IN WHITE WE TRUST

Dairy farming is delivering in spades for more than 115,000 small entrepreneurs — the vast majority of them women — in five states

STORMY WEATHER
Collaboration and innovation are mitigating the damage being done to our health by climate change

WATERED UP
A social behavioural change campaign is spreading the good word on water wide and clear

INTERVIEW
Ashok B Lall on architecture’s relationship with society and its obligation to sustainability
Any and every effort to provide women with a leg up makes for welcome reportage here at Horizons. Our cover story details the nature and success of one such effort: a programme to initiate farmers, many of them women, into the lucrative business of milk production.

Supported by the DHANII Foundation, the implementation arm of the Tata Trusts’ Dairy Mission, this initiative has strengthened the earning power of rural families in five states by having them take up milk production as a principal or supplementary enterprise. As important as the money pulled in has been, so too is the agency the women involved have acquired, within their families and the community, as equal members of the household.

Our Centre Stage section looks at the calamitous link between climate change and health, and what the India Health Fund, a nonprofit seeded by the Trusts, is doing to further innovation and collaboration that can combat infectious diseases through cutting-edge diagnoses and surveillance measures. Collaboration is also the watchword in the joining of hands between the Trusts and DMart Foundation to back programmes in water conservation and cancer care.

The feature articles in this edition cover two spheres — employment and health — that deserve all the attention they can get. We have a story on the ripple effect a Tata STRIVE project, spread over six states, has had in creating small businesses by bolstering budding entrepreneurs from among rural youth. Our second feature describes an ingenious approach that connects food and physical wellbeing to encourage women to get screened for breast cancer.

We have more than the usual in the space reserved for interviews and opinions. There’s the well-known Ashok B Lall speaking about architecture and its place in society, and there’s EdelGive Foundation’s chief executive Naghma Mulla on maximising the impact of CSR resources allocated to social development.

The Tata Trusts’ chief executive, Siddharth Sharma, writes about fostering an ecosystem where climate-change action can flourish; Aparna Uppaluri, chief operating officer of the Trusts, advocates for philanthropies to change their outlook to secure better outcomes from social-sector spending; and Neeraja Chilukoti and Ashwin Dalal of the Centre for DNA Fingerprinting and Diagnostics explain the challenges of coping with rare genetic diseases.

Not least in the spread served up for you, dear reader, is the picturesque rendering of a behavioural change campaign that’s putting village communities at the heart of water-related issues.

Chisestabelle Naranja

We hope you will help us make Horizons better with your valuable feedback. Please do write to us at horizons@tatatrusts.org.
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Shilpa Naresh
Abraham K John

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

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Dairy produce is the currency and women the protagonists in a business that has proved a blessing for more than 115,000 farmers in five states. By Labonita Ghosh and Poorva Chavan
Kanya Venaramji Jat has studied till class X but until a few years ago, she knew nothing about finances, budgeting or bank accounts. “These are not things we are taught in school,” says the 36-year-old resident of Karanwa village in Rajasthan’s Pali district. “Then we get married and our husbands take care of the finances. Many women don’t even get to know how much money comes into the home.”

That’s the past. In the present, Ms Jat has progressed to running an enterprise. She is the chairperson of a milk producer company (MPC) called Asha, based in Udaipur, which has more than 35,000 members, all women who earn their living from the business of milk. Ms Jat helps these members increase their incomes and manage their finances.

**Collaborative push**
Asha is one of five MPCs set up under the Dairy Health and Nutrition Initiative India (DHANII) Foundation, a collaboration launched in 2016 by the Tata Trusts and NDDB Dairy Services, a subsidiary of the National Dairy Development Board. Include the other four in the group — Shwetdhara in Ayodhya, Uttar Pradesh; Sakhi in Alwar, Rajasthan; Ruhaanii in Sirsa, Haryana; and Indujaa in Yavatmal, Maharashtra — and you have in excess of 115,000 milk producers, 95% of them women, who are also members and shareholders of these companies.

DHANII, the implementation arm of the wider-ranging Tata Dairy Dairy advantage

- Round-the-year market access for members
- Increased productivity through better feeding practices, animal care and breed improvement
- Enhanced value chain, better prices and no intermediaries
- 100% digitisation of payments (going directly into bank accounts)

**The DHANII spread**

- Five milk producer companies (MPCs) in five states
- 115,000+ MPC members, 95% of them women, in 2,700+ villages
- MPCs collectively generate more than 450,000 litres of milk every day
- Cumulative revenues of ₹7.75 billion in 2022-23
Mission, was set up to bolster the incomes of rural families by supporting them in taking up milk production as a supplementary business alongside farming. The programme has evolved so well that milk production has become the mainstay for many of these families.

Ms Jat’s family, for instance, were once agriculturists who owned two buffaloes on the side. “With my earnings from the business, we were able to buy so many more cows and buffaloes that my husband has given up farming to lend me a hand in the dairy business,” she says (the Jat family makes a minimum of ₹35,000 a month from dairy).

Dairy has always made sense in India. More than 100 million farmers in the country earn their livelihood from it and some 70 million of them own at least two or three milch animals. The dairy sector contributes around 5% to the national economy, and also plays a critical role in ensuring food security, reducing poverty and creating a sustainable income stream for small and marginal rural folks.

**World leader**

India is the world’s largest producer and consumer of milk, accounting for 24.64% of global milk production in 2021-22. Milk production in the country has grown by 58% in the 2015-23 period. Despite the positives, dairy is still not perceived as a profitable venture by many farmers. Milk yields remain well below international standards and the sector struggles with challenges such as unorganised value chains, predatory middlemen, and cattle breed of poor health and quality.

DHANII has tried to craft a model that streamlines, formalises and standardises processes, while bringing more organisation to operations, particularly at the village level. This means supporting farmers already engaged in milk production and also showcasing it as a viable source of additional income.

The setting up of MPCs was a step in that direction. The five under DHANII currently provide an income source to people in 2,700+ villages in five states. On average, the MPCs collectively sell more than 450,000 litres of milk every day. In 2022-23 the five companies did a cumulative business of ₹7.75 billion.

DHANII’s goal is to, in the coming years, link at least 300,000 households with MPCs and ensure coverage of 5,000 villages in 25 districts in five states. Importantly, it aims to enable dairy farmers to make a minimum of ₹60,000 a year.

The women milk producers attached to the MPCs are actually ‘dairypreneurs’, dairy entrepreneurs who have set up robust businesses that make their families less reliant on fickle agriculture.

“With farming you can get an income only at the end of the cropping season, say six months or a year, depending on what you grow,” says Baljinder Singh Saini, head of operations at DHANII and a regional manager with the Tata Trusts. “But households need cash on a daily basis and that’s where dairy helps. Milk producers at our MPCs get paid in a 10-day payment...
The effect of having dairy as an income generator is enormous because most village households already have some livestock at home. DHANII’s research has shown that 75% of rural households own an average of two to four animals. But as of now only one-third of rural household incomes is dependent on dairy-related livelihoods which, unlike conventional farming, is an all-season occupation.

DHANII reckoned, when it started, that since 75% of women farmers are already engaged in dairy activities, they may as well turn that into a lucrative, home-based business. And that’s how the MPCs idea has panned out.

Says Komal Menaria, a manager with the Asha MPC: “The system works like this: milk producers go to a common pooling point in the village in the morning and in the evening to drop off as many litres as they can generate from their cows and buffaloes. They are paid based on the quality of their milk, which is assessed using machines.” Better quality or high-fat milk garners more money.

The milk is taken from the pooling points to a chilling centre and sold directly to either an institutional buyer such as Mother Dairy, delivered at the doorstep of individual buyers or converted into milk products. Besides convenience, this process has transparency built into it.

**Middlemen out**

“Before the MPCs were formed, we had to sell the milk to collectors and middlemen who visited the village,” says Ms Jat. “We would get whatever price they decided, usually as little as ₹20 a litre. Now the minimum we get from the pooling point is ₹60 a litre.”

“The milk producers were also struggling to find good market linkages, having traditionally sold only to intermediaries or dudhias,” adds Mr Saini. “MPCs were created with a two-pronged strategy in mind. The first was to augment the knowledge of beneficiaries about milk production, cattle nutrition, animal husbandry, etc. Second, we wanted to create an institution that would incorporate marketing as part of its work. The purpose of the MPCs is to cement a long-term and sustainable source of income for dairy farmers through community-owned institutions.”

To give them greater ownership of the process, individual milk producers are made shareholders of the MPC they are attached to. At the end of the year, they receive additional funds in the form of dividends for the shares they own. Each MPC is run by a board of directors comprising 11 members, eight of them women. There are two experts to help the milk producers with technical and animal husbandry know-how.

This is important because the dairypreneurs struggled initially with managing their livestock, breed improvement and veterinary issues.
“Earlier we used to toil away at the milk business but could not make enough from it,” says Pinky Sharma, chairperson of the Sakhi MPC in Alwar, Rajasthan. “But now we know how to take better care of our livestock.”

Instead of crop residue, which does not provide enough nutrition, the MPC farmers now give their animals a mixed-minerals feed. “We’ve also learned about artificial insemination and improving the quality of livestock, and have access to prompt veterinary interventions,” adds Ms Sharma. “We have become much more organised about our business.”

Ms Sharma and her family, who live in Bamboli village in Alwar, started with 10 cows and buffaloes. Today they have 20 and most of the women in this joint family of 18 are in the dairy business. “My three sisters-in-law and I have been able to buy many more milch animals over the years from our milk production earnings,” says Ms Sharma.

Money was the big motivation for Durga Keshav Shende, who lives in a village near Yavatmal in Maharashtra, with her husband, a daily wage labourer. Their family of four was always short on money but Ms Shende did not feel qualified enough to seek a job. In 2019, when the Indujaa MPC was set up in the area, she decided to join it.

**From one to many**

Ms Shende took a loan from the local self-help group to buy a cow (the family didn’t have one). “I was confident about making a success of it,” she says. “My little business is doing well now and dairy has become my family’s primary occupation.” Ms Shende currently has three buffaloes and three cows and earns about ₹15,000 a month from milk production.

“In male-dominated Alwar, as in many places in rural India, women have no say in the household’s financial matters,” says Shivani Sharma, a management information systems expert with the Sakhi MPC. “DHANII’s milk producers receive their payments directly in bank accounts under their names, not their husband’s or any other family member’s.

“They manage the family’s expenses, pay the children’s school fees and even buy more livestock with loans from the bank. All this has made a big difference to their standing in the village.”

Some MPC women members who had to give up their education, because they were married off early, are now going back to it. Zulfina Bano, a 29-year-old member of Sakhi who dropped out when she got married as a preteen, has now completed high school and earned a science degree as well with her dairy earnings.

“The dairy business has given our members financial independence, decision-making powers and respect in society,” says Ms Sharma. “That’s true empowerment.”

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A training workshop in dairy management for milk producers from Raipur village in the Pratapgarh district of Uttar Pradesh
Dairy farming can be a good money-earner but the initial investment needed to buy a milch animal is often too heavy a burden, putting it out of reach for most marginal farmers. Take 36-year-old Sarita Devi, a native of Jhunjhunu in Rajasthan who used to depend on farming a small plot of land to keep the home fires burning. Ms Devi had one cow that gave her only a few litres of milk a day, far from enough to make a living.

In 2019, Ms Devi joined the Sakhi Mahila Milk Producer Company (MPC) and this opened up a world of new possibilities for her. The MPC helped her secure a bank loan of ₹150,000 for dairy farming. Ms Devi used this to buy four cows, her business started growing and, with the extra money earned, she has been able to increase her herd size.

Today, with 17 cows on her farm, Ms Devi contributes 80 litres of milk to her MPC every day and pulls in up to ₹150,000 every month as a result. One thing she promptly did as her income pot got bigger was admit her two children to an English-medium private school.

