What it Takes to Make a FARMER HAPPY

Farmers in the hill districts of Kerala are better off than their brethren elsewhere thanks to organic farming and consumers willing to pay more than the market price for healthier products, writes **Rohini Mohan**

WAYANAD, KERALA

There is a light in Joseph Pendanath's eyes when he walks through his farm, whose thick foliage resembles a forest in parts. He checks how the nutmeg graft is doing, throws a coconut frond over a few spinach saplings for shade, caresses a pepper vine here, smells a green lime there, and loosens the soil around a slender arecanut tree. From the tubers underground to the tallest coconut tree, Pendanath's three acres in the foothills of Wayanad in Kerala is filled from soil to sky with layers of more than 30 food and cash crops. The ideal forest farm.

As drought, unseasonal rain, or pesticide wither the fields of millions of small farmers across India, the lushness of Pendanath's farm is bewildering. When asked what he did different, he says, "When a farmer doesn't choke the soil, it will give like you've never seen. And when the consumer pays me the price that can sustain this kind of farming, I can do more of this."

Pendanath is one of the over 4,500 hill district farmers in Kerala who form an alternative farming collective called the Fair Trade Alliance Kerala (FTAK). These largely small and medium land holders — 10% are women —do sustainable, organic farming that rejects mono-cropping for biodiversity, preserves and shares local seeds, and embraces the market. They largely export cash crop like spices, nuts and coconut to the growing group of ethical consumers in the West, and food crops like vegetables and rice to the local markets. While the national farm income in India is an average ₹77,000 a year, FTAK chairman Thomas Kalappura says its members (with 0.3 to 4 acres of land) make at least ₹1.5 lakh a year. In the tense environment of climate change, large scale agribusiness, and a complex mix of state dependency and apathy that threatens the future of agriculture, these small farmers are making profits.

FTAK was formed in 2005 by Kerala's oldest organic store, Elements in Kozhikode. The 600 farmers who were its first members were looking to increase market access for their organic produce, negotiate better prices, and as an extension of the existing tradition of welfare politics in Kerala, ensure trade justice. "The farmer's dignity is at the centre of the collective," says founder Tomy Mathew. "Small farmers are the worst off in India, but for ages, governments and NGOs have chosen to help them through aid, not trade."

Distress At Large

Marginal and small farmers make up nearly 83% of cultivator households in India, but nearly all of them spend more than they earn. Between 2001 and 2011, 9 million farmers quit cultivation and 38 million joined the ranks of agricultural labourers. According to the National Crime Records Bureau, about 3 lakh farmers have committed suicide since the nineties, 5,650 just

in 2014. About 72% of these were smallholders, and the main reason was bankruptcy or indebtedness. "Input costs — water, fertiliser, seeds, machines, labour and fuel — have risen while prices for the final produce have not risen proportionally," says Kavita Kuruganti, convenor of the Bengaluru-based Alliance for Sustainable and Holistic Agriculture. "The conventional market is neither free nor fair, as highly subsidised producers are allowed to dump low quality products into the market, and price out small farmers. This has made small holdings largely unviable."

The hill districts of Kerala — Kannur, Kasargod, Wayanad, and Kozhikode — are not parched like several agrarian regions in the country, but here too, farmers were facing the brunt of seed and fertiliser costs, Kerala's quintessential high wages, and the artificially fixed low market prices for farm produce. Behind even the most glistening farms could be a mountain of debt or insurmountable price worries. This is why the farmers who formed FTAK in 2005 focused on economics first. "Price is the greatest pitfall for the Indian farmer," says food and trade policy Devinder Sharma. "Governments rig it with subsidies and market regulation, global corporations rig it with

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inordinate access, and consumers worsen it by wanting to pay as little as possible even if they can afford more."

