Bhoomi Ka
CLEAN | GREEN | FAIR

NATIONAL COALITION FOR NATURAL FARMING

Spreading Roots

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Our country is beautiful and bountiful which has been possible only because of our smallholder farmers. In spite of their resilience being challenged by industrial scale monocultures oriented towards production enhancement and bulk distribution, smallholder farmers are producing almost all our millets, tubers, vegetables, and proteins, requiring much less fossil energy inputs and also growing diverse crops, cultivars and breeds. This diversity increases resilience for all. Smallholder farmers have demonstrated over many generations their ability to provide healthy nutrition and maintain intact ecosystems. We have learnt from them about the magic of producing food, fodder and fibre while emulating and working with the nature.

On the 75th year of India's independence, we present here stories of 75 smallholder farmers from across the country, who practise natural/ecological farming and who have been lighthouse for many. We bring in these inspiring stories shared by facilitating organisations. These stories remind us that the smallholder farmers, who represent a large portion of our population, have been major contributors to the country's well-being, resilience, and sovereignty. We are aware that these stories are just a few patches on the beautiful large patchwork which cover our needs, and there are many more. Let the collection of such stories spread roots till they become a reality against all odds.

Send us your stories. Let us celebrate 75 and beyond.

Anshuman Das | Welthungerhilfe
Jagdeesh Rao | CEO, National Coalition for Natural Farming

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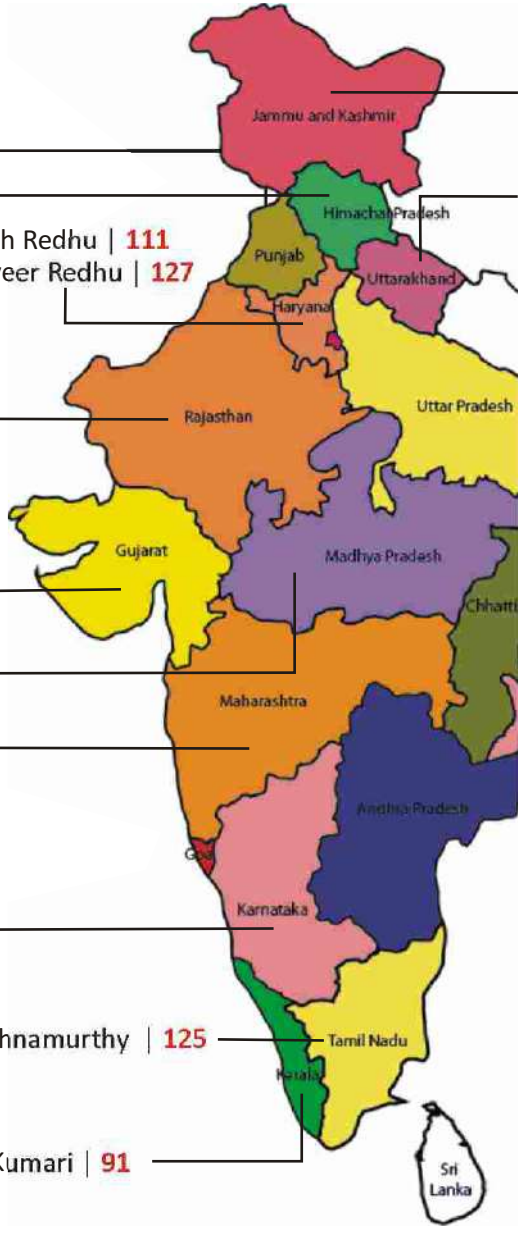

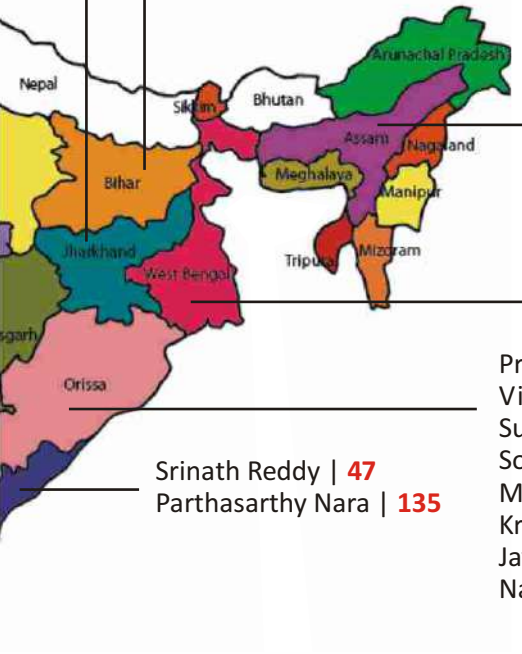

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Leading from Front

Kamla Ben, born to a family of farmers, has been farming ever since her childhood. Now, a mother of 2 sons, and wife of Shankar bhai, she still continues her practice as a farmer.

Kamla Ben got associated with HDRC and started working for the tribal rights, but life started to change when she was introduced to Working Group for Women and Land Ownership (WGWLO) through HDRC and became a Mahila Kisan Sakhi, whose primary job is to educate the women farmers about land rights and sustainable agriculture. She participated in the training and capacity building programmes, and started to interact with the women farmers across 15 villages. But soon she realised that female farmers were reluctant to adopt sustainable agriculture methods. After introspection, she realised that they do not have any role models with whom they can relate. So, she decided to step up, and just like a true leader, she decided to lead by

Damor Kamla Ben, Shankar Bhai

Nawaghara, Meghraj, Aravali, Gujarat | **Land:** 4 and a half bighas + 7 bighas
Grows: Vegetables, Millet, Watermelons
Support: Human Development and Research Centre

example.

Her husband had a farming land of about 4 and a half bighas, which he cultivated jointly with his 2 brothers. She discussed with them the benefits of sustainable agriculture in the long run. But they remained unconvinced. This made her realize the importance of land rights for a woman. Though they work equal to the male members, they have little to no say when it comes to decision making. But Kamla Ben did't give up after lots of effort, she convinced them to start sustainable agriculture in half a bigha of land.

She started farming through SRI method in 2017. At first, she sowed wheat in the half bigha land. She used cow dung manure, prepared a bio-pesticide called *Amrit Pani* and applied the lessons she learned from her training. In the first year the production was very less. But the food tasted far better. The taste of the food and also the perseverance of Kamla Ben, compelled her husband Shankar Bhai to support her. Kamla Ben then demanded to include her name in the land records of her family, and she was successful. In the next 2 years, the production gradually increased.

> **“Having a piece of land in my name made all the difference.”**

In 2019, they purchased 7 bighas of land in nearby Valuna village, for which they used their savings and also took a loan. In that land they started cultivating watermelon using drip irrigation, indigenous varieties of millets, and green vegetables for household use. In her farming, Kamla Ben always uses local variety of seeds which she saved from the crop she produced. Except for cooking oil and spices, Kamla Ben seldom purchases any materials from market. She successfully sustained her family and also returned 70% of the loan that they had taken for purchasing the land.

Now other women farmers have a living example of how sustainable agriculture could benefit the overall production. Kamla Ben has now motivated and helped about 132 women farmers of 15 villages to adapt to sustainable agriculture. She also initiated seed banks in 15 villages of the local varieties of crop.

She has also received facilities from several schemes like Kisan Samman Nidhi Yojna, I-kissan, and also has got subsidy in hand pump for her land.

She is now an active advocate for women land rights and is a relentless warrior to motivate others to adopt sustainable agriculture.

Seeds and Weeds

The life and work of Suresh Kumar stands out as an example of individual commitment and resilience in forging community based actions towards sustenance of environment friendly agricultural practices. He is a local inhabitant of the Sarjapura village, and a farmer for past 2 decades. He started his hobby of farming as a teenager but couldn't continue it owing to his father's traveling job. After obtaining a degree in performing arts, Suresh Kumar made a rather curious choice of adopting agriculture as his artistic medium. There were several factors, recalls Suresh, which pushed him to choose farming as his preferred medium of expression - connection to the roots and lands of Sarjapura - his hometown - being the shared connection behind his aspirations.

Situated at the borders of Karnataka and Tamil Nadu, Sarjapura was famous for its silk and muslin. Post independence, Sarjapura transformed into an agriculture town and was quick to adopt scientific methods of farming popularised at the time of green revolution in the country. The indigenous crops of Sarjapura, which primarily consisted of edible weeds and vegetables, gave way to the cash crops supported by the 'Minimum Selling Price' (MSP) scheme of the government. Consequently, with the decline of indigenous

Suresh Kumar

Sarjapura, Anekal, Bengaluru | **Land**: Terrace garden, open farm | **Grows**: Indigenous plants, native vegetables, edible weeds
Support: Bengaluru Sustainability Forum

crops, its consumption, recipes, and knowledge also became scarce.

Another problem in replacing indigenous crops with cash crops in Sarjapura was dependence on chemicals. Farmers generally overuse chemical fertilisers to increase their yield which releases the toxins not just in crops but also in soil, water, fauna and human body.

Suresh identified the eluding indigenous knowledge base of Sarjapura as his area of intervention for his community based and ecologically inclusive art project built around natural farming and cultivation of indigenous crops. His project 'Sarjapura Curries' started as a terrace garden, backed by grant of Rs.5 lakh from Bengaluru Sustainability Forum (BSF). As a single parent he had to do a lot of cooking for himself and his daughter and the idea of a terrace garden with self-grown vegetables seemed like a perfect idea to introduce his daughter to local food and also maintain good health in the process.

> **"It's pretty unfortunate that people appropriate natural form of farming as a privileged practice"**

Suresh, then, expanded his practice to an open farm where he grows varieties of native vegetables and edible weeds. Through Sarjapura curries, Suresh also reaches out to fellow farmers by distributing them free seeds of indigenous edible weeds and training them in the ways of organic farming on terrace gardens and farms. Suresh also hosts public gatherings for tasting the local recipes made from edible weeds to encourage adoption of organic methods of food cultivation and consumption by both the community of farmers and consumers. It has not been easy, as people were sceptical about the viability of cultivating indigenous crops on a large scale, questioning the market and income of organic produce.

Now, there are many terrace gardens, and his efforts have been successful in getting together a local network of farmers, consumers, welfare organisations and enthusiasts who help in promoting and generating support for organic and indigenous methods of farming.

Sarjapura Curries by Suresh Kumar is an enterprising and holistic project which takes up the ambitious mantle of cultivation and preservation of Sarjapura's local ecology by way of organic farming. He seeks not only to revive the cultivation of indigenous crops but also preserve the local culture through documentation and archival of local recipes and curries for the future. Community participation and ecological inclusivity are the core elements of Suresh's project on which he strives to build the foundation of a healthy and sustainable future.

Anchoring the Future

My husband was a pioneer in natural farming. He was actively engaged with DSS. He never used chemicals and asked neighbours to taste our poison free food. With him passing away 10 years ago, I was left alone with two daughters and the remnants of his enthusiasm. I hit a slump at the beginning, but I wanted to keep his spirit alive.

So, I started anew. I kept close contact with DSS, who trained me in different techniques and methods of natural farming. These helped channel my efforts and resources. I have

Pranati Nayak

Narada, Khordha, Odisha | **Land**: half acre | **Grows**: Ladies' fingers, Cucumber, Ridge gourds, Brinjal, Pointed gourd, Lemon, Banana, Coconut and Elephant apple
Livestock & others: 4 Jersey Cows
Support: Darbar Sahitya Sansad

attended all the DSS training programs and went on several exposure trips to Krishi Vigyan Kendra (KVK) and model farms in different places which helped me obtain the necessary experience to channel my efforts and resources effectively.

I don't use any chemicals as I don't want to feed my children any poison. The DSS team has taught me to make hybrid fertiliser cum pesticide. *Handikhata*, is made from *Neem* Leaves, Pongamia, Calotropis leaves, fresh cow dung and cow urine. Owing to the treatment of pre-sown seeds with *Jeevamrut*, regular application of *Handikhata* and cow dung, the plants are healthier than ever before. The locally sourced inputs for the fertilisers have brought down the input cost. I own a small herd of 4 Jersey cows that provide me with inputs for the crops. *Neem* and Calotropis from my plot ensure ingredients for *Handikhata.*

> **"If a man can carry out natural farming on his own, what can stop a woman from doing the same. Why should she stop? Why should she lose hope?"**

My crops are healthy and the yield is much more than chemical farming. DSS provides good quality of local seeds. I sell a portion of the vegetables in the local market and DSS sells the rest to Bhubaneswar markets, which fetch a higher price. Vegetables from my land are well sought after.

I plan to invest in the dilapidated pond we own. I have got it cleaned and now awaiting water test results. DSS is helping me in getting free water sample testing by the Central Institute of Freshwater Aquaculture (CIFA).