Thanks to the Sakhi MPC, started in 2016 by the Tata Trusts-supported Dairy Health and Nutrition Initiative India (DHANII) Foundation, the lives of many women like Ms Devi have taken a turn for the better.

The five MPCs under the DHANII umbrella — two in Rajasthan and one each in Punjab/ Haryana, Uttar Pradesh and Maharashtra — have been vital in mobilising women dairy farmers to, first of all, dive into the business, to get better returns on their investment and to make judicious use of the money earned. Financial inclusion, once a concept alien to
The MPCs also help farmers access related financial products and services, be it with insurance, government schemes or farmer credit cards. The five MPCs in the DHANII fold have successfully mobilised more than ₹630 million thus far for the benefit of around 20,000 members.

Discipline and self-regulation are built into the model. The MPCs work only with members who meet the minimum membership criteria. Their equity in the company depends on their contribution, which in turn increases their interest in the success of the company.

**Financial finery**

The financial inclusion part means that loans are facilitated, and savings schemes made more accessible to the women dairy farmers who power the MPCs. To ensure that members get financial backing when required, the MPCs have tied up with the likes of Bank of India, State Bank of India and HDFC Bank. Every MPC member has a bank account, transactions are digitised and payments for milk credited directly to the farmers’ bank accounts.

“Financial inclusion was a bottom-up approach,” says Baljinder Singh Saini, head of operations at DHANII. “Beneficiaries saw an opportunity to buy more milch animals and earn more profits. For the banks there is regular cash flow and creditworthy beneficiaries.”

Bank representatives even go to the MPCs’ milk pooling points to provide doorstep services. “Banking services are available in the village and at my doorstep,” says Nita Shriram Elpate, an MPC member from Kharbi Udapur village in Maharashtra’s Yavatmal district. “Plus, we get our money directly in our account every 10 days.”

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By bringing members under the
The focus on financials is about more than loans. Fair pricing is a tenet that has been followed from the beginning. Before the MPCs were established, farmers had no option but to sell milk to local traders or middlemen, who would often pay them less than the market price. The MPCs, instead, have transparent pricing.

Farmers bring their milk to a milk pooling point in each village. **Sahayaks** (women employees) use tamper-proof machines to measure the fat and SnF (solid-non-fat) content of the milk. The farmers get their money based on these metrics.

“I’m able to earn a higher and more stable income this way,” says Mishri Devi, a member of the Sakhi MPC.

The advent of the MPCs has led to a better quality of life for its members. It has also triggered new employment opportunities in ancillary activities such as milk chilling. More than 2,700 youth and women are employed as **sahayaks**, artificial insemination technicians, transporters and workers. Many of them have been able to double their income since joining the programme.

The success of the MPCs has put their members on a satisfying and stable growth path. There are plans to invest in improving infrastructure and technology — by installing solar panels, biogas plants, milk analysers, etc — and to adopt best practices and standards for quality and safety. Their milk will get tastier still for DHANII’s women entrepreneurs when all those pieces are in place.

In the purview of formal banking channels, the MPCs have aided women in becoming financially independent. “Earlier, many of these women were dependent on their husbands for money for daily expenses,” says Sanjesh Sharma, a senior facilitator at Sakhi. “Now they get funds directly in their accounts, giving them the freedom to make household decisions related to money. It’s a radical transformation in their lives.”

The women are trained in concepts related to financial literacy so that they can make informed decisions. The training sessions cover budgeting, saving, investing and borrowing, information about products and services, benefits and risks. With large funds involved, it’s important that borrowers make optimal use of their capital.

**High and stable**
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In May 2020, the Sakhi Mahila Milk Producer Company (MPC) marked a significant milestone: it launched its first milk product, branded as Sakhi Ghee (ghee means clarified butter). The other MPCs soon followed suit. Ruhaanii in Punjab launched its branded ghee in December 2020, followed by Rajasthan’s Asha in October 2021. The success of the ghee venture has led to Sakhi and Asha manufacturing and selling branded paneer (cottage cheese), rasgullas and gulab jamuns (syrupy sweets).

The expansion into milk products has strategic benefits for the women driving the MPCs. For instance, they help use up surplus milk, add diversity to the product portfolio, meet the growing local demand and enable the MPCs to extend market reach and broaden their customer base.

Marketing was a challenge in itself. The MPC-branded products are sold in local markets and towns, which means competing directly with established players. To get a competitive advantage, MPCs adopted cost-based pricing, which adds a reasonable profit margin to production expenses. “The prices are adjusted to fit the market,” says Dharmendra Chaudhary, chief executive of Sakhi MPC.

Distribution was another focus area. Tamper-proof packaging ensures that the quality and safety of products are maintained throughout the cycle of distribution, storage and sale. A wide distribution network ensures that the products are available in various retail outlets. The MPCs have also gone digital, with a mobile application that makes their products available online and allows customers to track deliveries.

The MPCs are now working on increasing production capacity and products. Also on the anvil are plans to launch curd, butter and packaged milk. That should translate into additional profits for members (the Sakhi MPC has generated revenues of ₹8 million thus far from the sale of milk products and expects to cross ₹20 million in the next two years).
Cattle classy

The women-led milk producer companies are enhancing their dairy income with better feed, fertility boosters and health-focused services

Time was when Gyani Devi’s single cow was more of a financial burden than an investment. The animal would produce four-five litres of milk daily, output that left little for sale after taking care of the family’s needs. A 45-year-old woman farmer from Chanana village in Rajasthan’s Jhunjhunu district, Ms Devi had hoped the income generated from the cow would add to her earnings from agriculture, but her family continued to struggle to make ends meet.

Life changer
Life changed for the better in 2019 when Ms Devi joined the Sakhi Milk Producer Company, promoted by the Dairy Health and Nutrition Initiative India (DHANII) Foundation, which was established in 2016 by the Tata Trusts in partnership with NDDB Dairy Services, a subsidiary of the National Dairy Development Board.

The Sakhi MPC’s backing for the women dairy farmers covers a gamut of aspects, including animal healthcare provisions, feed, insemination, health checkups and breeding advisories. “Sakhi has helped me understand why it’s important to improve the health of my cows so that they provide more milk,” says Ms Devi, now the proud owner of 20 cows that, together, give her at least 270 litres of milk every day. With milk production as her primary source of income, Ms Devi and her family earn more than ₹200,000 every month.

Encouraging the breeding of healthier cows is one of the ways that DHANII works to make dairy farming profitable and sustainable for its MPC members. The MPCs
have played a pivotal role in helping marginalised farmers improve milk productivity and their livelihood prospects.

“Apart from providing assured markets to dairy farmers, the focus by MPCs on productivity enhancement services (PES) is crucial in building capacity and knowledge of animal health, animal nutrition and breed improvement,” says Baljinder Singh Saini, head of operations at DHANII.

Feed and fodder solutions are key components in the PES basket. MPCs provide services like ration balancing with high-quality cattle feed and mineral mixtures along with silage and fodder. The added nutrition helps improve cattle health. Nearly 68,000 cattle have been covered under the ration-balancing programme, 94,000-plus have been artificially inseminated and about 28,000 have been tested in infertility camps till March 2023 by Sakhi MPC alone.

**Support services**

Veterinary support is another area of importance. Farmers get the benefit of regular infertility camps, where they get diagnosis and treatment for their cattle. The MPCs also offer quality breeding services — artificial insemination, infertility treatment, breed improvement, etc — at the farmers’ doorstep, saving them expenses on transportation. Easy access to treatments for mastitis and deworming goes a long way in enabling MPC members to keep their animals in the pink of health.

There are support solutions for MPC members as well. One of rural India’s challenges has been financial inclusion and the MPCs have stepped up to partner with banks and similar institutions to offer their members better access to loans for dairy-related activities.

While the need for animal husbandry services seems evident, it took time for the MPCs to convince owners to learn about and invest in their animals’ well-being. For instance, farmers had doubts about whether ration balancing was good for their cows and buffaloes. There were also apprehensions about artificial insemination.

To counter these the MPCs
Nita Shriram Elpate (above) ventured into the dairy farming business with a single buffalo that yielded about 5 litres of milk every day. A resident of Kharbi Udapur village in Maharashtra’s Yavatmal district, she would sell 2 litres of this milk to a nearby dairy and save the rest for family use. Selling just 2 litres was never going to be enough, what with the money spent on animal feed and travel expenses. A real profit was nowhere to be had.

In 2022, Ms Elpate became part of the Indujaa Milk Producer Company in her village and it was a turning point. On joining she received one buffalo, enough to increase her milk yield and income significantly. Soon Ms Elpate was able to add two more buffaloes to her farm and her business got a further boost after she received training in animal healthcare.

“The training sessions gave us invaluable insights about the intricacies of acquiring and maintaining a high-quality buffalo,” she says. “We understood how to assess the animal’s age, evaluate its health and identify signs of pregnancy and ill health. We also learned about animal feed, mineral mixtures and deworming.”

Ms Elpate can now avail the services of veterinarians and para-veterinarians at her doorstep. “When we find that an animal is sick, we call the doctors; easy access to these services, and at nominal costs, has saved us a lot of money,” she says.

The steady growth in income has added to Ms Elpate’s interest in expanding her dairy business. “It has motivated me to take better care of my animals and feed them the right way,” she says, “I’m sure they will give me more milk in the days ahead.”
Finding a vocation and a voice

The Dairy Health and Nutrition Initiative India (DHANII) Foundation, a collaboration between the Tata Trusts and NDDB Dairy Services, was set up in 2016 to provide small and marginal farmers an additional source of income through milk production. Building on the fact that most small farmers own one or two milch animals — and their maintenance and care is typically managed by the women of the house — DHANII set up five milk producer companies (MPCs) in five states of India. About 95% of the members of these MPCs are women, many of whom are thriving dairy entrepreneurs. This has not only given them cash in hand to invest in and grow their businesses and pay for household needs, it has also improved their standing in their families and the larger community.
(clockwise from left) Members of the Sakhi Mahila milk producer company (MPC) from Sahajpur village in Rajasthan’s Alwar district; Aashubi (left), also a resident of Sahajpur and a longtime Sakhi MPC member, with others from her village. Members of the Ruhaanii MPC at a collection centre in Rampur Mander village in the Mansa district of Punjab.
A group of women from Bamboli village in Alwar district gets the lowdown on the benefits of entering the dairy farming business. An MPC employee conducts a contact group meeting in a Rajasthan village. Sita Devi, a member of the Alwar MPC, brings her day’s collection to a centre with a newly-inaugurated milk chiller unit in Sheoganj in Rajasthan.
Laxmi Devi, a member of Asha MPC, inaugurates a chiller unit set up at the Vellangari milk pooling point in Sheoganj (the chilled milk is bottled and sold to institutional buyers or delivered to the doorstep of individual buyers). Facilitators from the Sakhi MPC in Alwar talk to farmers about better cattle care. Members of the Ruhaanii MPC, which has dairy entrepreneurs from both Haryana and Punjab, swap notes. A milk-vending machine of the Asha MPC (Rajasthan) provides fresh milk to village residents.
Climate change is among the gravest health threats facing humanity, but innovation and collaboration can help mitigate the damage being done.
aggravated by climate change. Scientists tell us that there is an intricate web of 1,006 distinct pathways through which climatic hazards exacerbate infectious diseases, highlighting the extent of human vulnerability to infectious diseases caused by climate change.

This doesn’t account for the unknown diseases and pathogens yet to emerge due to climate-linked changes. For instance, the thawing of permafrost is unearthing viruses that were once frozen in time, opening a Pandora’s box of pathogens. And this has started.

**Siberian warning**
In 2016, a 12-year-old boy’s death and the hospitalisation of about 100 people in Siberia served as a warning about the unforeseen consequences of climate change. Anthrax, dormant for 75 years within a frozen reindeer carcass, resurfaced as permafrost thawed, resulting in the contamination of soil, water and, subsequently, the food supply. More than 2,000 reindeer succumbed to the outbreak, shedding light on the macabre reality of climate-induced health crises.

