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Agroecology and going local

LEISA INDIA

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Women are instrumental in scaling up agroecological approaches
(Photo: S Jayaraj for AMEF)

The AgriCultures Network

LEISA India is a member of the global Agricultures Network. Seven organisations that provide information on small-scale, sustainable agriculture worldwide, and that publish:

Farming Matters (in English)

LEISA revista de agroecología (Latin America)

LEISA India (in English, Kannada, Tamil, Hindi, Telugu, Oriya, Marathi and Punjabi)

AGRIDAPE (West Africa, in French)

Agriculturas Experiências em Agroecologia (Brazil).

www.leisaindia.org

Dear Readers

Local food initiatives following agroecological approaches are gaining ground. Forced by adversity of global pandemic, communities have realised and recognised the importance of being self reliant. We have seen an upsurge in kitchen gardening, even in urban spaces. Farmers learnt to sell their produce using digital tools, with the help of proactive individuals and organisations. Overall, farmers survived even the pandemic, by making appropriate adaptations while urban consumers moved towards 'growing own food' and 'buying local'. Globally, there is an increasing recognition of sustainable local food systems. Adaptation is key to sustenance.

In this issue we have included experiences of farmers and institutions that are practising and promoting agroecological approaches. We have also included some views and opinions from the global context. We hope these experiences, views and opinions will interest and inspire you. We look forward to your feedback, as always. We remain deeply indebted to you all for your commitment to promotion of LEISA.

We heartily wish you and your families A Very Happy New Year 2021.

The Editors

LEISA is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors, to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.

AMEF is a member of AgriCultures Network, which is involved in co-creation and sharing of knowledge on family farming and agro ecology. The network is locally rooted and globally connected. Besides magazines, the network is involved in multi stake holders' engagement and policy advocacy for promotion of small holder family farming and agroecology. The network consists of members from Brazil, Ethiopia, India, Netherlands, Peru and Senegal. The secretariat of the network is located in IED Afrique, Dakar, Senegal.

MISEREOR founded in 1958 is the German Catholic Bishops' Organisation for Development Cooperation. For over 50 years MISEREOR has been committed to fighting poverty in Africa, Asia and Latin America. MISEREOR's support is available to any human being in need – regardless of their religion, ethnicity or gender. MISEREOR believes in supporting initiatives driven and owned by the poor and the disadvantaged. It prefers to work in partnership with its local partners. Together with the beneficiaries, the partners involved help shape local development processes and implement the projects. This is how MISEREOR, together with its partners, responds to constantly changing challenges. (www.misereor.de; www.misereor.org)

AME Foundation promotes sustainable livelihoods through combining indigenous knowledge and innovative technologies for Low-External-Input natural resource management. Towards this objective, AME Foundation works with small and marginal farmers in the Deccan Plateau region by generating farming alternatives, enriching the knowledge base, training, linking development agencies and sharing experience.

AMEF is working closely with interested groups of farmers in clusters of villages, to enable them to generate and adopt alternative farming practices. These locations with enhanced visibility are utilised as learning situations for practitioners and promoters of eco-farming systems, which includes NGOs and NGO networks. **www.amefound.org**

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Janak Preet Singh

Farm on wheels, an initiative to sell local produce has enabled the farmer groups to access diverse local markets in a decentralized manner. In doing so this initiative has set an example to all other farmer groups collaborating with NESFAS in Meghalaya and encouraged them to adapt it and take it forward in their areas.

33 The power of women's networks for agroecology in India

Soumya Sankar Bose and Amrita Gupta

"We knew we needed a space to save our native varieties of seeds and transmit the traditional knowledge of farming which is agroecological, which does not harm nature," says Chukki Nanjundaswamy, coordinator of Amrita Bhoomi near Bangalore, Karnataka – a peasant agroecology training center established to prove that an alternative farming model can exist. As a member of La Via Campesina, the center offers training based on the farmer-to-farmer approach, centering agroecology, peasant rights, food sovereignty and social justice.

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Agroecology and going local

Agroecology is the basis for the future. It is a durable, resilient and a sustainable response. It illustrates how it can provide answer to multiple challenges – old and new, to improve production systems, foster ecosystems, foster dignified farm based livelihoods. It creates the necessary resilience to deal with climate challenges, sustainable food systems and local economies. For instance, while the country was in turmoil because of the COVID-19 pandemic, resilience has been on display by farming communities.

While the world was in complete chaos, farmers in Rajasthan were dealing with locusts and lockdowns. They were using their traditional knowledge systems, using their own seeds, using traditional fertilisers like *Neemastra, Keetnashak* etc., and were also using the local village level mandis to sell their produce. They also absorbed migrant workers to the farms in villages which were considered ghost villages with many moving to towns in search of livelihoods. Some of them got immediate farm work, while some of them had to wait for the off-farm activities to reopen. "Mother nature has work for everyone". (Rituja Mitra, p.6).

More than anything, it is necessary to understand how farmers deal with nature. To enable this, we should be sensitive to the way farmers have been dealing with nurturing biodiversity, facing and dealing with challenge of competing requirements of different living species on the ecosystem. One has to see this reality through a different 'eye' how our body, our land, and our bodily connections preserve and nurture Earth and Life. A cross disciplinary art project involving poets and artists along with farmers illustrated this interconnectedness of life how farmers involved in huge seed conservation and exchange nurture and uphold mother earth (C F John, p.9). It was a collective space fostering an act of regeneration with sharing sessions guided by people who have dedicated their life as a sacred duty to preserve and nurture land and communities. These intrinsic and sacred relationships were explained through symbolism and space for open reflections - specially erected walls mud and seed walls, pyramids symbolising eye of the seed, creating borderless landscapes of forest lands and farm lands depicting the relation between humans, farm land, wildlife. The attempt was to take the visitor to different layers of the story of farmers who work silently day and night like earthworms, nurturing, preserving and resisting, not waiting for anyone. Through this project it was illustrated that Art gains a new meaning by not making divisions between Art and Life.

Globally, there is an increasing recognition of sustainable local food systems. For instance, there was an upsurge of backyard gardening and 'buying local', practices that are important for local food sovereignty. Local food initiatives are being considered crucial for building more just and sustainable food systems as they support locally based economies and governance, bring consumers in contact with producers and with their natural environment, highlight the source of food, circumvent agro-industrial food production and avoid supermarket monopolies. It is true that not everyone has land, the know-how or time to garden. There is a need for intentional work in network building and allyship based on collective learning and transnational action, shift our efforts from individual to collective, exclusive to inclusive. This work is critical to building a more caring, sustainable and just food systems. (Colin Anderson, Jessica Milgroom and Michel Pimbert, p.16).

Importantly, for reviving local production and food systems, transgenerational knowledge sharing, between old and young is crucial. Most importantly, it has to be recognised that agroecology has a female face. Agroecology is being nurtured by women taking lead worldwide with their focus on sustainable food systems. Illustrating the power of women communities to harbinger changes, as a community educator, Leonida Odongo, with an impressive knowledge of the reality of

farmers in Africa, emphatically says that *"It is becoming clear that the future is agroecological"* (p.17). Research in Kenya has found alarming levels of pesticides in fresh foods, which are partly responsible for increases in cancer and other diseases due to the carcinogenic components they contain. During the pandemic which affected access to markets and increased domestic violence, these women farmers were convinced about the benefits of moving ecological way by the use of theatre and music. Through community sessions, farmers take the role of bees, farmers, butterflies or chemical companies and each actor shares how pesticides impact them. At the end a judge, who is Mother Earth, makes a verdict. The 'We are the solution' campaign, led by women in West Africa, is an example of a strong women-led network that promotes female voices in policy processes for family farming. Like elsewhere, in Southern Africa, women connect with each other faster than men; they tend to share easier. They have more spaces for interaction, not only while farming but also in the market and other places. Of course, the interaction with men is also important.

We know that organised women are bold, resilient and transformative. This requires networking, forging collective movements, sensitive processes recognising the women play in rural life. Recognising and operationalizing these aspects women farmer networks in India, Chukki Nanjundaswamy, coordinator of Amrita Bhoomi, says, **"**We knew we needed a space to save our native varieties of seeds and transmit the traditional knowledge of farming which is agroecological, which does not harm nature,". The experiences reveal that without this grassroots women farmers' movement, it would have been impossible to scale these practices up to lakhs of famers with gender sensitive resilient working systems to manage farm as well as home**.** Thus, agroecological approaches pursued improved finances, nurtured food sovereignty, self-reliance, and dignity as well as right to take decisions. (Soumya Sankar Bose and Amrita Gupta, p.33)

There is a need to create internal responses and local solutions by the communities themselves, facilitated by well intentioned development agencies. They are the keys for sustenance of alternative approaches – be it alternative production systems, creating and accessing markets or accessing and adopting knowledge. 'Farm on wheels' is a timely initiative by farmer groups to sell their produce directly to consumers and at the same time, create sustainable livelihood opportunities for themselves. Collaboration with others is also necessary as small holder trade surpluses are limited and further bridging gaps through online platforms. (Janak Preet Singh, p.22). Mobile telephony has brought in new flexibility for adopting technology as a means to build bridges. For instance, NaPanta is a free to download 'Agricultural crop management' mobile application being used by more than a lakh of farmers. Recognising the gap the small and marginal farmers face in terms of knowledge access, this startup helps farmers access all kinds of agriculture-related information they need in real-time. (Na Panta, p.27)

New challenges throw up new solutions – be it reviving relationships with ecosystems, sustainable and resilient food production systems, inducing new consumer preferences, easily accessible markets and wider knowledge sharing.

