TATA TRUSTS

AUGUST 2025

HORIZONS

SISTERHOOD SHINING

Women's collectives from across India are enabling their members to enhance earnings — and to redefine their place in the world

SEEDING READING

School and village libraries in Karnataka are creating spaces that spur children to bond with books

FOOD FOR GOOD

Rural communities are at the heart of an effort to rid four Rajasthan districts of acute malnourishment

INTERVIEW

Ganesh Devy, scholar extraordinaire, on his continuing quest to understand India

EDITORIAL

Women coming together is a splendid phenomenon with manifold benefits: good for the protagonists themselves, for their families and for their communities. That is the essence of our cover story, which explains how collectives of rural women, carefully nurtured and professionally run, are providing a platform for their members to find financial well-being.

Perhaps as importantly, these enabling enterprises are sparking a change in the patriarchal order of rural India, with women members stepping out of their homes and finding their feet in the world. That means money in their hands, a voice in the household and recognition in the village and even beyond. Our cover story details how five all-women collectives from five states — Maharashtra, Gujarat, Nagaland, Mizoram and Odisha — are making a difference in the lives and prospects of their members.

In our Centre Stage section, the subject is a programme that has led to the creation and sustenance of more than 500 school and village libraries in the districts of Yadgir and Koppal in Karnataka. This edition of *Horizons* features, additionally, an extensive initiative at the community level — targeting more than 40,000 infants and children — to tackle chronic malnourishment in four districts of Rajasthan; and a report on the Tata Trusts-supported India Health Fund's continuing effort to combat the medical scourge that is antimicrobial resistance.

A highlight of this issue is our interview with Ganesh Devy, an exceptional scholar who has traversed a variety of disciplines — from linguistics and languages to cultural studies, anthropology, history and philosophy — to explore India and Indianness. A public intellectual of rare calibre, the soft-spoken and modest Mr Devy has written some 90 books, a stupendously prodigious output that includes standouts such as *After Amnesia, Of Many Heroes* and his latest, *India: A Linguistic Civilization*.

Also on the *Horizons* menu this time is a perspective piece by Shikha Srivastava, who heads the urban poverty alleviation portfolio at the Tata Trusts, advocating for underprivileged women seeking secure housing in India's urban centres. To wrap it up, there's the pictorial spread on a 10-state collaborative research project, involving the Tata Trusts and the Indian Institute of Spices Research, Kerala, to maximise the advantages of cultivating spices in the country's rural reaches.

Chistabelle Noronha

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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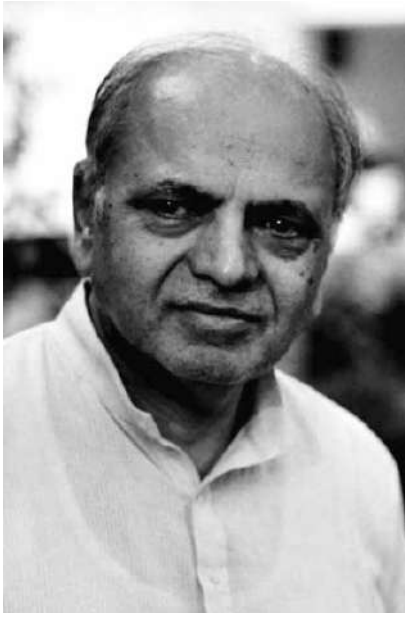

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SAFE members at a company outlet for collection and sales

Finding their way and their voice

Women's collectives supported by the Tata Trusts are fostering their members in multiple ways, from facilitating financial security to enabling recognition in the community **By Labonita Ghosh**

In India, women's work remains largely invisible. Whether as homemakers in cities or as farmers in villages, their efforts often go unrecognised and unrewarded. Such anonymity is even more pronounced in the country's rural reaches.

Studies show that while women in rural India do the lion's share of farming and animal husbandry work — typically more than men — they rarely own land or have a say in household decision-making. And women are disadvantaged further.

With migration increasing and men moving to urban areas for employment, the burden of managing the home, the field and the family's financial needs has fallen on women. But they are constrained by a range of challenges, not least entrenched patriarchy.

A report by Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts, states that "rural Indian women had minimal decision-making power, were underrepresented in leadership roles, and were strangled in the vicious cycle of poverty".

The way to enhance the everyday lives of these women — and, by extension, their families and their communities — is collectivisation. That means bringing women together in well-established, institutions such as farmer-producer organisations (FPOs).

Such collectivisation provides women with a platform to increase household incomes, involves them in the value chain, and secures decision-making power at village and other regional fora.

Aspirations count

By delivering quality agricultural inputs and better market connectivity, FPOs give small women farmers greater control over their finances and their future. That includes their aspirations. With some disposable income in hand, women are now able to secure educational opportunities for their children and provide for the family's healthcare needs.

Many women farmers are keen and able to grow their business with additional training and investments in the latest farming inputs and techniques. Some of them have become agri-entrepreneurs. As individual farmers they would have found it difficult to get loans to do this. But the FPO connects them with the banking system.

The most transformative part of the FPOs is giving their members a voice. Marginal women farmers who were not allowed an opinion in their families have turned into confident leaders and community resource persons, who negotiate with village councils and district officials for what their FPO needs.

Kukhrunulu Khamo, a shareholder with the Kade FPO in the Phek district of Nagaland, says: "I am recognised and respected in my village and in my community as a successful member of Kade. People listen to me. Kade has given me the confidence to stand up before 600-700 families and talk about our work."

The spread of the FPOs is illustrative: from corporations with thousands of shareholders, millions of rupees in turnover and boards of directors to fledgling associations with potential for growth. They have been brought together by a common purpose: the empowerment of women. ■

A water user group meets in Khusgavhan village in Nandurbar as part of a Yahamogi FPC intervention

Out with the old

With divinity on their side, 3,325 women farmers in Maharashtra's Nandurbar district are forging a bright new future in farming

The Pawra and Bhil tribes of Nandurbar district in Maharashtra worship Yahamogi as their goddess of food and protection. It was only fitting, then, that when they formed a farmer producer company (FPC) in 2018, they would name it after their revered deity. Especially since this is an all-women organisation.

The Yahamogi FPC is a registered entity with its head office in Mundalwad village in tribal-dominated Nandurbar. Over the years, it has emerged as an institutional model for grassroots-driven, women-led agri-businesses that work to uplift small and marginal farmers through sustainable agricultural practices, better and enduring market access, and technological inputs.

Yahamogi was set up with help from Collectives for Integrated Livelihood Initiatives (CInI), a partner organisation of the Tata Trusts. It is an apex body that represents 76 village institutions in 81 villages in Dhadgaon and Akkalkuwa in Nandurbar. The FPC, with a shareholder base of 3,325 members, is governed by a five-member board of directors headed by a managing director, three of whom are women.

To understand how Yahamogi became such a successful livelihood initiative, we need to go back a few years. "In 2014, when we started working in Dhadgaon, 99% of the farmers there were in traditional agriculture," says Vijaysing Patil, area manager at CInI. "They grew maize and millets, which are staples and intended only for home consumption. There was very little surplus, and if so, it was sold at the local market. The farmers did not even think of growing vegetables, which are cash crops, except in their kitchen gardens."

Having grown the staples for generations, the farmers were reluctant to try anything new. They rejected hybrid seeds, unsure of their productivity, and were wary of rotating crops. During the

sowing season, they would broadcast the seeds in straight lines in channels, as they had always done. This was a backbreaking, labour-intensive process. All of this was about to change.

"We did not have the right knowledge about agriculture and were blindly following what our families had done for decades," says Madhuri Valvi, the 40-year-old managing director of Yahamogi FPC. "Earlier, when we grew maize and radish, we found it difficult to protect them from pests and usually ended up with just enough for the family. We had no access to quality seeds or fertilisers and no idea about seed treatment."

Unfair deal

Worse still, they had to buy farm inputs at a premium from traders who visited the village, and these middlemen also became their conduit to the market. Getting a fair price for their produce was out of the question. When seeds were not available in the village, farmers would have to travel 75km to Nandurbar market to purchase them.

Now, thanks to CInI, Ms Valvi and most of Yahamogi's other women farmer-shareholders get quality seeds, fertilisers and farm implements practically at their doorstep. That usually is a designated spot in the village, which also serves as a collection centre for their produce.

There's more in the CInI mix. Ms Valvi has adopted rotational farming in her 5-acre plot, growing tomato, brinjal, cabbage, cauliflower, cow pea and, in the summer, watermelon and groundnut. But the star of the crops in this area is green chilli, to which Ms Valvi devotes a full acre of her farm and grows throughout the year because it sells well.

"The change in mindset, from traditional subsistence farming to commercial cultivation, has come after years of demonstrations," says Mr Patil. "While village institutions and the local self-help groups have played a big role in this, it was also up to us to find 'innovators' among the small-scale farmers, people willing to experiment with hybrid seeds and new practices."

Once CInI identified its innovators, they became forerunners in converting their fellow villagers. For instance, these innovators were initially persuaded to plant 100-200 saplings of certain vegetables and use well-treated hybrid seeds. Once there was a good crop that sold well, others decided to join in.

Trying new methods and better seeds has taken Ms Valvi's agricultural income from ₹30,000-35,000 a year to about ₹200,000. She's constantly trying out new seed varieties, the kind that yield thicker-skinned tomatoes that don't get squashed, smaller brinjals, spicier chillies and Nandurbar's famous purple garlic.

Yahamogi's business activities focus on three core areas. First, supplying quality agricultural inputs such as seeds, fertilisers and pesticides. Second, output marketing, especially for vegetables, involves finding new and more lucrative places to sell produce. Third, to provide on-field technical and farm mechanisation services.

The FPC has enabled its farmer-members to access markets within the district and beyond — even up to Surat in neighbouring Gujarat — through three collection centres. This directly benefits more than 1,200 farmers. The plan is to expand the network to cover more geographies and commodities.