According to one report, the largest number of diseases aggravated by climate change involve transmission by vectors such as mosquitoes. Climate change-related events are raising temperatures and altering precipitation patterns, creating favourable conditions for the breeding, survival and spread of disease vectors.

Mosquitoes, for example, breed more rapidly in warm, humid

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**Hot topic, cold facts**

The statistics on climate change and health are alarming:

- In 2023, the World Health Organization reported an “unexpected spike” in dengue cases: close to a historic high of 5 million-plus and more than **5,000** dengue-related deaths. Nepal, a high-altitude country where mosquitoes have not survived in the past, reported more than **35,000** cases of dengue in 2023.

- Just a 1°C rise in temperature can increase the risk of dengue occurring by as much as **13%**. Earth’s temperature is already 1.15°C above the 1850-1900 average, with no sign of it falling.

- By 2050, the two main disease-spreading mosquitoes — *Aedes aegypti* and *Aedes albopictus* — will significantly expand their distribution geography, posing a threat to half the world.

- A *Lancet* study has found that by 2070 the population at risk of malaria and dengue may increase by up to **4.7 billion** additional people (relative to 1970-99).

- *Anopheles stephensi*, a type of mosquito that can carry multiple malarial parasites at the same time and once *found largely in Asia*, is now spreading to East and West Africa.

- Climate change is influencing the distribution and abundance of ticks that transmit the bacteria-causing Lyme disease in the northern hemisphere. The US reported **42,000-plus** cases of the disease in 2019.
conditions, leading to larger populations and higher rates of disease transmission. Additionally, altered precipitation patterns can create breeding sites for mosquitoes in stagnant water, increasing the risk of disease transmission.

Climate change has already begun to disrupt the seasonal patterns of vector-borne diseases, leading to shifts in the timing and duration of disease-transmission seasons. Warmer temperatures are likely to prolong the transmission seasons for diseases such as malaria, allowing vectors to remain active for longer periods of time and increasing the opportunities for disease transmission.

Warmer temperatures are also extending the geographical range of vectors into areas that were previously unsuitable for their survival. For instance, a study published in 2023 by the UK-based Royal Society notes that climate change is already leading a transition: tropical species are spreading towards the poles, and species everywhere are raising their body temperature to survive in higher locales.

The study found that millions of species — among them, and along with them, pathogens — have been moving uphill at a pace of 1.1mt per year, and to higher latitudes at a pace of 1.7km per year. It notes that in recent years mosquito-borne diseases such as malaria, dengue and the Zika virus have expanded to new latitudes and elevations, and will continue to do so in the future.

**Malaria menace**

While the mosquitoes carry on with their onward march, they don’t spare old territory. A recent example is Pakistan, which saw a four-fold rise in malaria — in excess of 1.6 million cases — in the aftermath of the October 2022 floods in the country. India, meanwhile, already reports around 3 million malaria cases every year (according to the World Malaria Report).

Despite the gloomy outlook, there’s hope. Madhav Joshi, chief executive of India Health Fund (IHF), an initiative of the Tata Trusts, says several cutting-edge innovations are being developed for infectious diseases, especially in the area of surveillance and early diagnosis. A nonprofit, IHF was set up in 2017 with funding from the Trusts and strategic support from the Global Fund to Fight AIDS, Tuberculosis and Malaria, an international financing and partnership organisation.

“There was very little capital available to take promising technology that would aid in the diagnosis, treatment and prevention of communicable diseases, and to take a product from the lab to the market”, says Mr Joshi. “This is a space that needs far more attention than it gets, particularly because climate change is going to lead to a spurt in infectious diseases.”

The IHF mandate is to identify tech-driven solutions for infectious diseases that can be deployed through India’s primary healthcare system. To this end, it has funded 15 startups thus far, many of which...
are now addressing the dual-edged sword of climate change and infectious diseases by strengthening diagnostics and surveillance and by applying a ‘One Health’ approach.

[One Health is a collaborative, multisector and multidisciplinary approach that operates at the local, regional, national and global levels, the objective being to achieve optimal health outcomes while recognising the interconnection between people, animals, plants, and their shared environment.]

The impact of climate change on the rising burden of infectious diseases can be tackled by making better diagnostics available to people, especially the underserved, right where they need them. Point-of-care diagnostic tools, faster active case finding and digital screening solutions must be accessible and available to everyone, everywhere — and at minimal cost — to cut down the time and expenses linked to disease detection and treatment.

The human element in all of this is critical. Binita Shrivastava Tunga lost her 11-year-old niece to dengue in 2014. Devastated, she couldn’t get over the fact that it was due to a misdiagnosis. “We have world-class medical facilities in India and yet we didn’t have a way to detect which disease the mosquito bite had caused, at least not fast enough for us to prevent fatality,” says Dr Tunga.

She and her husband, Rashbehari Tunga, quit their jobs in 2015 to set up a company to help solve this problem. Their startup, Ameliorate Biotech, has developed an affordable and user-friendly device that detects which of the three most prevalent mosquito-borne diseases — malaria, chikungunya or dengue — is affecting a patient. Pinpointing the disease is vital, given that mosquito-borne ailments often present similar symptoms at an early stage, which can lead to misdiagnosis.

**Easy field use**

With support from IHF, Ameliorate developed a diagnostic kit that identifies the disease with just two drops of blood, and within 10 minutes. The device uses a single test kit and a single blood sample and can be easily used in field conditions by frontline workers with minimal training.

Other features make it suitable for rural India or remote areas: it does not require serum or plasma samples to make a diagnosis, it does not need a cold-chain facility or biosafety labs, the results are quick, and it generates minimal medical waste. This kit will probably become a necessity across the world because mosquitoes are reaching higher altitudes and temperate regions where they were absent before. “My niece would have survived if she’d been rightly diagnosed in time,” says Dr Tunga.

As soon as a new disease emerges or an old one reemerges, strong disease surveillance measures must be in place to detect them quickly at the local level, and authorities must take action to stop them before the disease has had a chance to spread.

Hotspot determination and disease modelling that takes into account variations in weather are going to be vital in the context. For this, public spaces and utilities such as the water supply system need to be tested regularly, and early-warning systems need to be set up to generate data and alerts in real time.

India is more vulnerable than most countries on this count, and not just because of its socioeconomic situation — a large
number of impoverished people, crowded urban centres, pollution, tropical heat, and sparse diagnostic and treatment facilities — but also because of the high prevalence of disease-carrying mosquitoes.

That last is a cause for worry. “Mosquitoes are now being found where they were unable to thrive earlier, at high altitudes or in colder regions, for instance,” Mr Joshi points out. That means a greater need for surveillance and vigilance by health authorities in preventing epidemics.

TrakItNow is an IHF-funded startup that does exactly that: it supports the surveillance and reporting of disease-carrying mosquitoes as a way to predict mosquito-borne disease outbreaks.

**Antimicrobial resistance**

Surveillance is critical especially as cures are getting less useful. “From what we see, about 80% of our population is affected by antimicrobial resistance and climate change is going to worsen the situation,” says Mr Joshi. “Basic medicines that used to work in the past are not as effective now because bacteria are adapting and mutating. We will need stronger and stronger antibiotics.”

Approximately 60% of all infectious diseases that affect humans spread from animals to humans. There is an increasing consensus that addressing human health issues must go hand in hand with animal health and environmental health. The One Health approach that values interconnectedness is a must if we are to comprehensively tackle the impact of climate change on infectious diseases.

IHF is paying attention to the threat of zoonotic diseases transmitted from animals to humans. CisGEN Biotech Discoveries is an IHF-funded startup pioneering solutions in animal health to prevent such outbreaks. Led by technopreneur Maroudam Veerasami, CisGEN has developed a pen-sized test kit to swiftly and affordably diagnose tuberculosis (TB) in cattle. This innovation helps safeguard livestock while reducing the risk of disease transmission to humans.

Typically, it takes a veterinary doctor three days and multiple visits to diagnose TB in cattle. The CisGEN kit is quicker and cheaper, making it affordable and convenient for farmers and vets. The rapid diagnostic format gives instant results, enabling farmers to isolate infected animals before they can spread the disease.

Given that 28% of all TB cases in humans may be of zoonotic origin, early detection in animals is crucial in preventing outbreaks. The company is planning to create combo kits for other zoonotic diseases (the kit has already been adapted for brucellosis, another common zoonotic disease).

While science and technology hold the potential to combat some of these threats, the not-so-good news is that, apart from a few government initiatives, funding for research and solutions in infectious disease is barely a trickle. Even those science- and technology-led innovations that have proved effective struggle to find support.

So, what will it take to have many more of these innovations reach the last mile, and prevent the devastating effect that climate change holds for human health? More investments and strong partnerships will be key ingredients.

By Kalpana Shab
The phrase ‘spray and pray’ describes most of India’s efforts to combat mosquito-borne diseases. A general-purpose mosquito repellent is sprayed by town and city municipalities before and during the monsoons because that is when the insects breed in large numbers. But with climate breakdown leading to erratic rain patterns, it’s difficult to accurately schedule such actions.

Widely used vector-control practices like fogging and anti-larvae operations are only partially effective as these methods do not account for the specific treatment requirements for different species of mosquitoes (owing to a lack of surveillance data). Real-time mosquito surveillance can address this.

Vector surveillance, which is integral to vector control, depends on manual processes for sample collection and requires entomologists for analysis and reporting. The time required for this — and the shortage of entomologists — makes timely vector control activities difficult to implement.

The India Health Fund has been involved with TrakItNow and has backed Moskeet, the world’s first commercially available smart mosquito surveillance solution. Moskeet can identify and measure concentrations of different species of infected mosquitoes and enable vector surveillance and control measures.

TrakItNow, a startup that focuses on AI-based solutions for health security, studied mosquito behaviour and consulted experts. What it found was insightful: mosquitoes carrying different viruses and parasites have different habits. Some are active during the day, others bite at dawn and dusk. Breeding habitats are different, too.

Moskeet attracts mosquitoes and traps them without killing the insects. With the help of AI, it uses wing-beat frequencies as a way of identifying the breed and gender of mosquitoes, and transmits this information to local health authorities.

Thanks to its autonomous operation and data-transmission capabilities, Moskeet overcomes the challenges of slow manual data collection and the shortage of epidemiologists to analyse and interpret information. This precise approach not only helps in preventing disease outbreaks but also minimises the resources required for disease-control efforts.

What sets Moskeet apart is its affordability and accessibility. Designed as a scalable solution for developing countries, it aims to ease mosquito surveillance and disease control by disseminating real-time information by location and species. Moskeet is being used by several communities across five cities in India — Hyderabad, Thiruvananthapuram, Panjim, Vijayawada and Yanam (Puducherry) — and it has been helpful to about 325,000 people so far.

There are several advantages to Moskeet:

- It gathers and interprets disease surveillance data 20 times faster than comparable devices, three times more accurately and at 15% of the current cost of manual methods.
- It delivers nearly 85% savings on surveillance alongside the value addition of real-time data.
- It reduces fumigation costs by 20% by identifying more effective pesticides.
- And it focuses resources on high-risk areas, reducing mosquito populations by up to 60% and decreasing the disease burden by about 40%.

Moskeet has been listed in the United Nations’ ‘development program solution catalog’, which is accessible by 170 country offices. These are places where it can be considered for adoption and scaling up.
As a discipline, architecture has constantly had to balance a host of elements to be truly relevant, from the practical and the aesthetic to the cultural and the social, and now the sustainable. How complex is it to get all the pieces right in these times?

Architecture as a profession has always had to grapple with all the dimensions you mentioned. At a certain time in history, the sustainability of social dimensions was implicit in the practice of architecture, in the sense that architects were in service to society and, therefore, were generating some social value or the other. When populations were small, our needs were relatively simpler and the exploitation of resources was limited, which meant you could do that in more natural ways, using what was available at hand in an intelligent manner and not seeking to convert all raw materials into a set of magic materials that could do wonders.