Resilient farmers of Thar

Rituja Mitra

The farmers from Indo-Pak bordering villages turned out to be far more resilient than expected amidst challenges like transportation clampdown during lockdown, locust attacks and other challenges.

"2020 wasn't that bad for us", pronounces Sadasukh Beniwal of Godu Village, Bikaner. While the country was in turmoil because of the COVID-19 pandemic, things have been quite different for the farmers of the villages near the Indo-Pak border. This year marked a good rainfall in the villages of the driest state of Rajasthan. Jaisalmer district received surplus rain than what it receives in a normal year as reported by the Indian Meteorological Department.

The farmers across Jaisalmer district and other bordering districts of Bikaner were in an ambivalent position in March, when the first phase of lockdown was imposed by PM Narendra Modi. Laxmi Devi, a farmer of Odhaniya village in Jaisalmer district asserts, "Soon

after the lockdown was called, local mandis were shut down completely. We had no option to sell or buy seeds for Kharif season from Bikaner or Jaisalmer Mandis. We limited ourselves to the nearby villages and Pokhran market".

Farmers like Laxmi Devi have been pursuing sequential cropping in her field. These practices turned out to be lucky this year. *"Till lockdown, it was all fine, but then I heard of the pest attack (refers to the locust attack) in the border villages. We were all worried. It was the beginning of the Kharif season and I had toiled a lot in my field. I would not expect my crops to be destroyed".* Fortunately, Laxmi Devi's field and her village were not as affected by the attack as it hit other villages. She hailed her resilient cropping system for this. "*Earlier these attacks were less. Whenever there was a pest attack only a few crops got destroyed as our ancestors had pursued and have taught us multi-cropping in the fields. The pests get attracted to some crops and don't like some, which act as repellent. Eventually some remain safe for us",* explains Laxmi. This argument was agreed by most of the elderly farmers who felt that this year locust had killed the crops of those farmers who followed monocropping and used a lot of pesticides. Prema Ram, 62, from Fulasar village in Bikaner district asserts, *"We have seen several pest seasons and have managed those effectively with whatever crops we grow in this desert. But when we do multi-cropping pest attacks are less. We don't use market-based seeds. We prefer Neemastra made by Nimbodi (neem seeds) and cow urine as organic fertilizers and pesticides for our crops and these are safer".*

> Mother nature has work for everyone, still people go to the towns for work

Women farmers like Laxmi who farms 25 bigha of dryland were quite apprehensive of the consequences

Pest attack on Laxmi's field is low owing to multicropping

Youngsters returned to villages during lockdown to take up farming

of the lockdown. *"My family is completely dependent on farming and some manual labour work but I would say Corona didn't affect us. The only impact was on our access to markets as we could neither sell our produce in the local market nor buy seeds from the market".*

While the world was in complete chaos, these farmers in Rajasthan were using their traditional knowledge systems and were effectively managing themselves, using their own seeds, using traditional fertilisers like *Neemastra*, *Keetnashak* etc. and were also using the local village level mandis to sell their produce.

Om Prakash, a youth from Bajju Tejapura village, who also works with a local NGO says, *"farmers' life wasn't as difficult as the labourers who returned to the villages when there was no work in the cities. Some of them got immediate farm work, while some of them had to wait for the off-farm activities to start".* Most of the villages in Kolayat Tehsil of Bikaner District or Pokhram tehsil had absorbed these migrant workers to the farms. The villages that were once turned out to be ghost villages, also started farming this year. These workers were involved in raising crops like moong, groundnuts etc. Sadasukh Beniwal asserts, *"The rural India gave jobs when the companies were asking them to leave. Mother nature has work for everyone, still people go to the towns for work".* He also applauds a few of the youngsters who came back. *"They wanted to help us with new selling places on the internet, we will soon do those!"* exclaims Sadasukh.

A child holding keetanashak

Om Prakash pointing at the problems of farmers says, *"With or without the COVID the farmers in Thar raised the Kharif crops without letting them to be burnt".* Apart from these, MSP remained a challenge during the pandemic, Durjan Singh of 16, Godu Village says, *"Agriculture sector has been always ignored but the disease cannot be blamed always for this. Everyone is taking this as an excuse".* Most of the farmers couldn't sell their produce to the government. *"MSP procurement online portals were closed"* informed Om Prakash. He also added that the only thing that helped the farmers were the village exchange of the produce and small mandis in the block headquarters.

Though this year was difficult in general, farmers were curious about the new changes that would surely come after Panchayat elections this year in October, Sadasukh says, *"Farmer's topic has been taken and some of the contending participants have acknowledged the need for new technologies. They are exploring ways to bring our produce on the MSP portal, Amazon and other online portals".*

The story of farmers of Thar carried mixed emotions of despair and happiness but they were apprehensive about the need to address them in their own way that they have carried through generations.

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An aesthetic of regeneration

C F John

The five day Art event "Let me come to your wounds, heal myself", as part of the 9th SeedFest 2020 of FTAK, was an invitation to come home, to our own senses and to claim ourselves: our body, our land, and our bodily connections that preserve and nurture Earth and Life. This cross-disciplinary art project was done in the context of climate change and the alienation we experience today from the interconnectedness of life.

At a time when no limits are set for our thoughts and success, both farmers and seeds stay within limits and blossom a boundless world of Life - an abundance blossomed from limits. What farmers nurture and uphold in this soil is a world of care, attention, resistance, survival, custodianship, togetherness, and sanctity. A farmer tightly holding on to the Seed and serving as its custodian should emanate a wisdom that the Nation can imbibe for its own healing and regeneration on many counts.

After spending three years with the farmers, something became clear to us: we did not want to create Objects

Interesting interactions among the participants

of Art from a concept or imagination, but rather wanted, through artistic interventions open spaces in which one could listen from the trail of silence that the farmer treads, and participate meaningfully for our own common healing. It was a place to recognise, honour and stay with the sorrow; resist, embrace, confess, make covenant, pray and meditate. It was a collective space fostering an act of regeneration.

The art event had 10 installations, performances, and sharing sessions guided by people who have dedicated their life as a sacred duty to preserve and nurture land and communities. It was presented in one-and-a-half acres of land graced by the seeds of sustenance preserved and nurtured by over 70 collectives. FTAK has been fostering them since 2005 as a sacred duty, keeping a covenant between the Seeds and us.

The installations - places of happenings

The Martyrs Wall, 30 feet long and nine feet high, aligned between 'Custodian of Seeds' and 'Soil beneath the feet – kindling imagination', was made of mud and seed. Above the wall at a height of 30 feet were installed nine prayer flags three feet long, on each of which was written by hand: "It takes an incredible and brave person to stay on with the soil, seeds and sprouting, and if need be submitting to its beating rather than submitting to the misdeeds of men for unethical gains, be it money, power or fame". The flag fluttered in the air, taking these words of deep respect all the way it can take across the earth.

Another prayer asked "God make me brave for life: ... as blown grass lifts, let me rise from sorrow with quiet eyes, knowing Thy way is wise. God, make me brave, life brings such blinding things, help me to keep my sight..." (a found prayer — anonymous). These prayers were placed against copies of handwritten FIRs of farmers who had shed their lives. These prayers were also whispered into the ears of the dear ones who came close to the wall. The wall bore 12 earthen vessels filled with seeds, and over 150 oil lamps.

Agriculture is defined by real time and is aligned with the proportion of Life. No wonder the farmer often fails when negotiating an unfair market. A wounded body and a handful of seeds are his weapons, not guns, lathis or legal notices. With deep respect and a prayer we dedicated this wall to all those who have shed their lives, and their surviving dependents.

In the midst of the gala of dreams of developmental projects in this country lived people amongst us who, in spite of the wounds, losses, and hostile circumstances, spent their time gathering seeds, caring for it tenderly through sun and mist, planting seeds, sprouting, nurturing, checking pests, and preserving Life and the life of soil. Our dream development projects burned many along with their land. Still, some persist in the same way that a chopped tree puts forth new branches from its remnants. They tried to keep the light of their farms alive, as a sacred duty keeping a covenant between the seed and us.

The Chair of seed keepers

The 'Pyramid of Custodian of Seeds' was a space to salute them. The Pyramid was like the shell of a seed made of loosely woven cotton fabric and bamboo. Within the pyramid was a table made of bamboo and mud which displayed, with respect as we would display holy scriptures, documents on 13 persons from Kerala who were Custodians of Seeds. The visitor entering the pyramid through the slit in the fabric which represents the eye of the seed, becomes one with the seed; it was an act of honouring the covenant between the custodians and seeds.

'Soil beneath the feet — kindling imagination', placed behind the Martyr's Wall, was a space to kindle and foster poetic perceptions of agriculture among children, initiating a process of nurturing a culture of agriculture in the landscape of hearts. We had four one-day workshops as part of this, conducted by Subha Joseph (Journalist), Manu Jose (Theatre), Vinoy Thomas (Creative writing), and Vishnu and Natasha Sharma (New Media). 'The Soil beneath the feet' and 'Custodians of Seeds' in the back and front of Martyr's Wall symbolically served as an act of affirmation and reclamation of life. Healing the wounds of the farmers as well as that of the Earth.

