting wilder with each passing year.

Skymet has, since its launch in 2003, evolved to become a go-to weather forecasting service in India for government as well as non-governmental organisations. In this interview with *Labonita Ghosh*, Mr Singh talks about Skymet and its work, while regretting the fact that the country — despite having to deal with ferocious heatwaves, frequent floods and worse — still does not have time and space enough for debate and discussion about the dangers of climate change. *Edited excerpts:*

Tell us a little about Skymet.

I was a journalist who later started working in air pollution and disaster management. That was before I founded Skymet. We began by working directly with farmers and other consumers. Skymet is both an app and a website, through which millions of people can access the weather. I wanted to democratise the process of weather forecasting.

“Climate change is a slow-moving catastrophe and urban people, both from a food-supply and a disease perspective, are less affected by it.”

It seems increasingly like India is experiencing only three weather conditions: very hot, very cold or very wet. What’s happening to our seasons?

We don’t have proper seasons in India anymore; now we have only winter and summer. We used to have ‘transition seasons’, winter to spring, summer to monsoon and then autumn. That’s disappearing, mainly because of the concentration of carbon in the atmosphere, which translates into extreme weather. That smooth curve of increase and decrease in temperatures, and increase and decrease in precipitation has vanished.

What are the reasons for this?

The first is the build-up and concentration of carbon dioxide in the atmosphere. This is a late 1980s phenomenon caused by industrialisation, initially in China and then in India. This carbon dioxide has unbalanced global weather systems and temperatures. We have a target of capping temperature increases over the next 20-30 years but that is not happening. The reality is that the last six years have been the hottest of the century across the world.

Second is the concentration of water vapour in the atmosphere because of the heat; this is abruptly changing precipitation patterns. It rains a lot quite quickly and then there are no rains over long periods of time. We are also experiencing what is called 'microclimate' because of so-called development: the cutting down of trees and forests, wind flows interrupted by urban heat islands and a decrease in atmospheric moisture. For instance, in summer it was quite common for a hot day to be followed by a series of thunderstorms. But it's no longer as cyclical as it used to be.

We have not been studying surface and atmospheric parameters quite as efficiently over the past century. We don't really understand how or why this is taking place. We stick to the theory of increased carbon but the truth is that the mechanics of how the atmosphere works have changed to a great extent. We no longer have any 'natural sponges' for the absorption of heat, moisture or flood water, so it's all spilling out as extreme weather.

Rainfall too seems to have become erratic. For instance, Mumbai has longer monsoons while Bengaluru faces unseasonal, torrential rain and floods.

We must look at precipitation in two different ways. One is the temporal distribution of rainfall and the probability of unseasonal rain. Intense seasonal rain, or an added element like hail, or heavy rain in winter, are unusual phenomena. Is it a consequence of climate change? We don't really know. Does it happen every year? Definitely not.

Earlier, there was some predictability with the monsoon. It stretched between June and September (sometimes October) and would deliver 16% of rain in June, 29% in July, 33% in August and 17% in September. That was, with a 20% variability, the 'curve'. Now the amount of rain you get in June and September is almost the same, and the variability has gone up by 50%.

August 2022, for example, was a failure as a monsoon month. There was minus 20% rain and it's very difficult for the monsoon to recover from something like that. Then in September and October it was at plus 50%. This meant that the 2022 monsoon was 99% of the long-period average, but at times it felt like a drought. Today you get near-average rainfall but you get it all at once; it's no longer staggered.

In cities this plays out in the form of heavy rain that the infrastructure cannot handle, which causes floods. That was the case in Mumbai in 2005, Chennai in 2015 and Bengaluru in 2022.

An elderly couple from Alleppey in Kerala being taken to safety during the devastating floods that crippled the state in 2018

People often don't understand how all of this is related to climate change.

Climate change has been an issue in India for the last generation or so. It is urban people who have been ignorant and least affected by it. For instance, between 1900 and 2000 there was a drought every decade. But between 2000 and 2023 we have had six droughts: in 2002, 2004, 2009, 2012, 2014 and 2015, apart from a few bad years with below-normal rainfall.

The media no longer publishes the number of farmer suicides, but there has been tremendous distress in Maharashtra and Karnataka on account of uneven distribution of rainfall. This disrupts crop cycles and causes heavy post-harvest losses. Rural livelihoods in India have been hit by climate change for about 30 years. Agriculture is extremely sensitive to such changes, whether it be with the quantum of produce or its quality.

Have weather extremes sparked awareness about climate change in our cities?