The difference in this age is twofold. One, the practice of architecture has shifted away from a profession that carries responsibilities beyond what
you are called upon to provide to clients. It has responsibilities to the environment and society; it has cultural responsibilities. But the way it has evolved, architecture has become a business where professionals seek opportunities to further their own wealth without paying heed to much else. That is a serious concern.

Second, there’s the scale and complexity of construction that is now happening. You are trying to cope with the needs of a growing population that has a bit more access to wealth. You seek to control the environment, provide greater comforts and conveniences, and also express wealth through the act of building. The processes involved here have a significant impact on the stability of our environment and that’s why we are faced with the climate change crisis.

The challenge for architecture as a practice and as a profession is to take responsibility for the social as well as the environmental. We have to rise to that challenge, develop the ethics for it and be a developmental force for a more sustainable life. That’s the challenge and very few of us are engaged with it globally.

You cite your interest in developing strategies for sustainable development, specifically affordable housing in the face of rapid urbanisation. Given the ever-worsening state of our cities, how do you go about what seems to be an intractable task?

If you look at the trends we are going through now and the predictions for the next two to three decades, what we are going to see is the inevitable result of the type of economy we have been drawn into. There will be more and more urbanisation across India, but there is an opportunity for much of the resultant growth to be directed toward tier-2, tier-3 and tier-4 cities.

In the context of per capita carbon emissions, it has been found that cities that are spread out tend to have higher carbon emissions than cities that are compact. In a compact city you have less moving around to do and mixed land use, and therefore your carbon emissions on account of transportation are controlled. Also, the distribution of services, including social services, in compact cities becomes much more accessible and economically viable.

However, there is a sweet point with densification, beyond which it becomes negative. What we are witnessing in the big metros may affect their smaller counterparts. “Oh,” they say, “double the FSI [floor space index]” or “triple the FSI”, which leads to buildings being 10-20 storeys high. When you analyse something like this, socially, culturally, and from the point of view of construction costs, maintainability, embodied carbon and operational carbon — it is terribly negative on all these counts.

A preliminary study reveals the likely optimal pattern of urban development, generally speaking: four-five storey buildings — low-rise or medium-rise high-density, in the language of urban design and town planning — in compact cities are the best option from the point of view of
affordability, environmental impact and resilience. There’s potential here for a policy shift if these aspects are recognised.

Critically, we have to consider our situation as a developing society where income disparities seem to be growing alongside GDP growth. In the circumstances, the making, remaking and extension of cities can be an engine for the distribution of wealth. This will happen when the grain of construction, or making cities, is relatively small, because that grain of construction enables many more participants with appropriate levels of skills, capacity or capital — instead of just big builders with deep pockets — to service the demand push.

You have been quoted as saying that “only when we commit to appropriate policies … that the health and wellbeing of our growing urban population can be ensured”. Do you see those policies and that commitment?

If you read the documents at the highest levels of policymaking, all the lovely words are said: environment, social justice, equity, affordable housing and so on. On top of that, there is our global commitment to reducing the intensity of our carbon emissions. So, yes, there is a declared intention. But converting that declared intention into commitment is a different story.

What’s happening at the moment is that the solutions for dealing with urban growth are about enormous infrastructure investments in large cities and the pushing of all development into high-rise types of construction. There’s a numerical need for more shelter and we think the numerical answer is the right answer, but this numerical answer has its implications. These implications — rising carbon emissions, increased construction costs, lower resilience, and social and psychological stress — have not yet come into the frame of consideration at the highest levels of governance.

The word ‘sustainability’ is used — and abused as well — in relation to all manner of things. What does sustainability mean in the context of architecture and urban planning?

Sustainability, simply put, is that which can stay stable for a long period of time. Environmental sustainability has become the dominant theme over the last two decades and there are two prominent factors involved. One is climate change and the other is the stress on water to meet the needs of urbanisation and growing populations.

With climate change and carbon emissions there are, broadly speaking, two different dimensions. First, emissions triggered by the production of building materials; that’s one of the major causes of climate change. The second point is about the operational energy requirements of buildings, which are increasing due to rising temperatures and heat waves.

These two factors are respectively called embodied carbon and operational carbon; we have to minimise both. We can do this by adhering to some very straightforward design principles. Unfortunately, our

“The making, remaking and extension of cities can be an engine for the distribution of wealth. This will happen when the grain of construction, or making cities, is relatively small...”
developer, design and construction communities are not paying attention to these simple principles.

When it comes to embodied carbon, the peak is taken by steel consumption. Steel comprises only 2-3% of the building mass but it accounts for 50-60% of embodied carbon in construction. That makes it very important to use steel judiciously, and the same goes for concrete.

On the operational energy side, what we call passive design — the external shape of the building, its orientation with regard to the sun and breeze, windows, shading, insulation of roof and wall, etc — can do a great deal to reduce the impact of conditions of heat or cold. It's just a question of design. Do this right and energy requirements can be halved when compared with a poorly designed building.

We here in Mumbai appear to be living in an age of architectural submission, where the tyranny of glass and steel dominates, where the nature of the relationship between architecture and society is muddled at best. Where do you see this headed and how can citizens get more involved in the participatory planning method?

My first advice to Mumbaites is this: leave the city. Otherwise, let Mumbai be, let it find its own destiny; we don’t know where it’s going. Mumbai has become the highest per capita carbon emission city in India for sure and there is no way for it to be on the right side of the sustainability equation, no way.

Mumbai is lucky on one count, though, in that it still has enough water to meet the needs of its people. But the city has cut the very branch it is sitting on by overbuilding like mad. Yearly flooding is a certainty and no engineer is going to stop that. But, believe it or not, many cities around the world have got depopulated and that may be the solution for Mumbai.

Architecture has forever been employed as a tool, even a weapon, to reinforce ideologies and solidify nationalistic inclinations. What's included and what's excluded when such tendencies take hold?

If you consider the historical perspective, I would have to say that the people who are celebrated as master architects in any culture across the globe were those patronised by the powerful and the wealthy. That continues and examples of it are the buildings of the big global corporations, which are like governments themselves: they seek to express their power and wealth one way or the other.

Most of what we are building today in our cities and towns is an expression of architects and building design professionals serving the public and society according to their means. But when architecture turns into a business, it seeks to go up the ladder because that’s where more money will be spent. What I say is, “Take your professional status seriously because your responsibilities go beyond serving the interests of your immediate client. Bring the environment and society into the picture; become a development practitioner.”
Would there be relevance in India today for an architect such as Le Corbusier and a city such as Chandigarh?

Yes and no. There’s a difference between Le Corbusier being brought into Chandigarh and the refashioning of the Central Vista in Delhi. Le Corbusier brought the offerings of the new world to establish a new kind of city, one that had its environmental balances, one that celebrated its institutions; he brought a vision of service to society. But today, whether it’s with the making of the new capital in Andhra Pradesh or what’s happening in New Delhi, the equation is somewhat reversed. The vision is that of the grand patron and of the professional being brought in to give expression to that vision.

Charles Correa, BV Doshi and Laurie Baker are the three gods we have had in the recent history of architecture in India. This triumvirate is my inspiration and they were never servants responding to the dictates of the patron. They were servants of social and cultural needs and, in that sense, they had a vision well beyond what we consider professional service today. Their time has passed; I don’t see the architectural or planning professions playing that role.

In the modern milieu, what sort of space is there for architecture as art and the architect as artist?

There is a lot of space for that. There are three dimensions that an architect combines in a society such as ours. The first is thinking of the product of architecture as a cultural artefact, a creation that gives joy, expresses beauty and can be memorable. That facet of architecture cannot be taken away. But at the same time, the production of this cultural artefact has to weigh in the other two dimensions: security of the environment and being a development agent or a development practitioner. Bring these three together and you are a complete architect.

As for the future of this profession called architecture, those of us who think we have to change direction and wrestle with development problems and environmental issues can no longer be mere service providers to clients. We need to move out of that and set up companies that bring together multiple skills: building design, structural engineering, construction engineering, environmental sciences, and law and finance. That’s the way to make a real difference. It means the future lies in architecture becoming part of an entrepreneurial culture.

Please tell us about your interests outside of work proper.

I’m a great fan of the Urdu language and I have, over the last few years, learned it. I enjoy reading and writing in Urdu and I also indulge my love of calligraphy through it. A second interest is Delhi, where I was born and where I have links to the old city and its history. I like to inform myself of all the changes that are occurring and attempt some literary or illustrative work to express ideas for the reinvention of this beautiful city.
Trained to thrive

Seeding small businesses and bolstering budding entrepreneurs — that’s the winning way adopted by an initiative spread across six states

Tushar Donde, a commerce graduate from Mumbai University, left the big city and returned to his village in Maharashtra’s Vidarbha region during the Covid pandemic. He had come back with an idea in mind: the prices of vegetables and fruits were so much higher in Mumbai than in his native neighbourhood. There surely was a profit to be made from the difference, Mr Donde reckoned.

Mr Donde began sourcing produce from nearby villages and supplying it to markets in Mumbai and other cities. Around that time he started working with a local company called Carver Farms, where he learned the science of extracting cold-pressed oils from sunflower and mustard seeds. The big boost for Mr Donde’s small business was yet to materialise, though.

That happened in 2021, when Mr Donde enrolled in a 10-day entrepreneurship development programme (EDP) conducted by Tata STRIVE, a skill
development initiative supported by the Tata Trusts. Armed with a loan of ₹40,000, he launched Healthroot, his very own cold-pressed oils unit. The Tata STRIVE team has backed Mr Donde all the way and continues to do so. “I still get calls from them; they encourage me and give me a heads up on business opportunities,” he says (most recently that Healthroot had caught the attention of a venture capitalist).

Mr Donde is one of more than 1,300 people who have been educated in building their small businesses through the EDP initiative. This is but one part of Tata STRIVE’s greater mandate — to help provide gainful livelihoods for the aspiring. This effort has reached in excess of 1 million youth since 2014.

Tata STRIVE got going with EDP on a small scale in Odisha in 2017. Branded a ‘Nano Unicorn’, the programme was set up in collaboration with the Odisha Skill Development Authority to provide structured entrepreneurship training to youngsters graduating out from the state’s Industrial Training Institutes (ITI).

EDP concentrates on enabling youth with potential. Candidates have to submit a two-page business plan before going through an assessment that includes a written test, a game-themed group activity and a personal interview.

While knowledge of business is not considered in the appraisal, background and awareness are important; what also counts is entrepreneurial bent and ideas. Candidates have to create a business proposal at the end of their training period. “It’s a journey from idea to plan,” says Shiladitya Samaddar, principal lead (operations) at Tata STRIVE.

Beyond jobs
The EDP programme has expanded over the years from Odisha to Maharashtra, Uttar Pradesh and Haryana, and it now includes non-ITI participants as well. “Our goal is to empower ambitious youth to become job providers rather than job seekers and to boost the local economy,” adds Mr Samaddar.

A successful example is 27-year-old Naresh Behera, who has launched a profitable business with a social cause (see Buzz in the biz on page 38). Mr Behera stands out and there are many like him who have benefitted from EDP. An internal survey of 228 budding entrepreneurs from the programme, conducted by Tata STRIVE in October 2023, is illuminating: the respondents’ mean monthly income grew from ₹7,566 to ₹86,433 per month, with monthly profits averaging ₹17,859. The jump is remarkable given that a third of the participants had no income source when they joined EDP.

The survey also found that the fledgling enterprises were sturdy on the whole, with a failure rate of just 2%. Moreover, nearly every entrepreneur in the programme has invested more funds in his or her enterprise (an average of ₹100,000-plus).