'The Chair of Seed Keepers' was just a wooden chair placed on a platform covered with a red carpet. As a farmer or as a person concerned about a farmer's living reality, recognising that farmers safeguard many vital conditions for our common existence, if you feel that there are things the nation could do to make their lives better, what could that be? What can you yourself do and what can the nation do? Imagining that you have been asked to make recommendations, or that you have been given the power to decide, you had to take the chair and make a statement. The person who wished to speak from the chair was asked to fill in a form that would ask her to identify herself and speak on what she hoped to do and what she would tell the nation, keeping the farmers as witness. It was on the one hand a platform for a public confession and making a covenant between her and the earth communities, and on the other hand to also become part of the solution and not point fingers at the 'Other', the problem. The filled form was displayed on the board next to it for the public to read.

K.P. Mohandas spoke from the chair to the public in the presence of farmers as witness "Farmer is the wealth of the country. He deserves the highest honour. I am ready to be part of the efforts that help protect all the farmers in this country. The rulers of this country should take steps to protect the farmers more than it does the soldiers." Sojan Kalapura said "just as education is free and compulsory, there should be a law making it compulsory for all citizens to do farming". The film actor Prakash Raj said, "I say to myself that I need to be a participant on this journey of evolution.. Let's be empowered with this magic of life, bow to our farmers." There were around 120 presentations, making confessions and covenants and calling for a change.

The chair was like a seed, it sprouted a consciousness keeping Nation and Earth at the heart.

Things moved us in the direction we hoped and beyond – surprises and learnings

The Human-Animal Conflict and the Trail of Silence was installed as a maze created by loosely woven cotton cloths, 44 inches wide and nine feet high, hung vertically and along a 90-foot-long fence made of old sarees, the same way farmers spread cloth around their land to protect their crops from wild boar. A panoramic view of a landscape depicting the relation between humans, farm land, wildlife and forest was drawn on the sarees. And on the inner side of the same sarees, the visitors wrote their responses to human-wildlife issues to form a quilt of responses.

The form was structured in such a way as to reflect the closely guarded but interconnected lands. Because the borders of the forest and farm lands that the animals cross are not borders for them. For them it is all an extension of one, single land. Similarly Trail of Silence was an expression, through words and images, of the inner worlds of the life of a borderless soil, an invitation to open our senses to closely observe the soil beneath the feet that walk the land. It is about a terrain that is vulnerable and stays subject to every element, force and intervention. The visitor moves through this loosely hung fabric to reach the inner spaces. The installation on human-animal conflict presented the concerns through text, images and sound. A sound piece of about fourteen minutes expressed the concerns over a lopsided forest management policy that simultaneously affects human, farm lands, animals and forest, and also presented

the solutions that people of the area suggested. These concerns were supported by documents received from state institutions through RTI, other data from people, handwritten appeals from the residents, sound and images.

Just as the terrain was subjected to all the elements and forces of nature, these two installations too stayed vulnerable. In the night they were soaked by the mist, during the day they shrivelled in the hot sun, absorbed the dust and flapped about in the wind. Though in our workbook we had articulated the intention of subjecting these two installations to the elements, I must confess that I felt uneasy to see the consequence! But for the visitors who were concerned with the subject, it spoke clearly. For some, it was shockingly revealing and gave them information for further dialogue with the authorities. For some it brought them face to face with, and helped clear, their own prejudices. For many it was the voice of their agony, while for some among them it continued to be a point of anger.

The farmers suggest maintaining the forest as a forest so that it would be a haven for the animals. The records show that 25-40 per cent of the forest holds Teak and Eucalyptus. In addition there are invasive killer plant species that choke the forest and deprive wild animals of their food. Above all, construction activities drive the animals towards the farm lands.

When it comes to compensation the farmers say, a yielding coconut tree destroyed by wild animals earns a compensation of Rs 770. A coconut sapling costs Rs 150; digging a pit, filling it with manure, and planting the sapling costs Rs 750. It takes five years for it to start yielding tangibly. Tending it for 10-20 years takes such effort and care. Can you fathom the feeling of a farmer aged 50-60 on the loss of that tree? He does not have years left in him to bring up another tree to that stage of growth. It is to this farmer that you offer a compensation of Rs 770 — less than a day's wage to an unskilled labourer in the area! For a coconut tree that could yield for him and his children and grandchildren fruit for about 80 years. That is an insult. Even if you reckon the yield for 25 years you should get Rs 25000.

A hectare of paddy would cost Rs 75000 to cultivate. You could harvest from it paddy worth Rs 1.6 lakh. But when it is trampled to nothing by elephants you are paid Rs11000, so it is with all crops, seasonal or perennial. That is contempt. Contempt for the farmer. Contempt for the act of farming. Contempt for what he nurtures.

For idle spectators the installations were just some loosely flung about fabric with some documents and images. But for others it was as if they were the faithful entering a temple festival ground. Through all the entertainment, the noise, the selling, the sun's heat and the dust, they could clearly hear the whispering of the goddess from the lips of the 'velichapaadu', the priest.

Sunil P Unni who was helping us with the installations spoke on behalf of many, saying, "These installations demolished the understood notions of installation art and the expectations. They are serving as translations. Because these spaces clearly translated the inner workings of the act of farming and seeds. These installations spoke to each one's right to her own context of life. For a farmer, it inspired her to re-enter and see herself again; for a student it was like a burning coal striking within her, making her recognise that it was her duty to be part of this and to nurture. For a salaried person, he would have wondered why until this day he hadn't been able to look into the eyes of a farmer, why until now he could not serve as a helping hand to the farmer. These installations taught people, when they walked around seeing the innumerable seeds, also to look at the farmer's face and see the scars it bears. That is how these forms have made themselves rich. At a time when we've got used to seeing art forms that are mystified or remained as spectacle to look at, these are without veils and directly connects to life. It is like it is said in the Bible, they spoke different languages but each one understood it in their own language. Here, people came from different backgrounds but understood from their own level, that is the success of these presentations." He added, "These installations also hid themselves from some others."

We were moved that people took the initiative to light all the lamps on the Martyr's Wall each day when the sun went down. We had planned to light the lamps only on the second day. Some deeply felt that the souls of those who were forced to shed their lives were around. After the lamps were lit, the air was filled with an inscrutable and deep emotion that connected people. We were also moved when we heard that one of the torch bearers whom

we had represented in the 'Torch Bearers' installation wanted to keep something from it as a souvenir. It seems he had burnt all the honours he had received in his life, but he wanted to keep this one. There were many such moving stories.

What we wanted to present after three years of our engagement with farmers was the light that the farmers had gifted us. Not our imagination or concepts, not our capabilities, not things pulled out from our own baggage of past engagements. Ours was an attempt to take the visitor to different layers of the story of farmers who work silently day and night like earthworms, nurturing, preserving and resisting, not waiting for anyone.

Yes, the event did not reveal itself to a number of people. That is how things turn out, sometimes. We had said in the introduction to the art event that what we had presented were not Objects of Art to be passively viewed, but spaces to recognise, to honour, to hold, to resist, to nurture, to stay with the agony, to pray, and meditate. "Let me come to your Wounds, Heal myself" provided spaces to open up new sprouts, a germination of something new, and an enhanced experience of living that becomes a work of art. Here, Art gained a new meaning by not making divisions between Art and Life. It provided spaces to engage with it and make it evolve.

The works and spaces aimed to help people engage with the ordinary. Once they learn to engage they start seeing the beauty, they start seeing meanings all around, they see within it the wisdom of our common survival. For all those who could not engage, they saw the yam, chilli, beans and pumpkins as just the same things they normally get to eat. But for those who learned to see, they saw the possibilities of a new sprouting. It was a poetic immersion in the ordinary, recognising the secret of life and its guardians. When someone walked with us through the farm, he exclaimed, "When I walked through these lands, I realised why my nights were not ending."

The soil becomes complete only when the seeds sprouts, the seed sprouts only when it is touched by water. The water does not have colour, form, fragrance and taste, but when it touches the seed it sprouts all these. The role of Art is that. To touch. It is not the art that should assume the colour, form and fragrance but that which it tries to touch.

The visitor leaves the spaces after listening to the seeds whispering. The visitor has to hold her ears close to the mouth of a clay jar two feet deep. From the darkness of its womb she hears the seed whispering.

"*There is a hidden sky in every seed*
the dream-filled slumber
holding its destiny as plant or tree…"
….
every step is a resistance
a lonely struggle
treading the earth as a prayer -
a prayer of suffering, kindness and hope
a prayer for life"
she whispers.
the place for Seeds is Soil – the place for Art is Life.

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*This reflection is on the art event **Let me come to your wounds, heal myself —** a cross-disciplinary art project with the farmers collective FTAK.*Collaborating artists:* **Azis T.M. - visual artist, V.T. Jayadevan - poet, Sivadas Poilkavu - theatre artist, M.P. Pratheesh - poet, C.F.John – artist-curator.**

Nutrition gardens

A promising intervention in the post COVID scenario

Lakshmi Unnithan

As the World grapples with the devastating consequences of the spread of the novel coronavirus, nations are faced with multiple questions that go well beyond the direct impact of contracting the disease. We are dealing with massive loss of livelihoods, unemployment, hunger, and a decline in overall health status of citizens.

The lockdown has had detrimental impact on the agricultural economy even though the government had announced certain measures to protect farmers, however, disruptions in the food supply chain have significantly impacted farmers across the nation, with small and marginal farmers forced to bear the maximum shock. Farmers have been struggling to harvest and trade perishables for many reasons including shortage of workforce, transportation, and limited market operations.

