Premium

Tech should work even in remote regions for impact: Mangesh Wange, CEO, Swades Foundation

Mangesh spoke to The Indian Express on the impact of the Swades Foundation's work, its technology interventions and key learnings.

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12 min read
Aug 8, 2026 07:30 AM IST

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Mangesh Wange, CEO, Swades Foundation. (Credits: Mangesh Wange)

Mangesh Wange is the CEO of the Swades Foundation, a non-profit organisation working across rural Maharashtra and using technology in its anti-poverty initiatives and programmes.

Founded by Zarina and Ronnie Screwvala, the Swades Foundation has reached around 3,400 villages in Maharashtra through programmes focused on health and nutrition, education, water and sanitation, and economic development.

Mangesh has previously held senior roles at Godrej, Fullerton India, and Thomson Reuters, where he worked on mobile information services for rural India. He holds a degree in agricultural engineering from Punjab Agricultural University, Ludhiana, and a postgraduate degree from IIM, Ahmedabad.

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Mangesh spoke to indianexpress.com on the impact of the Swades Foundation's work, its technology interventions, key learnings *and* the challenges of implementing technology in rural India. ***Edited***

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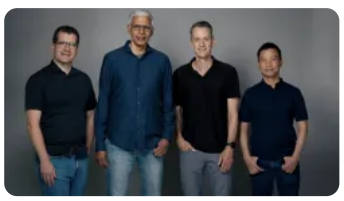

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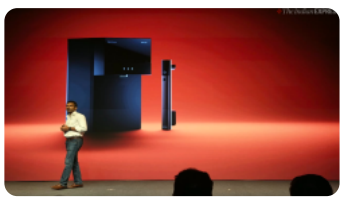

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Venkatesh Kannaiah: Tell us about the journey of the Swades Foundation, and its impact.

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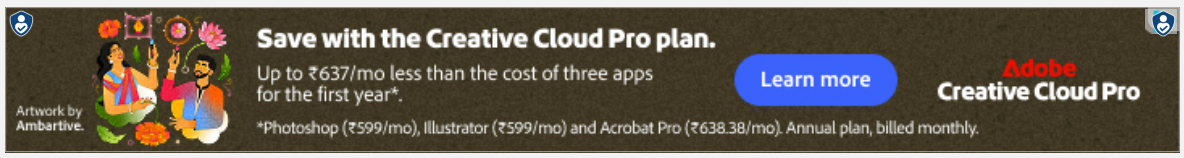

Mangesh Wange: Swades Foundation, in its current form, has existed since 2012. Before that, our organisation was known as SHARE (Society to Heal, Aid, Restore and Educate) and focused on water issues and on girl-child education. Based on their learnings from SHARE, our founders, Zarina and Ronnie Screwvala, developed a mission statement to lift one million people out of poverty every five years.

We currently work across five districts in Maharashtra: Raigad, Nashik, Palghar, Thane, and Nandurbar. Our work focuses on drinking water, health, education, sanitation, and livelihoods. We are now present in more than 1,000 villages, and our programmes impact around a million people. Our teams include experts in veterinary science, agriculture, civil engineering, health, and doctors.

We first engage with the community and build mutual trust. The community contributes through shramdaan or other forms of contribution, while we help build their capacity. Then we bring in technical experts, knowledge, and funding, including CSR support. Finally, our goal is to become redundant in a location within five to seven years.

We also empower communities to leverage government schemes. Last year, we tracked six government schemes across 1,000 villages and were able to converge around Rs 150 crore in government funding, in addition to our own direct spend of around Rs 100 crore.

Venkatesh Kannaiah: How important is tech in the Swades journey?

Mangesh Wange: Given the scale of our operations, tech plays a critical role.

First, it helps us manage our internal operations and deliver services efficiently to the community. Second, we use technology as part of the solutions we take to communities. And third, we are looking at how emerging technologies like AI can further empower communities.

What we've seen over the last 10 years is that network connectivity has improved, even remote villages are now much better connected, and smartphone penetration has increased. We have leveraged this changing landscape to improve our operations.