Continuously evolving as a full-service agriculture solutions provider, Yahamogi's technical and farm mechanisation services operate under six custom hiring centres — managed by user groups

A journey blessed

- Named after a tribal deity, the Yahamogi FPC comprises 3,325 women members
- The FPC represents 76 village institutions in 81 villages in Maharashtra's Nandurbar district and is governed by a five-member board of directors
- Yahamogi's core strengths are supplying agricultural inputs, helping with marketing, and providing technical and farm mechanisation services

Yahamogi FPC's board of directors at a meeting with village officials in Kalibel in Nandurbar

of 10–12 farmers — that are equipped with tractors and different implements.

The FPC has established strategic dealerships with 17 agri-input and technology companies. These partnerships facilitate the supply of various kinds of micro-irrigation systems, mulch film, spray pumps and other farm machinery at affordable prices, along with technical support and training.

For Kusum Rahase, a member of Yahamogi's board, farming was never the main source of household income. Her husband, Sunil, was a temporary teacher at the local primary school. The family owned a 3.5-acre plot in Manvani village in Nandurbar, where they cultivated small amounts of maize and sorghum.

Sunil's unexpected death in 2015 changed everything for Ms Rahase. She realised she needed a substantial income source to support her family of three, and quickly. She put her kids in an ashram school, tried working as a midday meal attendant and took hefty loans. Then, at a village meeting, she heard how small-scale farmers like her had made it big.

Ms Rahase embraced farming like the lifeline it would soon become. "I got out of traditional methods of cultivation and started rotating crops for all-year-round output," she says. She bought high-yield varieties of seeds and saplings, even dug a well for better access to water. "I now have at least two seasons of various crops, sometimes three."

Improvement curve

Ms Rahase's crop of green chillies, garlic, onion and cabbage brings in ₹70,000-80,000 a year, and she knows she can do better. "I want to keep improving; that's why I still attend as many training sessions as I can."

Ms Rahase has become a valuable asset for Yahamogi. As the cluster head for 10 villages, she holds regular meetings to update other women farmers about the latest agritech and inputs. Her grassroots-level dissemination of information, reassuring manner and her own success story have brought many more women into the company fold.

"Earlier, I didn't dare to speak up even in my own family," says Ms Rahase. "Now, becoming an FPC office bearer and successful farmer has given me so much confidence that I can talk freely at any gathering, no matter how large. I even visit government offices and speak my mind about what our FPC needs. And, usually, people do listen."

It's not just Ms Valvi and Ms Rahase. Many of Yahamogi's women farmers have been leading from the front, says Dinesh Pardeshi, an assistant manager with CInI and the FPC's chief executive. "They know what they want and are not afraid to try and get it," he says. "Whether it is improved farming practices, enrolling new members or finding new markets, the FPC members bring new thoughts to the table and take all the initiative themselves." ■

Change is calling

A women's collective in Gujarat has supported its members in becoming successful farmers — and in breaking social taboos

The Sabarkantha and Banaskantha districts of Gujarat lean towards the patriarchal. Families don't encourage their women to go out and work. Instead, they have to handle the house, help male members with farming and manage animal husbandry duties. They have their hands full, but their pockets tend to be empty.

Even though the population in these districts is largely tribal — the Dungri Bhil community — where women are less governed by traditional norms, working outside the home is still frowned upon.

Things have changed over the past years, or have been forced to. With men migrating out of the districts to find employment, women have had to take charge of the household, including agricultural responsibilities. The burden was heavy and a helping hand was more than welcome.

That was provided in 2015 when Collectives for Integrated Livelihood Initiatives (CInI), a partner organisation of the Tata Trusts, set up the Sabar Aart Farmer Enterprise (SAFE) producer company in collaboration with the Vikram Sarabhai Centre for Development Interaction, the charitable trust.

An all-woman organisation, SAFE has 4,549 members from 52 villages spread across Sabarkantha

A meeting of SAFE's board of directors

and Banaskantha. It caters entirely to small and marginal farmers by enabling the creation and sustenance of livelihood opportunities.

"Having worked in the agriculture sector in the Khedbhrama tribal area [in Gujarat] for a long time, we found that women engage in most of the farming work, but this work is invisible and they hardly get any money for their efforts," says Virendra Vaghani, area manager for CInI's livelihoods programme in Gujarat.

Collectivisation was the solution, adds Mr Vaghani: "With more migration by men, the involvement of women in numerous activities in the agricultural value chain was increasing. We felt that collectivising them in a farmer producer organisation (FPO) would reduce gender inequalities, empower them and get them some income."

Welter of woes

While the vast majority of households in the project area are engaged in cultivation, the average landholding size is an acre or less. Farmers had to travel far to get quality agricultural inputs — seeds, saplings, fertilisers, pesticides, etc — and find a market for their produce. That led to many of them distress-selling their land and getting out of agriculture altogether. Annual incomes were stuck at about ₹40,000.

"We had struggled with setting up men's cooperatives," adds Mr Vaghani. "We were already promoting and nurturing self-help groups and village organisations for women. We found them to be more committed to organising regular meetings and managing finances effectively and transparently. It made sense to start a women's collective."

SAFE works with women from 274 hamlets in a cluster-based approach that covers productivity enhancement, livestock development, microfinance and community organisations.

The FPO makes agricultural inputs available to women farmers practically at their doorstep through collection centres in every village cluster. These centres also act as the nodal point for the procurement of produce, which is directly sourced from the farmers and sold. SAFE is involved at every stage of the process, from seed to sales.

One major challenge SAFE faced is water scarcity. Although the Sabarmati passes through the region, most households are set too far back from the river. Others are located on hilly and rocky terrain where the water cannot reach or even be retained. "The groundwater level is also low, negating a lot of irrigation options," says Mr Vaghani.

Farmers like Veenaben Dawada have had to find their way around this problem, and SAFE has been a help. A 48-year-old from Patadiya village in Sabarkantha, Ms Dawada lost her husband some years ago. The family had only their 1.2-acre plot to fall back on and rainfed cultivation of maize and vegetables just wouldn't cut it.

Ms Dawada decided to make two big changes to her farming. First, she switched to growing more lucrative commercial cotton and groundnut, which would also be less water-intensive. Second, she decided to dig a borewell to irrigate her fields, and invited her neighbours to share the water.

"Water scarcity was a looming problem," says Ms Dawada. "When I did rain-fed farming, my crops would die in the field because of too much or too little rainwater. That's why my borewell helps, and now, because of a watershed programme initiated by CInI, the groundwater has also increased."

CInI has trained the SAFE farmers to employ all kinds of water options: drip irrigation, lift irrigation, furrow ridge and more. It has also encouraged the FPO members to grow and deal in

SAFE zone

- SAFE covers 274 hamlets in 52 villages in Gujarat's Sabarkantha and Banaskantha districts
- It has 4,549 women farmers as members, who are helped in accessing agricultural inputs, water and other resources
- SAFE has registered a turnover of ₹102.96 million over the 2020-25 period. In, 2024-25 the turnover is ₹30.3 million

Members of SAFE's board of directors at an interaction with leaders of village organisations

several value-added — and lucrative — products currently, such as residue-free lentils (black gram, green gram, etc), turmeric powder and cattle feed.

Ms Dawada is one among many who have benefitted as a result. And she has had some good seasons lately. Earlier, when the family did not have much surplus to sell, their annual income was ₹30,000-35,000. After switching to cotton, they make more than ₹100,000 a year. Enough for Ms Dawada to hire farmhands to relieve her of the backbreaking work she had to do earlier.

Thanks to the support of SAFE, Ms Dawada can now concentrate on growing her business and then some. "I want to bring more women into the fold and collaborate with them to open a tailoring unit," she says. "I plan to start packaging and selling tea as well."

For Rinaben Rathod, SAFE has provided a stairway to self-improvement. The 36-year-old resident of Khandurumbri village in Banaskantha district is a member of SAFE's board of directors. For the last 10 months, she has been travelling to Ahmedabad for two or three days of training every month.

For a woman who was not previously allowed to step out of her house, except to assist her husband in cultivating their field, Ms Rathod has fought hard to be 'allowed' this freedom.

"The elders in my family were dead against me leaving the house," she says. "It took a lot of convincing for them to even let me join SAFE. But once they saw the good work being done, and how it was helping so many women farmers become successful, they gave in."

Ms Rathod travels quite a bit within the cluster of villages she is in charge of, calling farmers to regular meetings and training sessions, facilitating agri-inputs for them and passing on information about new technologies that they can use.

"The work I do is liberating," says Ms Rathod, "and it would never have been possible without SAFE. What our FPO has done goes beyond agriculture; it has brought social change to our lives." ■

Leg up for liftoff

Locally available lemongrass has fuelled a thriving business for an enterprising group of women in Mizoram's Serchhip district

The women of North Vanlaiphai village in Mizoram's Serchhip district never realised that a revolution was underfoot — quite literally.

They knew all about the ubiquitous lemongrass plant growing all around their village and in other parts of the district, but never gave it much thought. They certainly didn't know that it would one day change their farming fortunes.

Before the North Vanlaiphai Women's Collective was set up in 2021, women farmers in this central Mizoram district were struggling to make a living. Land holdings here are fragmented, overrun by forests, perched on inaccessible hillsides, or simply uncultivable.

"Most villagers do not even own land. About 80% of them lease the land from the village council and grow crops on it," says James Lalthansanga, programme officer with the Northeast Initiative Development Agency (NEIDA), a partner organisation of the Tata Trusts.

Then there is water scarcity. Water sources are typically a kilometre or more away from the village, and the hilly terrain makes it difficult to dig borewells or create irrigation systems closer by.

JH Lalkrosthangi, from North Vanlaiphai village in Serchhip, on a lemongrass run

"Because of the small size of plots, we cannot imagine crop production on a large scale," adds Mr Lalthansanga. "The women make candy, engage in some animal husbandry, but that is just a token contribution to the household income. So when this exciting thing presented itself, they were eager to take it up."

Mr Lalthansanga is referring to the opportunity of making lemongrass tea from the wildly growing *hnim* (grass in Mizo). "It wasn't until we at NEIDA visited North Vanlaiphai and saw the extensive growth of lemongrass that we realised there was a commercial opportunity right there, waiting to be plucked."