Fair trade as a concept recognises the skewed market, and tries to appeal to the buyer's sense of justice. It rests on the principle of consumers supporting producers directly and a willingness to pay more than the conventional market price in exchange for healthier products. This group, driven by what Kuruganti calls "enlightened self-interest" — eating organic, a selfish health motive — ends up helping the environment and the producer.

Cashews or turmeric with a Fairtrade label — certified through third parties like Fairtrade Labelling Organisations International or community guarantees — attract a minimum price greater than the market price, plus an additional premium to invest in the social, environmental or economic needs of the producer community. "This acts as a safety net for farmers when the global rates fall below sustainable levels," says founder Mathew.

Sometimes, as FTAK has done, farmers negotiate even higher rates on the basis of quality or value-added attributes. For instance, the Switzerland-based Pakka has been buying 80 MT of FTAK's cashews for 10 years, paying about a third more than the price set by Fairtrade International to compensate the superior quality of the nuts. Ueli Barufflol, director of Pakka AG, says a cooperative such as FTAK can become valuable as an institution for its members, "not only for marketing their products for fair prices but also providing a mid and long-term proposal on how to improve their livelihoods and lives on a very regional and pragmatic way, with a strong democratic process".

Pendanath and Theyamma, another member of FTAK, continue to take loans, but they are able to pay off due to the assured price. "Organic and fair trade approaches have the double benefit of reduced cost and price sta-

Joseph Pendanath in his farm in Wayanad

TOMY MATHEW
FOUNDER, FAIR TRADE ALLIANCE KERALA

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bility," says Kuruganti. "We used to depend heavily on government subsidies because that was the only way to break even," says Theyamma who now share-crops coffee, cardamom, pepper and vegetables with 11 other smallholder women. "Now that we can sell coffee through FTAK for ₹10-12 more than market price, it's like we don't need a crutch, but can walk on our own."

Pakka's Barufflol says in the last three decades, people in developed countries have become more sensitive about the effects of their consumer behaviour and are increasingly "trying to avoid a negative impact in the upstream value chain by making an educated choice". Though the proportion of such educated consumers is still small, it is steadily growing. As the demand for coconut oil grows globally for healthy cooking, Pakka has begun to buy the Elements brand of organic oil made from coconuts procured from FTAK farmers. "An increasing number of people want to know the value chain realities of the product," says Barufflol. "Nobody wants to eat cashew cracked in the prisons of Vietnam, or child labour hazelnuts from Turkey, or almonds from Californian orchards killing the environment."

Bridge to Global Markets

FTAK's Mathew says unlike the West, the ideas of fair trade in India are embedded in the organic market. A government-funded study by Assocham and TechSci Research found in October 2015 that the organic market is growing at 25-30% a year and would touch $1.36 billion by 2020. Organic farming is practised in 12 states in about 4.72 million hectares. In 2013-14, organic food production was 1.24 million tonnes. The Kerala government has declared the state will aim to be 100% organic by the end of 2016, and in the past year more than a 100 organic shops have opened in the state. "The health motive is often what inspires the question — where does my food come from?" says Mathew. "And that gradually leads to other ethical questions. India is heading there."

The Indian organic market is still highly unorganised, mired with controversies about fake certifications, and expensive licensing that smallholders

can't afford. Market access for organic farmers is also debilitatingly poor — state open markets do not mark up organic produce, thus leaving farmers to find their own buyers. Organised alternatives like FTAK show how smallholders can reach even global markets, and even be in a rare position to negotiate price. "Third party fair trade certification is still cumbersome, costly, even sometimes corrupt," says Mathew, referring to the long checklist and record-keeping a farmer must fulfil to be Fairtrade or organic certified. They will now gradually try to do away with certification, and develop a counter narrative — through peer-certification, or building consumer-and-farmer groups, or create a small producer label like farmers have done in Latin America.