Under the Government of India's Panchayati Raj system, Participatory Rural Appraisal (PRA) is a standard practice. Every sarpanch and gram sevak is expected to conduct it, and it forms the basis for bottom-up planning and budgeting.

We follow the same approach, and this is where technology becomes powerful. It is essentially a bottom-up planning process where, at both the household and village level, we identify needs, gaps, and available resources. Based on this, the village prepares a three-to-five-year Village Development Plan.

Now imagine doing this across more than 1,000 villages and one lakh households. If all that information is digitised, life becomes much easier. Earlier, everything was done using paper and pen, which led to delays and mistakes. Now, tech has resolved this challenge to a large extent.

Venkatesh Kannaiah: Tell us about the Swades app and its impact.

Mangesh Wange: We first developed the Swades app for our own teams, and over the last 18 months, we have extended it to the community as well. When you visit our villages, you'll see community members themselves using the app to enter data — from household census information, education levels, farmers' needs, water requirements, sanitation gaps, and much more.

The platform is currently being used across 1,237 villages, with one authorised community representative in each village using app credentials provided by Swades to generate and submit local development demands.

This information comes to us, and based on that, we prepare village development plans. The villages themselves can see whether they are in the red, yellow, or green category in terms of performance.

Suppose, in a village, 10 households need buffaloes or goats. They enter that demand in the app. The community contribution is deposited with the committee, and that too is updated in the app. The request then goes to our training team. Those 10 beneficiaries undergo training, and once they complete it successfully, they become eligible to receive the benefit. Every stage is tracked digitally.

So everything — from the census and demand generation to training, fulfilment, assessment, and final feedback — is managed through tech.

Community-generated requests are verified by Swades teams and tracked through real-time MIS dashboards, allowing thousands of interventions to be planned, monitored, and executed simultaneously.

We also have a community cadre called the Survekshan Mitra, which conducts field audits.

Take orchard plantations as an example. Typically, many plantation drives see lakhs of saplings planted during the monsoon, but a large number do not survive afterwards.

To address this, our Survekshan Mitras visit the field and record through the app whether the required pits have actually been dug. After six months and again after one year, they revisit the farms, upload photographs through the app, and record how many trees have survived. So, we are using technology not just for collecting data, but also for monitoring, training, assessment, verification, and feedback.

Swades app is an integrated app that supports all our operations. One of its biggest strengths is that it works both online and offline.

Before digitisation, village coordinators would visit households individually to understand community needs and manually relay them to the Village Development Committees. Now, this has changed.

Venkatesh Kannaiah: Tell us about your learnings from the deployment of the app on the ground.

Mangesh Wange: For example, the online-offline capability has been one of

our biggest learnings. Initially, we found that even where network connectivity existed, it was often poor in many villages. Apps need to work both online and offline.

Then there is a lot of hand-holding required on how to use the app — the training aspect. Timeliness and discipline are also important.

Language was another consideration. We had to make it available in Marathi for local communities.

Beyond that, it's largely about behaviour. It's more of a user adoption and user experience challenge.

Venkatesh Kannaiah: Tell us about appropriate tech interventions that are relevant on the ground in rural India.

Mangesh Wange: I think the biggest tech intervention that has worked for us is in capacity building and knowledge transfer.

We have community workers whom we call Swades Mitras. They are somewhat like the ASHA workers under the Government of India. They play an important role in maternal and child health, nutrition, and related areas.

If you look at rural India, there are two big challenges. One is physical reach. Suppose one Swades Mitra is responsible for five villages, and one of those villages is deep inside a forest or high up in the hills. Delivering services in such locations becomes a major challenge.

This is where technology plays a role. The first is access and connectivity. If a Swades Mitra has to visit a pregnant woman, they need to know that she has been registered with the Primary Health Centre and is receiving the required services. Every month, her nutrition and health also need to be monitored.