The all-year-round cold weather of Serchhip, its high altitude and humidity make lemongrass — a hardy 1ft-tall plant that can survive winter snowfall and water scarcity — grow here in abundance.

NEIDA introduced the idea to the women of North Vanlaiphai and helped them set up the eponymous collective. At the moment, this is a somewhat informal group, an offshoot of the more structured East Lungdar

farmer producer organisation (FPO), which has both men and women as members.

N Vanlaiphai, as the group is known, currently has 20 members making lemongrass tea from the easily available plant, after receiving technical support and guidance from NEIDA and the local Krishi Vigyan Kendra (the Kendras are extension centres that serve as a bridge between the Indian Council of Agricultural Research and farmers).

JH Lalkrosthangi, a secretary with the village council in North Vanlaiphai, had tried to make lemongrass tea on her own even before it was suggested by NEIDA. "I got together women from my neighbourhood to start working on this," says the 41-year-old. "There was enough lemongrass growing in the village so that we did not need any seed capital, but we faced a lot of other problems."

Farmers from Leilet Kam village in Serchhip collect lemongrass

Market hurdles

One of the hurdles was market access. Ms Lalkrosthangi used to sell her tea locally and in Aizawl, Mizoram's capital. It can take up to seven hours to cover the 170km from North Vanlaiphai to the city. Ms Lalkrosthangi would pack the tea into bags and send these once a month. Friends in Aizawl would collect the cargo and deliver it to a local wholesaler. It was a complicated and uncertain system, one that gave her no control over the price her tea was sold for.

NEIDA helped her and others in the Collective resolve such issues. A solar dryer, donated by the Selco Foundation, was provided to dry the lemongrass and scale up production. After some basic packaging, NEIDA buys the women's produce and sends it to markets as far as Guwahati, in Assam, at no additional cost to the Collective.

Lalhriatpuii, also from North Vanlaiphai village, is grateful for NEIDA's assistance. Once she joined the Collective, Ms Lalhriatpuii received training in hygienic processing, drying and packaging. She also has access to bigger markets in Mizoram and sells directly at fairs and exhibitions. Having branded her products, she's now able to negotiate a better price for them. Ms Lalhriatpuii used to make ₹12,000-15,000 per year from small-scale sales. She now earns ₹60,000-75,000 from lemongrass tea alone, with additional income from her candy and passion fruit juice business, which brings her total yearly income to about ₹120,000.

Among the women working with Ms Lalkrosthangi is Ms Zohmingthangi, a 31-year-old mother of two who is new to the trade. "After joining the group, I learned how to clean, dry and pack lemongrass tea," she says. "I find it inspiring to work with other women and share ideas. I'm slowly starting to earn a steady income and that makes me proud."

Ms Zohmingthangi no longer has to depend only on her husband's *jhum* farming; she has started to take care of major household expenses, including the children's education. More significantly, her extended family now sees her as an entrepreneur doing something meaningful, not just a homemaker. "One day I hope to have a flourishing lemongrass tea business that I can run entirely from home," she says. ■

Fruitful all around

An organisation of women farmers in Nagaland's Phek district is blending a lucrative business in exotic fruits with empowerment and inclusivity

The women of Pfutsero in Nagaland's Phek district play a big role in agriculture. While the men do the heavy lifting — tilling the field or clearing the forest — traditionally it is the women who select, prepare and transplant the seeds and saplings, manage water resources, and help with harvesting. In many families, they are also responsible for the animal husbandry duties.

It was a significant step to turn these women into farmers and entrepreneurs. All it needed was the right kind of support. That was provided in 2021 by the Northeast Initiative Development Agency (NEIDA), a partner organisation of the Tata Trusts, which helped set up the Kade Farmer Producer Organisation (FPO). This all-women enterprise has 650 member-shareholders from eight villages in the area, is run by a chief executive, and has a board of directors.

Kade — which in the local Khezha language means large and expansive — is also the name of a place that is central to all eight villages: a small junction that gave the FPO its name.

In Pfutsero, small-scale farmers had struggled for years with market isolation, fluctuating prices and limited access to resources. The Kade FPO was born out of the farmers' determination to collectively and collaboratively improve their lot by securing a considerable bump in their household incomes.

Members of the Kade FPO with their produce in Pfutsero in Phek district

"About 80 or 90% of the households here have been subsistence farmers for generations, growing only what they require for their own consumption," says Tekhewetsolu Wezah, cluster coordinator for NEIDA's livelihoods project in Phek. "What else were they to do when they have small plots, with only a portion of this cultivable?"

A scarcity of water has led

farmers here to depend mainly on the monsoons, with rain-fed crops suffering in the dry season. To top that, poor roads and infrastructure had confined the farmers to the local markets, where they were forced to sell their produce in bulk at lower rates.

The Kade FPO changed all that. With strategic planning and collective effort, it began to break down traditional barriers, enabling women farmers to access better markets within and outside Nagaland. With training and guidance, the farmers learned to negotiate, package and brand their products, turning raw potential into real value.

Cash in the crop

First, the FPO encouraged them to grow cash crops and scale up production. Says Julia Soto, chief executive of the Kade FPO: "Earlier, it was the middleman who would buy our produce, and we could only reach markets within the district. After coming together, we have been able to send our products to neighbouring Manipur and, from last year, to metros like Delhi and Bengaluru as well."

The products Ms Soto refers to are an assortment of exotic and in-demand fruits that the FPO members grow, among them kiwi, gooseberry, persimmon, plums, wild apples and apricots.

Says 31-year-old Kukhrunulu Khamo, who lives in Porba village in Pfutsero: "We sell the fruits in large numbers and, if we have any left over, we process them into jams, preservatives and candy. These last longer and have found takers in the metro cities of India. In this way, our post-harvest losses are also reduced."

NEIDA has played a crucial role in all of this. "NEIDA has supported us in many ways," says Ms Soto. "It has shown us how to grow exotic fruits, with a package of practices that ensure we get bumper crops. We were taught about disease and pest management, packaging and branding, and provided solar dryers for processing."

Farmers, who would earlier dig canals to channel water into their fields, are now banking on NEIDA's irrigation initiatives: the digging of ponds and building *jalkunds* (water tanks). "We helped the FPO identify clusters of five or six farmers, then provided each group with a shared irrigation structure they could use," adds Ms Wezah.

Women have always played an important role in family and community life in Naga society. But this doesn't necessarily translate into decision-making powers. That is changing.

A remarkable thing about the Kade FPO is its multi-generational character. The age of its farmer-producers ranges from 20 to 75 years, which means there are several mother-daughter units (even some grandmothers) working together.

For Ms Khamo, the FPO has given her a voice. She became a shareholder in 2022 and a board member shortly after. "I'm often invited for training programmes where we are taught not just to develop ourselves as better farmers, but also as entrepreneurs," she says.

It helps that Ms Khamo is a local success story. Before joining the FPO, her household income from cultivating vegetables and rearing pigs and poultry was ₹167,00 a year. Today she makes ₹30,000-40,000 from growing vegetables alone, and her annual income has jumped to about ₹230,000.

"The Kade FPO has given me a platform for a better life," says Ms Khamo. "It has also given me credibility as a farmer and recognition and respect from my community. Best of all, it has turned me into a leader." ■

They mean business

- The Kade FPO has 650+ members from eight villages in the Pfutsero subdivision
- Its turnover in the 2022-25 period was ₹4.3 million
- The FPO's main products are exotic fruits, high-value vegetables, and processed items like fruit candy, jams and vegetable pickles
- Members have market access to Kohima and Dimapur within Nagaland, as well as to Manipur, Delhi and Bengaluru

A meeting involving members and shareholders of Sakam Sindur FPC

Bazaar bonanza

A women's collective in Odisha's Keonjhar district has delivered in spades by creating a dedicated market for its 2,000-plus members

Saraswati Hansda has a large family. The 36-year-old from Barigaon village in Odisha's Keonjhar district lives with her husband, two children, in-laws and sundry relatives, bringing the total number under one roof to 10. Ms Hansda's husband works as a driver, but the family's primary source of income still comes from farming their 3-acre plot. And the money's never enough.

"After every harvest, I would worry about where to sell our produce for a good price," says Ms Hansda, a paddy farmer. "We used to keep some of this for our consumption, but with so many mouths to feed, we were forced to find buyers."

Ms Hansda would take the rice and vegetables she grew to the local *haat* (village market), simply because she did not have any other sales avenue. "Whatever I could not sell would simply rot on the farm, and we would lose a lot of money. I had no idea how or where to approach traders, or how much I should get for my produce." In the circumstances, getting a fair price for her produce was impossible.

"That is the biggest question of all small farmers," says Santanu Dutta, team lead, Odisha, with the Collectives for Integrated Livelihood Initiatives (CInI), an associate organisation of the Tata Trusts. "Where can they sell their produce, do it in a seamless, hassle-free way, and also get the right price for it?"

With this and other cultivator concerns in mind, CInI helped set up a collective for marginal women farmers in Harichandanpur in Keonjhar in 2022. The Sakam Sindur Farmer Producer Company (FPC) started with just 97 members but now has more than 700 shareholders and 2,000-plus farmers from some 60 villages in its fold.

These members access a range

of agricultural services through a professionally-managed organisation run by a president who is assisted by an elected 10-member board of directors.

At the heart of the Sakam Sindur's success is a *mahila krushak bazaar* (market for women farmers) that has been set up in Bhagamunda, a village in Harichandanpur. This is a collaboration between the FPC and the District Mineral Foundation (DMF) fund, established by the Odisha government to benefit citizens living in mining areas.

One-stop solution

The bazaar, a one-stop agricultural platform, connects farmers to markets so that they know — unlike earlier — where their produce goes, exactly how much it fetches in the market, and what they can plan for the following season.

"If market connect is a concern with farmers, so is timely agri-inputs," adds Mr Dutta. Other than seeds and saplings, mechanisation is something smallholding farmers desperately require.