There are other challenges we have forgotten in the times of COVID pandemic is the extreme weather patterns, water stress, soil degradation that threatens the future supply of food. Diversification of agricultural production can help address these environmental challenges and transition from 'calorie-rich' to 'nutrition-rich' food systems. Developing sustainable food value chains could drive food system transformation.

When in Lockdown what we only think of is to how to get clean food and nutritious at the same time. We have come a long way in terms of being away from whole foods to fat filled burgers and pastas. There was a time when we used to eat food grown in the backyards and we still have many a backyards in Kerala. The idea of local is a novelty these days as to every thing local is given a stamp of modernity and are available right in the supermarkets.

Women started kitchen gardens in Badi harvesting nutritious vegetables

There are many movements nationwide to encourage the nutrition gardens and all the more, local vegetables needs to be incorporated as they definitely improve the nutrition and health, community, culture and ecology.

The Chhattisgarh government, for instance, recognizing its importance has made Badi development a point in their flagship programme called Badi development a point in their flag- ship programme called NGGB (Narwa Garu-a GhuruaBadi) and has already started work in this direction issuing guidelines around how to develop Badis. Government incentives to develop the so called Back yard home gardens also should actually bring in changes in the direction of Food Security and Nutrition in these challenging times of Weather and Pandemics.

According to a report by PRADAN (Arpon Bhattacharjee and Ajay Gupta, Agriculture World, June 2020)

Somi Baghel, a marginal farmer belonging to Bastar, Chhattisgarh, has an inspiring tale when they decided to develop their Badi and they started getting support under multiple programmes of NABARD, district horticulture department, MGNREGA and PRADAN to develop Badi and learn newer techniques of farming that would get them decent earnings.

This gave them a platform to participate in changed ways of farming like growing nutritious kitchen garden in her BADI. BADI is invariably found in all tribal households are planted, with maize, millets and nutritious local vegetables like papayas, moringas, some perennial vines like ivy gourd, ash gourd and green leafy varieties all of which provide a critical supply of cash and food items at times of need. Badis are a priceless resource for rural tribal farmers, particularly women. Many researches conducted around home-steads and its multifaceted role in the well being of rural households also support this argument. The Post COVID scenario saw an increase in women registering for such programmes to developing their BADIS for Food Security.

Localicious is a People's Movement for Local Food and is an inititative by Krishna Mckenzie, Solitude Cafe, Auroville, Pondicherry. And all the more Local foods are hardy and are easier to grow in abundance. They need little care and we just have to grow it to water it. It grows easily and is packed full of nutrients and is an economically viable option for everyone. The huge diversity of nutritious spinaches, yams or green papaya could be tapped if the entire community consciously eats a few times a week. There would be a profound change in our consciousness, as we would be reclaiming our connection with mother earth and our nutritional needs. The post Covid Scenario saw an increase in the number of people who signed for Solitudes community vegetable baskets.

Utthan, an organization from Gujarat was in continuous contact with the communities it serves and they noticed that in the Covid times many villages did not have easy access to vegetables or quality sustainable seed varieties. Being cash strapped, most families would not prioritise vegetable purchase. The worst sufferers would be women and children, as patriarchal practices in families lead to prioritisation of others. Many landless families do not even have the option to grow vegetables.

Kitchen garden kits were provided to 2514 families across 53 villages. Six varieties of seeds were provided to 864 families in coastal and 1650 in tribal areas. The biofertilizer requirement was collectively taken care by Women's Groups and Sustainable agriculture women trainers. The kit was apt for around 1000-1500 sq.ft. of designated land area or for land around people's homes. Locally researched and truthful seed varieties of lady's finger, cluster beans, black eyed pea, bottle gourd, bitter gourd, sponge gourd/ridge gourd were distributed under safety guidelines developed by Utthan wherein use of masks, gloves and distancing by team and village volunteers were ensured. Panchayats and village leaders were roped in with good results. The complementary efforts to ensure good practices included use of digital awareness through pamphlets, videos on package of practices and bio pesticide production by women trainers in 'sustainable agriculture practices'.

The consciousness building efforts for compassion needed during this crisis has led to a commitment by 2514 families to support another 7500 families, especially those who are landless and are unable to grow vegetables due to lack of land or water resources. This is estimated to support nutrition security of 700 grams/ day of vegetable supplies to 7500 families for 2.5 months between mid July to September'20. This quantity suffices for the needs of an average family size of six.

There should be more movements like these where in we understand the importance of adding nutrition by growing diverse food baskets through nutrition gardens. Utmost importance needs to be given to the well being of women and children at these challenging times and none other than local vegetable that could give us immunity than any imported fruit and vegetables. There is definitely a need for like-minded farmers also who are ready to dive in and start valuing their cultural farming heritage, to explore and help create a community with them that will honour them financially.

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Pivoting from local food to just food systems

Colin Anderson

Jessica Milgroom

Michel Pimbert

The COVID-19 virus has jarred many people out of the illusion that globalised, corporate food is safe and secure. Yet, many people don't know what to do about it. Some have taken up backyard gardening and 'buying local', practices that are important for local food sovereignty. However, across Europe and North America, many of these responses remain couched within a market-based neoliberal paradigm. We desperately need to focus our action on breaking up corporate power in food systems and supporting long-term systemic changes.

Local food initiatives are crucial for building more just and sustainable food systems. They support locally-based economies and governance, they bring consumers in contact with producers and with their natural environment, build community, teach people about where their food comes from, circumvent agroindustrial food production and avoid supermarket monopolies. Home gardening can also provide healthy affordable food, opportunities to learn and to connect people with nature and food. However, local food initiatives and gardening would go much further in driving social change if they also confront structural inequalities and social exclusion.

First, not everyone can afford food at all, let alone healthy, sustainably produced, local food, and not everyone has land, the know-how or time to garden. Individual gardening initiatives would have more impact if they were coupled with collective efforts to secure access to land, organise workshops or construct novel systems of local exchange, for example for those who don't have time to garden or money to purchase healthy local produce.

Second, while strong local communities are important for developing territorial food systems, this turn inwards to one's own community risks fostering exclusion and division. There is a need for intentional work in network building, solidarity and allyship with people from other communities or with different backgrounds.

Third, local food initiatives can often be depoliticised, focusing exclusively on the technical aspects of local food systems. Yet, citizens can simultaneously mobilise to influence the governance of food systems by working with (local) governments, confronting structural inequity in food initiatives (e.g. anti-racism), or engaging in contentious politics to confront policies and practices that lock in corporate food systems.

Fourth, these localised initiatives in the global north often fail to confront the ongoing colonial relationship between corporations, 'eaters', elite groups and governments in the global north with food producers and communities in the global south. The only way to topple this model is through broad-based collective learning and transnational action that reveals and deconstructs the ongoing colonial relationships at play in food systems.

Working against the grain, social movements are amplifying the political dimensions of local food initiatives. They are advancing economic models based on feminist and degrowth economics that move far beyond the profit-motive of capitalist economic logic. We need to continue to shift our efforts from individual to collective, exclusive to inclusive, and technical to political to break up corporate power and other intersecting oppressions. This work is critical to building a more caring, sustainable and just food system.

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“Agroecology in Africa has a female face”

Leonardo van den Berg and Janneke Bruil

A community educator and food justice activist, Leonida Odongo has an impressive knowledge of the reality of farmers in Africa. In this interview she talks about the impact of Covid-19 on women in Africa and the importance of tafakari; reflection with farmers on their own experiences. “It is becoming clear that the future is agroecological”.

How has Covid-19 affected women in Africa?

Covid-19 regulations in Kenya required farmers to have a permit to transport food from one county to another. This was especially the case at the onset of the pandemic in Kenya in March 2020, but many farmers (particularly women) could not afford these. Other markets were closed to contain the pandemic. This was problematic because open air markets are key sources of livelihoods for women. There was also a lot of brutality meted on traders to enforce these measures, for example through the use of teargas to scatter the traders. Due to the financial stress and because people have to stay at home, there are also more conflicts within households, which has contributed to a spike in genderbased, domestic violence in particular.

Market restrictions also led to increases in food prices for consumers. Other regulations restricted people's movements between counties; As a result, families, especially those in informal settlements, had great difficulties in getting food. Some informal settlements were completely locked down. While the government announced that food would be provided to these settlements, local administrators controlled this food and only distributed it to people that supported them. This led to rallies and demonstrations, for example in Eastleigh, where people chanted: "You can't lock us up and not give us food", when the government enforced a lockdown restricting movement in and out of the area due to rising cases of Covid 19.

In addition, many companies in the capital city and towns shut down. Employees did not get their salaries due to closures and could not send remittances to rural areas – a crucial source of income for many rural families. This meant that farmers that depend on remittances were not able to till their land on time.

This situation was compounded by a locust infestation during the period of the pandemic. The government's main counter measure was aero-spraying, which we know has negative effects in terms of climate change and toxicity. Farmers have not received support to mitigate the impacts of both the pandemic and the locust infestation.