What makes EDP shine is the quality
of the training it delivers. There is a dedicated team of about 30 professionals from diverse organisations, active and retired bankers, established entrepreneurs, academicians and professionals from the corporate and development sectors.

The pedagogy pool offers expertise in banking, government schemes, marketing and scale-up strategies, and domain-specific subjects, not to mention motivation and emotional support.

The wider support base for the programme includes the Maharashtra State Skill Development Society, SKF India, Crompton Greaves, Owens Corning, Tata Steel Foundation, Tata Capital, Tata Communications, Sahyadri Farms and the Odisha Skill Development Authority.

“I realised that starting the training straightaway with topics of finance or marketing would not work,” says Abhijit Giri, a professor and director at Adamas University who has mentored aspiring entrepreneurs from Uttar Pradesh. “We had an interactive first session where they shared their hopes and fears and I told them real-life success stories. It’s amazing what a little passion and community spirit can achieve.”

Gaurav Gupta, who leads EDP at Tata STRIVE, finds satisfaction in how participants evolve through the programme: “With each post-training follow-up we see more and more of them troubleshooting and finding solutions in funding, growth, risk mitigation,
A key facet of the EDP story has been teaching financial discipline. Having a current account with a bank helps, for instance. It ensures that the entrepreneur has completed his or her business registration and governmental and legal compliances. “A current account requires entrepreneurs to be more systematic about filing returns, while it also makes it possible to apply for loans under various government schemes,” says Mr Samaddar.

Loan support
Tata STRIVE provides loans of up to ₹200,000 for these budding business talents, many of whom have specific skill sets — as a beautician, tailor, mechanic or electrician — that make them better placed to find success and, thereby, repay their loans and grants. An example is 33-year-old Firoza Shaikh, who lives with her husband and 15-year-old son in Ambedkar Nagar colony in Pune in Maharashtra.

Ms Shaikh used to run a beauty service from home and she wanted to turn this into a full-fledged beauty salon. EDP provided her with training and a ₹20,000 grant to kickstart her business. “Enrolling for the course was the best thing that happened to me; it gave me much-needed confidence,” she says. Following her training, Ms Shaikh got a diploma in beauty and hair treatment, rented a small space in her neighbourhood and invested in good-quality equipment. With business getting better, she is now looking to employ a few hands to keep up with demand.

That’s vindication for Tata STRIVE and what it has tried to effect through the entrepreneurship programme, which gives dreamers with the drive a solid foundation for business liftoff.

By Kalpana Shah
Life beyond lumps

A unique approach to encourage screening for breast cancer cooks up interest in a manner far from medical

Meeta Sharma (name changed), a 38-year-old mother of three, found a knotty growth in her breast last year and got so anxious she did not know what to do. “I was scared; I wanted to get it checked by a doctor but I was feeling really awkward,” she says. Then a cancer screening camp near her village provided the path to relief.

Called ‘Gaanth Pe Dhyaan’ (attention on lumps), the camp was part of a cancer detection programme nurtured by the Tata Trusts. Held in Ranchi in Jharkhand, just a few kilometres from her home in Chauri Basti, it enabled Ms Sharma to get a free screening session and a meeting with a doctor. The diagnosis revealed a non-malignant growth, reason enough for her to be relieved but there was more to it. “I’m so thankful I attended the camp, or I would have continued to worry,” she adds.

Gaanth Pe Dhyaan (GPD) is a unique on-ground social experiment by the Trusts that puts the spotlight on breast cancer, which affects an estimated 192,000-plus women in India every year — it kills more than 90,000 — making it the leading cause of the disease in the country.

Each GPD event starts with a cooking demonstration, which is followed by a screening camp, and covers 300-400 individuals. To make the programme more interesting, local chefs are invited to cook a regional dish that is prone to forming lumps if not prepared right. A few participants taste the dish and when they

Chef Sailaja Aechuri (extreme right) at the Gaanth Pe Dhyaan event held in Tirupati in Andhra Pradesh
point out that the lumps mar the offering, the narrative shifts to breast cancer. The question then arises: if we take care not to have lumps in food, why don’t we check for these in our bodies?

The message being driven home is that women must not ignore their health, that they have to, as a first step, be responsible for conducting regular self-examinations to check for breast lumps.

Getting started

The first GPD event was held in October 2023, to coincide with breast cancer awareness month, at the Ranchi Cancer Hospital and Research Centre, a unit of Tata Trusts Cancer Care Foundation. A leading Jamshedpur chef and entrepreneur, Priya Gupta, was at the event and drew an all-women audience from local communities. Ms Gupta conducted a live cooking session on stage to make 

\textit{dhuska} dhokla, a local savoury that tends to get lumpy if not prepared right.

The link between lumps in food and the importance of self-examination of breasts for lumps (which could be a symptom of cancer) was made clear to women in the audience, who were then encouraged to go in for a clinical breast examination. The Ranchi event turned out to be a tasty success, with around 400 women signing up for cancer screening.

“Screening-related activities, that too for cancers, are always tricky as we are reaching out to apparently healthy populations and hence there is no strong felt need to undergo screenings,” says Dr Vikram Sahane, lead, public health at the Tata Cancer Care Foundation, an initiative of the Tata Trusts. “An event like this takes a creative approach to generate interest in the community.”

GPD’s correlation with the community has been encouragingly positive. Over 90% of the attendees go for screening and that makes the investment in equipment, screening personnel and other resources for the event worthwhile.

The Ranchi response encouraged the Trusts to take the initiative further. Live events have since been held in Tirupati (Andhra Pradesh), Dibrugarh (Assam) and Kolkata (West Bengal). Devoid of medical jargon, the ‘lumps in food’ metaphor has worked well at all the locations where it has been staged.

In Kolkata the team tied up with chef
and food author Ananya Banerjee, who cooked a local delicacy called *rosopuli pitha*. In Tirupati, chef Sailaja Aechuri, who runs a YouTube cooking channel, made tomato *baath*. She was joined by chef Varaprasad Karthyaeni (from the Taj Group of Hotels in Tirupati), who made pineapple *kesari*. In Dibrugarh, well-known chef Santa Sarmah came on board to cook a local favourite, *narakbinha* soup, in lumpy style.

In each of these GPD shows, hundreds of women signed up for cancer screening. The events are backed by the Trusts’ cancer care ecosystem, which works with the regional chapters of the Indian government’s National Health Mission and trains local frontline workers to help with the screenings.

The GPD programme has blossomed well enough to take the shape of a movement. Multiple hospitals are replicating the idea and more than a 100 media stories have highlighted the power of the idea.

**Fear of the unknown**

Dr Sahane says this programme could not have come at a better time, considering the ever-rising cases of breast cancer in India. “This cancer is curable in most cases if detected early,” he says. “Unfortunately, women are either not aware that they may have it or are afraid to find out.”

The Trusts have long been committed to driving cancer-care interventions. Their comprehensive cancer care programme, launched in 2017, rests on the four pillars of better access; enhanced quality of care; affordability; and awareness, detection and palliative care.

Powerful communication has been critical in increasing awareness. In addition to the cooking demo events, the Trusts have made three short films that speak about watching out for symptoms and taking them seriously. What makes GPD vital for India is that over 50% of breast cancer cases in the country are diagnosed in the late stages, leading to preventable fatalities.

“Early detection is the key to survival,” says P Arun, director of the Tata Medical Center (Kolkata) and a senior oncology consultant. “People allow cancers to grow by avoiding regular checkups. Screening is scary but cancer is scarier. By the time the pain manifests itself, it’s nearly always late.”

Another supporter of the GPD initiative is Kailash Sharma, who joined the Tata Trusts cancer care programme in 2019 after a successful stint of three decades at the Tata Memorial Hospital, Mumbai. He is responsible for staffing the Tata cancer hospitals and centres coming up in India. “It’s good that we are getting these state-of-the-art facilities in India, but my heart sinks when I see advanced cases of cancer that could have been stopped in their tracks with early detection,” he says.

The GPD programme was the culmination of intensive research in the catchment areas of key Tata cancer hospitals. The core of the idea lies in

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**A burden too heavy**

- Breast cancer is the most common cancer worldwide and the fifth leading cause of death due to the disease.

- An estimated 90,000+ women die of breast cancer in India every year and 192,000+ women are affected.

- Globally, 70% of breast cancer cases are detected in the early stages and 30% in later stages; in India the ratio stands inversed at 70:30.

- The breast cancer survival rate is pegged at 95% if detected early.
addressing the fear and the multitude of questions that the disease brings for patients and their caregivers.

“Captured creatively in ‘kaise ka cancer’, a campaign that garnered more than 20 million views, the Trusts felt reassured that large-scale awareness campaigns can effectively change perceptions and reduce the stigma and the fear, nudging people to take action with the belief that every ‘question’ does have an ‘answer’,” says Deepshikha Surendran, head of communications at the Trusts.

The multimedia, multi-language campaign reflected a comprehensive segment approach. “We expected the GPD idea to gain immediate traction because of its core insight, the simple metaphor employed and the ease of action,” adds Ms Surendran. “Every hospital we did this in, the staff were amazed at how simple the concept was and how we were able to engage the community.”

What keeps the initiative going is the impact, of course, as well as the responses from participants. “It’s wonderful to see villagers, teachers, doctors, college students and others all come together for a common cause,” says Kumud Jha, president of Ranchi-based NGO Divyam Dream Foundation.

The chefs who participate are also completely on board, happy that they can use their skill and talent to make a difference. They contribute ideas on recipes and dishes and even share their personal stories. Laeba Ashraf, a chef from Taj Vivanta in Bhubaneswar (Odisha), attended the Ranchi event and related her story of how her grandmother survived breast cancer due to early detection.

At the Kolkata event, one of the participants was a woman from Bangladesh, attending along with her family. She had been diagnosed with leukaemia and had found out that the diagnosis was incorrect. After the cooking demo, she made sure she was among the first to register for the breast cancer screening, telling the other participants, “I understand the trauma that we go through if we are told that we have cancer. Better to get yourself properly checked.”

By Kalpana Shah
Partnerships are the bedrock of building and expanding philanthropy in India. Can you tell us how this collaborative model works at EdelGive?

Edelweiss was a young company back in 2008 when it decided to create a nonprofit; that’s when EdelGive was set up. The agenda was plain and simple: to bridge the gap between profit and nonprofit in terms of our resources, which were articulated as money as well as time and skills.

I am from the financial sector and when I joined EdelGive I had no clue what the development sector was about. I came with a fresh pair of
eyes, and at a time when the sector did not get much attention. During my first two years I made a lot of field visits and had conversations with a lot of people. We were giving grants of about ₹2 million each to different NGOs. I call that phase of our giving intuitive philanthropy. We realised that our small grants were having a limited impact, but that a lot was possible if we brought more partners like us together. That’s when we decided to focus on the end objective and that happened through a collaborative partnership model.

Our partnership model is structured on the recognition that we cannot do everything. We have the finances, we understand how to monitor money, and how to ensure this money delivers a return; that’s our capability. But the fact is we cannot engineer social change on the ground. We have partnerships with those who are better than us at what they do; that leaves us to do what we are good at.

**How do you go about deciding on matters such as sphere of work, scale and the nature of giving?**

It is something that has developed over the last 10 years. We had a straightforward process earlier where annual grants were given to small and midsized NGOs. Our collective pool was limited; we had the agency to use it the way we wanted but our support was limited to the size of the pool we had.

We chose education because we thought it was pertinent. Then we thought, ‘OK, whoever gets educated would want to earn a livelihood’, so we zeroed in on livelihoods and skilling and — since women are critical — gender. What we had in spades was the desire to make a difference.

Soon it dawned on us that something was off, that we were merely scratching the surface. In education, for instance, we say we will give access to schooling. We have 95% of our children enrolled in primary education but only about 40% get to secondary school. That’s why we started looking at what could be done to help children continue with their education.