"Preparing the field manually takes a lot of time and hard labour," explains Mr Dutta. "You might miss the rains and the sowing season altogether. A tractor, on the other hand, can help you get the land ready in a matter of hours."

The bazaar provides access to farm machinery services at minimal cost. It also facilitates the repair and maintenance of solar pumps and drip irrigation systems for Sakam Sindur's farmer-producers.

Most of the FPC's members are first-generation vegetable farmers. That is, they have moved away from traditional subsistence practices to increase their incomes. For that to happen, they needed some handholding.

"Sakam Sindur has empanelled expert local farmers who reach out to cultivators and provide know-how and practical training," says Mr Dutta. Alongside knowledge transfer, the FPC generates hyper-local advisories that help farmers bring climate resilience and better management to their practices.

"We link the farmers to new technologies and constantly seek information and insights on their pain points, so that these can also be addressed," adds Mr Dutta.

In September 2023, the DMF fund provided an electric vehicle to the FPC, transforming the service delivery process overnight. Doorstep delivery of farm inputs and equipment, as well as pickups for produce to be transported to the market, have made the lives of Sakam Sindur's members a lot easier.

"As smallholder farmers in remote hamlets, we struggled to reach the threshold volume needed

A promotional campaign by the Sakam Sindur FPC in Harichandanpur

Market connection

- The all-woman Sakam Sindur FPC has 710 shareholders and 2,000+ farmers
- The FPC covers about 70 villages in and around Harichandanpur in Odisha's Keonjhar district
- Members can access farm inputs and services and, importantly, have a dedicated market to sell their produce at a fair price
- Sakam Sindur has recorded a turnover of ₹20 million since its inception in 2024-25

Sakam Sindur FPC's all-woman board of directors

to connect with markets," says Saraswati Behera, president of the Sakam Sindur FPC. "Input access was time-consuming, often requiring a full day's travel to various places. For this reason, many women farmers were discouraged by their families from taking up agriculture. The *mahila krushak bazaar* has changed all that."

The FPC has also connected its farmer-members to 45 external vendors at both the input and output ends. It has fostered public-private collaboration by building strong ties with the state government, specifically the Department of Horticulture, the DMF and district authorities.

As Sakam Sindur continues to grow, it aims to expand its produce portfolio beyond vegetables and paddy; increase access to input credit and agri-tech solutions; and, importantly, train more women farmers to become entrepreneur-leaders.

As the 35-year-old Ms Behera puts it: "We never thought we could run a business, talk to officials, or make decisions that impact hundreds. But now we do. Sakam Sindur has made us believe in ourselves and one another."

Income boost

That kind of self-assurance also comes from having a regular and steadily growing income, like Ms Hansda does. Thanks to CInI's training and the bazaar, this board member of Sakam Sindur earns at least three times what used to be the annual baseline salary of farmers here: ₹30,000.

Ms Hansda's husband drives a local passenger vehicle and his earnings now go entirely into the family's savings box. Ms Hansda runs the household with what she makes from farming. "Earlier, we had just enough to survive, and I tried to keep us afloat by managing the home in the best way that I could," she says. "But today my income from agriculture pays for the children's education, our family's health requirements and more."

Ms Hansda has gone from being a reticent, unlettered homemaker to a respected champion for her FPC in the community. "Nobody has helped us as much as the CInI *dadas* [brothers]," she says. "I want to mobilise more women to avail the same benefits that I did and become successful."

CInI, however, is looking at minimising its role here. "Previously, there was a lot of dependence on us for services and inputs," says Mr Dutta. "Now the FPC has taken over all operational and advocacy activities. We wanted to eventually make ourselves redundant, which has been achieved. Sakam Sindur can run entirely on its merit with its strong woman leadership." ■

Senior citizen Muddegouda Policepatil sharing stories with children at the government school in Hyati in Koppal district

Seeding the reading

More than 525 school and village libraries in Karnataka have created shared spaces that enable children to bond with books

The morning assembly at the Model Higher Primary School (MHPS) in Ginigera village in Karnataka's Koppal district is slightly different from that of other schools.

After the national anthem is sung, prayers recited and the message for the day read aloud, 11-year-old Rupa Virupaksha Badigera stands up and introduces her fellow schoolmates to *Friend*, the Kannada translation of an illustrated book about a naughty cloud named Tultule. This is the 'book talk' part of the school's morning assembly, where a student shares a synopsis of a book of their choice, with just enough information to pique the audience's interest.

Book talk is one slice of a larger reading initiative introduced in 2015 by Kalike, an associate organisation of the Tata Trusts, under its 'strengthening school libraries' programme. The larger objective is to embed the reading habit in children attending the 300-plus government schools in Yadgir and Koppal, two of Karnataka's lesser developed districts. The library programme is guided by Parag, the Trusts' initiative that aims to encourage reading.

The programme works to build a lifelong connection between children and books. "We have been involved in strengthening school libraries because we found that most schools lacked dedicated library rooms, age-appropriate

11-year-old Rupa Virupaksha Badigera introducing a new book to her schoolmates at the government school in Ginigera village in Koppal

Books are the bait

- Kalike's effort has covered 300+school libraries in Koppal (200+) and Yadgir (100+) districts, with 46,158 children benefitting from them
- Also in the programme are 227 child-friendly libraries in *panchayat* (village council) areas; these serve 20,000+ readers
- Kalike has supported the setting up of 543 home libraries by children
- Training has been provided to 150 animators, 250 library teachers and 227 *panchayat* librarians

books or regular library periods," explains Shivkumar Yadav, Kalike's programme officer for education.

Kalike has also helped in the makeover of *panchayat* (village council) libraries so that children have access to books even when schools are closed.

When Kalike kicked off the library initiative a decade back, the first realisation was that the need was for open doors as much as open minds. "In many schools, books were locked away in almirahs in the headmaster's room, and most titles were not suitable for children," says Kalike's programme director, Girish Harakamani. "We had to start from there."

Animated effort

Kalike's efforts went beyond creating library rooms. Its programme team sourced age-appropriate books, engaged with school authorities to assign a library period for every class, and trained teachers as librarians. The intent was to create an enabling environment where students could access age-appropriate storybooks. Importantly, some 40 of the schools involved now have an 'animator', appointed by Kalike to conduct reading sessions for students.

"Children are most drawn to storytelling sessions and drawing," says Aishwarya Gouli, the animator at the Ginigera school. "They interact more, especially among themselves, and they begin to show more interest in reading." Kalike's team trains animators like Ms Gouli and equips them with lesson plans to use during their

Animator Heena Begum conducting a library session for students at the Budgumpa government school in Koppal

reading sessions. The organisation has trained 150 animators, 250 library teachers and 227 *panchayat* librarians thus far.

Kalike's library interventions are for classes IV to VIII and there's also the newly introduced library corner for younger children. These corners are set up as part of the schools' foundational literacy and numeracy centres.

The library initiative took a turn when the Covid pandemic struck. That was when Kalike decided to extend the model to *panchayat* libraries. "We thought that community learning centres would keep children engaged during the lockdown," says Mr Harakamani. "These libraries were not child-friendly at all, and there were hardly any children accessing them."

Training tack

To improve panchayat library facilities, Kalike started conducting regular training sessions for the appointed librarians. It also helped bridge gaps in the infrastructure by providing book racks, reading tables, and storybooks. The training sessions have been particularly effective.

Gavisaiddappa Manglapur has been the *panchayat* librarian at Ginigera for three decades, but he has had minimal training for the post. "Thanks to Kalike, I have been able to go for training courses and even a three-day field visit to community libraries, including the Mysuru public library," he says. "This has helped me engage better with children, learn what they like to read, and conduct sessions for them."

Kalike has turned 227 *panchayat* libraries in Koppal and Yadgir into child-friendly reading spaces and the difference is visible. Manjula Devi, the *panchayat* development officer for Ginigera, notes a significant increase in

Student members of the library club at the Ginigera government school in Koppal gather for a meeting

all-round interest. "These are shared spaces and Kalike's intervention has led to community activities, music, chess and craft," she says.

Children visiting the *panchayat* libraries are encouraged to take part in the government's 'Take one for mother' initiative, where they borrow books for their mothers.

To make the library initiative self-sustaining, Kalike has worked on cementing a community buy-in. For each school, a member from the permanent teaching staff is given the additional responsibility of a library-point teacher, who is expected to take on the job of animator. The idea is that a member of the school staff can continue the library sessions even after an animator's tenure ends.

To build ownership among students, Kalike encourages them to form library clubs. These clubs are tasked with library activities such as book mending, record-keeping and ensuring books are returned on time.

Mapping the impact

With the project spreading and unfolding well, Kalike is planning to conduct a formal impact study. "Though the influence of books and libraries is often difficult to measure, we want to explore how to quantify the impact of this programme on the community," says Mr Harakamani.

And there is a clear impact. Neelkanth Sali, a 45-year-old agriculturist, says his *panchayat* library has helped him reconnect with science. Shivkumar HR, headmaster of the Ginigera MHPS believes children often learn morals from the books they read, especially autobiographies.

Mr Yadav from Kalike says he has observed significant changes in children coming through library activity sessions such as reading aloud, book talks and storytelling: improved confidence and social behaviour, creativity and critical thinking skills.

A common upside noted by teachers is an enhanced interest in creative activities. "These children are reading better and paying more attention to their studies," says Vanashri Kulkarni, library-point teacher at the Government Higher Primary School at Budgumpa in Koppal. "We see an overall development in general, particularly with craft-related work.

Eighth-standard student Abhishek at a library session conducted by the Ginigera government school

Shankarayya TS, the state government's block education officer for Koppal, is effusive in his appreciation for Kalike's exertions. "They have changed the libraries into an enabling environment for children," he says. "Along with animators, they have also created centres that help improve reading and writing habits in children."

The initiative has had some unintended side effects, a standout being children setting up home libraries *(see right)*. "I consider the home libraries as a possible proof of concept," says Mr Harakamani. "After all, our aim is to turn children into lifelong readers."