The water crisis in recent years has depleted the water table. The small tube wells dry up and only select deep borewells have water. Nonetheless, Natural Farming has been a blessing. The vegetable sale came in handy during the lockdown period. My success has encouraged my sister-in-law to clear out a bit of land and start growing vegetables. A few other women in the village are also following the natural farming methods. I am happy and proud of my efforts. Women need to get motivated and break the social barriers to become the anchor of their own fate.

Safe Food for All

A few years ago, when I had just started farming, I made a mistake and sowed the *Ragi* crop in May. I later learnt that the apt time for it was towards the end of June. So eventually, our land was infected with a major pest attack. I knew that it was my fault and decided to let the worms have a feast. Some villagers asked me if their goats could graze since I wasn't harvesting. I agreed and for the next few days we had pests, goats and cows feed on the crop! Then when we had planned to sow a new crop, it rained! When we got

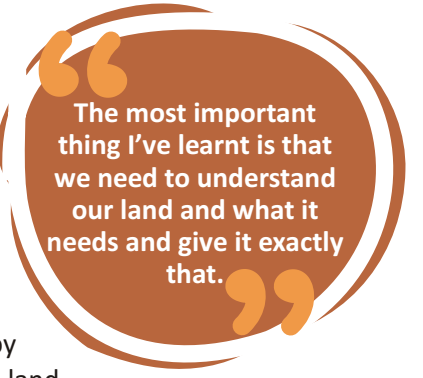
Raspinder Singh

Sherpur Kalan, Ludhiana, Punjab | **Grows**: Sugarcne, Mustard, Til, Wheat
Support: Kheti Virasat Mission

back to the farm, the *ragi* had regrown! We let it be and that was the best *ragi* yield we've ever had! With the animals feeding on it and the rains pouring, we were blessed with a rich soil. And since then, I truly believe that sharing with everyone, be it human beings or other creatures of nature, would never, ever bring losses!

I pursued engineering but I was not interested. I went ahead and pursued post-graduation, which was better. I took up Agricultural Engineering and realized that I understood things much faster since I had been around those farming instruments and technology all my life. Thereafter, I joined a fertiliser company but was unhappy there. I developed a skin condition which had something to do with the chemicals I was consuming through my food.

Hence, I took up quarter acre of land from my father and started growing things for our kitchen organically, part-time. It was a success! The yield, taste, everything was so different, even my parents and family were surprised! But it was hard to convince them to let me do this full time as they wanted me to go abroad. But I struggled and convinced them by working hard on the farm. Perhaps, it was family pressure that made me put in a lot of effort to study, learn, practice and implement natural farming.



I attended various sessions organized by the KVM and was very inspired by the passionate organic farmers. Slowly, I started practicing on more and more land, and started selling the produce to other families around me and built a network of exclusive buyers.

Other than that one time, I have never encountered a problem of pest management since we feed our land with great nutrients and it gives birth to healthy crops which can fight pests on their own. The most important thing I've learnt is that we need to understand our land and what it needs and give it exactly that. We also make sure we have zero waste. We never burn our residue and instead make compost or feed it to the cows. The cows' waste is used to make biogas, which we use in our kitchen and the kitchen waste, again, we give back to the land.

As of present, I am able to earn as much as a farmer using chemicals and I do the same without poisoning mother earth! I may not be earning a lot, but my needs are very less. I am at peace and get so much joy from doing what I do, I wouldn't trade it for the world!

Sustainable Ventures

Haridra Deka is an SHG member of Joymoti Mahila Gamya Sangathan in Daha village, five kilometres away from the town of Mangalda. She lives with her husband, two sons, sister-in-law, and her ailing mother-in-law. Her husband, the sole earning member, met with an accident which left him unable to take up his driving job. With an ailing mother and a physically challenged husband, there was an immediate need of new opportunities for survival.

In such circumstances, ITC – Mission Sunhera Kal came forward to help. When approached, she immediately showed great interest in all the activities under the initiative. The initiative was to enhance the income of small and marginal women farmers in

Haridra Deka

Daha, Pachim Mangaldai, Darrang, Assam | **Land**: 2 acres | **Grows**: Bananas, Beans, Spine gourd, Lemon, Pumpkin | **Livestock & others:** Pigs, Goat, Ducks, Chicken
Support: Seven Sisters Development Assistance

endemically poor regions of Assam through sustainable practice of NRM via integrated practice of farming. The SUSI model is a family-based approach of intervention, where a family would plan multiple livelihood activities based on the natural resources available with them. She attended all the trainings provided by SeSTA on the key interventions.

Earlier, they used to cultivate paddy and other seasonal crops in their land. Since the intervention, she started using vermicompost in her vegetable field and in the horticulture plot. The setup cost was INR7500. She planted banana and different types of vegetables in rows between the banana trees. Her vegetables and fruits sold for INR12500.

In the 2nd year, she decided to overcome societal restrictions and invested INR 22000 in piggery. She took a loan of INR 15000 from the revolving fund of her SHG. Her investment included the construction of the pigsty, buying a female sow, feed, and health management. The sow gave birth to 14 piglets, which she sold for INR40,000. Now she has one sow along with 12 piglets.

> **"My crops make me proud and my neighbours happy"**

With profits coming in, there was a moral boost and she invested INR15000 in goat rearing and earned INR42000 by selling eight goats in the subsequent years. In the meantime, she improved her poultry coop to rear chickens and ducks. She was able to sell 35 ducks for INR18000 and made a profit of INR8000 from chickens in 2018.

With hard work bearing fruits, she decided to go for SRI paddy after receiving the trainings. In the last three years she got a surplus of 3.6 quintal of rice above what she was harvesting by traditional method. She earned an additional profit of INR45000. She, then, laid her hand in strawberry cultivation, a new concept for everybody in the area. Overcoming scepticism, she invested a small sum of INR2000 to try out. The harvest was good as per the investment as she was able to sell for around INR4000, after consumption at home and distributing to the neighbours and relatives as it was a new delicacy.

Recently she has constructed one farm pond on half bigha investing INR37,000 by taking a loan from the SHG. Fingerlings have been released and feed management is in progress.

Today Haridra Deka has all the resources in her house that aesthetically defines an ideal rural home in Assam.

Saving Seeds

My father had sent me away from the village to pursue higher studies, but the roots of my land always pulled me back. I used to work all day at the farm with him singing and sowing. The knowledge that I gained each day from him was something that has hugely contributed to what I am today.

For a good share of my life, I worked with Adivasi Lok Kala Parishad. I was a poet/ writer, and it was while collecting Bagheli folklore, I realized that saving folk songs and sayings won't mean much if the local crop varieties, which repeatedly crop up in the folk literature, are not saved and protected alongside.

There is one rice type known as 'Kargi' that contains

Babulal Dhaiya

Pithaurabad, Unchehara, Satna, Madhya Pradesh | **Land**: 2 acre | **Grows**: Rice.

tiny defensive spikes. In our Bagheli, we say, *'DhaanboveKargi, suvarkhayenasamdhi.'* (If you plant the Kargi rice kind, neither wild boars nor the son-in- law's family will consume it). It suddenly occurred to me that: songs and seeds have to be preserved simultaneously.

In 2005 I started researching extensively about indigenous crops and I came across a lot of methods that were chemical-free and amounted to almost zero investment! I wanted to adopt these techniques on my farm and wanted to save the mother earth from the hazards of chemicals while also preserving the indigenous seeds.

During my research, I came across Kodo Rice. According to folklore, in ancient times, rulers would instruct farmers to plant this kind of rice and store it for droughts, since it can be preserved for years. Furthermore, even a small amount is incredibly filling. However, because of its coarseness, it was disliked, and farmers stopped cultivating it. It is critical to conserve these crops because they might be useful in the time of crises.

I faced a lot of people who questioned my techniques and purpose, but I was hell-bent on my beliefs and today I have collected 110 varieties, which I grow on my two-acre land. The seeds I collect are kept in a seed bank which has been developed with the help of the Madhya Pradesh State Biodiversity Board.

When my region experienced a dry spell in 2015, the rice varieties sown in my field stayed intact, which amazed the other farmers.

Traditional seeds can adapt to local environments, as well as fight weeds, and do not require pesticides because ants, spiders, and insects perform the job.

I want the world to know that indigenous crops, whether wheat, rice, or anything else, have been cultivated in our land for thousands of years. The environment of this country has seasoned these crops and they ripen regardless of small temperature fluctuations. They can be utilized to combat climate change and global warming.

Getting awarded Padma Shri is a big honour for me but what makes me happier is to see my crops ripen.

It is said that India once had over 1 lac varieties of rice. I still have a long way to go in my journey and I want the youth of my country to join in.

> **"Words and seeds have a long history; when they are lost, all knowledge they coded is also lost."**

Barren to Fertile

Subhadra Khaperde

Pandutalab, Dewas, Madhya Pradesh | **Land**: 2 bigha | **Grows**: Various Millets, Pearl millet, Sorghum, Maize, Wheat, Chickpea, Seasonal Vegetables

As a social activist, Subhadra had long been working on land rights, women's health, rights and wellbeing. While organising health camps for women, she realised that major requirement for village women is proper nutrition, and that cannot come from the chemical and pesticide laden food they consume from village markets. They must grow their own poison-free food. This realisation turned her into a natural farmer.

Subhadra belongs to a Dalit farmer family. In 2015 her family bought two bighas of dry and barren land as they could not afford fertile land. They dug a 200 feet tubewell, and later a 70 feet well to tend their land.

> **"I am trying to prove that the baton of this kind of agriculture, that is built on a basis of conservation, should be in the hands of women."**

She made the unlikely choice of growing millets, a forgotten crop, as it has never been grown using chemical fertilisers. The search for seeds took her to many remote villages and she got a good variety. She grew all the major millets like *bhaadi, bhatti, rala, kodo, kutki, more, ragi. Also,* pearl millet, sorghum and maize. Among the other crops which she grows regularly are, ground nut, amaranthus, *san, patsan,* roselle and vegetables like ladies finger, *gilki*, gourds, *jivikand, gathaalu, arbi*. In the Rabi season, she grows onion, garlic, wheat, chickpeas, *rajgira*, carrot and papaya. She has around 15-17 varieties of trees growing along the boundary of her farm.

For home consumption, she gets almost everything from her farm-pulses, chickpeas, vegetables and grains, which has reduced her dependence on the market to a great extent. The rest of the harvest is used to produce seeds that she sells in the local markets. People order seeds from her, and she also distributes these to women in nearby villages, thus spreading the idea of organic farming.

However, her journey is not always smooth. As she remotely manages the farm, the expenses are more than her earnings. But Subhadra is not deterred by the loss, as her idea is to experiment and create a model and more importantly save the seeds of forgotten crops. She hopes that the government would support the small farmers who take income risks to grow poison free food for markets.

Easy and Slow

My transformation into a natural farmer happened after my mother's death in 2011. Earlier, I was in the rat race of growing 'more' with poisonous chemicals. My mother died of cancer. I came to know that pesticides are triggers for cancer. I decided that I don't want to be the cause of cancer to other people. Everything which comes off my farm should be healthy and poison free.

Initially, I had very few resources and little knowledge. So, I was worried that my yields would go down. In the first year I grew on one and a half acres. Then, I visited Pinglewara trust and was very impressed. I read a book by Subhash Palekar, I attended a training workshop of KVM, and decided to do 2 more acres. I attended a lecture of Dr. Amar Singh Azad and made up my mind to make a complete change to organic farming on my 11 acres immediately. I attended workshop trainings in Bangalore, Hyderabad, and Gujarat. KVM staff also frequently visited my farm and gave suggestions.

During chemical farming, I was spending about Rs1 lakh on chemical inputs per year. In organic, I have had to spend INR25,000 per year on cow dung inputs. Next year, I will make my own compost using 4-5 trolleys of cow dung from the onsite dairy and paddy straw. I think this will cost me up to INR6,000 to INR7,000 in labour cost. For my *basmati,* I am spending less on inputs and my yields have increased. Between harvests I have plenty of time to travel or spend with my family.

Ravdeep Singh

Farwahai, Barnala , Punjab | **Land**: 11 acres | **Grows**: Basmati rice, Wheat, Green manure crop, Cereals, Pulses, Bajra, Moong, Maize, Mustard, Fenugreek, Grams, Coriander, Sorghum, Lady finger, Vegetables
Support: Kheti Virasat Mission

My other inputs are diesel, Jantar seed (green manure), and labour. I do less ploughing now, so my machinery use has gone down by 50%, further reducing my cost by lakhs. We are using 60% less water in natural farming with mulching.

I do intercropping. There is no monocropping. I mix all of the vegetable seeds and then spread them randomly to confuse the pests. I have set aside one acre for a Horti-Silvi-Pastorial system (Orchards+Forestry+Livestock) using an indigenous breed of cows.