We have to provide services to the community, but we also need information back from the community — whether immunisation has taken place, how the mother and child are progressing, and so on. That data has to come back to us. So, one of the biggest advantages we have seen is in improving knowledge transfer, access, and connectivity.

For example, the government has the eSanjeevani telemedicine platform. During COVID, we started using it and trained our Swades Mitras to use it. Today, they schedule doctor's appointments and facilitate video consultations through the platform. At the very least, diagnosis and consultation can happen remotely.

The second area is knowledge transfer and capacity building, not just in health, but also in agriculture. For example, when we conduct programmes on livestock management, dairy farming, or goat rearing, we don't have to physically travel to 100 villages. Technology enables us to reach everyone.

Venkatesh Kannaiah: In areas like water and sanitation, have you started using drones or sensors to track availability, flow levels, or similar parameters?

Mangesh Wange: Not directly. However, we work with one of our partners, Foundation for Ecological Security. They provide satellite imagery and information on groundwater tables, which we use for planning and designing our water projects. We also track water levels in open wells and collect that data. In addition, all our water infrastructure has been geo-tagged.

We started using drones about one and a half years ago. They are mainly used in our natural resource management projects, especially for soil and water conservation. Before the monsoon, or before a project begins, we capture baseline drone images. Then, after about one and a half years, we fly the drone again and capture images from the same latitude and longitude. This allows us to compare the before-and-after condition of the project area.

Venkatesh Kannaiah: Do you work with startups? Tell us about areas where startups could look to build products.

Mangesh Wange: Several startups are working on applying AI and developing health technologies for screening and pre-screening. For example, we tried a technology for anemia testing. Normally, haemoglobin (Hb) testing requires a finger prick, but non-invasive technologies are available now. We also tried a thermal scanner for breast cancer screening, where the scan is connected through the internet to a doctor sitting in a city for interpretation.

We piloted both of these technologies. However, we found a significant number of false positives and false negatives because the technologies are still evolving.

If a proven technology is available, we are willing to work with startups. But I cannot allow my community to become a guinea pig for testing an evolving technology. We have built a relationship of trust with them, and I cannot mislead the community or take that kind of risk.

Also, these health technologies need necessary approvals from the Government of India before they can be deployed at scale.

The same principle applies across sectors. The technology has to be proven, reliable, and affordable enough for non-profits to adopt and take to the community.

Venkatesh Kannaiah: What kind of opportunities and challenges exist for tech in rural India?

Mangesh Wange: There are three key challenges for tech adoption: awareness, access, and affordability.

Take healthcare, for example. You and I can easily visit a nearby dental clinic for treatment. But imagine how difficult it is for someone in rural India to make multiple visits for the same treatment. That is a major challenge and an opportunity.

Education is another area. In many rural schools, one teacher handles Classes 1-4 with 30 students. Can tech be of help?

In agriculture, a lot of work has already happened around market prices, mandis, and online information platforms. But I still believe there is a need for a technology platform that truly aggregates demand and supply.

Today, an Indian farmer buys inputs in retail — one bag of urea or one bottle of pesticide — but sells produce in wholesale, often by the tractor-load. That is one of the biggest structural challenges. If technology can bring farmers together, almost like an Uber platform that matches demand and supply, and genuinely solve that problem instead of just providing information or advice, it would create tremendous value.

One of the biggest opportunities, in my view, is water quality testing. If every village water source is regularly tested and the results are uploaded to a government dashboard or made available to the district health officer, they can proactively identify villages facing contamination, low flow rates, or problems such as E. coli.

Another important application of technology is project monitoring. One of the best examples is the Pradhan Mantri Awas Yojana. Under the scheme, beneficiaries receive subsidies based on project milestones. For instance, once the foundation is completed, they receive the first instalment from the government.

A similar approach can be applied to Jal Jeevan Mission projects. Once a water source is created, that milestone can be uploaded to the district administration and the Jal Jeevan Mission authorities, triggering the release of funds. When the pipeline is laid, another milestone is recorded. When the project is completed, that too can be verified digitally.

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