We also considered skilling, where the funding model in India is, according to me, completely counterintuitive: we concentrate on the demand for skilling while ignoring the aptitude for it. How can we assume that all poor people are happy becoming plumbers and, if they are women, beauticians?

When the drought in Marathwada [in Maharashtra] happened in 2012-13 and farmers faced devastation, I was shocked to realise that people thought farmers were a separate category of people, not included in livelihoods. Most urban stakeholders thought of livelihoods from an urban lens of skilling; farming did not fit into their framing of livelihoods. That year we wrapped up our entire skilling portfolio and moved almost ₹40 million in grants to rural livelihoods.

We didn’t know much about rural livelihoods; our aim was to fund people to earn where they live and we wanted water to be at the centre of everything. In our gender portfolio, we moved from life skills for women

“The process of moving money cannot be emotional ... For money to work towards the best possible result, you have to craft a process that’s beyond question.”
to ensuring social justice and access to finance (there’s a clear connection between the two).

While the portfolio was growing stronger and bigger, funding partners started joining us. We reckoned that if our partners were going to trust us and this was not going to be a one-time thing, then we needed to create a process that was sterile, repeatable and accountable. That’s how the collaborative model began; there is a separation between purpose and process.

The process of moving money cannot be emotional. Money does what you make it do. For money to work towards the best possible result, you have to craft a process that’s beyond question. That brings us to the crucial part: purpose. The collaborative model is driven by purpose and multiple stakeholders; the governance and money-moving components are standard.

**What are the challenges in finding the right partner or NGO?**

There are two challenges. One is that there are too few of us and the other, strangely, is that there are too many of us. We did a dipstick survey and found that 99% of NGOs have access to 1% of capital and 1% have a lot. We are in a sector that is supposed to be dedicated to equality, but we have created a structure where the grant mechanism is unequal, where people are classified into winners and losers.

How do we select the NGOs we want to work with? Instead of looking at 10 of them and choosing two or three from the lot, we went the opposite way. We sought out the best in the areas we were interested in and we made the whole approach dignified. We didn’t judge these organisations on how well they wrote their proposals or how good their English was. We wanted to know what the problem was and what their plan or solution was, and it’s fine if the project took three years instead of one.
We work with around 130 NGOs and we are always a little worried about making wrong decisions, but our way of managing our grants is friendly and intensive rather than report-driven.

The regulatory changes of recent times have not been good for Indian nonprofits, with funds drying up for many of them. How has this affected EdelGive?

We have been impacted, for sure. We had plans to work in spheres where funding is inadequate, but as soon as the regulatory requirements were imposed, many NGOs had to reduce their capacities. Foreign grants not filtering through has broken the backs of many organisations.

Indians are traditional givers, but most of that giving is directed towards religious causes or support of less privileged family members. We are still not comfortable with giving, institutionally or individually; our muscle for giving to social development causes is fairly weak. It is also my belief that we are not invested in the problems of the nation beyond the headlines, so we don’t feel we need to participate in funding solutions for these problems.

We have emerged from being a poor country but I am surprised by our bias on poverty. There is a belief that the poor are lazy and that the privileged have worked hard to succeed. When sensitive, decent and educated people form opinions of this kind, it has a societal impact. Maybe the only good thing about the changed regulatory regime is that now we have no choice but to ourselves pay to solve our problems.

The sustainability equation is central to the objectives of any programme or initiative, but that’s hard to realise. How do you work around this reality?

The entire design of the grant-giving mechanism is unsustainable. We have disallowed corpus building and we have capped operational costs. The fact is that every grant-giving model is unsustainable on its own.

We need to look at sustainability differently. We need to be comfortable with earning and allowing others to earn. We need to be comfortable with having costlier programmes and saying that these cost money.

What have been the effects of the pandemic on the social development sector in the context of migrant workers, particularly women?

The vast majority of these women have not come back; they have been lost to the labour market and their rights have been compromised. As for the development sector, the capacity of organisations to pay for even basic amenities became a big challenge. Funders wanted to give only for programmes because we wanted to put food in the mouths of the poorest and not see the cost of delivering that.

People did spend a lot on charity but it all went into direct cost, which
made for a weaker service pipeline. It’s heartbreaking to say but we made this a service delivery model. That changed the basic nature of what we think is facilitation for the poor. But the pandemic did create more givers.

What’s your view on the potential of philanthropies, nonprofits and others in the social sector to do lasting good in the Indian context? How much of this potential is being realised?
The potential is massive and we are nowhere close to realising it. There is a large segment that has the capacity to give but does not understand the social sector, which, for its part, does not know how to demystify itself. The gap between giver and receiver is large and this has serious consequences.

You are a chartered accountant (CA) by profession. Why the decision to work in the development space?
Though I loved studying it, I hated working as a CA. It was boring and it didn’t give me any sense of purpose. I studied it honestly because I was a good Muslim girl who needed a quality education before she got married. So, at 22, I was a CA. I didn’t disappoint my father and it was my convenient way out. But to realise as a young working CA that I had spent five years of the best part of my life studying something I didn’t want to continue with was quite devastating.

What are your interests beyond work, and do you have time to pursue these?
I love writing, which I find therapeutic. I’ve not been able to write much lately but I write whenever I am upset — or happy.

Women’s rights leaders and activists in a village in the South 24 Parganas district of West Bengal at a meeting called to discuss how to address issues of violence in the community.
In fostering an ecosystem where sustainability flourishes, organisations can collectively amplify their impact, leading to a ripple effect across commercial industries and beyond.

A rapidly expanding economy and vast population put India at the forefront of the global climate challenge. Confronted with the unprecedented task of integrating climate change into her growth narrative, with an ambitious goal of reaching net zero by 2070, India is making noteworthy efforts to stride towards a sustainable, low-carbon future, with climate-resilient pathways being forged at national and state levels.

Thus, prioritising tangible steps is a necessity; the responsibility for driving this transformation does not lie with the government or environmental groups alone. Businesses, as powerful growth engines of the economy, have a vital role to play. By interweaving climate change considerations centred around mitigation, adaptation, and advocacy into corporate strategies and developmental frameworks, a sustainable and prosperous future may be secured for India and the world.

The fruition of mitigation efforts aimed at curbing heat-trapping greenhouse gases will take decades to show impact. However, by accelerating the transition to renewable energy, arresting deforestation trends, and restoring natural habitats we may start making a positive difference, now.

A prime example of this is Uttarakhand, where 90% of the drinking water comes from small springs. A combination of climatic factors, deforestation, and topography has led to a decline in water availability. To address this, the Himmotthan Pariyojana’s springshed management programme has employed scientific methods to prevent soil and water runoff.

This approach has led to an increase in water infiltration and enhanced water discharge from springs, ensuring a more sustainable water supply. Additionally, there’s an emphasis on enhancing local village expertise in natural water resources management. After revitalising the springs, trained para-hydrogeologists, referred to as ‘water champions’, assume responsibility to ensure the project’s ongoing success.

Inspiring effective climate-change action

Siddharth Sharma is the chief executive officer of the Tata Trusts.
Another such endeavour is working to ensure ‘Energy Security’ for communities living in remote areas of Manipur. This initiative seeks to revolutionise the lives of marginalised fishing communities through solar energy solutions. Faced with dwindling catches, the locals have repurposed their floating huts into eco-friendly homestays, rejuvenating livelihoods and bolstering local tourism. This effort ensures that these fisherfolk can sustainably thrive in their ancestral habitat, preventing the need for migration while earning a viable income. These initiatives, which prioritise both local community needs and environmental considerations, are charting the course for a more robust and sustainable future.

Efforts to prevent a worse future must be accompanied by measures to address the already baked-in consequences of damages. Adaptation, which aims to help people, animals, and plants thrive amidst the rising climate volatility, is an equally urgent business priority and this involves evolving organisational practices, institutional infrastructures, and technologies in the areas that are most in need.

In a country like India where only 4% of the world’s water resources are available to sustain 18% of the global population, the imperative for water conservation cannot be overstated. Innovative initiatives like building artificial glaciers in four critically water-deficit villages in the high-altitude Leh district are playing a crucial role in expanding dependable areas for irrigation and boosting crop output.

Similarly, a range of strategies that include ensuring the availability of quality fodder, providing proper healthcare for animals, and establishing linkages with milk-based market networks has transformed livestock farming into a profitable venture for farming families living in the hilly regions of Uttarakhand.
and Himachal Pradesh. Such initiatives reduce vulnerabilities to climate impacts and safeguard livelihoods and ecosystems, ultimately minimising the need for reactive emergency responses.

Voluntary commitments aimed at emissions reduction and safeguarding the global environment are commendable strides, but the gravity of the crisis demands active collaboration with domestic and international think tanks, business coalitions, and advocacy groups to stay informed on evolving regulations and technologies.

The India Climate Collaborative, founded by some of India’s top corporate and philanthropic leaders, is a unique alliance aimed at strengthening the Indian climate network, crafting a climate narrative tailored to India and fostering impactful solutions. By fostering partnerships around sustainable land management practices, adaptation strategies, and education and awareness, the ICC aims to accelerate the adoption of clean energy technologies. Its multi-faceted approach aims to achieve positive change on both a local and a national level, promoting a more resilient, low-carbon, and environmentally conscious India.

In the contemporary milieu, businesses play a pivotal role within societal frameworks. They must, as articulated by Ratan Tata, “go beyond the interest of their companies to the communities they serve”, to find “solutions tailored to meet local needs”. This assertion embodies the Tata Group’s intrinsic ethos underpinned by the Tata Climate Change Policy, a strategy adopted in 2009, well before sustainability concerns acquired a global momentum. Central to this is a threefold focus on mitigation, adaptation, and advocacy.

In fostering an ecosystem where sustainability flourishes, organisations can collectively amplify their impact, leading to a ripple effect across commercial industries and beyond. The fusion of climate-conscious social development with corporate strategy is more than just an aspiration. It is an obligatory stride towards a harmonious coexistence with our planet and a legacy of responsible enterprise for generations to come.

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For more than a decade now, the approach of funding organisations the world over has been dominated by unidimensional theories of change and magic-bullet approaches. A well-justified restlessness to demonstrate the impact of investments made for social good has also meant that solutions are designed to focus on symptoms rather than root causes.

Many of us in the social sector have understood that complex problems cannot be solved by linear ideas of how change happens. Increasingly, there is a heartening shift in the philanthropy and social good space. Fundamentally, we must grapple with the question of whether social outcomes can be specified, commissioned and delivered through a programme or an intervention focus.

A root-cause approach to addressing intractable development issues such as malnutrition, increasing income inequality or low educational attainment will mean that we can no longer afford to concentrate only on strengthening last-mile delivery of services.

This will also mean that we need to look beyond funding programmes and institutions to making deeper investments in comprehending the conditions of change, encouraging place-based approaches, measuring collective impact, amplifying marginalised voices, and building the skills and capacities of those closest to where change is needed.

While it is commonly acknowledged that social change is complex, the approach of our philanthropic infrastructure and the pathways to resource and facilitate change remain siloed while operating in a top-down fashion.

India is seeing unprecedented growth
in the number of family philanthropies and foundations, and the pool of flexible and patient capital is growing. This presents a unique opportunity for the social development sector to take on larger and hard-to-change issues through collective action and collaboration.

To act together, philanthropies, individually and collectively, will need a shared approach to diagnose what has to change and how to make that change happen. Increasingly, the philanthropy sector globally is turning to a systems approach to frame their impact pathways. As philosophy and framework, this approach can help us reposition and recalibrate the development sector’s approach to problem-solving for complexity.

What we require is a shared understanding of why supporting larger transformations in systems and power structures — rather than stand-alone programmes or intervention models that drive us to count beneficiaries — holds the promise of greater and more sustained change.

As we shift away from siloed approaches towards less tactical and more strategic interventions, our goals can focus on transforming the structures, norms and policies that produce the social, environmental, and economic problems that we confront today.