The most remarkable outcome in all of this is that the Kalike library endeavour is spurring a first generation of readers, opening up new vistas for underserved communities. ■

By Amritha Pillay

Sixth-standard student Poorvika Krishna at her home library in Ginigera village in Koppal

A library on the inside

In 2020, as the Covid pandemic raged and schools went into shutdown mode, a meeting of the Kalike team and the animators it had trained heard about an unusual development — a young girl in a village in Yadgir district had started a reading corner in her home, a space for her and her friends to gather and read.

From the one to the many. There are now more than 540 home libraries in Yadgir and Koppal. These are not fancy by any means: children choose a corner or space in their house, display a set of books — procured on their own or contributed by Kalike — and invite their friends to read and borrow them.

Many of the students are first-generation schoolers, their interest sparked by the concept of home libraries they heard about from their school animators. The children setting up the libraries have found that there are advantages to having their own set of books.

Take 14-year-old Meghana Ramesh Kudrimoti, a student at the Government Higher Primary School in Budgumpa in Koppal district. She wants to be able to access more than one book at a time. Another happy librarian is 13-year-old Suresh Baligar. His father, Pampanna Baligar, sees the home library as a welcome distraction: "Earlier, he would spend a lot of time just loafing around outside. Now he and his friends sit here and read."

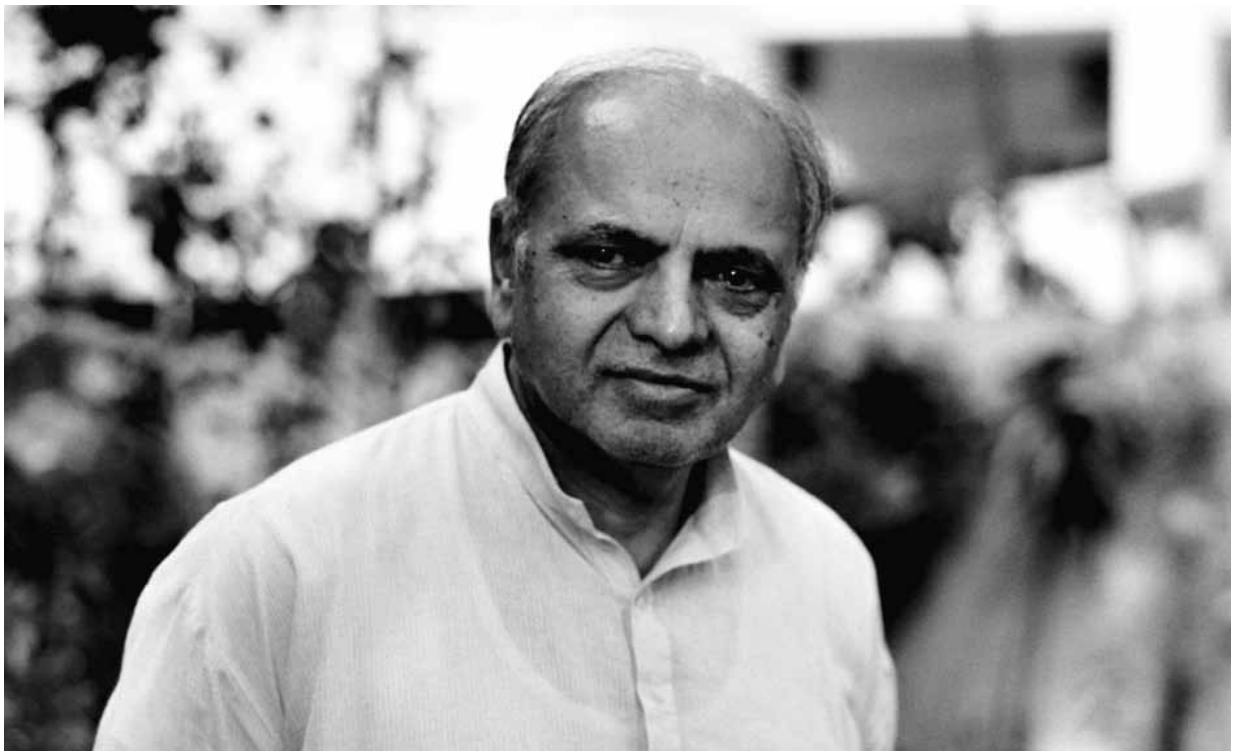
‘Indian minds are multilingual’

Across a lifetime of remarkable scholarship, Ganesh Narayandas Devy has explored a range of themes and disciplines to better understand “a single subject — India”. This is an unending quest, says the 74-year-old professor, whose extraordinary body of work covers linguistics and languages, literary criticism, cultural studies, anthropology, history, education and philosophy.

Prof Devy wears his learning light as a feather, as he does his multiple accomplishments. He spearheaded the groundbreaking ‘People’s Linguistic Survey of India’, which mapped 780 languages in the country; created the Bhasha Research and Publication Centre and the Adivasi Academy; and is the writer of some 90 books. The standouts in this collection are *After Amnesia* — his first book in English and winner of the Sahitya Akademi Award in 1993 — *Of Many Heroes*, *A Nomad Called Thief* and his latest, *India: A Linguistic Civilization*.

Prof Devy’s personal story is as compelling as his professional odyssey. Born in Bhor, a village near Pune, his first brush with formal education happened when he walked into the second-standard classroom of a government school near his house. That bizarre beginning — he was allowed to continue after tests and not a little drama — led in time to junior college and his dropping out, overwhelmed by an English-medium education he had never encountered previously.

Then followed a spell in Goa, as a 16-year-old, doing odd jobs and menial labour, using every waking hour reading English classics to get a grasp of the language, making it back into college, completing postgraduation studies, securing a doctorate, and qualifying for a Rotary Foundation fellowship that enabled him to read at the University of Leeds for a second master’s degree.



Prof Devy went on to teach English at the Maharaja Sayajirao University of Vadodara. That marked the beginning of a career — and a calling — as a researcher and a writer, and it laid the field for his subsequent expeditions into the realm of knowledge, its structures and its discontents.

A winner of several honours, among them the SAARC Writers' Foundation Award, the Prince Claus Award and the Linguapax Prize, Prof Devy speaks here to **Philip Chacko** about his work and his penchant for "describing people, describing life, describing thinking". Excerpts from the interview:

You have journeyed through a variety of disciplines in your research and your writings. Which of these is closest to your heart?
All of my work is about India. I think of India as a dynamic congregation of many types of people, and I never cease to feel fascinated by the kind of things people keep doing. Ordinary people in ordinary life are great stories. I thought I would try to situate them in various fields of learning. I could not remain a slave to any particular discipline. It is not like I decided this in advance; it just happened.

I moved from literature to criticism to translation to history to philosophy to sociology to anthropology to education, all the while trying to understand one single subject – India. And I think I have understood very little of India; it will take me 10 more lives for that.

How would you characterise the influence of language in the social development of a nation, its people and its culture?
The entire cultural geography of India is based on language. The political economy of India is based on language. Language, therefore, has deeply influenced our being who we are. It is of as much essence to this nation as are bones to a body.

No language is eternal but it is distressing to hear that an estimated 1,500 languages worldwide could disappear by the end of this century. Why is preserving any language a worthwhile endeavour, and why are we failing to do so?
Languages take birth, they grow and they die, but we must remember that they are not biological systems. They are not like animals; they are social systems. And when a language dies, we cannot see proof of it, as you can when an animal dies. When a language dies, it gets assimilated into neighbouring languages. The trace of an old language always enters a new language.

Even a large language can disintegrate — like Latin and Sanskrit did — creating many other languages. This is the natural process and it's a slow process. Sometimes a word can stay in use for tens of thousands of years. But grammars break down when there is a migration of people into other areas. If economic or political forces compel people to migrate, then their language is in danger of disintegration and disappearance.

When one says languages have to be conserved, one is saying that people need to be supported, livelihoods need to be supported, because a language mobilises people as a community. If that language disappears, the community disintegrates. Therefore, language disappearance is not the vanishing of a single system; it's doom for an entire community.

But was this not necessary in the past? The answer is, migration as a phenomenon has entered human life in a big way. At present, 42% of the human population is migrating every day. These people face the risk of losing their languages faster than they would have been lost naturally.

The Treaty of Westphalia in 1648 changed the international order. In the years since, the world has become a community of nations. Each nation has to have the ability to defend itself, or it will be gulped up by a neighbouring nation. In such a situation, most nations are trying to be larger than they are. That means imposing a national identity on their citizens and, in the process, restricting regional identities and multilingualism.

The English language did not spread because of colonialism; colonialism spread because of the English language. It's the same with Russian, French, Spanish and now Hindi, languages spreading to other areas and trying to put neighbouring languages under their shadow. I don't think that is good for languages or for human communities.

"Even a large language can disintegrate — like Latin and Sanskrit did — creating many other languages. This is the natural process and it's a slow process."

You spearheaded the pioneering People's Linguistic Survey of India, which mapped some 780 Indian languages. What was the

In this image from 2012, Prof Devy speaks to a group of people about India's oral heritage

motivation behind that mammoth enterprise, and what did you learn from it?

Much before independence, George Abraham Grierson had carried out a linguistic survey of India. This was the first of its kind in the world, but it was a bit inadequate. A big chunk of the South was left out; secondly, the map of India that Grierson had before him was very different from the map of India after 1947.

In 2007, the Indian government decided to do a fresh survey and this was called the New Linguistic Survey of India. A committee was appointed — I was a member of it — money was set aside and the task was handed to the Central Institute of Indian Languages. For various reasons, from bureaucratic tussles to differences between ministries, the idea fell through.

At that stage, I mobilised my friends from tribal communities and academia. We said that if the government is not doing the survey, we will do it ourselves. Designing the survey was a complex exercise because we have languages of different kinds; every language has different needs and structures.

Grierson had designed his survey in the framework of historical linguistics, with a greater interest in the genealogies of languages. For him the question — which language came out of which linguistic ancestor? — held importance. I set aside history and made geography the backbone of the survey. Grierson had focused on grammar as the heart of language; I decided to focus on the tongue rather than the heart. That's what people speak as dialects and what people claim as a language.