No, otherwise people would not be obsessed with acquiring more square feet, more clothes and more 'things'. How many people feel guilty about their carbon footprint? How many buy hybrid vehicles because that is more responsible behaviour? How many people are vegetarians? People show up in plenty at climate conferences and seminars but, in terms of making personal choices, I don't think they care enough.

Those who work on a day-to-day basis, like a vegetable vendor or a fisherman, also have their livelihoods impacted by the weather. If Mumbai shuts down for a week because of heavy rainfall, its street vendors are not

able to sell anything and their stocks rot. Similarly, heavy rainfall affects fishing communities all along the coast of India.

But urban India (even the urban poor) is more resilient than rural India — because it is richer. Climate change is a slow-moving catastrophe and urban people, both from a food-supply and a disease perspective, are less affected by it. Furthermore, cities can access water when they need and their denizens can be relocated when required. That makes it tough to put a number on urban livelihoods being affected by climate change.

Unlike a farmer, how much a city dweller earns is not dependent on how much he grows. The prices of vegetables may go up during a low-rainfall season, but that is a function of multiple things.

What impact does this slow-moving catastrophe have on human health? Are we seeing the return of old diseases and the emergence of new ones?

The creation of a band of varying temperatures and the availability of moisture makes for fertile ground for vector-borne diseases. No one had heard of dengue or chikungunya 20 years ago. Air pollution and the like, which are tangentially related to climate change, are causing respiratory health crises in Delhi and north India, especially during winter.

With minimum temperature variation in Delhi last winter, it went from 1.4°C to 10.2°C in a span of just five days. This jump of nine degrees, followed by a sudden drop because of unseasonal rain, sparked chaos. People forget that it's not just a dip in winter temperatures that affects us. In January of 2007 and 2008, the maximum temperature was 30°C in Delhi. This hot-cold variation fuels a steep curve in temperatures.

If we look at evolutionary history, we can see that anthropogenic changes in climate force an impact on our physiology. It's happening quite rapidly with young children and older people. Large temperature variations, if you are already vulnerable, will make you weaker and sicker and compromise your lifespan. And this will happen across the animal kingdom, including with human beings.

Given what Skymet is involved in, do you work closely with the Indian government?

Very closely. The central government is our single largest client. We work with the government to capture yield data and remote sensing data. The Maharashtra government gets its weather data from us, while we also work with the Kerala government on forecasting and actual data. We run the disaster management for precipitation as well as forecasting in Nagaland and we've also worked with the Gujarat government.

We've discussed the Indian situation. What about the world?

It is the same pattern of extreme weather everywhere. Europe has witnessed a number of heatwaves in the last two-three years. Summer

"...anthropogenic changes in climate force an impact on our physiology. It's happening quite rapidly with young children and older people."

temperatures in London have touched a never-before 40°C. The continent is not receiving enough snowfall, which means there is not enough water in the rivers for navigation.

A number of vector-borne diseases are emerging in Europe as a consequence of climate change, besides people having to contend with mosquitoes and fierce heatwaves. Europeans are not used to such high levels of evapotranspiration [when water from the soil and trees evaporates into the atmosphere].

In the US the intensity of hurricanes has increased, but winters have become less harsh. Europe and America have only one season for planting and growing crops, not two like us. This means that at some point their agricultural patterns and food supply will get disrupted by climate change.

Are there new kinds of pests that are attacking crops now?

In 2020, there was a massive locust infestation in Rajasthan, Haryana, Punjab and Madhya Pradesh. The swarms are said to have entered India from Pakistan and they attacked crops. There was a climate change reason for this. A rise in temperatures and successive cyclones in Africa and West Asia had created the warm and moist conditions needed for the locusts to lay and hatch eggs in huge numbers.

Is there a way to reverse all this or should we accept that this is the new normal?

This is the new normal. Human beings are extremely arrogant. We create climate systems but as soon as we have a measure of economic success with our GDP, everybody starts eyeing growth. This is unsustainable growth. We want to contain climate change but we don't stop producing more cars or constructing more buildings or consuming less food.

We believe that we can throw more money at climate change solutions and that will contain it. At an earlier time, when there were fewer people around and we were not so obsessed with GDP, the environment was doing well enough. Not any more.

People want to do something about climate change but I feel that train has left the station long ago. The one thing we don't want to hear is that we have to consume less and live with it. How do I tell my child not to be ambitious, not to acquire more clothes, cars, food?

If India has to grow, we must consider GDP. But that GDP has to be calculated differently. The more of a surplus we create, the more it hurts the environment. If we factor the cost of environmental damage into our GDP, it would look very different.