Profile

Leonida Odongo is an activist and educator working on agroecology, feminism, human rights and social justice, based in Kenya. Next to engaging in technical, legal and political education with rural communities and grassroots organisations, she also plays an active role in the Alliance for Food Sovereignty in Africa (AFSA), the World March of Women Kenya and Africa and the Civil Society Mechanism of the Committee on World Food Security. Leonida currently coordinates the activities of Haki Nawiri Afrika, an initiative advancing social justice among university students, smallholder farmers and communities negatively impacted by climate change. Email: leonida.odongo@gmail.com

The community dialogues enable women to have safe spaces where their voices can be heard and their concerns listened to

What is the biggest systemic challenge for African farmers?

Agribusiness companies have discovered that food is a billion dollar enterprise and are increasingly entering the African countryside. In even the most remote rural communities in Kenya, you will now find agribusiness shops that sell chemical fertilizers, pesticides and chemically produced seeds.

Agribusiness companies try to convince farmers to use chemical pesticides, claiming it makes the work easier and makes them have higher yields. However, what they don't say is that pesticides destroy biodiversity, make the

Knowledge is co-created by the farmers' own reflections and experiences

soil toxic and kill earthworms, butterflies, bees and other organisms. Research in Kenya has found alarming levels of pesticides in fresh foods, which are partly responsible for increases in cancer and other diseases due to the carcinogenic components they contain.

Many of the pesticides available in Kenya have been abolished by law in other countries. Unfortunately, weak legislative systems in Africa are leading to the continent becoming a dumping ground for what is no longer useful in other parts of the world.

How do you address the promotion of pesticides?

We use *Tafakari*, a Swahili word meaning 'reflection'. When working with farmers, you cannot demonise how they produce and what they are using without presenting alternatives. So we hold community sessions where farmers are able to reflect and share their experiences. Farmers often tell me that 10 or 20 years ago they grew food without using any chemicals. Now they do: prior to seeding, when crops are growing and even during harvest. Often they say that while these chemicals increased production initially, yields are now declining.

This is an entry point for us to discuss various issues. For instance, soil fertility. We ask farmers to bring a glass of soil from their farm and to observe how many leaves, earthworms and other organisms they can spot. If there are no leaves, it means there are no microorganisms. If there are no earthworms, it means that chemicals have killed them. With no leaves and organisms it also means that there is no humus in the soil. Then we reflect with farmers on the importance of microorganisms and humus and their roles in soil fertility.

We also use theatre to spark reflection. For example, farmers take the role of bees, farmers, butterflies or chemical companies and each actor shares how pesticides impact them. At the end a judge, who is Mother Earth, makes a verdict. In this way learning is made as easy as possible. After every session we converge with the audience to share their experiences and we discuss their challenges.

Art is a starting point to reflect on change.

In some of our reflections with farmers we invite an artist or a musician to express culture and its relation to the way food is currently produced. Musicians can play a song about traditional life in Africa and relate this to what is happening now. For example, right now there is a lot of individualism. It used to be unheard of to buy seeds from a shop, because you could always get them from your neighbours. Art can be a starting point to reflect on change.

What is the secret to the success of this approach?

Farmers want to see tangible change, so we discuss things they can associate with. The beauty is that we co-create knowledge informed by the farmers' own reflections and experiences. What we enjoy very much is transgenerational knowledge sharing, for instance when elderly farmers talk about the different herbs that can be used to make organic fertilisers and when young people participate in these sessions to learn from elderly farmers.

We also ask local, innovative farmers to come to talk about how they produce. When crops are failing, farmers approach them to ask: "how come your crops are not dying like mine?". These exchanges between farmers really help to re-emphasise that indigenous, agroecological forms of production really work. We also organise practical training on making compost, bio-fertilisers or natural pest repellents, for example from the leaves and bark of the Neem tree. We don't put too much emphasis on writing and instead focus on listening and practical exchange.

What is the role of women and feminism in these initiatives?

Agroecology has a female face. The majority of people who till the land and save seeds are women, who have relationships and knowledge that are important for agroecology. Sadly, when you go to an African household you will find that men control the land, cattle and coffee or tea plantations. These are deemed to be 'male' crops, whereas women control crops that do not earn cash for the household but are mainly for subsistence. Ironically, it is the women who harvest the tea and coffee and take it to the millers for processing, but when the cash gets paid, it is the males who control this money. In some cases, when farmers are paid bonuses or when prices of commodities in the market go up, men tend to leave home, go to the nearest town and spend all the money. That is why it is important to start a dialogue about food production and who controls the resources.

> Women can be bold, resilient and transformative.

The community dialogues enable women to have safe spaces where their voices can be heard and their concerns listened to. These platforms also provide opportunities for women to recognise their importance as women, not only in terms of reproduction but also in terms of production. They enable women to get access to opportunities to interact and speak about issues such as domestic violence, reproduction, health and education or discuss other issues affecting their children.

Women save seeds and have knowledge that is important for agroecology

More spaces are being created for women to participate in decision making

Patriarchy is very much entrenched in African culture and it takes time for it to change. In communities we have discussions around gender roles about food production and the overall work on the farm and in the household. We ask: Why is this happening? What is the economic contribution of each person in the household? Why do we need to change? In these platforms we get women to speak directly to men on why patriarchy hurts food production. This self-analysis is the beginning of changing gender roles. We are seeing that the men we have worked with are changing in terms of how they interact with women. But a lot still needs to be done, not only in Kenya but across Africa.

With all that is going on, what gives you most hope for the future?

What gives me hope is that it is becoming clear that the future is agroecological. The emergence of many problems including new pathogens such as Covid-19 are related to the destruction of ecosystems. This makes a strong case for agroecology.

Another hopeful development is that more spaces are being created for women to participate in decision making and that women have great skill in organising. In order to change people's mentality more structurally, there is a need for stronger women's networks that are advancing rural women's leadership. And we see these are growing. Through dialogues we have been able to create a network of over 300 women in Eastern Kenya that work on issues of agroecology. The 'We are the solution' campaign, led by women in West Africa, is another example of a strong women-led network that promotes female voices in policy processes for family farming. And in Southern Africa, there is a Rural Women's Assembly.

We find that women connect with each other faster than men; they tend to share easier. They have more spaces for interaction, not only while farming but also in the market and other places. Of course, the interaction with men is also important. You can't solve patriarchy-related problems if you don't include men. But when women come together, they learn from each other and grow together. We know that organised women are bold, resilient and transformative.

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Farm on Wheels initiative in Mawhiang village

NESFAS

Self help is the best help

Indigenous farmers stand strong against economic slowdown

Janak Preet Singh

Farm on wheels, an initiative to sell local produce has enabled the farmer groups to access diverse local markets in a decentralized manner. In doing so this initiative has set an example to all other farmer groups collaborating with NESFAS in Meghalaya and encouraged them to adapt it and take it forward in their areas.

The world is hit by a global pandemic, taking everyone by storm and severely impacting various regions. Covid-19 has disrupted the economy throughout the world with small farmers being particularly vulnerable as they lack base capital to tide over the lull in the economy. Closure of regular markets or their partial functioning subject to stipulated government protocols have caused great economic hardship to many. This, however, has not deterred the self-reliant Indigenous farmers. They have withstood this test of time and have come out with innovative solutions to tackle the crisis with the support of NESFAS(The North East Slow Food and Agrobiodiversity Society), a not-for-profit organization with its head-office in Shillong, Meghalaya that works to promote, defend and revive the indigenous food systems in North East India.

NESFAS is located in Shillong, the capital of Meghalaya. NESFAS is working in 130 villages of Meghalaya and Nagaland and is currently implementing a Rural Electrification Corporation (REC) Foundation funded project- 'No one shall be left Behind "Biodiversity for Food, Nutrition and Energy security for 3000 households. At present NESFAS is engaged with 3249 farmers in various activities, primarily engaged with small scale Indigenous Women farmers who are mostly practicing shifting cultivation. Some are also engaged with more settled agricultural system like paddy and bun or terrace cultivation. These farmers keep local seeds which are passed on to them by their elders. Though the local seeds are slowly disappearing, special efforts are being made to revive them with help of activities like seed exchange programmes and establishment of community level seed banks.

These farmers usually sell their produce in weekly local markets. Some hire a small space and some make temporary arrangements and vend on floors and pavements. They also sell the produce to traders who come and buy the products. However, because of COVID 19, this way of selling was highly affected.

One of the local solutions devised to tackle the regular market disruption and to overcome the livelihood challenges is the launching of an initiative called the 'Farm on wheels'. This timely initiative is a platform for farmer groups to sell their produce directly to consumers and at the same time, create sustainable

Kitchen garden of Rajesh B Marak in Darichikgre Garo hills

livelihood opportunities for themselves. In fact, it is literally a vehicle which the farmer groups hire to sell fresh local produce once a week or whenever the produce is ready. Around 200 farmers/ 30 farmer groups spread in various districts of Meghalaya got involved. These farmers hire a vehicle. No groups own a vehicle still, but the plan is to purchase in the future from their group savings.The farmers map out the market days and accordingly make a plan. Usually the Farm on wheels is operative twice a week. From each group only 1 to 2 farmers accompany the vehicle. This is done to ensure cost savings. NESFAS has helped these farmer groups with promotional material, some seed money and trained them on book keeping. In fact, these small scale indigenous farmers grow a variety of produce/ diverse produce. Some produce is also foraged from the wild. The produce that is marketed includes a variety of foraged wild edibles, cultivated vegetables like potatoes, carrots, beans and other seasonal vegetables, fruits, and pulses. The farmer groups associated with NESFAS are

making use of the Farm on Wheels platform. They are also selling in the local markets as covid protocols are easing down. This initiative aims at allowing businesses to function while adhering to social distancing norms and actually take the market to the consumer. It ensures the urgent need to safeguard domestic food security and also the ability to market their local produce right from buying to selling.