I make some natural cultures to spray before paddy cropping. I spray *Jeevamurt, Gurvamurt,* Garbage Enzyme, Biodynamic cow pat pits, paddy straw extract and foliar spray made from cow dung/urine extract. I get better growth, more flowering, and adequate nutrition. We share practical experiences with farmers through KVM and have developed a network of small farmers. Green manuring, mulching and enzyme sprays have been very effective to develop humus. I have slo successfully produced a biodynamic spray made from eggs, jaggery, lemon juice and *kapur* (used in ayurvedic medicines). It has helped increase flowering of mustard and pea crops.

> **If unseasonal rains come, I am not worried. I am out of the rat race now.**

Last year, I found an indigenous mustard crop in my field. I decided to protect it. From one plant, I yielded 375 grams of mustard. I kept the seed. Conventionally, a good yield of mustard is 6 quintal per acre. We calculated the potential yield for this crop could be above 20 quintals.

I realized that weeds could help the crop. KVM introduced me to a green manure called Aurogreen. This fixes nitrogen, maintains soil pH, reduces alkalinity by absorbing the salts.

It is very hard to find indigenous seeds. I have bought seeds from Bangalore and Gujarat and I am multiplying them. Slowly the seed banks are growing.

I sell in the open market. I have been selling produce at a local store and do my marketing there.

At first, people did not take me seriously, they said this is not possible. After seeing my *basmati* crop last year (18.5 quintals per acre) people were impressed and are trying themselves.

I am planning to open an organic dairy comprising of only indigenous cows.. I have also started an orchard with bananas, mango and other fruits.

In chemical farming there is only monoculture, but in natural farming, one has to diversify. It is a constant challenge and a face new things everyday and that gives me a great that give me great happiness. In many ways my way of thinking has changed. About farming, about life, about family, my mind is very easy now and I am able to enjoy life at my own terms and at my own pace.

Enduring the Storm

My 3 sons work in Kolkata. My husband has to occasionally migrate to Karnataka during paddy transplanting time, and to Kolkata for daily wage labour. It's hard for me when they're not around.

My village is surrounded by rivers and bears frequent brunt of natural calamities. During heavy rains, river water overflows and enters my home and garden area. Frequent cyclones have destroyed many fruit trees inside the homestead. The soil of the garden and pond water is very saline. Rainfall is uncertain and, in the summer, soil gets hard and it's impossible

Sonamuni Munda

Lebukhali, Hingalganj, West Bengal | **Land**: 5 katha (0.08 acre)
Grows: Vegetables | **Livestock and others**: Hen, Pigs, Catfish
Support: Development Research Communication and Services Centre

to cultivate vegetables. Our situation was desperate.

After the cyclone Aila, DRCSC started to help us. My neighbours and I were motivated to form mutual cooperation groups and underwent training and capacity building sessions. We gathered up our courage to try something new.

A small ray of hope surfaced in me. Giving up my dependence on chemical inputs, I started to develop my garden following sustainable agriculture techniques in 2018. I planted the seeds in the raised beds prepared in the garden and practised mixed cropping, using the multi-tier concept with trellis, land dykes, use of container or sacks. I was oriented about preparing compost manure and use of different pest repellent methods like neem oil, solution from tobacco leaves etc. To cultivate a mixed variety of leafy & fruit vegetables, legumes, pods, herbs, roots & tubers. for monsoon and winter, I made the best use of available space in my homestead.

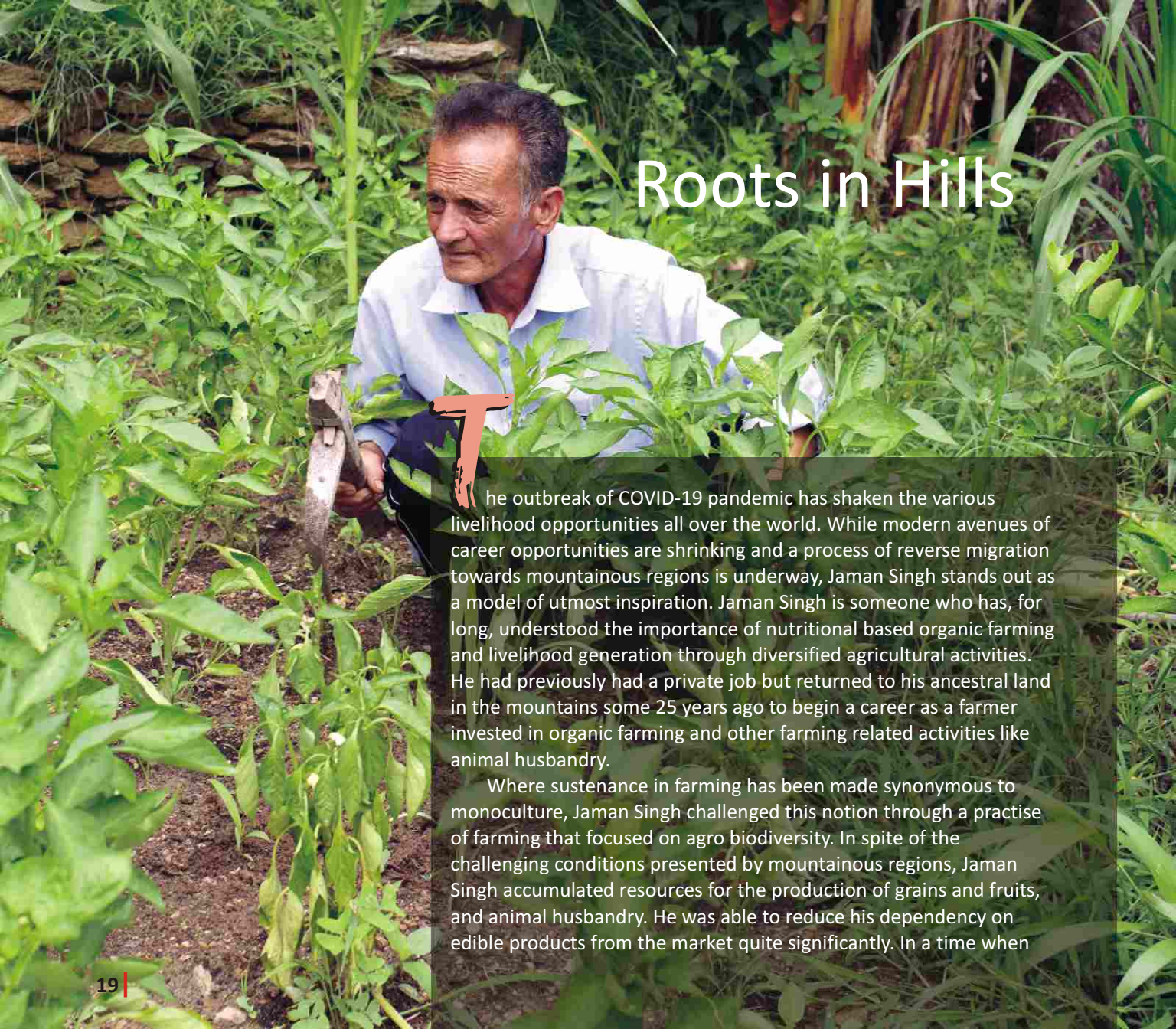
> **“Aila and other storms took away everything. But I have grown strong since.”**

To combat the shortage of water in winter, I have also installed rainwater harvesting structure in 2018. The water harvested is used to irrigate winter vegetables and cultivate catfish.

I have 6 hens and 10 pigs. I received support to develop house for hen rearing, which reduced their diseases. I have learnt azolla (a kind of aquatic weed) culture, which is a good feed for my hens. Azolla increases egg production. In addition, wheat and rice husk is also given to hens. For pigs, I provide rice, wheat and wheat flour.

I eat safe and nutritious food from my garden. Even poultry eggs, meat are home produced. During the peak harvesting time, my vegetables are often stolen. Although more mud soil and slime are required along with compost to recover the fertility of the soil, I am happy that I have enough from my land.

Roots in Hills



The outbreak of COVID-19 pandemic has shaken the various livelihood opportunities all over the world. While modern avenues of career opportunities are shrinking and a process of reverse migration towards mountainous regions is underway, Jaman Singh stands out as a model of utmost inspiration. Jaman Singh is someone who has, for long, understood the importance of nutritional based organic farming and livelihood generation through diversified agricultural activities. He had previously had a private job but returned to his ancestral land in the mountains some 25 years ago to begin a career as a farmer invested in organic farming and other farming related activities like animal husbandry.

Where sustenance in farming has been made synonymous to monoculture, Jaman Singh challenged this notion through a practise of farming that focused on agro biodiversity. In spite of the challenging conditions presented by mountainous regions, Jaman Singh accumulated resources for the production of grains and fruits, and animal husbandry. He was able to reduce his dependency on edible products from the market quite significantly. In a time when

Jaman Singh

Karchoolivillage, Tarikhet, Uttarakhand | **Land**: Less than an acre | **Grows**: Potatoes, Vegetables, Local yam, Garlics, Onions, Ramdana, Jhungra, Finger millet, Gahat, Bhatt, Urad | **Livestock & others:** 2 cows, Hens
Support: Lok Chetna Manch

most of the large-scale agricultural production is done on soil that is fertilised by artificial fertilisers and sprayed with toxic pesticides, Mr. Singh, through his organic farming, is an example of a welcome sustainable change in agricultural practices.

At present he gets around 20 litres of milk from his two Sahiwal cows and about 12 eggs from his hens each day. This way he has been able to significantly improve the nutritional status of his family and neighbouring farmers. It has also added an additional source of income generation to his list.

While this seems like a perfectly happy story, Jaman Singh has had to face his fair share of struggles. One of the major problems that farmers in mountainous regions face is that of water and he was no exception to this struggle. However, where many would give up and return to their earlier jobs, Jaman Singh faced his hurdles head on. To meet his irrigational requirements, he built tanks by digging holes in the ground and covered them using plastic sheets.

Using integrated farming system, he has been able to utilise less than an acre quite efficiently. Moreover, as all the crops and vegetables that he grows have different sowing and cultivation periods, the farmland is never bereft of crops in any season. At present he uses cow dung manure. Without synthetic and artificial inputs, the food grown and consumed by his family has high nutrition value.

> **“The way I grow food, has made me self-reliant by generating income and making my farm sustainable”**

Through years of experience in farming, he has begun storing and preparing seeds which he then sells in the market for additional income. Apart from commonly produced crops, Jaman Singh has ensured cultivation of indigenous nutrition-based grains such as *gahat, bhatt, urad* etc. His success and dedication towards the cultivation of indigenous mountainous crops has encouraged other neighbouring farmers to adopt similar practises and engage in multi cropping and nutrition based organic farming. Watching him grow almost all kinds of Rabi and Kharif crops, which chiefly include finger millet, *Jhungra*, Barley, *Ramdana* in his scattered land holdings of less than an acre in size, other farmers around him are trying to understand the benefits of agro-biodiversity and the numerous benefits it includes.


Poison Free

Pema Bai, Radhe Shyam

Bilood, Pandhana, Khandwa, Madhya Pradesh | **Land**: 5 acres
Grows: Soyabean, Maize, Cotton, Wheat and Gram
Support: Aga Khan Rural Support Programme (India)

I am a proud farmer today.

I live with my husband, two sons, daughter in law and three grandchildren.

Farming is the main source of income in my family. Right from the beginning, my husband and I was practising chemical-based farming in our 5 acres of land. I used to put Urea, DAP, Potash regularly. I used to spray insecticides, such as, Monocrotophos, Coragen, Canfidor, Biojontan, Ulala on soyabean, maize, cotton, wheat and gram. It was considered a normal, as everyone did the same. I have been doing farming as a source of income, but the high cost of agri-inputs has always been a worry. I was not even aware of how these inputs were causing health hazards, or you may say, I simply ignored it.

In 2017, I had gone for an exposure visit to Kailash Bihari's farm, a natural farmer from Baroda Ahir village, Pandhana. I was very impressed. It seemed like someone opened my eyes. I made up my mind to shift to natural farming. However, my husband was not convinced. He declined natural farming practices totally. He argued that all crops would go waste if we don't put fertilizers and pesticides. But I was firm on my decision and convinced him to apply organic fertilizers in at least 0.5 acre and that's how my journey towards natural farming begun. I saw how the yield multiplied and we fell sick less often after eating the crops from my field. After initial resistance, even my husband converted into the strongest supporter of my practices when he saw the breath-taking changes in the farm.

> **"No one in the family gets sick anymore"**

Currently, we are practicing natural farming in our entire 5 acres of land. We are using *Bijamrit*, *Amrit pani, panchpattikadha*, soyabean tonic and GGOC (ginger garlic onion chili chutney). Using these home-made inputs, we have saved INR 45000 in past three years. With my husband's help, I have also started making these in a bulk quantity and selling it to other farmers. This has not only opened another source of income for me, but also changed the mind-set of the farmers in my village. I started inter-cropping in our farm this year.