**Portfolios over projects**

It is clear that donors will have to prepare for long-term engagement by working together, providing support to those who lead systemic change, and being patient and realistic about the time it takes to achieve such change. Donors have a critical role in crafting pathways of systems change by funding systems portfolios with equitable and inclusive goals, rather than only projects.

There is a lacuna in funding for learning and capability building/bridging and encouraging collaboration among systems change leaders, which will need immediate resources to foster co-learning.
and co-creation of systems change models of collaboration.

We have today a range of tools to assess, map and measure how systems work and how they can change. Systems thinking can also foster a culture of innovation and an environment for collaboration within organisations.

A recent study in a healthcare organisation using systems thinking tools such as causal loop diagrams demonstrated that “applying systems thinking creates preconditions for local health practitioners to innovate in their local hospital unit, having the wider effect of improving community health and thus the overall health system”. The study revealed that fostering innovation to solve complex problems in health systems required more than leadership that encouraged an innovative culture.

Using systems thinking tools helped unpack where there were blocks in organisational structures, as also what needed to change in the organisational culture. For instance, while it is widely acknowledged that there is a need for technology innovation in addressing the care gaps in primary healthcare, identifying where the innovations are critical, where adaptation might be a challenge, and how to innovate for the context is what systems thinking can help us with.

At the Tata Trusts, there has been a legacy of thinking about systems in an implicit way. For example, the Trusts have historically funded individual scholarships, fundamental scientific research and institutions that advance research. JRD Tata had famously asked: “Do we give sufficient thought to the nurture of the young investigator, to providing the right atmosphere and conditions of work and full opportunity for development? It is these things that foster invention and discovery.”

As the ideas of institutions and networks evolve in an increasingly digital world, we are presented with yet another opportunity to rethink the role of philanthropy. Where are institutions headed? What is their role in systems? What would a portfolio approach nested in systems thinking look like for a donor seeking to address a complex development issue? What could a pool of funds do if donors come together to listen to those embedded in systems? Do donors see themselves as part of the systems they hope to transform? How would that shape their role in the system?

**A sector apart**

Philanthropies are in a position to make choices and explore different modes of working in a system, such as building and sustaining institutions, growing grassroots resilience, providing catalytic capital and fostering innovation. Few other sectors can unlock innovative ideas and meaningful resources in these ways.

More recently, implementation research is gaining credence for examining complexity, helping examine interventions in the 'real world' to understand what works but also how and why it works. Social innovation, in all its complexity, demands that we move away from reductionist approaches that take apart complex problems to deal with the components separately, failing to account for their interaction with one another.

As the knowledge and tools to understand and address complexity grow, the time to respond and engage is upon us.

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Farming has always been a difficult proposition in the arid districts of Nandurbar, Dhule and Chandrapur in Maharashtra’s tribal belt. The land is undulating and unyielding and water shortage is a constant. The only water available for agriculture here is from the monsoons and most of it runs off downhill, taking the alluvial topsoil with it.

This was the yearly headache confronting Chagan Chaudhari, a 42-year-old farmer from Sakri village in Dhule. Mr Chaudhari owns eight acres of land but still spends most of the year working as a farm hand on other people’s plots. “Only four acres of my land holding are cultivable; the remainder is on a slope and cannot retain water,” he says. “I can grow maize and soybean for three or four months, during the rainy season, but the rest of the time the land lies fallow.”

Things are about to change for Mr Chaudhari, though. A few months ago he and three other farmers with adjoining plots invested in a solar unit to draw water from a well to irrigate their fields. “We had approached the local electricity board to get power to run a pump that would draw water, but we were told our plots were too far away from the village,” he says. “They said it would cost us ₹300,000 to set up new electric poles and get a connection.”

At ₹125,000, the solar unit costs less than half that amount. It comes with a lift-irrigation system to draw water from the well and drip-irrigation lines covering one
That’s great news for Mr Chaudhari and his wife, Sunita, who can now farm all year round, growing vegetables and pulses. “Our annual income is about ₹70,000; we expect that to increase by ₹30,000-40,000.”

This turnaround has been enabled by Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts that educates villagers about various kinds of agricultural advances and makes these available to them through self-help groups (SHGs).

**The power of water**

Rajendra Vasave, a farmer from Jamli village in hilly Nandurbar, is among those who stand to benefit from the effort. He is using gabion structures — boulders tightly packed in wire meshing — to slow down and collect rainwater runoffs to water his plot, and also help to recharge wells dug nearby. Like other farmers, Mr Vasave will be able to cultivate his fields for an additional season, and that means an income enhancement of ₹15,000-20,000 per annum.

The farmers CInI works with in the three tribal belts are being supported by funding from DMart Foundation, the corporate social responsibility arm of the retail chain, which is providing financial backing for the water resources management programme. Starting from August 2023, the Foundation has pledged to support this initiative for three years.

The money will go towards creating water-harvesting infrastructure that will slow down (and retain) runoff rainwater in the ridge areas of the three targeted districts; facilitate percolation of rainwater into the water table; prevent erosion of the topsoil; and create rainwater storage options by constructing check dams. All of these together will make water available to farmers so they can follow two or three cropping seasons in a year, instead of just one.

The goal is to reach 1,881 households across 205 villages and develop some 400 water-harvesting and recharge structures. Farmers will be offered access to technology such as solar-powered lift-irrigation systems, drip irrigation and mulching.

“The tribal belt of Maharashtra has...
always struggled with access to adequate water,” says Deepak Sharma, a senior technical officer with CInI. “Now, with farmers able to undertake farming all through the year, many are considering growing high-value vegetables. The aim is to increase the annual income of farmers to ₹100,000 and more a year through the use of technology and other sustainable methods of cultivation.”

Maharashtra is not the only state where DMart Foundation and the Tata Trusts have joined hands to develop and protect water resources. In Bhavnagar in Gujarat, the two organisations are collaborating to combat salinity ingress, the phenomenon whereby invasive seawater and its salty contents pollute groundwater. The implementing agency here is the Coastal Salinity Prevention Cell (CSPC), a nonprofit established jointly in 2008 by the Trusts, the Aga Khan Rural Support Programme and Ambuja Cement Foundation.

DMart Foundation has been backing this programme since July 2022, and the setting is a cluster of 20 villages in Bhavnagar’s Talaja region. “When groundwater levels drop due to excessive use in and around the coastal villages, it creates a vacuum that the seawater rushes in to fill,” says Sujit Kumar, regional manager (Gujarat) with the Trusts. “Sometimes the ingress is as far inland as 10-15km and this affects everything, from drinking water to groundwater-based irrigation systems.”

The DMart-funded programme looks at salinity ingress management through community-based sustainable water resources development. The idea is to achieve water security for about 3,000 households across 20 villages by managing their groundwater, conserving and enhancing existing water sources, and ensuring availability for domestic and agricultural use.

Saurashtra receives a fair amount of rainfall but most of it runs off into the sea. Creating appropriate storage structures is difficult in the circumstances. “The redress has to be two-pronged,” adds Mr Kumar. “There’s supply-side water management, which involves conserving and bolstering existing water sources by recharging underground aquifers through rainwater percolation, enhancing water-storage capacities by deepening ponds, widening and desilting of streams, carrying out well-recharge activities, constructing new
check dams, repairing and renovating existing structures and trying to maximise rainwater harvesting.”

The demand side, says Mr Kumar, has to do with educating local residents on how to judiciously use the conserved water: teaching them about water budgeting, aquifer mapping, monitoring the quality of the groundwater and such. Till now, 74 water harvesting and recharge structures have been built under the programme and 1,500 farmers from the 20 villages have benefitted as a result.

Help with cancer care
Cancer care is the third area where the Trusts and DMart Foundation have come together. In early 2022 the Foundation bankrolled the purchase of a CT simulator for the Jorhat Cancer Centre (JCC), a 45-bed facility of the Assam Cancer Care Foundation (ACCF), a collaboration between the Assam government and the Trusts. The intent is to increase accessibility to radiation therapy at a subsidised cost.

Later the same year, DMart Foundation stepped up its support by partnering ACCF on a community outreach, awareness, screening and patient-aid programme for cancer sufferers in the districts of Barpeta and Dibrugarh. “We have a screening programme for five noncommunicable diseases: hypertension, diabetes and three kinds of cancer (oral, breast and cervical),” says Ramen Barman, programme coordinator, ACCF. “While hypertension and diabetes screenings can be conducted by healthcare staff with basic training, they need to be better prepared to deal with cancer.”

That’s where DMart Foundation is helping out, with funding for capacity-building workshops for staff – primarily community health officers, nurses and other frontline workers – at health and wellness centres across Dibrugarh and Barpeta. The objective is to bring more people to the wellness centres for screening.

Another aspect of DMart Foundation’s support is financial aid for poor patients. Ramesh Das believes this saved his life. A few years ago, this resident of Naharkatia town in Dibrugarh experienced excruciating pain in his mouth. It turned out to be a tumour and doctors at the Dibrugarh Cancer Centre recommended emergency surgery. Mr Das, whose monthly income is just ₹1,200, couldn’t afford it. That’s when DMart stepped in with financial assistance.

More than money and what it can do, the initiatives involving the Tata Trusts and DMart Foundation have shown how partnerships fuelled by clear intentions and cemented with discernible outcomes can bolster the social development cause.

By Labonita Ghosh
‘It’s not just about writing cheques’

DMart Foundation, the corporate social responsibility (CSR) arm of the retail giant DMart, makes a substantial contribution to more than 250 government schools in Maharashtra by funding and running excellence programmes. In mid-2022, the Foundation went further in terms of geography and sector when it joined hands with the Tata Trusts to support social development initiatives in water resources management in Maharashtra and Gujarat and in cancer care in Assam.

In this conversation with Labonita Ghosh, DMart’s managing director and chief executive, Neville Noronha, talks about the company’s philanthropy philosophy and how it tries to maximise the impact of its programmes. Excerpts from the interview:

What is the philosophy of DMart Foundation?
We want to create an impact in three key areas: education, especially primary education; healthcare and nutrition; and climate change mitigation. The bulk of our investments is going towards securing our future; that means children, particularly the underprivileged among them. Anything that involves children and their development is a priority for us. We like to do things that are difficult for others to do. It’s not just about writing cheques.

What would you say those are?
For instance, creating specific learning programmes in government schools is quite challenging. Children from economically-weak backgrounds have significantly larger learning impediments. We went to the drawing board and thought through two or three impactful programmes that could enhance a child’s learning journey. These programmes can assist teachers in achieving better learning outcomes for students in regular subjects. They act like accelerators that help teachers reach the learning goals of their students.

We zeroed in on two key areas: making reading fun and introducing computers to children in an exciting and immersive way. We went about refurbishing school libraries and made them a fun place to hang out. We provided age-appropriate books and trained teachers to conduct reading classes, story comprehension sessions and general peer-level discussions on the topics read.

Our reading programme is a big hit with our children as well as with our teachers. We applied the same approach to our computer literacy initiative. We provide the hardware and software in the computer lab at the school. We also maintain it and keep all applications and operating systems updated. We then conduct basic computer training that is age-appropriate. We have refurbished the computer lab and ensured a 2:1 child-to-computer ratio for every class to make the
learning effective and ignite curiosity in the child. These two flagship programmes run in parallel with the regular school curriculum.

Over the years we have added a few other programmes to our list. The ‘English for all’ programme focuses on building the confidence of children to comprehend and speak English fluently. ‘Swachh school abhiyaan’ aims to educate and bring awareness about health and hygiene to schoolchildren. The idea here is to inculcate the right hygiene habits in the children, which they would carry back to their homes and their communities to ensure a larger impact. The best part of this effort is that due to its competitive structure, every single person in the school is involved.