For five of its 10 years, FTAK has also invested in seed preservation. Annually, it holds a seed festival in a village in Kerala, to which farmers from across the state bring local, organic seed varieties for display, exchange and sale. In a public yatra to invite Wayanad district farmers to participate, A J Paul, a panchayat leader, spoke admiringly of a "Raman chettan", an elderly farmer who has conserved 40 varieties of rice, all indigenous to the district. "People like him are not only freeing us from the cost burden of buying seeds from MNCs every year, but also preventing the terrifying trend of companies patenting seeds at our expense," says Paul. "By reviving and staking a claim on Wayanad's heirlooms, Raman chettan is leaving a rich legacy." Seed conservation and exchange, then, is an investment in the continuity of agriculture in the region.

As the "seed swaraj" yatra reached Kannur district, Lijy Pulickal, a woman farmer brought a plate with seeds from three types of brinjals, eight types of chilli, and three kinds of toor dal. She took these to the seed fest on January 22-26 in Kurvanchal, Kannur district. For the past three years, says Pulickal, she has not bought a single seed in the market. "I don't even need to buy groceries!" she says. "Except for sugar, salt, and tea, everything is in my farm or the neighbour's."

There are many challenges still — the need to market locally to avoid dependence on foreign buyers, the continued strain (though reduced) of farm indebtedness, and the lack of investment in storage and processing. As they attempt to bridge these gaps, beyond promoting organic, fair and indigenous practices, the organised farmer's movement has achieved more basic rights that have eluded Indian farmers for decades now. Pulickal's kitchen-farm has given her food security. Theyamma's group of 12 women sharecroppers is reviving communal farming and gender equality. And Pendanath, cooling in the perfect shade of his sky-high forest farm, has recreated traditional biodiversity.

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What is Fair Trade?

A social movement to help producers in developing countries achieve better trading conditions and to promote sustainability. It advocates paying higher prices to exporting producers, as well as improved social and environmental standards.

In the US and EU, demand for Fairtrade labelled products is rapidly increasing

Organic Farming in India

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Source: Assocham & TechSci Research

Organic spices produced by FTAK, Kerala

The seed festival at Kurvanchal in Kannur district

Kris's Brain Wave

Infosys co-founder Kris Gopalakrishnan is funding brain studies with three niche projects that are closely aligned to his interest in computer science and a desire to improve research in India, writes **Hari Pulakkat**

How do we build an economy based on innovation? An essential condition for such an economy is a good research base. "We need to get more people to join research," says Infosys co-founder Kris Gopalakrishnan, "and we need to improve the quality of our research."

Gopalakrishnan had just funded a stem cell-centred multidisciplinary programme on mental diseases and blood disorders, by providing ₹6 crore. For the researchers, it is the icing on the cake, coming after a government grant of ₹140 crore for the project. For Gopalakrishnan, it is part of a general plan to improve research in the country, and a specific attempt to drive synergies between brain research and computer science research.

Gopalakrishnan had begun pursuing his core philanthropic interests — computation, education and entrepreneurship — even before retiring as vice-chairman of Infosys in 2014. He had set up, with his wife Sudha Gopalakrishnan, the Pratiksha Trust to fund his ideas. In 2014, the trust announced a grant of ₹225 crore for the Centre for Brain Research (CBR), to be set up inside the Indian Institute of Science (IISc) campus in Bengaluru. He subsequently gave ₹30 crore to IIT Madras to set up three chairs in computational brain research. He gave ₹11 crore to a partnership between the Centre for Brain Research and Carnegie Melon University. And last week he gave ₹6 crore to the Institute for Stem Cell Biology and Regenerative Medicine (in-Stem) for research on mental diseases and blood disorders.

Gopalakrishnan is acting through a set of firm beliefs on the importance of research, on the role of computing, and the relationship between computing and the human brain. The Infosys Science Foundation, in which he is

a trustee, founded the Infosys Prize designed to draw young people to research by creating icons.