I have given trainings to all my SHG members. Alone we can do so little; together we can do so much.

Drops of Life

The erratic rain pattern had caused incessant damage to Arjun Damor's crops. The hilly terrains did not allow the water to stand and the Rabi crops could not be irrigated. He was compelled to occasionally migrate to brick kilns to support his family. But the labour cost was low. In absence of proper nutritious food, the family suffered from malnutrition. Arjun had to take

Arjun Damor

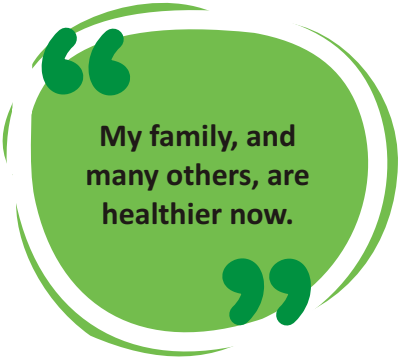
Chulipada, Ukala, Banswara, Rajasthan | **Land** : 4 bigah | **Grows**: Maize, Pulses, Sesame, Wheat, Chickpea, Pigeon pea | **Livestock & others**: 2 Oxen, 1 goat, 3hens
Support: Vaagdhara

loans for treatment of his daughter and wife in private hospital. He couldn't focus on the agriculture because of the ailments at home. Frustrated, Arjun decided to sell off his land to pay off the loans and get proper treatment for his family.

Just at this critical point, he met a facilitator from Vaagdhara, who informed him about the Government schemes for free treatment of BPL families. He also told him about the village development committee and child right committee formed by the organisation and farm related Government schemes which can help him overcome his troubles. With this knowledge, Arjun secured treatment for his family in government hospital. He joined the Gram Sabha and submitted a proposal for bundling, check dam, anicut, and deep well for his farm, which was approved.

Bundling stopped erosion of land, and check dam and anicut stopped the rainwater from washing away and restored the underground water, raising the water table. As a result, water level increased in the deep well he had dug. Good understanding of crop cycle and availability of water helped him diversify his Kharif and Rabi crops. He started growing fruit trees and vegetables. With a rise in his income, he could buy 2 cows and 2 buffaloes and sell the milk. He also had some time to work locally and stopped migrating altogether. His wife and daughter recovered as they received good nutrition from the farm, and expenses towards medicine went down. As the inputs to the farm came from the livestock, and the seeds were saved and used, farm expenses also went down. Extra income was generated from selling of farm products and milk. Lady luck turned around.

Arjun has now educated 100 farmers from 5 villages in crop cycle, bundling and government schemes, which he himself had benefited from. He is an inspiration for all.



Home Grown Home Made

Being a woman, Santosh Bai's transition towards natural farming was not easy. She has unlearnt and further challenged many fundamental societal beliefs about women's abilities and skills. When she first decided to start natural farming, her husband criticized the idea and did not support her.

Santosh Bai, with a family of 10, owns a 3-acre land. After joining an SHG formed by AKRSP-I in their village, she attended some training programs and exposure visits on conservation agriculture and natural farming. She decided to experiment

Santosh Bai

Gawla, Khargone, Madhya Pradesh | **Land**: 3 acre | **Grows:** Maize, Jowar, Wheat, Rice and Millets, Seasonal Vegetables, Soyabean and Nuts | **Livestock and others**: Cows, Ox, Calf

Support: Aga Khan Rural Support Programme (India)

conservation agriculture on a small portion of their land. Her first attempt was eye opening. The difference in seed germination, water retention, quality of harvest, input cost and the net profit were remarkable when compared to chemical farming. She gained the confidence to not only continue but also to expand conservation agriculture methods to half acre and then one acre for the next seasons. Her husband also turned around. And their life changed for good.

Initially, it was not easy for Santosh Bai to gather knowledge and resources to practice NF against her husband's will. She faced challenges in making fertilizers at home, finding good seeds, etc. But with the support of AKRSP-I, she learnt to make homemade fertilizers and pesticides like *Amritpani,* cow dung fertilizer and use *Neem* water and *Akao* leaves for pest control. She uses many novel methods like no tillage and mulching.

She got support in the form of loans and a variety of seeds like that of Foxtail millets and Sorghum. Her farm also has some livestock -three cows, one ox and a calf. As their village faced tremendous challenges for water scarcity, Santosh Bai, along with other women of her SHG, pressed the government officials to fix the problem. Now they have a well and pipeline for irrigating their farms.

> **"Harvest produced from homemade fertilizers looks better than the one grown with chemical fertilizers and it also tastes better"**

Natural farming has improved the quality of the soil in her farm to a great extent by softening it and enriching it with nutrients. The input cost has also reduced drastically from INR 10,000 –12,000 to INR 3000 – 4000 as she makes homemade fertilizers and pesticides. 30% of the produce from her farm is for home consumption and the rest is sold in the local markets, where she gets good response from people who trust that the produce is chemical-free and healthy.

Santosh Bai has emerged as a change maker for many others in her village. Inspired by her, as many as six farmers have adopted natural farming in her village.

Back to Home

Vinobha Nathan

Sirki, G.Udayagiri, Kandhamal, Odisha | **Land**: 4 acres | **Grows**: Local plants
Support: Social Welfare Agency and Training Institute, Odisha

Vinoba Nathan, an artist and photographer from Tamil Nadu, came to Kandhamal, Odisha in 2018. Attracted by the place, he settled down in the valley of Sirki village.

Vinoba, a Tamil and English speaker, made the tribal village his home. He established a good relationship with the tribal community with his simplicity.

Driven by his philosophy to work with nature, he started to make the most of with the Lantana Camera plant, which is treated as a weed in most parts of the country. He used his artistic skills to develop bed, sofa and other household assets for his personal purpose. But it was not as durable as he had expected.

> **We have to bring back the youths to their land.**

Further, he took 4 acres of land in the valley on lease to develop a model permaculture farm. He started by maintaining soil moisture and soil fertility and planted different trees available locally, thus conserving local biodiversity for future generations. He faced mild protest from some affluent community members and almost lost hope to roll out his vision.

The land was previously inhabited by indigenous peoples, but now most of them migrated to other states for work. The natural and traditional agricultural knowledge that once brought prosperity and security to the tribals are at the verge of complete extinction. During the crop season, it seemed, he was the only person to till the land following ecological and conservational practices. It seemed that the current farmers are going to be the last farmers to work on this land.

To attract youth towards their native land and reduce friction within the community, he built an artistic house using waste and low-cost materials. The place quickly became the centre of attraction, and people approached him to learn his skills.

From his first stay, he observed that the youth felt that agriculture is a highly demanding job, and the return is meagre. Hence, they migrate to other states in search of work. “So, I do hands-on training for few youths to help them practise natural farming and ensure a good income,” he says. His efforts for the last 4 years, has turned the valley into an Eden with various trees, shrubs, and herbs.

He continues his efforts to create a blooming food forest in the valley.

Nurturing Nature

My experimentation with organic farming began in 2014 after my visit to the organic food festival hosted by SRISTI, Ahmedabad. The chemical-free, nutritious and traditionally cooked food amazed me. I also learnt about the damaging impact of chemical farming on our health and soil. I was excited about the prospect of bringing better health and wellbeing

Neeta Behen

Vadkuyi (Vyara), Gujarat | **Land**: 40 bigha | **Grows:** Bhindi (Okra), Leafy Vegetables, Sem (Indian Beans), Mirchi (Green Chilly) and Dhaan (Rice)
Support: SRISTI

for my family through organic farming.

I got associated with various groups like Seva Sansthan, ATMA Project, Swa Bhoomi Kendra and Krishi Vigyan Kendra to understand more about organic farming and learn the required skills. I started slowly and with small steps to understand the ins and outs of my transition. Initially, I grew organic vegetables only for my family. So, when the ATMA established an organic market in Vyara, I started growing on a larger scale.

Challenges kept coming our way, but things have a way of falling back into the right place if you are on the right path. Through the ATMA Project, I had learnt some essential natural hacks like the importance and use of *Gomutra*, *Neem* paste, *Duss Poornima*, *Beejamrut* and *Jeevamrut* and much more. And I have used these diligently on my farm ever since. *Jeevamrut* is like mother's milk for my seedlings. I read books by Subhash Palekar too, which helped me understand the philosophy behind organic farming.

I make sure to pluck the weeds regularly and hire labourers, at times. Also, I save seeds in every cycle, use them in the next and even share with neighbours. The only challenge I face is the unavailability of water, at times. I do not have borewells, so my neighbouring farmers are kind enough to share water.

> **"Just like how one nurtures her child, I nurtured my farm at every step and in return the farm has nurtured my family - in health and wealth."**

We sell our products directly to the consumers. They love the taste of my vegetables! And I get a fair rate too. I earn around INR 40,000 a month from selling my produce.

Before 2014, the soil was hard with harsh chemicals. Today, when I walk in my farm, I feel as if the soil is softly hugging my bare feet, and the saplings and greens welcoming me. And this warmth that I receive, reassures me that I made the right decision. I want more people, especially widows like me, to start organic farming. I dream of setting up our organic farmers' market and selling our vegetables beyond our district as well.

Our Farm, Their Farms

I used to visit my friends' farms across south India and it is from these experiences that I learnt agro-forestry.

When I came back to my village, after more than 15 years, I was disheartened to see the tension and dissatisfaction where once there was joy and contentment. There was increasing migration and youths did not want to be in the villages anymore. So, through the agroforestry model of farming, I took up the task of demonstrating the abundance in our village.

One fine evening, I joined a group of old

Kumar Neeraj

Dur Hai village, Lakhisarai district, Bihar | **Land**: 1.5 acres | **Grows** : Food and non food crops

men talking about various things. I learnt how, in the past, people here did not grow rice at all. They grew *bajra, ragi, rahad,* pigeon pea etc, none of which are now grown, and the younger generations don't know about these crops. I travelled across Bihar to learn how the different crops are grown and practices traditionally followed. I learnt about the region-specific companion plant.

When I face challenges on the farm, I often reach out to the local people for insight. I learnt about the various bio inputs like *neem* or cow based inputs. Today, what I practise and experiment at the farm are all taught by local people.

In 2018, I began experimenting in my 1.5 acres farm and often invited local youths, women and villagers to join in. I took an integrated approach at farming: I grow a mixture of both traditional and modern crops, and paddy and timber trees. Slowly I began experimenting in small portions of the farms of the neighbouring farmers. Our agroforestry demonstration plots total to 5 to 7 acres. Each of these plots have more than 30 species of crops including non-food crops. A major challenge is the absence of a systemic support. Many times, I have to get seeds from far off locations, which is difficult.

> **"I left my law practice, I imbibed human connections and chose the village."**

I don't have any livestock, but I get livestock manure from buffaloes, pigs, chicken from the villagers. Farming and village life have taught me that it's important to build relationships .

Last year, I built water pockets, as a measure to conserve water, that act as sponges for water. Farmers were sceptical but when they saw that I am less dependent on the water canals and my plants thrive during the drought season, they asked me to teach them the same process.

Most of our produce is consumed within the village and we rarely have to go to the market to sell. Villagers are all ready to purchase the produce even if they have to pay a premium amount.

From the last 2 years I provide fellowship programmes to women and youths of the villagers on agroforestry. We have had around 40 fellows till now and they have all begun to initiate the processes in their respective lands. In future, I am hoping to work more closely with children and youth of the villages. I believe that passing on the wisdom to the next generation is critical. Our dream is to present our village as an agroforestry model.

Small but Sufficient

Padmabati Mandi remembers the time when she used to live in extreme poverty with her son and daughter. She worked as a daily wage labourer then. Her land used to produce only 2-3 types of vegetables in one season with the chemical farming practices. To add to her woes, water scarcity made it impossible to cultivate her land. Lack of sufficient and nutritious food and uncertainty of daily wage

Padmabati Mandi

Chingri, Chhatna, Bankura, West Bengal | **Land**: 4 bigha | **Grows**: Vegetables, potato, onion, paddy | **Livestock and others**: Poultry
Support: Development Research Communication and Services Centre

made her life miserable. There were days on which they couldn't afford one full meal.

DRCSC held her hand in 2012. In several agriculture related training programmes such as livestock rearing, techniques of preparing organic manure, pest and disease management etcetera, Padmabati learnt the tricks of natural farming. Her homestead had a small backyard, and as per the suggestion of DRCSC, she turned it into a productive space. She started growing nutritious vegetables and fruits by recycling household waste and grey water and kept indigenous poultry, which supported each other in a symbiotic method: the fruit and vegetable waste provided for poultry feed and poultry litter was used for growing vegetables. The produce was bounteous, and she was now convinced that her children would now get more nutrition than they ever had. The land which grew 2-3 vegetables was growing multiple crops. She also started cultivating in a fallow land behind her small hut.