We should also look at providing benefits to rural folk who live far healthier, eco-friendlier lives with far less per capita usage of energy and resources [than urban people]. They bear the cost of urban consumption, much like developing countries have to bear the brunt of developed countries. ■

"If India has to grow, we must consider GDP. But that GDP has to be calculated differently ... if we factor the cost of environmental damage into our GDP, it would look very different."

Changing the climate for funding support

Enabling CSR backing for nonprofits crafting inclusive solutions in the climate change ecosystem is essential for India's socioeconomic prosperity

Emerging economies such as India are faced with a challenging dilemma: how do we continue developing while tackling the climate crisis? India is proactively reducing its emissions through ambitious 'nationally determined contributions' while investing in green growth, an economic paradigm that embraces the decoupling of emissions and growth. But what about the climate impacts we are already witnessing, or those that will increase in intensity and frequency as the crisis worsens?

Over 75% of India's districts are vulnerable to climate change-induced extreme weather events (Council on Energy, Environment and Water, 2021) and nearly 5 million Indians were displaced by disasters in just 2021 (United Nations High Commissioner for Refugees, 2022). Floods, droughts, heatwaves, cyclones, and wildfires, among other physical risks, are affecting progress on crucial Sustainable Development Goals relating to education, healthcare, water, nutrition and livelihoods.

The statistics can seem alarming but this isn't a crisis without hope or without concrete solutions that we can implement. There exists a rich and diverse ecosystem of grassroots changemakers battling the climate crisis. With scarce resources and confronted with multidimensional barriers, nonprofits and vulnerable communities are combining cost-effective responses to

Shloka Nath heads the sustainability and policy and advocacy portfolios at the Tata Trusts. She is also the acting chief executive of the India Climate Collaborative.

localised climate events with traditional approaches to development.

Take the VIKAS Centre for Development, an Ahmedabad-based non-governmental organisation, and its efforts to build a bio-shield along the coast of Gujarat. Comprising multilayer and multi-species plantations, including mangroves, this 'green wall' acts as a buffer protecting the economic assets of local communities against cyclones and salinity ingress. The benefits are manifold: the bio-shield contributes to climate change mitigation by acting as a natural carbon sink while integrating livelihood and income opportunities for local communities from the plantations.

A full accounting

Solutions like these take in the multidimensionality of challenges faced by vulnerable communities. They signal the emergence of a more holistic standard for development, one that accounts for different considerations — climate, environment, gender, health, livelihoods and more — while keeping communities at the centre and building resilience to risks.

To ensure their success, these inclusive solutions need trusted funders with an eye on India's existing development challenges, as well as experience with on-ground development work and building community agency. An important factor, in the context, is corporate social responsibility (CSR).

With more than ₹1 trillion (100,000 crore) deployed in the social sector since 2014, CSR is deeply intertwined with India's development ecosystem, making it an obvious ally for nonprofits responding to the climate crisis. Yet most of India's CSR funders do not fund climate projects. There are a few possible reasons for this.

One, nonprofits often do not have access to the right networks or are unable to communicate the effectiveness of their climate-related work. That means funders have low visibility on what different climate projects look like, which nonprofits are implementing them, and the development co-benefits of these initiatives.

This often manifests in CSR funding being directed towards tried-and-tested projects — large-scale tree plantations and solar projects among them — that may not always have a sound scientific basis and could be ignoring specific ecosystem considerations, thus affecting the long-term sustainability of the effort.

Two, given the period within which CSR funds must be spent, funders prefer short-term projects with well-defined objectives. It can be difficult to allocate funding to climate projects that typically require longer timelines, and for implementing organisations to utilise such funding during the spending period.

Additionally, climate change is not yet identified as a clear category within Schedule VII of the Companies Act, 2013. This prevents funders from increasing their climate spending and may encourage them to, instead, either categorise climate projects in climate-adjacent categories such as 'environment', or forego funding climate projects altogether.

Three, we have also heard about funders sometimes not knowing how to identify a good climate programme. For example, climate solutions can be conflated with environmental solutions, including water and waste projects that do not have clear climate impacts.

The fourth possible reason is that funders as well as nonprofits struggle to measure the impacts of climate projects, given the long timelines of such projects and their nascency, and the high costs associated with monitoring and evaluation (M&E) processes. This is amplified by a

lack of financial capacity within nonprofits to build internal M&E and communications capacities to capture the impact of their on-ground efforts.

While some of the obstacles faced by CSR funders are matters in the policy realm, others can begin to be addressed by building understanding and connecting funders with nonprofits implementing inclusive solutions. A dedicated climate solutions platform, for instance, can make diverse solutions accessible to funders and bring like-minded partners together to enable increased funding for community-centric climate solutions.