I said it is not my right to decide whether a given language is a dialect or a language. If people say ours is a language, I should accept their claim

The Adivasi Academy in Tejgadh, Gujarat, that Prof Devy set up

because language is a social institution, created by an entire society. For instance, in Kerala there's the Byari dialect of some Muslim communities. I said, let Byari be a language. Why should I force it into Malayalam, Kannada or Tulu?

"There is a forest of languages growing around us," you have been quoted as saying. This forest is being denuded, and English and Hindi are deemed culpable to some extent. But is that not how it has always been, languages being created, used and discarded?
A forest has above it a sky that sends rain and strengthens the soil. But that same sky sometimes sends lightning and thunder and trees get uprooted. If their entire education is in English, children will have difficulty writing and reading their own languages. If all administrative communication is in Hindi, then people working in offices will have difficulty writing even English.

What we now notice in India is people who don't know enough Hindi in reading and writing, and who don't know enough English in reading and writing. We are becoming a society of people who know many languages but not any one of them well enough. This is a condition of multiple language illiteracy. I am not against Hindi or English; I love both languages. But I also love my Gujarati, my Marathi, my Kannada.

Language has been a contentious subject in India and the issue is on the boil once again. In the context, how do you view the National Education Policy and its three-language formula?
This reminds me of the historical moment in 1952 when state boundaries were to be drawn and language became a big issue. As for now, the language issue has come up precisely when, in the background, there is the looming

threat of delimitation. The representation of the people in Parliament is being decided and some fear that their numbers will be reduced and others will benefit. Hence, the language issue as it is surfacing today is not linguistic; it is an issue related to representative democracy.

Edward Said wrote that everyone "lives life in a given language" and that the complication for him — the split — was trying to produce a narrative of his native language, Arabic, in English, the language of his education and writings. What bearing does this kind of split — which is common in India — have on your literary undertakings?

I accepted this split as a natural condition for the Indian consciousness. I always believed that Indian minds are multilingual. I was born in a Gujarati family that lived in Maharashtra and we spoke Gujarati at home. I studied Marathi in school and, later on, I learned some Hindi. Then I learned English. I don't think of this as a fractured situation; rather, this is an invitation to dream in different spheres.

How many languages do you know?

I have two mother tongues, Gujarati and Marathi; I cannot say one came before the other. I did not study Hindi systematically; I learned it through songs, films and travel. I studied English systematically at the university level, which is why my English is of the books. Sanskrit I studied on my own; it is a language of my quest, and I still have a long way to go. I also know 12 tribal languages.

Different languages spark different kinds of relationships. Actually, even when there is a language I do not understand being spoken around me, I feel as if I belong to that language. I think all languages in the world are a 'linguasphere', like there is an atmosphere.

When you look back at your life and all your varied accomplishments, what is it that you find most fulfilling? And what remains unfinished?

That I could remain active, intellectually and socially, makes me happy. My relationship with my wife, Surekha – my life partner for the last 55 years – and my daughter, Rashmi, has given me great strength. Also, all my life I've been captivated by music. What gives me energy is not God or nation or religion – it's music.

I don't think anything remains, but I'm working on 10 volumes on civilization, covering all nations in the world. Once that is done, I think I would have completed one unit of my quest, describing people, describing life, describing thinking.

Humans have a shared and common future. We have to think together now. We no longer have the luxury of thinking only as a nation, as a culture, as an ethnicity, as a language. That's the big leap. ■

"We are becoming a society of people who know many languages but not any one of them well enough. This is a condition of multiple language illiteracy."

A researcher at the Goa-based Molbio, which has developed the Truenat portable diagnostic tool

Equipping the med armoury

India Health Fund is at the forefront in the fight against antimicrobial resistance, a phenomenon at fever pitch in the country and around the world

Patient M had cancer. Over a period of months, he received carefully regulated doses of chemotherapy, followed by radiation therapy. As he neared the end of his treatment, Patient M picked up a bacterial infection. That stumped his doctors as he failed to respond to antibiotics. Patient M survived cancer but succumbed to sepsis that could not be treated.

Patient B had a bacterial urinary-tract infection (UTI). Her doctor put her on several courses of increasingly strong antibiotics as the infection continued to rage. It took several weeks and much diagnostics before the doctor pinpointed a

drug that would be effective for her. Patient B managed to recover.

The culprits in the cases of both Patient M and Patient B were superbugs, strains of bacteria that are resistant to the tools of modern medicine, such as antibiotics. And superbugs are more than just prevalent in India.

Nature magazine calls India a stronghold of superbugs because of the spread of antimicrobial resistance (AMR). Shorn of jargon, AMR means that the common drugs we use to combat pathogens that cause infectious diseases may soon cease to be effective.

A 2023 *Lancet* article included some frightening data from a study conducted in the country. It stated that scientists registered as high a level as 87% resistance to commonly used broad-spectrum antibiotics. "It is one of the scariest scenarios for a clinician — to be faced with an infection against which there is no cure," says Dr Abdul Ghafur, an infectious disease specialist with Apollo Hospital, Chennai.

IHF to the fore

The criticality of the superbugs-and-AMR issue was what prompted the Tata Trusts to consider it an extremely serious healthcare concern. That led to India Health Fund (IHF) focusing on AMR.

IHF was established by the Trusts in 2017 and its objectives are well-defined. "Our mandate is to derisk the development and enable the scaling up of solutions that can address infectious diseases," says Madhav Joshi, IHF's chief executive.

As a nonprofit on a mission to contain India's infectious diseases burden, IHF considers AMR more than a red flag. The Fund has been at work on AMR since 2023, stepping up to back innovators and biotech startups — among them Molbio and HealSeq — in bridging the considerable gap between lab and market for these enterprises.

Superbugs spreading

The NDM-1 (for New Delhi metallo-ß-lactamase-1) enzyme makes bacteria resistant to most antibiotics; first detected in India in 2008, it has since spread to 70 countries.

- WHO has reported resistance rates as high as 42% in E coli against cephalosporin-based antibiotics, and 35% in Staphylococcus aureus against methicillin-based antibiotics.
- The Organization for Economic Cooperation and Development estimates that resistance to last-resort antibiotics will double by 2035 as compared with 2005 levels.

The aim is to encourage the development of science-led innovations in, for instance, a range of diagnostics that can help clinicians identify which strain of microorganism is the cause of an infection and which drugs are likely to succeed. These tools will be the frontline defence against AMR (see *New weaponry* on page 35).

Such diagnostic solutions will be an important weapon in the much-needed armoury to counter AMR. The challenge lies in AMR's complexity, though its root cause is well-known. Experts blame the worrying rise in drug-resistant pathogens partly on the overuse of antibiotics, which are easily procured from pharmacies without prescriptions and freely consumed by people with no understanding of medicine.

It's not just in humans; antibiotics used in animal husbandry — to improve yields in the farming of cattle, poultry and shrimp — add to the AMR burden as more drug-resistant organisms circulate in the community. These bugs can then spread to humans through our food chain and through effluents and sewage. The result: a high burden of AMR in humans and poor health outcomes as antibiotics fail.

Countries like India, which have to cope with issues ranging from sanitation and poverty to overcrowding and limited medical resources, carry a high burden of AMR.

With India home to a quarter of the world's tuberculosis patients, the AMR upsurge has fuelled a nightmare situation. Drug-resistant tuberculosis, spurred by AMR, has been rising by more than 20% each year, putting to serious test the government's mission to eliminate the disease.

Although tuberculosis may be a bigger concern in lower-income countries, the AMR alarm bells are ringing around the world. For example, the Western world is seeing a rise in drug-resistant UTIs, a common malady that affects at least half of all women and one in 10 men. According to one study, almost 80% of bacteria that cause UTIs are resistant to at least two commonly used antibiotics. Notably, the World Health Organization has declared AMR among the top 10 public health threats globally. A *Lancet* study termed AMR a global health crisis, with millions of deaths linked to drug-resistant infections each year.

Misuse and overuse

The approach to tackling AMR is as complicated as the nature of the problem. The most obvious one is to address the source of the issue, the root cause being the misuse and overuse of antibiotics.

"India has effective policies that require certain medicines to be sold by prescription. This is already being enforced for some drugs, such as sedatives. We need to implement it for antibiotics as well," says Dr Ghafur.

A more nuanced solution includes stepping up AMR stewardship, where more stakeholders advocate against patient abuse of prescription drugs and make doctors and pharmacists aware of the inherent danger. Advocacy needs to be backed by data, which means surveillance mechanisms to track the prevalence of drug-resistant pathogens.

The Council of Scientific & Industrial Research (CSIR) is among the Indian agencies active in the fight against AMR. Immunologist and biotechnologist Dr Vinay Nandicoori heads CSIR's Centre for Cellular and Molecular Biology (CCMB). The centre is working on ways to identify the presence of AMR genes in pathogens by tracking wastewater samples. In this context, an alarming surveillance study has revealed that 20% of tuberculosis genomes are already drug-resistant.

"The rise in AMR means India needs to find new solutions to emerging and reemerging diseases," says Dr Nandicoori. This could be new diagnostic tools, novel molecules that can replace or reinforce the array of antibiotics in use, or novel treatment approaches. "Innovation is critical and innovators in this space need to be supported," says Dr Nandicoori. "Too many startups in biotech fall into the valley of death, the gap between lab and market." IHF's efforts are engineered to ensure that does not happen.

IHF supports innovators in the lab-to-patient pathway in multiple ways: with funding, access to networks of investors and collaborators, handholding through the maze of regulations for clinical trials, and even at the final go-to-market stage. "Our role is to support the maturing of innovations so that India has a viable pipeline of solutions to tackle AMR," says Mr Joshi.

IHF is concentrating on diagnostics for primary care. "We want to help physicians take the right decisions quickly," adds Mr Joshi. "Currently, doctors need lab culture results to identify which drugs the pathogen is resistant to, but this can take two-three days. When faced with a patient already severely ill, a doctor needs information within 15-30 minutes."