> **"This garden has become our guardian. It not only gives us nutrition, but also gives us income."**

Now she grows a mix of seasonal vegetables cultivated on raised land and broadened embankments throughout the year. She grows tomato, ladies finger, beetroot, carrot, chilli, cowpea, ivy gourd, beans, spinach, radish, fenugreek, turnip, elephant foot yam, taro, amaranth, bitter gourd, coriander, brinjal, ash gourd, bottle gourd, pumpkin, ipomoea, ceylon spinach, cucumber, ridged gourd and snake gourd. Paddy is cultivated in the low-land during the rainy season and green gram, potato and onion during winter. Her family consumes at least 450 grams of green vegetables or fresh fruits every day round the year.

She is now in a more empowered position to take essential household decisions such as buying expensive items or taking decisions in her children's education.

High Ridge and Deep Furrow

The main occupation of the people living in the coastal areas of the Sundarbans is agriculture, but it is extremely complex and susceptible to risks owing to unpredictable weather. The only way to create irrigation resources in the region is to collect excess rainwater in the monsoon and retain the rainwater and use it for cultivation in the next season. Excess rainwater harvesting can be done effectively through suitable land-shaping of farmland, which involves improving the surface of agricultural land to collect excess rainwater as well as cultivating a variety of crops through integrated cultivation to make the land surface suitable for improved water intake.

'High Ridge and Deep Furrow' model is surrounded by high ridge, so even if the surrounding agricultural land is under water during the rainy season, vegetables can be easily grown in the bunds of this model. As there is a pond in the model, vegetables can be cultivated in the dam with the help of pond water in winter season. The main objective of the model is to

Bikash Mandal

Dhuchnikhali, North 24 Parganas, West Bengal | **Grows**: Brinjal, Tomato, Ladies finger, Cucumber, Bitter gourd, Ridge gourd | **Livestock & others:** Fish
Support: PRASARI

collect excess rain water to create irrigation resources, reduce soil salinity, reduce the salinity of groundwater and increase the income of farmer. This model is suitable for fishery and multi-crop farming.

With the help of PRASARI, this model was made on the land of Bikash Mandal. In previous years, he used to cultivate paddy only once in this land. He used to produce only 300 to 350 kgs of paddy in this one bigha of land. As a result, he could not earn enough. Due to excess water in the rainy season and lack of water in winter, he had never had the opportunity to cultivate vegetables on this land, although he has 20 years of vegetable cultivation experience.

> **"I know exactly how to combat all difficult times. This model will not fail me."**

The demonstration of the model is in 1 bigha. The model is shaped into alternate ridges (1.5 m top width × 1.0 m height × 3 m bottom width) and furrows (3 m top width × 1.5 m bottom width × 1.0 m depth). This model has four bunds and five channels. Bamboo scaffolding has been installed in each channel, which are 104 feet long. Each channel is connected with a 3.5 katha pond and the depth of this pond is 8 feet.

The cost contribution of PRASARI in building the HRDF modelis Rs112280.00. Bikash Mandal has contributed Rs 17164.00 with his labour. Hence, cost ratio of making HRDF model (Farmer: PRASARI) = 1:6.54

Now, he cultivates bitter gourd on two scaffolds, cucumber on one scaffold and ridge gourd on two scaffolds. Brinjals are on the inner bund and ladies' fingers are planted on the embankment around the model. This is the first time he has planted vegetables in this model. So far, he has spent INR9020 to cultivate vegetables. He has made a profit of INR41790 by selling vegetables. He is cultivating vegetables by applying 90 percent organic fertilizers. He stocked 9 kg IMC fingerling (2.5 inch) and 500 grams of grass carp in the pond. He is regularly feeding fish in the pond. He produced 178 kg of IMC and 7 kg grass carp from the HRDF model and made INR17050 as profits from fishery.

He has made a total profit of INR 58840 (Agriculture-INR41790+ Fishery-INR17050) despite the natural calamities and pandemic, and he can only look forward to more profit in future.

Sprouts of Hope

Manisha

Borkhari, Kushalgarh, Rajasthan | **Land :** 3 bigha | **Grows:** Saplings of fruits like Mango, Lemon, jackfruit, Java Plum, Guava, Papaya, vegetables like Brinjal, Tomato, Chillies | **Livestock & others:** 2 cows, 2 buffaloes, and 2 bulls
Support: Vaagdhara

There was a time when Manisha and her husband Himmatsing Rathod could not afford to buy good quality seeds and fertiliser from market because of their poor economic condition. The crops suffered. They struggled every year.

A facilitator from Vaagdhara, informed them about the self-help group formed by the organisation where they had monthly meetings and discussions on the relationship between seed, water, land, forest and animals. He also told them about trainings which were conducted on how to prepare organic fertilisers, procure and treat seeds to start a nursery.

Inspired by the opportunities Manisha joined the farmers' self-help group. She started participating in the regular meetings and applied her newly acquired knowledge to her land. Her husband showed enthusiasm and was happy to be trained by her. They decided to use the compost they prepared in their land.

Manisha joined Vaagdhara's 3-day residential training on starting a nursery and learnt with keen interest. On return, she started a nursery in 1 bigha of land. In the beginning, half the saplings were ruined, and she had to incur loss. But she knew that her efforts would not go waste. Next year, with sustained effort, the saplings emerged. She sold these to Kushalgarh market in turns and made a remarkable profit of INR 20,000.

> **"I have turned my fortune wheel around."**

She named her nursery Dasa Mata and with the help of the organisation, distributed pamphlets in her locality. With increasing demands, she started growing several vegetables and fruit saplings. As the word spread, people from entire Kushalgarh started coming to her door and she had no need to go to the market. Her fare to the market and time was saved.

These days, Manisha sells saplings worth INR80,000 every year. She has started livestock rearing. She has 2 cows, 2 buffaloes, and 2 bulls. The fertiliser cost has been reduced as these livestock provide the inputs to her nursey. She earns some extra money by selling the milk. Their poverty-stricken days are a thing of the past. She is an inspiration to the people in her locality, who come to her to learn her trade.

Heart and Hearth

Durgapur Biogarden is a growing Agri-Horticulture company which majorly deals in plant propagation, organic manures (vermicompost), integrated farming, aquaculture & landscaping. The farm is situated on 60 bighas of land including 10 bighas of water body. It comprises of - Vermi compost unit, Horticulture & Nursery unit, Aqua culture unit and Duckery and Layer unit. It has its own regular water supply distributed through drip irrigation technique which ensures minimum wastage of water. This is a result of endless effort of Achintya Kr. Paine, Director of Durgapur Biogarden, who started his journey with an unproductive barren land. Today Durgapur Biogarden is one of the major suppliers to Forest Dept of West Bengal government, Horticulture departments., Panchayats and private institutions. Durgapur Biogarden is also accredited by National Horticultural Board, which is one of its kind in West Bengal. 20 people work in the farm at present.

In the year 2003, Mr. Adhirendra Kr. Paine started this project in a barren, unproductive & uneven land which was not suitable for any kind of agricultural activity. The land was surrounded by SC/ST villages & there was no employment opportunity. There was no source of water, the primary requisite of any agricultural farm. At the beginning, the farm was started by plantation of aromatic plants & its distillation. In 2005, the project shifted to orchards of Mango, Guava, Sapota & Lemon trees. After huge success of orchard, they spread into nursery business. At present they are producing various exotic & rare varieties of fruits. They have introduced various techniques like intercropping and drip irrigation in their farm. Besides fruit cultivation they have plantations of various ornamental & medicinal flowers.

Achintya Paine

Durgapur Biogarden, West Bengal | **Land**: 20 acres | **Grows**: Fruits, Vegetables, Oilseeds and Ornamental plants | **Livestock & others:** Poultry, Fish, Ducks

In the middle of the farm there is an open land for seasonal crop cultivation which is maintained & nurtured mostly by organic components. There are 7 water bodies for fish culture & prawn culture. In integration they have developed chicken & duckery unit.

A total area of 30 bighas is allocated to orchards & nursery with intercropping. Several varieties of Mango, Guava, Lichi, Lemon, Java apple, Sapota, and Jackfruit are planted in this unit. The in between spaces of the orchard trees are used for intercropping of seasonal short-term crops like turmeric, ginger, mustard, elephant foot yam, seasonal vegetables etc. To ensure quality & purity of plants, they don't grow plants with seeds from outside. All the plants are either grafted or air layered.

They have a unit for ornamental & medicinal plants. It includes various native & exotic flowers, decorative plants & a range of plants with medicinal value.

The farm depends largely on bio-fertilizers for its farm production. It has a large vermi-compost unit & azolla pits which supply their need for fertilizer & produces huge surplus for outside selling.

> **"Ecological farmers should be incentivized for their contribution towards environment protection."**

Of the 7 water bodies measuring 10 bighas, 2 units retains water for the entire year and others can hold for 5-6 months. By part culture technique the rest 5 water bodies are used to rear finger sized fish upto a certain weight. Then they are shifted to other two ponds for growth & then harvest. Indian Major Carps like grass carp and silver carp are grown there.

To maximize production in this unfavourable climatic condition this unit has introduced many specialized techniques to maintain quality and productivity of soil and water. A special attention is given to pond environment and nutrition of fishes. Beside natural feeds, nutrient rich supplementary feed is provided for healthy rearing and to gain good weight of fish. At present, the half yearly production is 5-6 quintals, and it is improving further.

The farm is a place for experiment and promotion of ideas of rural agro business. Students from Calcutta University uses the farm as their learning ground. Achintya also had training on Integrated Aquaculture from Green College by Welthungerhilfe. Lately, he has acquired a Certificate on Agroecology from Calcutta University and Norway University of Life Sciences assisted by Welthungerhilfe.

He has a shop in the nearby city to create urban connect to his rural unit.

"I believe, if we can use our natural resources optimally and sustainably - we can all lead a good life here in the village and don't have to look at the cities for employment. Once the villages develop economically, services are also going to develop. So, we can afford better education and health services," says Achintya.

Guiltless Food

When we were young, our mother used to bring moong, rice and vegetables, cook them with ghee and feed us nourishing Khichdi. Nowadays, kids are fed from packets or bottles. Instead of the traditional concoction of Tulsi, ginger, and honey, they are given medicines for even common cough and cold. The traditional food and medicine kept us in good health. My motivation for natural farming is to get poison-free food for myself, my family, and my community.

10 years ago, I switched from chemical farming to fully organic natural farming, and I have not regretted. DSS helped me in learning and implementation of chemical-free natural farming practices. I was part of several training programmes, and I am still learning more each day about natural farming. I was also included in group exposure programmes. These programmes organised by DSS allow farmers to visit farms to know more

Sulochana Parida

Brahmankhandi, Khordha, Odisha | **Land**: 4 acres | **Grows**: Paddy, Moong, Black Gram, Vegetables | **Livestock & others:** Fish
Support: Darabar Sahitya Sangha

about the natural farming practices.

I have 4 acres of land divided into two fields and one pond with an adjoining vegetable garden. In the Kharif season, we grow paddy and in Rabi, we grow Moong and black gram. We hire a few labourers during peak times to work in the field. The pond has a great variety of fish. Along the bund of the pond, I have planted several vegetables like brinjal, chilli, spiny gourd, banana, lemon, papaya, mango, drumstick, pointed gourd, pumpkin, bottle gourd, cucumber and ridge gourd. I have planted and fostered the garden all by myself. I have also planted *mati alu* (yam) along the hedges of the field. It acts as an addition to the vegetables and also strengthens the fence. Additionally, I have a few date trees and a neem tree in the garden. Most of the time, the harvested vegetables are utilised for household consumption. During the peak of the seasonal harvest, I earn some money by selling the extra vegetables either in the neighbourhood or in the local *haat*.

> **In these uncertain times, everyone should start with healthy practices, right from ensuring plant health to good quality food.**

DSS taught me how to make *Handikhata*, and now I apply it to all my crops. The materials for preparation are all easily available, with our cattle providing the dung and urine and the leaves are supplied by the *neem tree*. A diluted solution of this mixture is sprayed over the crops every week. The solution provides all necessary nutrients to the plants and protects against pests and insects. I make these myself and even ask the neighbours to use them in their fields. I share the *Handikhata* for free. I ask them to pay me once they get the results in the form of healthier plants and a good harvest.

In the initial years of transition, the yield had been low, but subsequently the yield turned better. The inputs cost very little; therefore, I am getting a better margin and good income from my field. Because of these efforts, DSS has felicitated me jointly with NABARD and KVK. The good results and health benefits encourage me to further learn and expand this novel practice. I am supported by my family members through thick and thin. Although things have been going well for me now, a stable electricity connection and perennial source of irrigation could reduce a lot of drudgery at our end. I would like to ask all my fellow farmer brothers and sisters to take up natural farming practices to achieve a better and healthier life.