However, the challenge faced with with regard to tradeable quantities as most of the small scale farmers have limited quantities and sell only the surpluses. Even after aggregation, they realise small quantities thereby limiting the number of visits to the market.

In doing so, this initiative has set an example to all other farmer groups collaborating with NESFAS in Meghalaya and encouraged them to adapt it and take it forward in their areas. In addition to the Farm on Wheel initiative some groups in West Jaintia Hills of Meghalaya, with the help of the Society for Urban and Rural Empowerment (SURE) has bridged the gap between farmers and consumers with a local online platform 'Syllad' (https://syllad.com/store) which enables sale of vegetables online. NESFAS partner NGO, Society for Urban and Rural Empowerment (SURE) coordinates the process between the farmers groups and the online 'syllad' initiative. SURE notifies syllad on the availability of produce and helps in procuring the produce from the farmers. The produce is sold under the tab- Fruits and Vegetables on the syllad online store. For more details, please visit the website. This partnership also helped deliver the goods to the homes of the community members in both urban and rural areas. Farmers are also now putting in an extra effort to cultivate healthy local produce in their kitchen gardens/home gardens to increase production and are sharing local seeds with other members of the community who are in need.

In Garo Hills, indigenous farmer groups have advocated the need for diverse kitchen gardens amongst community members. They are emphasizing on clean, local and nutrient-rich food for good immunity in our fight against the COVID-19 virus besides safe guarding domestic food security and livelihood sustenance. COVID-19 in some way has highlighted the importance of dependency on local diversity for food and livelihood. It has empowered the local farmers to strive for self-reliance and self-sufficiency, something that the Indigenous farmers have always been advocating but had lost its significance in the day of mass-production centric industrial agricultural system.

Seed exchange at Mukhap

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Natural farming and agroecology could accelerate inclusive economic growth in India

International experts in a convention organized on 29 May by NITI Aayog endorsed efforts to significantly boost agroecological and natural farming approaches in India.

Speaking to an audience of senior international and national experts and policymakers, Minister of Agriculture, Shri. Narendra Singh Tomar stated, "Natural farming is our indigenous system based on cow dung and urine, biomass, mulch and soil aeration [. . .]. In the next five years, we intend to reach 20 lakh hectares in any form of organic farming, including natural farming, of which 12 lakh hectares are under BPKP [Bharatiya Prakritik Krishi Paddhati Programme].

Setting the scene for the online High-level Roundtable, the first of its kind in India, NITI Aayog Vice-Chairman Dr Rajiv Kumar established a high bar for the transformation and renewal of agriculture in India when he asked whether agroecology and natural farming can 'avoid excessive and wasteful use of water, prevent farmer indebtedness, contribute to mitigating greenhouse gases while supporting farmer incomes and their ability to adapt to climate change'.

International experts from the US, UK, Netherlands, CGIAR, Australia, Germany, and of UN acknowledged India's pioneering leadership in the arena of agroecology—the science of applying ecology to agriculture for sustainable outcomes that are more resilient to climate shocks such as droughts or flooding and pest attacks, but are still productive and support farmer's livelihoods—and especially natural farming, which is a form of agroecology.

The gathered experts provided evidence from latest studies, cutting-edge research, and science as well as practical experience from economics, finance and markets. The overwhelming conclusion was to support the Minister's conclusion that natural farming and other agroecological approaches, such as organic agriculture, have great promise for a renaissance of Indian agriculture, so that farming is not just productive but truly regenerative and sustainable.

In his concluding remarks, Dr. Rajiv Kumar emphasized that agroecology is the only option to save the planet and is in line with Indian traditions said, it is not man vs nature, but the man in nature or man with nature. Humans need to realize their responsibility in protecting other species and nature. We need knowledge-intensive agriculture and the metrics need to be redefined where production is not the only criterion for good performance. It has to include the entire landscape and the positive and negative externalities that are generated by alternative forms of agriculture practices.'

https://krishijagran.com/agriculture-world/natural-farming-and-agroecology-could-accelerate-inclusive-economic-growth-in-india/

India can access carbon credits worth USD 50-60 bn if propagates agroecology: Niti Aayog

New Delhi: Suggesting adoption of innovative farming methods based on ecological principles, Niti Aayog vice chairman Rajiv Kumar on Friday said India can have access to carbon credits worth USD 50-60 billion if it propagates natural farming and agroecology.

Kumar during a virtual high-level round-table on 'Agroecology and Regenerative Agriculture' also stressed on the need to make agriculture more knowledge intensive. He said there is a need to ensure that natural farming is scalable and absorbs innovations.

"We can also access green bonds market worth USD 1 trillion," Kumar said, adding that India will have to practice agroecology as an innovative process and broaden the metrix for measuring results.

"India can have access to USD 50-60 billion worth of carbon credits if it propagates natural farming and agroecology," the Niti Aayog vice chairman said.

"Can't carry on with past practices because that is like driving a car in a dead end street. Need to change direction for saving the environment and improve farmers welfare," he said.

In India, there has been a long history of farming that is based on traditional and environment-friendly practices. The state of Sikkim became the first-ever organic state in the world and was awarded the UN Future Policy Gold Award, 2018. Agricultural production accounts for 40 per cent of global land surface and is responsible for 70 per cent of projected losses in terrestrial biodiversity.

Moreover, agricultural activities are one of the main contributors to human emissions of greenhouse gases and responsible for 25 per cent of total emissions due to intensive fertiliser usage and deforestation, negatively impacting well-being of at least 3.2 billion people.

https://economictimes.indiatimes.com/news/economy/agriculture/india-can-access-carbon-credits-worth-usd-50-60-bn-if-propagates-agroecology-niti-aayog/articleshow/76096876.cms

Biochar helps hold water, saves money for farmers: Study

Washington [US], October 19 (ANI): The abstract benefits of biochar for long-term storage of carbon and nitrogen on American farms are clear with the new research from Rice University that also shows a short-term, concrete bonus for farmers. The concrete bonus would be money which will not be spent on irrigation.

In the best-case scenarios for some regions, extensive use of biochar could save farmers a little more than 50 percent of the water they now use to grow crops. That represents a significant immediate savings to go with the established environmental benefits of biochar. The open-access study appears in the journal GCB-Bioenergy.

Biochar is basically charcoal produced through pyrolysis, the high-temperature decomposition of biomass, including straw, wood, shells, grass and other materials. It has been the subject of extensive study at Rice and elsewhere as the agriculture industry seeks ways to enhance productivity, sequester carbon and preserve soil.

The new model built by Rice researchers explores a different benefit, using less water. "It's still an emerging field," said lead author and Rice alumna Jennifer Kroeger, now a fellow at the Science and Technology Policy Institute in Washington. The study co-led by Rice biogeochemist Caroline Masiello and economist Kenneth Medlock provides formulas to help farmers estimate irrigation cost savings from increased water-holding capacity (WHC) with biochar amendment.

The study analyzes the relationship between biochar properties, application rates and changes in WHC for various soils detailed in 16 existing studies to judge their ability to curtail irrigation. The researchers defined WHC as the amount of water that remains after allowing saturated soil to drain for a set period, typically 30 minutes. Clay soils have a higher WHC than sandy soils, but sandy soils combined with biochar open more pore space for water, making them more efficient.

WHC is also determined by pore space in the biochar particles themselves, with the best results from grassy feedstocks, according to their analysis.

In one comprehensively studied plot of sandy soil operated by the University of Nebraska-Lincoln's Agricultural Water Management Network, Kroeger calculated a specific water savings of 37.9% for soil amended with biochar. Her figures included average rainfall and irrigation levels for the summer of 2019.

The researchers noted that lab experiments typically pack more biochar into a soil sample than would be used in the field, so farmers' results may vary. But they hope their formula will be a worthy guide to those looking to structure future research or maximize their use of biochar.

https://www.malaysiasun.com/news/266734629/biochar-helps-hold-water-saves-money-for-farmers-study

Naveen Kumar who developed 'Na Panta'

App that helps farmers get better yield

NaPanta is a free to download 'Agricultural crop management' mobile application. Available on the Android platform, it currently has over 1,17,000 users (farmers) from across Andhra Pradesh and Telangana.

In December 2016, Hyderabad-based Naveen Kumar decided to travel to his hometown Hanamkonda in Warangal. Little did the founder of 'ApnaLoanBazar,' (an online retail loan aggregation platform) know, this trip would change his life.

He recalls, "The incident is clear in my head. A farmer was found dead. He had committed suicide by consuming pesticide after being cheated by a dealer who sold him adulterated cotton seeds, for a profit of Rs 300. And while the crop had grown in all its beauty, it failed to yield anything. With no option to recover the loss or repay the cost incurred for the crop, the farmer took the drastic step of killing himself".

Naveen couldn't sleep for nights. So he conducted extensive ground research with farmers across villages, agricultural officers, scientists experts etc. and stumbled upon some unique findings.

"We didn't invest a penny in marketing when we developed the app. It was an absolute surprise for us that within four months we had over 50,000 farmers downloading it. Most of the farmers would promote it through word of mouth and share the app using 'ShareIT.' From then to now, the journey has been a rollercoaster ride and full of learnings. Today, I can proudly say that NaPanta is like an agricultural encyclopedia for the marginal farmer. Once they use our app for any kind of information, they don't need to go to any additional source."