Tools and networks

Apart from mobilising funds, this platform must also look at supplementing capacity building and institutional readiness to tackle the climate crisis. Examples include providing nonprofits with the tools and networks needed to accelerate these solutions, such as support to develop strong M&E frameworks and improve communication of climate impacts.

Crucially, by supporting and enabling easy access to high-impact, people-first climate solutions being implemented by trustworthy organisations, a platform like this can provide an important signalling function for climate action in the development sector. It can ignite a call to action to funders seeking to help scale up India's homegrown answers to the climate emergency.

Integrating a climate lens into CSR portfolios also has a role to play in how the developing world conceptualises its response to the climate crisis. Integrated solutions provide concrete evidence that we don't have to choose between acting on the climate crisis and addressing development priorities, that the most vulnerable communities can lead the dialogue on climate-integrated development, and that climate responses need to be bottom-up and account for existing inequalities.

A family braves heatwave conditions near the confluence of the Ganga and the Yamuna during a hot summer day in Prayagraj in Uttar Pradesh

Furthermore, partnerships between nonprofits designing these solutions and CSR funders can lead to superior outcomes and institutionalise climate thinking in remote corners of the country. For these projects to have long-term climate benefits, we need them to be sustainable even after they end. Generating local livelihoods and keeping communities involved from the beginning are key requirements in ensuring this.

To be able to avoid the worst climate risks and to equip communities with the tools and capacity to respond preemptively, CSR funders with development expertise need to lead the conversation on equitable climate action with those at the frontlines of the crisis. We need funders to start thinking climate today, regardless of their current portfolios, to shield India's socioeconomic story from a warming planet. ■

Crafted for a cause

Paramparik Karigar has been an invaluable source of support for rural artisans seeking to express themselves through skills beyond the ordinary

When I joined Paramparik Karigar — the association of craftspeople — way back in 1997, the biggest challenges were finding a venue and the funding to hold exhibitions. Sponsors were in short supply and we could not get corporate houses to support us. We were operating out of the residence of Roshan Kalapesi, the founder of Paramparik Karigar, at that point and we needed help.

That was when Russi Lala, the late chronicler of the house of Tatas, stepped in with his experience and expertise. Mr Lala encouraged us to approach the Tata Trusts for funds to establish and run an office for a period of three years. He was confident that with a proper setup and infrastructure we would be able to function professionally and, down the line, become financially independent.

Mr Lala was right. Paramparik Karigar soon established itself as a brand and it was backing from the Trusts that turned the tide for us. The member-karigars started securing a regular income and their standard of living improved. The karigars then came forward to donate 8% of their sale proceeds to the organisation. This became an important source of money for Paramparik Karigar and it continues to be so to this day (over time, with increasing sales and improved incomes, the karigars increased their donation amount to 10%).

Paramparik Karigar could not have come into existence without the vision and commitment of Roshan Kalapesi. It was Roshan who came up with the idea of holding an exhibition of crafts and textiles at the National Gallery of Modern Art in Mumbai. Sponsored by the Aditya Birla group, this was the first time that crafts were exhibited at a national gallery. The show was a tremendous success.

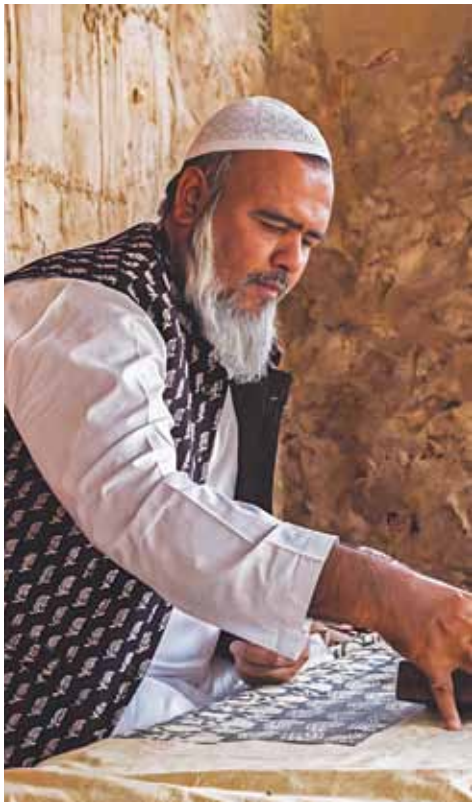
Roshan encouraged our sculptors to make large pieces and these were well-received at an auction — another first — conducted by Bowrings at the Taj Mahal Palace in Mumbai. Unfortunately, Roshan passed away before the auction was held. But that did not stop Paramparik Karigar from finding its place in the sun. The auction provided a terrific boost to our karigars, who were emboldened to create bigger and better works of art.