Dr Ghafur, a clinician who sees cases of AMR in patients almost every day, concurs. "In government hospitals, doctors see 100 patients in three hours. They need rapid tools to help them with the right course of treatment. The hope for the future lies in ideas advanced by startups willing to take bold steps."

One of the bold is Dr Reety Arora, head of research at CrisprBits, an Indian startup that uses gene-editing technology to develop solutions for precision medicine. The CrisprBits solution is called PathCrisp, a diagnostic tool that tests common pathogens for genes that indicate resistance to typical antibiotics.

Testing times

"We have further developed PathCrisp so that it doesn't need a cold room; it works at room temperatures and on blood samples," says Dr Arora. The good news for PathCrisp and patients is that it will soon be tested in hospitals.

For startups like CrisprBits, the path from lab to real life can be tortuous. "Getting the science right is just one aspect," says Dr Arora. "Biotech startups face multiple challenges: getting blood samples for study, licences for technologies, approvals for clinical trials, the maze of regulatory requirements and, not least, funding."

Mr Joshi underscores the significance of the Tata Trusts' philanthropic capital in all of this. "There is a realisation that we may be nearing a tipping point when it comes to AMR," he says. "There are new strains of pathogens in the environment, superbugs that are multidrug resistant. What do we do when the drugs we have stop working? We need solutions. That's why the Trusts have chosen to be a catalyst in this space." ■

By Gayatri Kamath

A member of the HealSeq team at the company's Bengaluru lab

New weaponry

The reality of medicine is that the developed world is more focused on noncommunicable diseases such as cancer, diabetes and heart disease rather than infectious conditions. India Health Fund focuses on challenges that plague lower- and middle-income countries.

Molbio and HealSeq are two standout solution providers in this space. Goa-based Molbio's Truenat portable diagnostic tool was a game changer for India's testing centres during the Covid pandemic, bringing down the diagnosis time from days to minutes.

The Truenat platform is a versatile molecular diagnostic tool that can be adapted to detect a wide range of infectious diseases. It is currently in use for the detection of Mycobacterium tuberculosis and specific resistance detection of specific antibiotic classes such as carbapenems.

Now available globally, the Truenat multi-disease device puts the power of molecular diagnostics in the hands of clinicians tackling infectious diseases in developing nations. It addresses respiratory diseases such as tuberculosis, vector-borne diseases such as malaria, dengue and chikungunya, and has been endorsed by the World Health Organization.

The HealSeq story started in a lab at the Indian Institute of Science, Bengaluru. Today HealSeq is a deep-tech company that offers affordable diagnostic platforms. AMR diagnostics are a part of its portfolio, with the company offering a first-of-its-kind test for the early detection of drug-resistant tuberculosis. ■

A cook and her helpers at a local school in Sapotara village in the Karauli district of Rajasthan wash their hands as part of a six-step process to promote hygiene

Food for good

Reaching and treating 40,000-plus undernourished children in four districts of Rajasthan is the objective of a community-focused endeavour

Yuvraj Kumar does not speak as yet but he knows how to make visitors feel welcome. Almost two years of age, Yuvraj greets guests to his home in Moras village in Rajasthan's Sirohi district with a big smile, happy to share his meagre food and rickety tricycle. There's a cloud encircling him, though.

Bright-eyed and energetic, Yuvraj may be doomed to grow up weak and sickly if urgent attention isn't forthcoming. He suffers from acute malnutrition, the symptoms of which are clear: weakened immune systems, delayed milestones and ailments that can impair – irreversibly even – physical and cognitive development.

Yuvraj weighed 2.5kg at birth. A year and 11 months later, he is severely underweight. His older brother, Sunil, is stunted. At five, he is only a few centimetres taller than Yuvraj. "I had no idea that the boys were suffering from malnutrition," says their mother, 27-year-old Kamala Devi, cradling her newborn daughter. "They are skinny and small built, but we thought they would grow out of it. If I had known they

were malnourished, I would have taken more care."

This is a common refrain across districts in Rajasthan beset by severe acute malnutrition (SAM) and moderate acute malnutrition (MAM). Addressing these life-threatening conditions in a community-driven manner is the objective of a far-reaching effort supported by the Tata Trusts through their partner organisation, Centre for microFinance (CmF).

Seeded in 2023, the 'comprehensive management of severe and moderate acute malnutrition' programme operates in four of the state's worst-affected districts: Sirohi, Dungarpur, Dausa and Karauli.

"These districts have large numbers of malnutrition and anaemia cases," says Mehul Kumar Mehta, programme manager with CmF. "Data from the National Family Health Survey – 5 shows a high prevalence of underweight kids. There is so much stunting and wasting among toddlers and children that the situation demanded a more intensive engagement [than what the government can provide]."

High-low equation

In 2018, Sirohi and Karauli were designated 'aspirational districts' by NITI Aayog, the Indian government think tank. The two districts were identified as having low socioeconomic indicators, but with potential for improvement with appropriate social development interventions.

That's when the state government initiated a host of initiatives to tackle malnutrition in these and other districts. But more was needed. When CmF launched its SAM-MAM campaign, the idea was to align with — and extend — the existing government programmes. "Sirohi and Karauli are already a priority with the state and central governments, but Dungarpur and Dausa also needed attention," adds Dr Mehta.

Stunting refers to a child being short for his/her age and wasting to a child being underweight for his/her height/length. The SAM-MAM endeavour aims to promote and institutionalise the management of acute malnutrition through both community and facility-based approaches.

The intent has been to identify malnourished children in a scientific and systematic way, and then provide them with 'energy-dense nutritional food', which is provided in addition to regular Take Home Rations that helps to fulfil their nutritional requirement as per their age.

The process of identification is carried out by a network of village- and district-level frontline workers: *anganwadi* (childcare centre) staff, accredited social health activists and auxiliary nurse-midwives. These frontline workers were trained to spot, screen, diagnose, manage and treat SAM and MAM children at the community level.

The screening — typically of children up to five years of age — includes periodic measuring of weight and height, logging the data and following up to see if there are any differences from the previously recorded figures. Parents, especially mothers, are encouraged to bring their children to the nearest *anganwadi* centre for screening.

The frontline worker needs to be trained to take measurements accurately and then record them on a digital dashboard. Putting

On the menu

- Launched in 2023, the SAM-MAM programme is operational in Sirohi, Dungarpur, Dausa and Karauli districts
- The objective of the programme is to reach and treat 40,000+ children suffering from malnutrition
- More than 26,000 children have been treated thus far through food-based interventions
- 5,300 frontline workers have been trained to identify, screen and log data about undernourished children, and to provide home-based counselling for families

the statistics online means that officials across the administrative spectrum can view and review them.

The frontline worker also needs training in counselling parents like Kamala Devi about preventative and promotive care, and in improving the dietary intake of communities by focusing on the nutritional practices of mothers and their children.

The overall aim is to reach and treat 40,000-plus SAM and MAM children under the age of five across the four districts, as well as at least 70% of wasted children until recovery. This is done through national and state-specific protocols for malnutrition management.

Fortified fix

The collateral benefits include improvement in the delivery of health and nutrition services not just to children, but also to pregnant and lactating mothers. Included are the preparation and serving of meals with fortified ingredients at *anganwadi* centres, and setting aside similarly fortified take-home rations for the entire family (these are currently supplied by the government).

More than 5,300 frontline workers have been trained by CmF thus far. Educating them about growth monitoring and food fortification has been a big challenge here. Manisha Devi, a cook with the senior secondary school in Dhanga village in Sirohi district, says she used to throw out the fortified rice supplied by the government thinking it had gone bad.

"When I washed the rice, kernels of it would float up to the surface," says Ms Manisha. "At first I thought someone had mixed in bits of plastic, so we would not serve it to the children. I didn't know then that this was rice fortified with iron, folic acid and vitamin B12."

Dr Mehta adds: "There were gaps in information around why fortified rice is being provided to schools. The procedures for how to identify and manage the fortified rice while cooking were not there, and nor was there any understanding about the importance of fortified rice. Or how it was being provided to children and the community at large to reduce the burden of anaemia. So kids were not served this and their nutrition levels were not improving."

There are several socioeconomic reasons why malnutrition has become so rampant in some parts of Rajasthan. Villagers here are either small-scale farmers or daily-wage labourers. Parents go off to work, leaving their infants to be managed either by older siblings or grandparents. Little attention is paid to the food intake of these children.

Climate change has forced a lot of farmers to give up agriculture and migrate from place to place looking for a living. Families on the move can't always provide properly for their children, who then end up eating whatever they can get their hands on. Cheap and easily available processed snacks take care of the hunger pangs but don't provide the necessary nutrition.

It has been a struggle to convince families about diet diversity and the need to include 'tricolour' food from different food groups — red and orange lentils; white rice or milk products; and green vegetables — so that children can get all the micronutrients they need.

"Typically, the villagers we work with are farmers with small land holdings," says Prashanto Bagchi, district project officer with CmF. "They can manage only one or two crops a year, so we advise them to grow lucrative cash crops and vegetables, even if in limited amounts." That brings some diversity to the table.

Anganwadi workers are now also educating parents about age-appropriate portion sizes for children. "A small bowl of food for younger children and a larger bowl for those older," says Mr Bagchi.

Health workers visit a house in Nagpura village in Sirohi to counsel the family about diet and hygienic practices

"This ensures that the older children don't eat up the portion meant for the younger ones, which is another reason for undernourishment of kids under five."

Alongside nutrition and supplementary health habits, CmF has also trained frontline workers to promote better hygiene among kids. Every *anganwadi* in the project area now has a handwashing corner. "We insist that the kids who come to the centre wash their hands frequently, especially before meals," says Pushpa Choudhary, a frontline worker. "A lot of illnesses spread due to a lack of hygiene in the villages."

Uttam Singh, the child development project officer for Sirohi district, is generous in her praise for the programme. "We have received a lot of support for our programmes from CmF," she says. "At the government level, we train frontline workers too, but we have fewer staff and are not able to reach everybody. The outcomes [of the programme] have been beneficial."