Naveen realised it was easier for well-to-do and educated farmers to benefit from the information available on government portals and via agriculture authorities on best practices. But marginal farmers wasted over 20-30% of their time in collecting information from different physical sources. And even in the pursuit of doing this, they were being cheated.

A mere lack of information made these farmers fall prey to spurious seeds, fake fertilisers, low cost for produce and exploitation by middlemen.

"And so, effective communication is the need of the hour in Indian agriculture. There is a huge gap between the actual on-field situations and government supported activities. To fill these gap, we developed the app and offered it to the farmers for free. Our app is designed primarily to serve small and marginal farmers," says Naveen.

The NaPanta app was, therefore, Naveen's unique solution to help farmers better their crop yield and curb the rising farmer suicides.

NaPanta – Developing an agri-encyclopedia!

NaPanta is a free to download 'Agricultural crop management' mobile application. Available on the Android platform, it currently has over 1,17,000 users (farmers) from across Andhra Pradesh and Telangana.

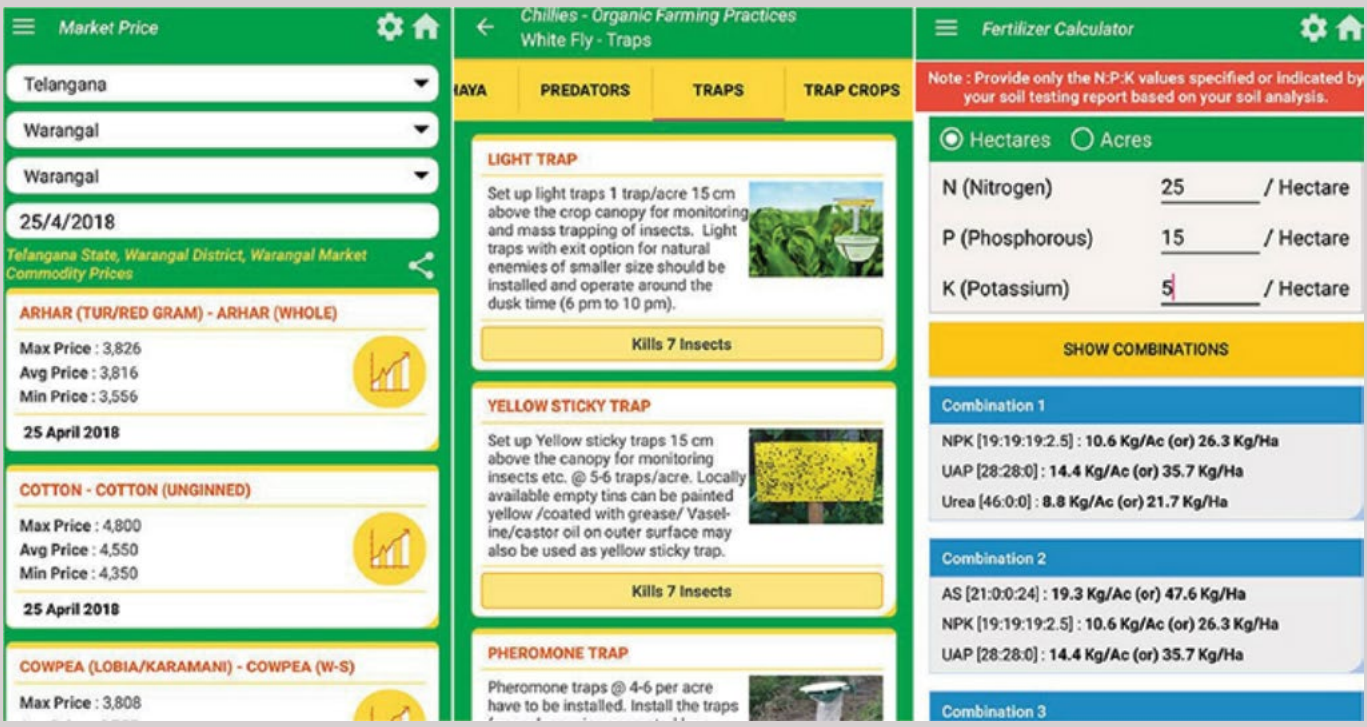
The startup is incubated and supported by AIP-ICRISAT and IIIT-Hyderabad and helps farmers access all kinds of agriculture-related information they need in real-time.

From daily market prices in 3500+ markets to a three-year price trend of over 300+ Agri commodities, everything is a mere click away. All the farmers need is a simple mobile internet connection.

Also, NaPanta helps farmers track their expenses in an organised manner and gives them detailed information on the availability, composition, preparation techniques of pesticides and insecticides.

It also displays a five-day weather forecast, information on crop insurance, location of soil laboratories, cold

A screengrab of the NaPanta app



A farmer training programme on the use of the app

storage facilities and agri-dealer contacts across the two states.

For those farmers who find it difficult to have an internet connection at all times, the app also has offline features with information on crop and pest management techniques for over 100 crops.

The app is currently available in Telugu and English and also helps small time, and marginal farmers buy or rent agriculture equipment for very affordable prices and sell their produce directly online without the interference of middlemen.

Failing their way to success

The road to developing the successful app was anything but easy. Within three months of its launch, the app had over 50,000 farmer takers. But it was only a matter of time until they started uninstalling it. The reason – there was little information and it did not meet the expectations of the farmers. Each of them has a unique requirement to be addressed which made the task at hand difficult.

"When we added too many offline features, their phones started crashing thereby leading to more uninstallations. But we persevered and after much trial and error arrived at the model when we offered over 16 services while maintaining the app installation size to less than 40Mb. This helped farmers even with the most simple smartphone to access and benefit from the app," says Naveen.

"Evolution and adding new features continues to be a constant process," he adds.

It is important to mention that all the data in the app follows the guidelines of CIBRC (Central Insecticides Board & Registration Committee) guidelines. Even the market price of agricultural commodities in various mandis available in India is acquired from agmarket.nic.in

Today, NaPanta has reached 1,17,000 farmers. The daily unique farmer visitors are over 3,000, and the daily app interactions are more than 25,000.

The reach of NaPanta reflects in the results of the extensive survey the University of California, Berkeley conducted in the villages of Andhra Pradesh with over 10,000 farmers. The students wanted to understand how farmers use technology for agricultural practices.

Naveen with a farmer

It was only a matter of time until NaPanta was invited to be a part of the Andhra Pradesh State Government and University of California's smart village project in these villages.

He fondly recalls how at a farmers meeting in Thallapusalapalli near Mahabubabad he was amazed to see some of the most progressive farmers using NaPanta for their activities.

"In presence of the Joint Collector, the chief guest, they told me how the app had transformed their farming methods. Even the District Agriculture Officer (DAO), Joint Director of Agriculture (JDA) and Assistant Director of Agriculture (ADA) of Telangana have shown interest in NaPanta and are encouraging the farmers community to benefit from it." While Naveen is presently in Mumbai pitching to the State Government of Maharashtra, NaPanta has already managed to get the state governments of Andhra Pradesh and Telangana on board.

He signs off, with a message on leveraging technology for the cause of the farmers. "The perfect blend of resources and technology is all that is required. What one needs to understand here is, a farmer is not concerned with lengthy articles about best agricultural practices, theories, and verbal comprehension! All he/she wants is hard facts obtained from and by other farmers toiling in the field. Present them with the right information and proper guidance, give them a solution to their problems and make sure it easy to understand. That's how you spark a revolution in agriculture."

Today, NaPanta has reached 1,17,000 farmers. The daily unique farmer visitors are over 3,000, and the daily app interactions are more than 25,000. Helping farmers master crop management techniques – one click at a time!

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This is an edited version of the original published at https://www.thebetterindia.com/170783/hyderabad-man-develops-app-that-helps-75000-farmers-get-better-yield/

NEW BOOKS

Smart Agriculture
Emerging Pedagogies of Deep Learning, Machine Learning and Internet of Things

Govind Singh Patel, Amrita Rai, Nripendra Narayan Das, R.P. Singh; *2021, CRC Press*, 254 p., ISBN 9780367535803

This book endeavours to highlight the untapped potential of Smart Agriculture for the innovation and expansion of the agriculture sector. The sector shall make incremental progress as it learns from associations between data over time through Artificial Intelligence, deep learning and Internet of Things applications.

The farming industry and Smart agriculture develop from the stringent limits imposed by a farm's location, which in turn has a series of related effects with respect to supply chain management, food availability, biodiversity, farmers' decision-making and insurance, and environmental concerns among others. All of the above-mentioned aspects will derive substantial benefits from the implementation of a data-driven approach under the condition that the systems, tools and techniques to be used have been designed to handle the volume and variety of the data to be gathered.

Routledge Handbook of Gender and Agriculture

Carolyn E. Sachs, Leif Jensen, Paige Castellanos, Kathleen Sexsmith, *2020, Routledge,* 486 p., £152.00, ISBN 9780367190019

Gender relations in agriculture are shifting in most regions of the world with changes in the structure of agriculture, the organization of production, international restructuring of value chains, climate change, the global pandemic, and national and multinational policy changes.

This book provides a cutting-edge assessment of the field of gender and agriculture, with contributions from both leading scholars and up-and-coming academics as well as policy makers and practitioners.