Catching the public eye

The karigars began to prosper and the shows they attended taught them how to interact with the public and learn the nuances and importance of design interventions and colour combinations. We were able to reach out to karigars across India and this elicited a very good response. Being invited to a Paramparik Karigar exhibition was, and continues to be, a matter of honour for craftspeople all over India.

Our membership numbers began to rise and we now have more than 100 craftspeople as members. Our karigars, having learned the ropes, are thriving. Kapilo Mahanto is an example. A tribal weaver from Kotpad in Odisha, Kapilo came to his first show with a cloth bundle full of saris. And he did not know how he would get back home if his saris did not sell. Kapilo went back smiling.

Ratna Krishnakumar has been deeply involved with the NGOs Paramparik Karigar and Srishti and has, for more than two decades, worked to support and promote Indian handicrafts and handlooms.



Paramparik Karigars (from left) Mohammed Yusuf Khatri from Madhya Pradesh, Alima Khatun from West Bengal and Prakash Joshi from Rajasthan

We have many success stories like that of Kapilo, who now lives in a two-storied house built with earnings from his craft skills.

Working and interacting with the karigars has been a fulfilling experience for all of us who have been involved in the programme. We are close to them and their families and they share the important events of their lives, sad or happy, with us.

There's more to Paramparik Karigar than supporting craftspeople and their art. We have a medical and education fund to help those in need, like the family of a young Pattachitra (cloth-based scroll painting) artist who succumbed to Covid, leaving behind a wife and two small children (the organisation has taken on the responsibility of educating them).

For those of us with our hearts in it, sustaining rural artisans has been a passion. To help handloom weavers going through dire straits, we convinced the Taj group of hotels to have them create exquisite saris for front-office personnel. We reached out to weavers in Varanasi for this and a village, Sarai Mohana, was targeted. The saris, designed by Jai Ramrakhiani, were so gorgeous that guests would touch and feel them.

Once the saris were woven and delivered, the weavers requested us for photographs. On a subsequent visit to the village, we were amazed to see these images displayed in the little homes of weavers alongside those of the gods and deities they prayed to.

Village awakening

Besides backing the weavers in their work, we got into social development mode with them. We adopted Sarai Mohana, provided weaver families with potable water facilities and, with the help of Tata Solar, got solar lights for them. We facilitated education for the children of weavers through the Tata Trusts, while also arranging for midday meals, uniforms and books.

The J Krishnamurthy school in the neighbourhood was roped in for this. The only condition laid down was that weaving

Workers at Aranya Natural, the natural-dye unit that operates under the Srishti umbrella

should be part of the curriculum, since the state government of the time was imposing fines on weavers who were teaching the craft to their children at home without sending them to school. This condition enabled the kids to learn weaving without breaking any law.

The difference all of this made to the lives of the weavers was a joy to behold. It's a matter of pride for me, personally, that girls benefitted the most from the school initiative. We used to get a lot of requests from young girls who would come and tell us, "Mujhe padna hai" (we want to be educated).

Srishti, a corporate social responsibility initiative of the company now called Tata Consumer Products (TCPL), shares a helping philosophy similar to that of Paramparik Karigar, though the cause is very different. Here the intent is to enable physically and mentally challenged children and young adults and at its core is DARE, a school that caters exclusively to their requirements.

On reaching the age of 18, students passing out from DARE have a clutch of options. They can move to Aranya Natural (a natural-dye unit), Athulya Paper Studio (which manufactures paper products), DELI (a bakery and confectionery), Nisarga (producers of jams and fruit preserves), Vatika (a farm where vegetables are grown organically) or Disha (where hand-embroidered dresses for children are crafted).

A time to flower

With 142 associates, as of now, Srishti is growing and spreading its wings internationally as well. Thanks to support from TCPL and the Tata Trusts, Srishti's associates have flowered beyond expectations. Given free rein to experiment, they have managed to reinvent many ideas. One such is a new technique of shibori, the Japanese dyeing method to create different patterns on fabric.

Yoshiko Wada, president of the World Shibori Forum, was so surprised and pleased to see the work of our associates that she promptly named it Arushibori (after Arumugam, the Srishti associate who fashioned it). These young men and women have no background in textiles or crafts, yet their inputs have been extraordinarily artistic.

The greatest reward has been to watch these youngsters blossom into productive adults and settle down into well-adjusted family lives. This has been true across every project and venture I have been involved with. The love and affection we receive from our associates and their families has enriched our lives in countless ways. ■

Ratna Krishnakumar spoke to ***Maya Sharma Sriram****, a writer and poet based in Chennai.*