We also felt the need to engage with the parents of these schoolchildren to urge them to support their child’s development, given that quite a few of these kids are first-generation learners. The ‘parent engagement programme’, as it is called, has our trained counsellors engaging with parents and motivating them to create the right environment at home to foster the child’s growth.

Sports, which is critical to build cognitive skills in children, was missing in the government school curriculum. That prompted us to introduce the ‘sports for all’ programme, which works to develop interest and participation in district, state and national-level sports competitions.

We have more than 650 teachers and supervisors to run these programmes. Plus, we have in-house team leaders who are not only responsible for building, curating and monitoring the programmes, but also working closely with teachers and supervisors to ensure high-quality execution on the ground.

Most of our CSR funds go into this school excellence programme. While it may seem like we are doing a lot, what we realised over the years is that unless we carry out a holistic intervention in such schools, outcomes will be limited. Hence our effort is to impact the child in as many areas as possible. The vision is to keep the child in school till he or she finishes tenth grade with the age-appropriate learning objectives achieved. While we still have a long way to go, we strongly believe we are on the right path.

India faces a lot of challenges and if an organisation like ours can
show that these can be addressed, even in small measure, it will inspire more corporates to focus on these areas, collaborate with large philanthropic institutions and invest their time, effort and money in them. It is our long-term endeavour to build a system, a template to activate such school excellence programmes in different cities of the country.

Another aspect that we think differently about is that we are not particular about doing philanthropy only in regions where we are present. We believe philanthropy will deliver a better bang for the buck if investments are deployed where they are needed the most. That’s why we have partnered with the Tata Trusts in the cancer care project in Assam, where we do not have a presence.

How did your association with the Trusts come about?
It started during the Covid phase. We were primarily into education but schools were shut and we had a CSR commitment to keep. That’s when we connected with the Tata Trusts. We had a few interactions and the first funding was for equipment [for the cancer hospital] in Jorhat in Assam. After that we got into a partnership for three years on cancer care. Writing a cheque is fine for one-time giving, but we prefer to have longer-term working relationships.

With the Tata Trusts, we are happy that they found us worthy enough to work with. It is an endorsement of what we do and what we stand for as an organisation.

What are the elements that make this dynamic work?
There is the commonality of values, which translates into sincerity in creating impact in a strong, no-frills, less-is-more manner. After three to five years, we should feel good that our funds have been well spent and that there has been an impact on the ground.

The Tata Trusts’ on-ground interventions have been yielding incredible results for decades. Also, when it comes to a partnership, we believe that DMart Foundation should bring something unique to the table. Only then can the partnership become strong and be sustained for a long period of time.

Besides cancer care, you are also funding water resources management projects in Maharashtra and Gujarat. How does this tie in with your climate change mandate?
We believe that a lot of issues around climate change cannot be resolved just by not-for-profit interventions; regulation and scientific innovation have a significantly bigger role to play. CSR resources can facilitate advocacy and education at the grassroots and village levels.

The fundamental aspect should be that there is an economic logic for all stakeholders. We liked the idea of the Trusts’ Lakhpati Kisan initiative, where farmers, through water resources management and development, can sowing more than one crop during the year. This can secure improved incomes for farmers in drought-prone regions.

How do you see DMart’s partnership with the Trusts evolving?
It’s just the beginning. We have had some wonderful learnings and have had an excellent working relationship with the Trusts so far. We hope to continue with this partnership for a long time to come.
Providing safe drinking water to rural communities is one of the core objectives of the Tata Trusts’ water, sanitation and hygiene theme. Consequently, the Trusts have been playing the role of catalyst in their collaboration with the Jal Jeevan Mission (JJM), the flagship programme of the Indian government’s Ministry of Jal Shakti. JJM’s ambitious objective is to provide potable water to every household in the country, and it is doing this by bringing rural communities into the planning, implementation, operations and maintenance process of drinking water schemes and infrastructure. The Trusts are contributing to the JJM effort in multiple ways, one of the most important being a social behavioural change communication campaign — currently operational in eight states — where the intent is to educate, enable and empower village communities on a wide range of issues related to water.
A group of women (above) in Kaldari village in Rajasthan’s Sirohi district at an event to test the water they use for fluoride. The Tata Trusts’ behaviour change campaign encouraged these villagers to use fluoride-free water sources. Matu Bai, a member of the water-user group of Bhula village in Sirohi, uses a fabricated model to explain the design of a twin-pit toilet. Mobilising households to construct and use toilets was an important part of the behaviour change campaign.
Durbala Boro collects water from the tap installed near her home in Choudhurypara in the Kamrup Rural district of Assam.
A meeting (above) being held in Hared village in Himachal Pradesh’s Kangra district ahead of a rally to push the message on water, sanitation and hygiene. A drawing competition on the ‘our water, our future’ theme for students of the Syeda Anowara Taimur High School in Kacharipam village in the Kamrup Rural district of Assam.
Women participants (above) at a ‘samman connection’ meeting in Fandi-Bodiwala village in the Sirmaur district in Himachal Pradesh. Another ‘samman connection’ event, this one involving students from Satgaon Ancholik School in Dhubar village in Assam’s Kamrup Rural district.
A ‘samman connection’ meeting (above) in Dakuwapara village in Assam’s Kamrup Rural district that was called to discuss the role of women on issues related to water. Water user committee president Abhinanda Debbarma (in check shirt) leads a water tariff collection initiative in Panbua village in the Dhalai district of Tripura.
Humankind has been battling diseases since time immemorial. Treatment protocols and the priority areas to tackle these diseases have been changing and improving due to the development of new therapeutic options. With the advent of vaccines and antibiotics, we have successfully eradicated many infectious diseases, and the focus has now shifted to noncommunicable diseases.

India is witnessing an increase in noncommunicable diseases, and genetic disorders form a major group of such medical disorders. To cite one example, congenital malformations are the fourth most common cause of mortality among newborns in urban parts of the country.

India is home to diverse cultures comprising different ethnic and linguistic groups. The Indian population is distinctly different from that of the rest of the world due to religious and cultural practices that encourage specific marriage patterns — termed endogamy — among communities. The practice of consanguinity, which includes marriage among close family members, is a tradition in many countries, and this leads to higher rates of genetic disorders.

Rare diseases are debilitating and lifelong and they affect a small percentage not so rare, after all

Rare genetic diseases are debilitating for patients and their caregivers, but the situation is getting better as awareness and government support increases.

Neeraja Chilukoti (top) is a project scientist with the Centre for DNA Fingerprinting and Diagnostics, Hyderabad, and Ashwin Dalal is head of the diagnostics division at the Centre.
of people. It is estimated that 80% of rare diseases are genetic in origin and they cause more damage to children. Rare genetic diseases (RGDs) pose a serious concern to public health in India because of our large population, which can translate to the rarest of rare diseases still being a huge burden. In India, it is estimated that 70 million people are affected by one of more than 7,000 classified RGDs.

Child fatalities
The commonly reported RGDs in India are haemophilia, thalassemia, sickle-cell anaemia, primary immunodeficiency, autoimmune diseases, lysosomal storage disorders and certain forms of muscular dystrophies. Of the RGDs, 50% of new cases are found in children — responsible for 35% of deaths before the age of one; 10% between the ages of one and five; and 12% in the five-to-fifteen age group. The landscape of Indian RGDs is dynamic and new rare diseases and conditions are being identified and reported regularly.

The first step to finding a solution to this problem is understanding the problem. India still does not have a definition for rare diseases due to the paucity of population-level data. A fundamental challenge in research and development to combat the majority of rare diseases is that relatively little is known about the pathophysiology or natural history of these diseases. Rare diseases are difficult to research as the patient pool is small, often resulting in inadequate clinical information.

The diagnosis of an RGD in a child is like a blow out of nowhere for a family. Parenting is extremely difficult for those with children suffering from life-threatening RGDs. Owing to limited awareness, parents end up approaching multiple hospitals, and the average duration taken for a final RGD diagnosis is about seven years. This diagnostic odyssey is only the beginning of hardships since the struggle to pay for treatment adds to the deteriorating financial and social condition of affected families.

Availability and access to medicines are important in reducing the morbidity and mortality associated with RGDs. Despite progress in recent years, effective and safe treatment is not available for most of these diseases. Although treatments are available for some RGDs, the cost is prohibitive and many medicines need to be imported. Hence, even when a correct diagnosis is made, there may not be an available therapy to treat the disease.

Less than 5% of rare diseases have therapies available to treat them. About 95% of rare diseases have no approved treatment and fewer than one in 10 patients receives disease-specific treatment. The Indian healthcare system is not yet geared to handle these patients and, in the absence of definitive treatments, patients have little to fall back on.

Activist parents
Some parents have turned into activists and have approached the government for a refinement of policies and to provide financial aid. It is their persistence and hard work that has led to RGDs coming to the notice of healthcare authorities. Despite all odds, these parents have continued to fight for the well-being of their children and pushed for government-backed programmes and policies to address the needs of those affected by RGDs.

RGDs being ‘rare’, many clinicians are not aware of the possibility of these conditions in their patients. There are encouraging signs, though. Genetic diagnostic facilities have increased considerably over the years, and they have become an integral part of healthcare
delivery. These facilities are available now in different parts of the country and there is no need to send samples abroad for diagnostic testing, as was the case a few years ago.

With the advent of technologies such as microarray and next-generation sequencing, it is possible now to study the whole genome of an individual at a much more affordable cost. These technologies have revolutionised the field of genetic diagnostics.

Prevention of genetic disorders is the only way to decrease the burden of these diseases. Since most genetic diseases are not treatable, the only option is to prevent the birth of these children by prenatal diagnosis. Once the genetic abnormality is identified in the patient, prenatal diagnostic tests can be done in subsequent pregnancies to identify if the unborn foetus carries the same mutation.

**Policy in place**
The Indian government launched a ‘national policy for rare diseases’ (NPRD) in March 2021 for the overall management of RGD-affected patients. The salient features of the NPRD include

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**GENETICALLY SUSCEPTIBLE**

7,000+ number of rare genetic diseases

350 million people worldwide are affected by these rare diseases

50% of babies born with rare diseases die within a year of birth

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1 in 20 Indians are affected by rare diseases, which means that about 70 million people in the country suffer from these conditions

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80% of rare diseases are caused by faulty genes

40% Chances of error in diagnosis during first visit; also, diagnostic delays are common

Two-thirds of rare disease patients do not receive evidence-based care

95% of rare diseases do not have FDA-approved drugs

Beyond medicine
Rare disease patients require care that is patient-centric and holistic

Lasting damage
Most rare diseases lead to permanent disability

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Source: Centre for DNA Fingerprinting and Diagnostics

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policy recommendations on diagnosis, awareness, treatment and patient support. RGDs have been classified depending on the type of treatment needed and the cost of such treatment.

There is a provision in the NPRD to provide up to ₹5 million per patient to procure drugs for RGD treatment (this facility is provided through one of the 12 centres of excellence established under the policy). In addition, the policy promotes research and development for the diagnosis and treatment of RGDs, and pushes for the indigenous development and manufacture of affordable drugs.

Furthermore, the Department of Biotechnology, which is attached to the central government’s Ministry of Science and Technology, has launched a project called UMMID (Unique Methods of the Management and treatment of Inherited Disorders). This works on the concept of ‘prevention is better than cure’ and is a huge step forward to promote newborn and antenatal genetic screening in India.

The national sickle cell anaemia elimination programme, meanwhile, addresses the health challenges posed by sickle cell disease, particularly among tribal populations of the country. Additionally, the Department of Biotechnology has funded a pan-India project on paediatric rare genetic disorders with 16 collaborating centres. The project envisages an expanded programme for these disorders, spanning diagnostics, research and counselling.

In a nutshell, RGDs are a public health emergency that need to be addressed in a multipronged way, bringing together all stakeholders — including patients, parent support groups, media, healthcare services, diagnostic laboratories and pharmaceutical companies — so that India is better equipped to deal with these diseases and their fallout.