Food for Health

Kamaljeet Singh Hayer left his flourishing legal practice to grow food that nourishes. He has a deep knowledge in nutrient-fixating crops, healing trees and the cycle of life running through nature.

He had a flourishing legal practice making lakhs every month. Today he dons khadi and toils in his farm from early morning.

"My grandfather lived up to 101 years, my father had passed away at 53 due to a massive heart attack and my younger brother died of brain tumour at age of 10 years. How could such a drastic shift come in our health within a generation?" he wondered. He found the problem and the solution in farming. "We are what we eat. Our ancestors had more nutritious food than us and had lesser stress triggers than us because of the simple life they led. I wanted better health for my family but was not sure on how to

Kamaljeet Hayer

Sohangarh (Rattewala), Guru Harsahai, Ferozepur, Punjab | **Land**: 50 acres | **Grows**: 60 crops

Support: Kheti Virasat Mission

achieve that," he says. Kamaljeet came across the website of KVM. He attended a KVM workshop which was a turning point of his life, as he met the famous scientist and an inspiration for many organic farmers, Dr O P Rupela. Dr Rupela asked the Punjabi farmers that why they were not adopting organic farming, which reduces input costs without affecting yield? A consensus emerged that people won't believe anything without seeing it. Dr Rupela advised setting up of organic farm models in Punjab to spread the idea.

Kamaljeet, despite being new to the group, offered his farm to be developed into a model, but a quick look at his profile made Dr Rupela reject him as he thought Kamaljeet might regret his decision." But I was determined enough and kept pleading for months," Kamaljeet says.

Finally, Dr Rupela agreed but told him to be aware of the rate of progress which will not only depend on his efforts but also on the perception of people.

> **"First, they will ridicule you, then oppose you, then they will join you."**

Around 20 acres of his 50-acre farm was selected for developing a biodiversity-based natural farm model that aimed to fulfil the needs of a family while providing a stable and substantial income.

The farm has been designed to recycle waste through continuous exchange of nutrients between various activities. Rows of 120 varieties of trees on the edges, a small pasture with herbs, rain harvesting pond, canal water, and combination of crops which complement each other for optimal growth in minimum resources, all these aspects make Kamaljeet's farm unique.

He, and two other farmers have joined hands to build a cooperative: *Kudrat Hut*. "Between us, we are growing 60 crop varieties on 50 acres throughout the year. We have started supplying healthy and nutritious food to 25 interested families in Muktsar town around the year, making an income of INR 60,000 every month. This helps us to deal with marketing issues that crop up with organic farming".

He's now planning to introduce agro-tourism for those interested in knowing more about natural farming.

Today, Kamaljeet has graduated to being a mentor for others and the lessons he has learnt are not easy to forget. "In race for making more money, we forget that farming is not just about sowing seeds and reaping harvest for the market. It's a unique amalgamation of soil, trees, birds, insects, animals and human being. By taking to chemical farming and monoculture, we have disturbed this relationship. But now I am a satisfied man."

Transforming Life

Look at me, I am an old woman now, but I never had any serious illness. My husband is older than me, but he is as strong as ever and works all day long. When we stay closer to our roots and when we love Mother Nature, we stay strong, fit, and healthy.

This belief drew me towards natural farming. We used to follow age-old tradition in our fields before other farmers brought in the poisonous chemicals. 29 years ago, in 1992, the DSS team came to the women in our village for a livelihood enhancement programme. They assisted us to set up Nipuna SHG for terracotta production. Soon after, we started making the famous Chandua designs. DSS helped us in designing, procuring better equipment and retailing these products in

Sobha Muduli

Badala Sasan, Odisha | **Land**: 2 acres | **Grows**: Vegetables, Fruits, Pulses, Betel
Support: Darbar Sahitya Sansad, Odisha

exhibitions in Odisha. The women felt empowered as they were able to contribute to the household income. More importantly, it incentivised us to retain age-old skills that would soon have been lost for eternity.

10 years ago, the DSS team reached out to our SHG to teach us about an efficient method of natural farming using only organic elements. I tried it in a small plot of land in my backyard. The yield was a little less, but the taste of the vegetables was much better than the ones fed with fertilisers. Enthusiastic from the first few cropping cycles, I started this practice in the whole of my land. Today my land is covered with lush greenery. I maintain crop cover all around the year and it ensures good household income around the year. I have scattered plots where I grow several varieties according to the availability of water and soil. The lack of input costs has made the farming process more viable and profitable for us.

The DSS team taught me to make a hybrid fertiliser cum pesticide called *Handikhata*. For, last 10 years I have been applying it to all my crops. I also learnt how to prepare *Jeevamrut* inoculum. I spray it in desired quantities during cropping cycles to keep the plants healthy. I also realised that it can be used for root-based pests of coconut and banana. The small plants are not able to withstand the power of cow urine, but in larger plants, the roots are benefitted from *Jeevamrut*.

> **Knowledge and seeds are for sharing**

As members of the SHG, we often share the inputs. I don't mind sharing my resources and knowledge with others, since this benefits the whole ecosystem. If my neighbour has weak crops with pests, I might have a pest attack.

I am growing varieties of vegetables like Bitter gourd, Banana, Coconut, Ridge gourd, Tomatoes, Papaya, Jute, Chillies, Brinjal, Cucumber, Snake Gourd, Potatoes in the small fields in the backyard. In the main fields, I have a fully organic Betel leaves plantation, along with some vegetables in a small patch. I use Mustard Pidia (mustard-based organic mixture) in the betel plantation. Although the cost of the mixture is high, we get a good yield. In the Kharif season, we (me and my husband, sometimes assisted by my elder son) grow paddy and in the Rabi season, we grow Moong.

Natural farming has transformed my life. As the head woman of the household, I never felt independent before. Since all the inputs are locally sourced, I get a feeling of pride in being able to do everything without anyone's help. Like all my skills, I am going to pass this on to my elder daughter in law. She too will be able to hold her head high with prestige.

Reviving Tradition

My land on hill slope has low productivity. I grow crops only in the rainy seasons, such as rice, finger millets (locally known as *Nagali*), some lentils and oilseeds. Besides these crops, we also have several mango trees on the farm planted under government run MGNREGA work. In good seasons we earn around INR 10000 from the fruits, while agricultural income from rice sale is around INR 20000 per year. To supplement this income, we rear chickens and goats and also work on wages either in the village or outside. I have 11 members in the family, including my 4 grandchildren and therefore we prefer to work within the village under MGNREGA.

Most farmers in my area use chemical fertilisers, not out of choice, but out of compulsion. Buying these from the market increases input costs, which we cannot afford. Still, I used to buy

Shantaram Choudhary

Sadakwadi, Mokhada block, Palghar district, Maharashtra | **Land**: 7 acres | **Grows**: Finger millets, Rice, Lentils, Oilseeds, Mangoes | **Livestock & others:** Chickens, Goats
Support: Pragati Abhiyan

seeds and urea from the market for rice, to get more yield. We believed in a simple equation - more fertilisers mean more production. This, however is not the case with *Nagali* that is cultivated by the traditional method. To prepare the land before sowing, we burn stack of wood, dry grass and cow dung cakes on the farm and broadcast *Nagali* seeds. We neither purchase any fertiliser from market nor do we use any homemade fertiliser. *Nagali* is an important crop for us but remains neglected and that reflects in decreasing production year after year.

In 2019, I changed my conventional method of *Nagali* cultivation. With support from Pragati Abhiyan, a Nashik-based organisation working with rural communities, I adopted a totally organic and systematic process for cultivation. In this method, first, we created saplings of the home conserved Nagali seeds in nursery beds. In three weeks, saplings got ready for plantation. To ensure proper spacing between the saplings, we used ropes and marked the plantation spots with red ribbons. I used this new method only on a half-acre area, while using the traditional method on the remaining half acre. I was surprised to see the striking difference in the plant growth, so were other farmers and agricultural officers who visited to see the results of the new method. The height and spread of the plant were better when compared with the conventional method of chemical farming. I applied *Jeevamrut* (liquid organic fertiliser) and sprayed *neem* oil, which boosted the growth further. The production also increased with this method; I got a total of 3 quintals from half acres compared to 1.5 quintals from the traditional plot.

Next year, in 2020, I expanded areas for *Nagali* cultivation. I also supported 10 more farmers to adopt the organic method for *Nagali* cultivation, who were motivated to use it after seeing my results. We have formed a Farmers Group to share our knowledge and resources. The organisation has given a cycle weeder and thresher to the group, which we use among ourselves. This year, the total production of *Nagali* was 7 quintals. After many years, there was enough stock of Nagali in the house. Especially, at a time when we were village bound due to the pandemic.

> **“Looking at the quality and quantity of Nagali in my farm, I got a satisfaction which I did not get for many years”**

Nagali, the super food, has now returned to our daily diet. Earlier we used to make *Bhakari* from *Nagali* flour, now the women have learned to make a variety of sweets like *laddus* and *khir.* Our children love these delicious varieties as much as they like *bhakari*.

Pure and Pious

My age was 10, when pesticides and fertilizer came into Punjab. I studied chemical farming and saw the yields increase. Seven years ago, I learned that this is not sustainable. In Punjab, there used to be very dense forest, but now there is only 6%. According to WHO, we need 33% forest to support our population. The 5 rivers of Punjab are polluted. Punjab uses 17 % of the pesticides in India. Personally, I have seen overuse of pesticides over the last 20 years, the wells have dropped to over 350 feet. We are suffering from lung cancers and cardiac problems.

I am at peace since I started Natural Farming.

My conversion was a long process. I attended the workshop of Subhash Palekar arranged by KVM and studied some books. I understood my own ignorance. People in my village complained that they could not find any pesticide free vegetables, so I took up

Nirmal Singh

Bhotna, Barnala, Punjab | **Land**: 28 acres, 9 in natural farming, the rest rented |
Grows: Vegetables, Paddy, Wheat
Support: Kheti Virasat Mission

the challenge.

My first big mistake was not living on the farm as it is about 20 km away from my home. The most effective fertilizer on the farm is the farmers' footstep.

My first step was to make my soil healthy. If you have a healthy soil, pest problems will be less, and the crops will have a strong immune system. The soil is a living organism, and it acts as immune system for the plants.

I stopped burning all of the paddy straw in the field and turned it into compost. In the first year, yield of my wheat crop was very low, so I added a great deal of cow dung to the field which really worked. I use aurogreen (green manure) in the field each year and organic manure made from cow dung mixture. The ground is exposed to the sun directly after the harvest.

I was able to get some local seeds from a seed bank run by Amarjeet Sharma in Channa village near Jaitu. For 1½ years I exclusively grew vegetables before switching to mostly paddy and wheat.

I don't have livestock, so I have to purchase about 10-15 trolleys of cow dung per year (INR300 per trolley) from a local natural farming enthusiast. Weeds are controlled manually and then mulched. In addition, weeds are controlled either with aurogreen or sometimes let it happen by pests naturally.

> **"I feel that I am doing a pious thing, it brings me joy to purify the water and work with nature."**

In chemical farming there is no place for cows. In natural farming, we go with natural outputs. I am considering to buy an indigenous cow to get manure naturally in form of cow urine and cow dung.

To market wheat, we organized meetings in the city to spread awareness to buy organic wheat. I sell my paddy in the open market.

I hope to make my field a model farm where villagers can come and see my efforts and hopefully get inspired to take up natural farming. My village is the first in this district to have 100% organic kitchen gardens and majority of the farmers in the village are now growing either organic wheat or paddy. In future, we hope to reduce water usage by 50% in our paddy fields.

Organic farmers have lost their traditional knowledge. I am hopeful for the future though; I am trying to do my part and helping people who want to change. If the effectiveness of natural farming is proven in one village, others will follow the example.

Daring Dream

Sonali Chakraborty has proved that farming is as profitable a business as any other, if done properly.

In 2018,social organisations YUVA and CWS ran a campaign "Pesticide free Jharkhand". Sonali was also a part of this campaign. The campaign motivated her to buy 1 acre of land in a

Sonali Chakraborty

Jamsedhpur, Jharkhand | **Land**: 3 acres | **Grows**: Wheat, Rice, Pulses, Mustard, Vegetables and fruits | **Livestock & others:** Cows, Goats, Ducks, Indigenous Chicken
Support: Centre for World Solidarity

remote village, 30 km away from Jamshedpur, where she could grow her own food. Slowly, as she started enjoying this work, she took the land adjacent to her farm on lease and started out on her journey as an organic farmer. She got the support of her sister Barnali Chakraborty. The sisters follow different methods of organic farming. While Sonali mostly handles the farming related affairs, Barnali manages the marketing.