The handbook has an international focus with contributions examining issues at both the global and local levels with contributors from across the world.

With contributions from leading academics, policymakers, and practitioners, and with a global outlook, the *Routledge Handbook of Gender and Agriculture* is an essential reference volume for scholars, students, and practitioners interested in gender and agriculture.

Agricultural Development and Sustainable Intensification
Technology and Policy Challenges in the Face of Climate Change

Udaya Sekhar Nagothu, 2020, Routledge, 326 p., £29.59, ISBN 9780367590932

Sustainable Intensification (SI) has recently emerged as a key concept for agricultural development, recognising that yields must increase to feed a growing world population, but it must be achieved without damage to the environment, on finite land resources and while preserving social and natural capital.

This multidisciplinary book presents state-of-the-art reviews of current SI approaches to promote major food crops, challenges and advances made in technology, and the institutional and policy measures necessary to overcome the constraints faced by smallholder farmers. The focus is not only on scientific aspects such as climate-smart agriculture, agroecology and improving input use efficiency and management, but also on institutional and policy challenges that must be met to increase the net societal benefits of sustainable agricultural intensification. The book is aimed at advanced students and researchers in sustainable agriculture and policy, development practitioners, policy makers and non-governmental and farmer organisations.

SOURCES

The Priorities of Indian Agriculture & Allied Rural Development For 2020-21-22.

Pradeep Chavan, *July 2019*, Format: Kindle Edition

Agriculture and rural development are inseparable. The country has to strike a precise balance between the induction of the latest technology and at the same time generating employment opportunities by promoting labour intensive organic agriculture & agribusiness. The emphasis has to be on sustainable development all through out.

The study questions the common trend of looking for solutions from other developing countries and emphasizes the need for our own analysis. The monograph proposes the immediate interventions in a strip of sixteen 'pills' when administered, within the next three years will hasten the qualitative, quantitative and sustainable development of Indian Agriculture and Rural Bharat. The study also puts together all the beads like organic agriculture, conservation of soil organic carbon and judicious use of resources such as fertilisers & irrigation water by using the common thread called sustainability.

Rural Marketing
Challenges and Opportunities

Dinesh Kumar and Punam Gupta, *January 2019, SAGE Publications Pvt. Ltd.,* 536 p., ISBN: 9789386062765

This new textbook discusses how the application of traditional marketing theories transforms when the 'fourth sector', or the emergence of social business, comes into play. Drawing from latest research, *Rural Marketing: Challenges and Opportunities* closely analyses two crucial components of the rural market—marketing to rural areas and empowering the 'bottom-of-pyramid' (BoP) markets to create successful business ventures. This book goes beyond discussing just the strategies to sell products to village economies. Infused with numerous real-life case studies of companies that have ventured into the field, this book will prove to be an extremely useful resource in understanding the uniqueness, dynamics and challenges of marketing in rural areas.

Innovating for Rural Markets in India 1st Edition

Dr. Subho Chattopadhyay, May 2016, CreateSpace Independent Publishing Platform; 116 p., ISBN-10 : 1533047111

The Indian rural market till long had been thought of as an inaccessible, unsubstantial market with limited purchasing power. This belief has prompted the marketers to blatantly evade the call of the rural markets.

The catch is that a sizeable portion of the rural consumer does not prefer to buy in bulk but have a propensity to buy in small amounts as and when required. This presses on the need for some change in the products, services and packaging and opens up a strong case in favour of innovation for the rural markets. Establishing an intensively wide and deep distribution channel may not always be economically viable and profitable. This presents another scope for innovation for the marketer intending to penetrate into the rural markets. The book attempts to give a brief account of the Indian rural market, explore the possibility of using innovation for penetrating into this market and point to and justify the suitability of some specific types of innovations for the rural market of India.

The power of women's networks for agroecology in India

A photostory by
Soumya Sankar Bose and
Amrita Gupta

"We knew we needed a space to save our native varieties of seeds and transmit the traditional knowledge of farming which is agroecological, which does not harm nature," says Chukki Nanjundaswamy, coordinator of Amrita Bhoomi near Bangalore, Karnataka – a peasant agroecology training center established to prove that an alternative farming model can exist. As a member of La Via Campesina, the center offers training based on the farmer-to-farmer approach, centering agroecology, peasant rights, food sovereignty and social justice.

Through their community networks and self-help groups, women have scaled agroecology from village to village

Commercial, industrialised agriculture has made women farmers invisible in much of the Global South. India is no exception. This is changing with India's Zero Budget Natural Farming practices (now more often referred to as Community Managed Natural Farming), which are being used by nearly a million smallholder farmers. Women, with little access to credit, land, or commercial seeds, have turned out to be its strongest dvocates.

Through their community networks and self-help groups, they have scaled agroecology from village to village; improving not only household nutrition, incomes, and soil health, but also their own agency and dignity. Within their practices, feminist logic takes precedence over traditional market dynamics. However, the approach has also created political tensions and controversies.

In Andhra Pradesh, women's self-help groups have been instrumental in spreading the principles of agroecological farming from village to village – without this grassroots women farmers' movement, it would have been impossible to scale these practices up and out to the nearly 600,000 farmers reached today, or to reach the

Women are instrumental in improving household nutrition, incomes, and soil health

A woman's collective in Anantapur

targetted 6 million farmers by the end of the decade. Most of the programme's staff and trainers are women farmers.

There are many landless women farmers in Anantapur (Andhra Pradesh) – some are widows of farmers who have committed suicide (an ongoing tragedy in India), others were rescued from trafficking. Nearly all are victims of caste discrimination. A group of them has come together to collectively lease land that was previously lying fallow. The women share their skills, knowledge, and labour amongst themselves, growing pesticide-free food for their families. They sell the surplus at their farm stores, and also deliver vegetables to customers' homes by bicycle – micro-enterprises that they are eager to see grow. The women in the collective have devised a rota system for farm work that allows them to manage both production and care work at home. Here, feminist logic takes precedence over traditional market dynamics. The women pay each other partial wages during the agricultural season, ensuring pre-harvest cash flow to cover household needs Beyond improved finances, agroecology also pays dividends in the form food sovereignty, self-reliance, and dignity.

Sujatha and her husband Jagadish have been practicing natural farming for nearly ten years on their 4-acre farm in Gottigehally, Karnataka. The transition from chemical farming was challenging, says Sujatha, but as they learned about the health hazards associated with chemical pesticides and fertilisers, their resolve strengthened. Now, their farm is being cultivated according to the five-layer model of natural farming: an ecosystem that is more forest than field. "There are maybe more than 200 varieties growing on my plot," says Jagadish. The couple grow bananas, coconuts, guavas, jackfruit, sweet potatoes, pulses and lemons, while also experimenting with coffee on the sloped areas of their farm.

Chickens and goats are free-range. Taller trees – silver oak and moringa – form a natural fence, and when these trees shed their leaves, this serves as a mulch, building humus in the soil.

Nisarga Nisargaka Savayava Krushikara Sangha is a self-sufficient cooperative group in Honnur, Karnataka. All members practice natural farming together, keeping social and caste discrimination aside. While Zero Budget Natural Farming is successfully being scaled, its popularity also brings political challenges and controversies. Central to ZBNF practices is the use of cow manure and urine to enhance soil microbial activity. Some critics have argued about exclusion of some communities and confusion about the programme's stance on genetically modified seeds. The Andhra Pradesh government shuns the use of GM and hybrid seeds in this approach, while other groups have approved their use. Thus, despite the scale it has achieved, there is still doubt about whether ZBNF practices will be successful in systems that have become heavily dependent on industrial inputs and technologies, such as the Bt cotton belt of India.

Jagdish follows five-layer model of natural farming: an ecosystem that is more forest than field

Kavitha Kuruganti discussing with farmers

In much of the world, women like Bayamma Reddy have long been the guardians of indigenous seeds; through agroecology, their wealth of knowledge and role on the farm has regained value. When Bayamma's sons left for higher education, she began to practice natural farming on the plot of land near her house, using the knowledge and skills that had been passed down to her across generations. She is from Balakabari Palli, Andhra Pradesh, which lies in one of the most drought-prone districts in the country. In these regions, commercial crops that require irrigation and other expensive inputs have proven to be untenable. To ensure a diverse food basket and mitigate the risk of crop failure, she and her husband follow the traditional practice of *navdanya* (sowing a combination of nine cereals and millets) before the onset of the monsoons.

Kavita Kuruganti is the founder of ASHA, the Alliance for Sustainable and Holistic Agriculture. She is also associated with MAKAAM, a nationwide forum of more than 120 individuals and women farmers' collectives, civil society organisations, researchers and activists, drawn from 24 Indian states, which works to secure due recognition and rights of women farmers in India. In a recent interview, Kavita explained how women were traditionally engaged in labour-intensive farm work like transplanting, weeding, and harvesting. However, as she explains: "As agriculture gets oriented towards markets, with an increasing reliance on herbicides and machines, men take over the decision-making." Practicing agroecology allows women to reclaim their decision-making rights.

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The photos on these pages are made by Soumya Sankar Bose. Amrita Gupta wrote the text and works with the Agroecology Fund. Contact email: amrita.agroecologyfund@gmail.com

This photo story is based on field visits and workshops during a week-long learning exchange in February 2020 in Southern India, where nearly a hundred agroecology practitioners, advocates, researchers and policymakers from more than 30 countries convened.