Ms Singh emphasises that the dashboard created by CmF to digitise the height-weight data collected from mass screenings has been helpful. "I can simply log in from my office and see the statistics for all four districts, down to the village level," she says.

The state government has now requested CmF to help create *poshan vatikas* (nutrition gardens). In this, small patches of land are used to grow vegetables, fruits and even medicinal plants that can be used to improve nutrition levels. CmF has been tasked with seeing how these gardens can be designed and where they can be placed.

The idea is for the community to eventually take over the programme entirely. "The community may not be able to identify a malnourished child, but it can tell when a child is sick," says Dr Mehta. "Building community ownership is imperative for the success of the programme." ■

By Labonita Ghosh

SPICE RISE

Then as now, India remains on top of the charts when it comes to spices. The country is the world's largest producer, consumer and exporter of spices, drawing on a rich heritage of cultivation, consumption and export.

Their production share may be small, but spices are a critical component of India's agricultural landscape, generating high economic value and employment opportunities, particularly in rural reaches. The Tata Trusts and the Indian Institute of Spices Research, Kerala, have been collaborating on an 'action research project' to better understand these and other attributes and advantages of cultivating spices.

Launched in 2023, the project concentrates on improving the spices value chain in 10 Indian states: Andhra Pradesh, Assam, Nagaland, Mizoram, Uttarakhand, Uttar Pradesh, Rajasthan, Gujarat, Tamil Nadu and Odisha. Agricultural practices, farmer collectives, seed production, processing units, branding and exports — the project covers it all.

Vanthala Laxmi and her husband (above), from Porlubanda village in the Alluri Sitharama Raju district of Andhra Pradesh, harvesting turmeric from their demonstration plot. The project enabled the couple to improve their yield and crop quality. **Turmeric procured** (left) for the Rehra Mahila Kisan Farmer Producer Company, based in Rehra village in Uttar Pradesh's Balrampur district, through the project. The procurement focused on healthy and well-developed rhizomes to ensure high-quality seeds.

A farmer (right) from Bheemasingi village in Andhra Pradesh's Alluri Sitharama Raju district with his harvested crop. Turmeric cultivation has been a way of life for farmers here for generations. **A field visit** (below) by an IISR-Tata Trusts team to a farmer's field in Chitora village in Rajasthan's Udaipur district.

Docheri Imti (above), a resident of Phuvkiu village in the Kiphire district of Nagaland, grows the Pragati and Lakadong varieties of turmeric and the Mahima variety of ginger as part of the project. **Members of** the Siro Seuji producer group (left), a band of farmers from Soikota village In Assam's Kamrup district, working their field ahead of cultivation.

Rathva Janabhai (above), a farmer from Ghata village in Gujarat's Tapi district, participated in the project and was able to improve his crop yield substantially. **Women farmers** (right) from Zhimkiur village in Nagaland's Kiphire district sowing the Pragati variety of turmeric.

Farmers harvesting turmeric (above) in Bheemasingi village in the Alluri Sitharama Raju district of Andhra Pradesh. The women farmers here play a vital role in turmeric cultivation, from sowing to harvesting. **Bichilla Basumatary** (left foreground), a farmer from Gopalpur in Assam's Kamrup district, planting seeds in her field.

A multi-activity centre in Odisha that was created through an initiative under the Jaga Mission, which provided tenure and habitats to dwellers of informal settlements

Home **comforts**

A study on policymaking and its outcomes highlights the critical role secure housing plays in easing the lives of underprivileged women in India's cities

Empowering women is the key to building the future we want — I am often reminded of this when I interact with women who have carved out little havens of security and opportunity within some of the most unhygienic and crowded settlements in our burgeoning urban centres. Despite their daily struggles, given the platform and agency, these women will come together to build homes, manage community service and demand basic amenities.

India ranks 108 out of 193 countries in the United Nations Development Programme's Gender Inequality Index. A safe and secure home with access to water, sanitation and hygiene is critical in ensuring the health and overall well-being of women, who are disproportionately affected by inadequate infrastructure, climate-related events and limited mobility. These factors hinder their ability to access resources and participate in public life.

Be it with land, housing or basic services, women are largely constrained by deficient schemes and policies, and by deeply ingrained patriarchal practices. Gender-specific needs are often neglected in Indian cities, leading to insecure and poorly designed civic facilities. Women are the worst affected by all of this.

In academic and policy-oriented research, tenure security and housing rights have been highlighted as aspects that are important for women in meeting their economic needs as well as in reducing poverty levels (*Grown, et al, 2005*). These also increase their participation in household decision-making (*Swaminathan, Rahul, and Suchitra, 2012*), protect them from domestic violence (*Panda and Agarwal, 2005*), and support their economic prosperity.

The policy landscape in India is undergoing a transformation, both at the Centre and in the states, by becoming increasingly supportive of women's economic empowerment and social status. Notable here is the Pradhan Mantri Awas Yojana (PMAY), which encourages home ownership for women, making it mandatory for a household to have at least one female member registered as the owner of a new house. Recent initiatives have built on this favourable policy environment to increase women's access to housing and basic amenities.

A widening of disparities

The need for gender-sensitive programming assumes increased significance as rapid, unplanned urbanisation, coupled with climate change, threatens to widen disparities. It is expected that India will have the highest number of vulnerable groups — primarily women and children — as climate change continues to become an ever-greater threat.

In the circumstances, the Tata Trusts felt the need to create a body of knowledge on policies and programmes that have impacted the access of women to housing, tenure and basic services, and to identify best practices. The learnings from the study will be used to inform programmes

Shikha Srivastava heads the urban poverty alleviation portfolio at the Tata Trusts

developed within the 'urban poverty alleviation' theme of the Trusts.

'Women at Centre Stage — Tenure, Housing and Basic Services from a Gender Lens' has been crafted by the India Resources Trust with support from the Trusts. It examines how urban habitat policies and legislations work on the ground, while providing valuable insights into their effect and efficacy. Additionally, three programmes involving government and civil society organisations — showcasing replicable good practices and innovations — have been analysed in detail.

Women-led progress

From Kerala there's Kudumbashree, one of the largest networks of women in the world. This organisation, comprising women-led groups at the neighbourhood, cluster and zonal levels, has enabled the rolling out of the 'housing for all' mission through surveys, field verifications and the active involvement of community networks. More than 130,000 beneficiaries have availed the scheme, promoting women's home ownership across Kerala.

The study found that direct beneficiary transfers into women's single or joint accounts ensured that funds were effectively used for house construction. Access to housing entitlements facilitated women's limited engagement with formal financial institutions for housing loans, although challenges persist with stringent bank criteria.

Women respondents were found to be well-informed about PMAY's beneficiary-led construction model, with most of them receiving assistance from Kudumbashree. Women who had moved into independent homes from joint family setups spoke about having more privacy and the freedom to make their own decisions.

Kudumbashree also provides short-term rental accommodation for women through She Lodge, a facility launched by the Kochi Municipal Corporation in March 2023 for working women and students travelling to the city. She Lodge includes rooms, dormitories, a library and a reading room. In nine months of functioning, it has served 22,000-plus women and earned a profit of ₹2.4 million. This is an initiative that can be replicated in other cities.

The second programme selected by the study was the Jaga Mission in Odisha, which seeks to provide tenure and liveable habitats to dwellers of informal settlements across the state. Land rights have been provided to around 150,000 residents thus far and 1,251 slums have been upgraded. The Tata Trusts were the lead partner (till 2021) in this project, which has won national and international recognition.

A crucial aspect of the land-titling programme was the ownership (or joint ownership) granted to the woman of the household. That in the bag, the Jaga Mission has moved from tenure to issues such as water, sanitation, open spaces, roads, waste management, energy and livelihoods.

Women respondents benefitting from the Mission's programme said secure tenures improved their safety and security, eliminated the fear of eviction and reduced domestic violence. They added that they were now able to focus on the health and education of their children.

Access to basic services has significantly improved women's quality of life through in-situ slum upgrades. The realisation of policy intent was noted on the ground as most women received 'land rights certificates' (LRCs) in their names.

Kutcha (makeshift) houses, though, are still the norm, even after tenure has been secured, which results in greater losses when extreme weather events occur. However,

Bhauben Solanki (left) and her family, who live under a flyover in Surat, are among the many millions of Indians who could do with a proper home

waterlogging, flooding and water stress at the neighbourhood level have been reduced through infrastructure upgrades.

Penetration of formal credit has been painfully slow and, currently, LCRs are not recognised as valid collateral by banks. This hinders access to formal credit for people in dire need of exactly that.

The last initiative to be studied was the work done by Mahila Housing Trust (MHT) in Jodhpur (Rajasthan) through its women-led 'community action groups' (CAGs), which have enabled improved access to housing assistance and basic services.

MHT has facilitated microloans for women and provided technical assistance to generate construction estimates and house designs. The implementation of cool roofing, for instance, has lowered indoor

Mothers and children in their New Delhi slum

temperatures. Women have been able to build structurally sound houses and — with tenure security in place — incrementally upgrade them.

More than one-third of the women surveyed were able to avail loans to construct or upgrade their homes. CAGs at the neighbourhood level have enhanced access to basic services such as water, sanitation, and electricity by empowering women to voice concerns, engage with officials and secure housing subsidies and loans.

The commonality for the women, regardless of where they hailed from, was household security and improved access to government schemes. Also, women who have sole ownership (or are the primary holders of LCRs) have greater decision-making power in their homes.

The study found that, overall, despite gains in tenure security and housing stability, challenges persist, principally poor infrastructure and the limited representation of women in urban planning. Patriarchal norms often restrict women's legal rights to land and inheritance, hampering their ability to fully benefit from housing programmes.

The necessity is to design schemes that prioritise women's names as primary house owners, ensuring their inclusion in utility bills and official documents, as well as offering gender-based incentives to promote land ownership. This needs to be supported by legal, social and institutional mechanisms that help women access formal credit.

The need for doing these cannot be stressed enough, because empowering women is the key to building the future we want. ■