On her land, she grows crops like organic fruits, vegetables, rice, and wheat. She keeps getting produce from her field throughout the year. The proud farmer practices organic farming and strongly denounces the use of chemical pesticides and fertilizers. She is well-convinced that organic farming increases soil fertility as the soil is fed with micronutrients from compost, plant residues, and food wastes. Their produce reaches more than 50 families in Jamshedpur and surrounding areas. People come to her farm to buy vegetables and other things. “I am not one of those who would take the produce at one go to the market. Our vegetables and other produce go directly to the customers,” she says.

> **“Its hard work. There’s no working hours in a farm.”**

Sonali suffered losses in the beginning but there was a desire to do something worthwhile and she never backed down.

After practising organic farming, Sonali took her farming a step further and started Agro-tourism. One can book tours of her farm or even enjoy ‘farm stays’. During farm stay, people not only get a chance to be close to nature, but they also take part in various activities. For example, plucking vegetables from the fields, practicing yoga etc. Her farm is today known as ‘Sonali Agro Farm’.

Sonali worked day and night from agriculture to agro tourism to make her dream come true. This required more ‘effort’ than ‘money’.

Sonali is a role model for neighbouring farmers, and she helps them as well. She plans to set up biogas plants. She has also kept some livestock for milk and manure. She also rears cows, goats, ducks, and indigenous chicken in her farm. In a small pond, she also raises fish.

She says, “Although most of my family members are employed, everyone is connected to agriculture. Earlier we all used to grow crops only for our family. But now we have started growing produce for the market as well.”

Not Alone

The story of Srinath Reddy is an inspiring tale of reverse migration from a rural village in Andhra Pradesh. Srinath Reddy moved to Bangalore to complete his education and started working as a graphic engineer in a design firm in Bangalore. After few years of working, in 2015, he relocated to his native village to help his father with farming.

In 2016, encouraged by the RySS field cadres, he decided to start natural farming in his 14 acres of mango orchard. From the knowledge gained from the field cadres and through undertaking trial and error methods, he devised a procedure to ensure high-quality mango yields in his orchard, using organic growth promotors and organic insecticides. Efficacy of the results strengthened his belief in APCNF.

He started accompanying the RySS field cadres to help farmers

Srinath Reddy

B.Rajapalli, Kadapa, Andhra Pradesh | **Land**: 14 acres | **Grows**: rice, millets, groundnuts, chilies, mangoes
Support: Rythu Sadhikara Samstha

transition from chemical to natural farming. By informing them about the benefits of APCNF. During these meetings, he observed that the farmers were wary of natural farming due to dearth of knowledge about the marketing of organic produce. Srinath was well aware of the exploitation of farmers through middlemen and debt caused by chemical farming. This, in turn, motivated him to start an NPM (Non Pesticide Management) shop so that farmers had access to organic inputs.

In 2018, Srinath set up an NPM shop. He started providing natural inputs to farmers in his village. To ensure the efficacy of his organic inputs, Srinath started to experiment on demo plots in his fields. In 2018, Srinath Reddy started with a customer base of 430 farmers undertaking natural farming in 688 acres of land and due to high-quality inputs and in-person visits conducted at the field, his customer base exponentially increased. In 2019, his NPM shop served 1890 natural farmers across 3969 acres.

While the harvest from natural farming was promising, Srinath realized that the bottleneck came in finding the buyers willing to purchase the product at a fair price. To solve this problem, he set up an output shop to sell organic produce to small-scale farmers. Using his business acumen and contacts from his co-workers and clients from Bangalore, he started selling rice, millets, groundnuts, chilies, mangoes. His clientele is spread across major cities in India like Bangalore, Visakhapatnam, and Hyderabad.

> “Agriculture is not considered a lucrative career amongst youth but this mentality should change as Agriculture sector has a lot of untapped potentials.”

During pandemic, Srinath helped small-scale mango farmers sell their products at remunerative price to buyers. When the word spread, all the neighbouring village farmers also started selling their mangoes through the output shop and the total business for the season was around 1 crore rupees.

Srinath also helps the poorest of the poor farmers by providing inputs and consultation free of cost. He organizes and helps in community input preparation to create awareness about APCNF. Through his efforts and resilience, Srinath has created a large-scale awareness about natural farming and brought urban market networks to small-scale farmers in his village. He is inspiring many youths in his village to follow in his footsteps.

A Brave Step

Nazir Ahmad (37) and his wife Arifa (30) are blessed with four kids. Nazir made his living through carpet weaving besides agriculture. But things started turning bleak due to a sudden health issue which made it very difficult for him to earn. As a result, all the responsibility of the family shifted on Arifa's shoulders. Since then, Arifa, the lone bread winner of the family, started her journey as a small farmer, besides being an artisan, to feed her family, as

Arifa

Jammu & Kasmir | **Grows**: Tomatoes, Brinjal, Raddish, Knol-khol and Capsicum
Support: Indo Global Social Service Society

produce from her land was not enough to support her family.

To overcome the trap of poverty, Arifa took a brave step that changed her harvests for the better. She joined a farmer producer group formed by IGSSS and received trainings on sustainable agriculture techniques to help her increase the yields. She was surprised to learn that the chemical fertilisers and pesticides could damage the land and make it even more difficult to produce healthy crops.

Arifa learned about environment-friendly agriculture practices, such as composting, seed preservation and the use of organic pesticides. By replacing chemical fertilizers with organic fertilizers, she was able to increase the fertility of the soil. She also realized what a difference it would make for her family if she could grow her own nutritious fruits and vegetables that could be incorporated into their diet.

> **"I believe and hope that all local farmers will use compost and organic pesticides in their kitchen garden one day."**

Agricultural training emboldened Arifa's ambitions for the future. With great excitement, she began growing vegetables on her small plot of land with the seeds provided as a support for income generation by IGSSS, putting all the knowledge gained from trainings into practice.

Arifa's strength and passion for learning started paying when the harvest was more than what she had expected. She was thrilled to have quality vegetables for the consumption of her family. In addition to this, she had enough produce to sell. She earned INR 3,32,000 by selling her different vegetable crops: 930 Kgs of tomatoes, 886 Kgs of Brinjal, 1083 Kgs of raddish, 2037 Kgs of *Knol-Khol* and 783 Kgs of Capsicum. With her income, she knows that she can look towards a peaceful future.

"By applying what I learned through IGSSS programmes, I turned from an ignorant into an enlightened farmer," says Arifa.

Crops of Labour

VIEWS came to me and introduced the concept of Natural Farming. They explained to me the techniques of natural farming, preparation of *Jeevamrut* and *Macha* tonic (fish-based manure), improved planting techniques and drip irrigation methods. I attended a training session in Taptapani, Odisha. It helped me to experiment with natural farming with

Murali Pradhan

Kishorchandrapur, Chikitia, Ganjam, Odisha | **Land**: 3 acres | **Grows**: Paddy, lentils, Millets , Brinjal, Okra, Beans, Papaya, Banana and Mushroom | **Livestock & others:** Cow
Support: Voluntary Integrated for Education and Welfare of Society

paddy in 1 acre of my land. I treated the seeds, using *Bijamrita*, and planted the sapling in Row arrangement. The neighbouring farmers ridiculed me, and my family was sceptical. The snide comments did not stop till about after a month when the crop began to flourish. I dug a ditch for water flow and maintained 2-3 inch of water for the standing crop.

The yield was excellent, and the plants were healthy. I got 5680 kilos of paddy from that 1 acre. The growth in yield was from 12-13 bags per acre to 40 bags with only one eigth seeds sown. I knew I took the right step. Now, in my 3 acres of land, distributed over two plots, I cultivate, paddy, lentils, millets and several vegetables.

VIEWS provided me with organic fertilisers and weeder in the beginning. Now, I use fewer seeds per acre, the yields are high, and the labour charges are reduced. This has resulted in better income for my family. Apart from the excess labour required during planting and harvesting, it's only my family who invests labour on a regular basis. Water for irrigation comes from a well in the field. I also have a desi cow for the preparation of *Bijamrita* and *Jeevamrut*.

> **"I am almost ashamed to admit that I used fertilisers and chemicals in my field earlier."**

Now my neighbouring farmers also got interested about natural farming. I shared my knowledge and offered them local varieties of seeds, and organic inputs. Almost all of the 24 households in my village have transitioned to natural farming after me. The women are really interested, and my wife and I help them with cultivation techniques and seeds. This year, I planted summer-time millets. I got 10 kilos of Millet seed (*Baishnavi* variant) from the Krishi Vigyan Kendra (KVK) for free. I sowed 2 kilos in an acre and got a yield of 500 kilos of high-quality millets.

The selling of crops is a bit tricky in our region. The middlemen and influential traders take away INR20 from every INR30 profit a farmer makes. Therefore, I sell millets in *hata* (daily markets held locally) and the vegetables in my village. I can proudly say that the produce in my field is of the best quality. I have also started manufacturing organic manure in bulk for a farmer in the neighbouring village, who bottles and sells them. This supplements the family income. My wife has been awarded Krishi Vigyanik Award from NABARD. Together we take all decisions, work in our fields and try to live a healthy life.

More and Better

Earlier, when Manibai and her husband Mangilal started farming, they used to do mixed cropping of *jowar, bajra, mung, chawla, urad, laltuwar, kulattha, rala, bhadi*, just like their forefathers, but as the hybrid seeds came in, they shifted to Soy, *kapas* and cash crops. There was an increase in production, and a good market price. They also used chemical pesticides and fertilisers in ample amounts but it proved to be an expensive deal as they

Manibai

Devnaliya, Udaynagar, Devas, MP | **Land**: 5 bigah | **Grows**: Kharif and Rabi crops | **Livestock & others:** 3 buffaloes, 2 bulls,1 cow and 1 calf
Support: Samaj Pragati Sahyog

had to get loans on high interest to procure seeds, manures and pesticides. In 2003, SPS started a women savings group in the village. They started with a contribution of 20 Rupees. Manibai and others started getting loans with small interest and easy instalments to meet their needs. Apart from discussions on loans, the group facilitator discussed how to preserve and use old seeds and cowdung manure for better crops. She also warned against the expenses involved and health hazards resulting from chemical inputs to farm. Farmers were taken for exposure visits to organic farms.

The advice had no effect on the farmers at the outset. Increasing expenditure (INR15000-20,000 per year) and repeated counsels from the organisation, however made them ponder. So, about 10 years back, the organisation used NADEP (an organic composting method named after its finder Narayan Deotao Pandharipande from Maharashtra) compost from concrete tank and mudpit, and vermi compost in the field. The result impressed Manibai. Since then, all the farm waste, cow dung and soil is treated to get manure for the farm. About 10-12 trollies of organic manure is more than enough for their 5 bigha land.

> **My farm has come alive with crops and water, bees and spiders.**

To meet the acute demand of water for Rabi crops, SPS did a survey to install pipeline and contributed 3 lacs. The members of the savings group took a loan of 50,000 and contributed. In 2016, the pipeline brought water from the Jhirpania Barrage which was situated 3.5 kms away and the village grew the Rabi crops (gram, wheat) for the first time.

Manibai uses organic compost for her saplings. She uses leaves of easily available plants and trees around her, like *akav, karanj, tamser, sitaphal* to prepare organic pesticides and uses it frequently on her crops. She has set up an organic pesticide unit in her house, from where she sells 700-800 litres every year.

They have 3 buffaloes, 2 bulls,1 cow and 1 calf. Manibari and her family believe that it's imperative to have livestock if an organic farm has to be maintained. They have started earning about a lakh every year and are delightful that they made a right decision.

Worms and Weeds

My encounter with natural farming dates back 15 years when I was frequently facing a lot of health issues, especially related to digestion. I had tried all sorts of medicines, but they all provided only temporary relief. That was when I decided to pay a visit to the local doctor in my village who practiced Naturopathy.

"We are Nature. Nature is Us." His words echoed in my ears! During my treatment, I learned a lot about how the body and nature are synonymous. I saw how just a few days of eating clean and organic

Mahesh Anna

Ammanaghatta, Gubbi, Tumkur, Karnataka | **Land:** 10 acres | **Grows:** Ragi, Tomato, Mango, Papaya, Finger Millet, Ginger, Turmeric, Lemon, Chillies, and a wide variety of green leafy vegetables.

food made me feel active and energetic throughout the day.

I thought that if the grains from the conventional chemical practices have destroyed our body so much, then what impact they'd had on the soil and water!

That was when I gave Natural farming a shot! I started investing myself in learning about the techniques by attending various workshops and seminars including the one that was conducted by Subhash Palekar and also reading books like One Straw Revolution by Masanobu Fukuoka.

I had made up my mind to completely switch to natural farming!

The initial period was a struggle because there were no set ground rules and everything seemed like a hit & trial method. The yield was low initially and a lot of people in my village started questioning my practices. This had a negative impact on my family who were otherwise supportive. However, I refused to give up. In natural farming, patience is the key.