Different Approach

Gopalakrishnan's own philanthropy aims at improving the quality of research. "My way of doing this is to identify groups that are doing high quality work and support them through grants and also set up collaborations," he says. Through collaborations, he says, the country can avoid duplications and accelerate research. Gopalakrishnan decided to focus on the brain for obvious reasons. "I strongly believe that the some of the disruptions in computing will come from our understanding of how the brain works."

Gopalakrishnan is driving collaborations of different kinds: between institutions in the country and abroad, and between experts in various disciplines. Both the chairs at IISc and IIT Madras bring together experts in various subjects. "By leveraging collaborations," he says, "I think India can contribute positively to the global community." The IISc programme has a collaboration with CMU. The in-stem programme has partnerships with Nimhans, Christian Medical College in Vellore, and Centre for iPS Cell Research in Kyoto,

Japan. Through the clinical programmes, he also wants to see if there can be a cure or at least a way to arrest the progress of neuro-degenerative diseases.

IIT Madras had acted immediately on the grant, selecting three professors in the US for chairs in computational neuroscience, and bringing them to the campus in Chennai. The three — Partha Mitra, principal investigator at Cold Spring Harbor Laboratory in New York; Mriganka Sur, professor of neuroscience at the Massachusetts Institute of Technology (MIT); Anand Raghunathan, professor at the School of Electrical and Computer Engineering at Purdue University — are scholars well known in their fields. All the three researchers will spend a lot of their research time at IIT Madras. Raghunathan is currently on a full-year sabbatical at the institute.

Understanding the Brain

Mitra works on developing an integrative picture of brain function, using theoretical, computational and experimental approaches. He is specifically involved in developing a map of the mouse brain, elucidating all the intricate wirings. Raghunathan, a computer scientist, is exploring the world of neuroscience to understand, among other things, how the brain does tasks that seem so difficult for the computer. Sur's research is on understanding how genes and proteins influence the brain wiring, and how they go wrong in diseases of the brain. "The brain is an amazing organ," says Sur. "It takes the stuff of biology and derives the stuff of computation."

It is this connection that so fascinates both computer scientists and neuroscientists, and it is also what drives Gopalakrishnan to fund cutting-edge research. There are practical benefits too, like helping tackle diseases
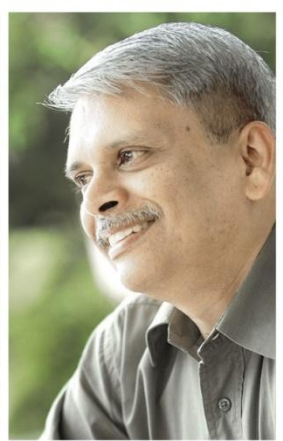
of the brain or making computers smarter. Using stem cells, for example, would help scientists create models of the human brain difficult or impossible to make otherwise. By studying the models of both the healthy and diseased brains, scientists may be able to figure out what causes disease. On the other hand, by studying the brain, computer scientists can help improve human-like algorithms for image recognition, inference and so on. The brain is an extremely efficient organ. "By studying the brain," says Raghunathan, "we can improve the computational efficiency of human-like tasks."

The IIT Madras chairs are now well into their research there. The Centre for Brain Research in its its early stages, as its board is now working on finding a director. One of its aims is to find changes in the brain early, before they manifest in clinical symptoms as diseases. "We now know that diseases start in the brain decades before the clinical symptoms show up," says Vijayalakshmi Ravindranath, chairperson at the Centre for Neuroscience at IISc. Catching these changes early can be a big advance in medicine, and could help alter the course of the disease in a person.

Gopalakrishnan believes that it is a good time to fund his research, as many new tools have come up to study neuroscience. Computation is a powerful tool. Stem cells is another. "With the new tools that we have," says Gopalakrishnan, "we can look at things differently. The task is extremely difficult and requires enormous funding.

"My job is to act as a catalyst," he says, "and to bring together different groups of people aligned with what I am focused on."

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KRIS GOPALAKRISHNAN
CO-FOUNDER, INFOSYS

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