> **"Natural farming has been more like a spiritual journey for me that has taught me so much about nature, as well as my own body"**

Soon squirrels and worms started making their homes on my farm and I heard the birds chirping around. I hadn't seen such a sight before.

A year later I noticed how the water consumption was a lot lesser when compared to the times before. Soon I started growing variety of crops.

A lot of people advised me to, at least, spray weedicides. However, I refused to heed their advice. Weeds made the boundaries around my farm. This helped in nitrogen fixation of the soil, and helped the plants hold water while maintaining the temperature of the land.

The foliage, twigs, and other plant wastes are recycled as manure to the crops and serve as fodder for my livestock. I observed that when my cows were fed with the produce from my organic farm, the quality of milk and manure was hugely better than before and their health also improved significantly.

Today my farm is spread across 10 acres of land and is full of house crops which are all sold in the market and used at home.

It delights me that the same people who questioned me years ago, prefer my crops over those of others. I have heard them praising the taste of my farm fruits.

Ensuring Diet Diversity

The blind following of chemical input based agriculture everywhere has made farming less viable and unrewarding. Its produce is unable compensate the household dietary requirements in terms nutrition and seasonal diversity.

Purnea district, an intensive agriculture area of Bihar, is witnessing the challenges of chemical intensive farming and its impact on overall nutritional status of people. Nutrition Sensitive Integrated Farming System (NSIFS) approach introduced under Swabhimaan initiatives focuses on increasing the quality nutrient intakes in small and marginal households by encouraging rearing of animals, birds and kitchen gardens and establishing a resource flow relationship, such that waste from one source works as feed for the other system.

Sushma Devi, a Jeevika member and small farmer was facing lack of food

Sushma Devi

Kachnahar, Purnea, Bihar| **Grows**: Paddy, Maize, Mulberry, Jute, Banana, Planktons, Guava, Vegetables | **Livestock & others:** 15 hens, 13 ducks, pigeons, one cow
Support: Abhivyakti Foundation

diversity at home. Her family of 6 members including her husband Suraj, her elderly in-laws and two kids, have different food choices and dietary requirements. Food from their own farm is the only solution to meet their needs. The NSIFS approach introduced by Jeevika with technical inputs and pilot modelling from Abhivyakti Foundation raised her hopes. After the training, she focuses on increasing the food diversity in household. She had a 70'x70' pond, which was seldom used to produce fish. The family produced crops like paddy, maize, mulberry and jute from their main fields apart from some vegetable production in post rainy season and some pigeons at home. Mostly the production sources were from four of the subsystems viz. crops, trees, pond and birds. The NSIFS approach helped her to add two more subsystems: animals and bio-digesters, apart from expanding the diversity of birds. She has also planted some banana, planktons and guava.

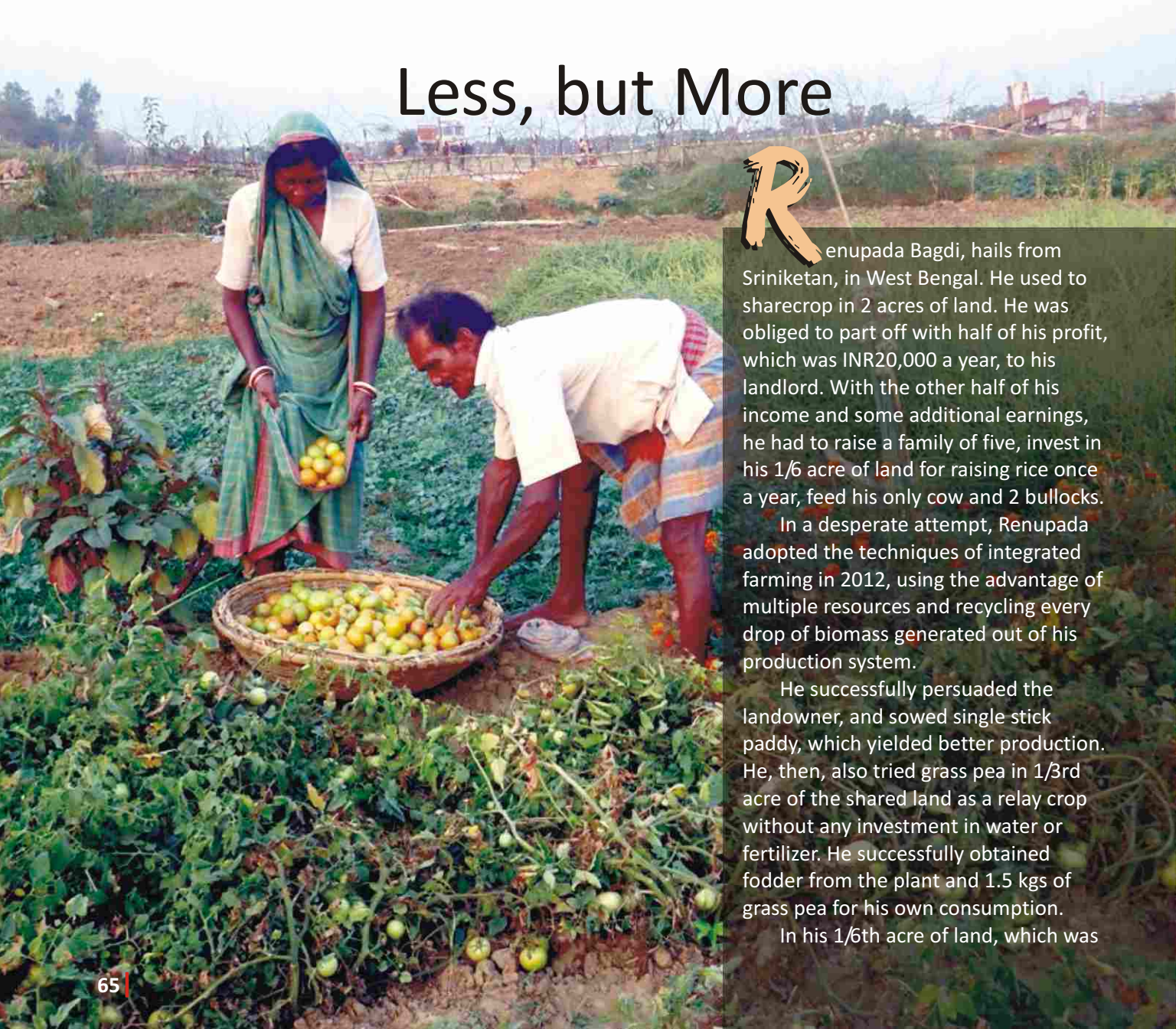
After setting up all these six sub-systems at home, she is getting sufficient nutrients from different sources at home in the form of eggs, meat, fruits and milk.

She constructed a duck and hen house over the pond and currently rears 15 hens, and 13 ducks from which she is getting 14 eggs every day. The duck and hen excreta, directly drops into the pond, saving her the cost of feeding fish which she has reared in the pond. The women in the house do not consume hens or eggs, so she has decided to add 10 more pigeons at home. She has also bought a cow. Apart from milk production, cow dung and cow urine are also now efficiently used in making compost and liquid manure for instant use in her fields. The increased income from the livestock has helped her to invest more in her fields and develop the kitchen garden more efficiently.

> "*Poshan Kheti* helped me to develop the system where I can grow everything I need for my home and earn some income also."

Sushma has carefully developed her kitchen garden with green leafy vegetables, vitamin A rich fruits and herbs for regular supply to her kitchen. With composting, liquid manure techniques, use of biomass and recycling, she has reduced the input cost of farming by one third. Convinced with the NSIFS approach, Sushma and her husband now help other small farmers in their neighbourhood to follow the same.

Less, but More



Renupada Bagdi, hails from Sriniketan, in West Bengal. He used to sharecrop in 2 acres of land. He was obliged to part off with half of his profit, which was INR20,000 a year, to his landlord. With the other half of his income and some additional earnings, he had to raise a family of five, invest in his 1/6 acre of land for raising rice once a year, feed his only cow and 2 bullocks.

In a desperate attempt, Renupada adopted the techniques of integrated farming in 2012, using the advantage of multiple resources and recycling every drop of biomass generated out of his production system.

He successfully persuaded the landowner, and sowed single stick paddy, which yielded better production. He, then, also tried grass pea in 1/3rd acre of the shared land as a relay crop without any investment in water or fertilizer. He successfully obtained fodder from the plant and 1.5 kgs of grass pea for his own consumption.

In his 1/6th acre of land, which was

Renupada Bagdi

Birbhum, West Bengal | **Land**: 1/6 acres | **Grows**: Paddy, Black gram, Soya bean , Lentils, Linseed and Mustard | **Livestock & others:** 2 cows, 2 bullocks, 1 calf, 2 goats, a sheep and 15 ducks

Support: Development Research Communication and Services Centre

once mono cropped, he started cultivating paddy and black gram, soya bean in the field dyke in rainy season. In winter, he tried lentils, linseed and mustard as mixed crops. As, in both seasons, he used only organic input, the water retention capacity of the soil improved. His nutrition garden, which grows in less than 1/6th acre, in a fallow land beside the railway track, is now productive throughout the year, with no cash investment. The entire farm input, in terms of fertilizer and pest repellents, comes from recycling the biomass which he gets from his livestock, plants and other agro wastes. He cultivates 10 to14 varieties of crop every season and most of the production goes for family consumption. This enriches the nutrition profile of the family, and also saves money.

> **"Yes, I got little less paddy in my organic field in Kharif, compared to the 2 acres of chemical farming (11 Q as opposed to 13.5 Q), but my net income is huge (INR7400 per 1/3 acre as opposed to INR1430), as I have no direct cash investment."**

His livestock and birds have now increased to 2 cows, 2 bullocks, 1 calf, 2 goats, a sheep and 15 ducks. The feed for three livestock and birds comes from the straw, mustard cakes, pulses and agro waste from his own production. He collects each type of dung and recycles through vermicompost and biogas plant, which are the key elements to his success. The eggs are often sold in the market. With the support of DRCSC, the bio-gas plant saves INR50 per day towards fuel consumption and saves the drudgery towards cooking in non-gas ovens. The slurry is fed to the vermicompost. When one compares the output of biogas in economic terms, it is almost 4 times the value of its recurring input cost. About 109 quintals of cow dung has been recycled annually by Renupada through biogas for producing cooking fuel, vermi-feed (for vermicomposting) and organic inputs for the farm. Renupada also practices aquaculture in a leased pond and his share of earning is INR4250 annually.

His annual profit is now INR62222 from 6 sources and he saves up to 19 types of vegetable seeds for future use.

No Longer Barren

Sand casting of agricultural lands is a common problem in low lying villages situated near river banks. The passing rivers carry a high amount of sand and silt, which gets deposited on agricultural lands during monsoons, floods and dam breaches, rendering the land unfit for cultivation. The state of Assam in India is notorious for floods during monsoon season which causes a huge loss of people's life and property, especially of small farmers who face huge losses in the form of collateral damage to crops and livestock.

Khabolu village is an example of one such village which experiences recurrent events of floods and sand deposition. Anamika Mili Narah (27yrs), Iti Payeng (32yrs) and Deubari Narah (40yrs) are residents of Khaboli Village who practice farming independently on their respective agricultural lands. Situated alongside the banks of river Subansiri and Ranganadi, the climate is preferable for

Anamika, Iti, Deubari

Khabolu Village, Bank of Subansiri, Ranganadi, Assam | **Land**: 1 hectare |
Grows: Potato, Pumpkin
Support: Indo Global Social Service Society

cultivation of paddy crops, however after an episode of monsoon floods, their agricultural lands were left barren due to sand deposition, making them unfit for cultivation. The incident hit hard on the livelihood of the families of farmers who were forced to abandon farming and turn to work as wage laborers to earn money. This also had an adverse effect on the food security situation in the region, as majority of farmers were unable to sustain their families' livelihoods due to loss of income from agricultural activities.

IGSSS intervened in the lives of these farmers as a part of its action based strategy to reach out to small and independent farmers and help them revive the agricultural land and boost its productivity. Anamika, Iti and Deubari were given training on scientific farming methods, including the use of bio-pesticide. Capacity-building workshops were conducted in partnership with local Krishi Vigyan Kendra (KVK) to train farmers about the farming practice of Rabi and Kharif crops. Post training, it was decided to convert the farmers' barren and unirrigated land into cultivable agriculture land. Intercropping was identified as a suitable strategy to revive the land from the spectre of sand casting. The three farmers agreed to explore the opportunities to promote an intercropping model in the sandy soil, measuring 1 hectare of land. IGSSS provided them with 3 quintals of potato seeds and 60 grams of pumpkin seeds. The potato was to be planted as the main crop and pumpkin as the intercrop.

> **"We had never imagined that we could grow anything in this land."**

In the first harvest of the season from intercropping model, farmers produced around 13 quintals of potato. Out of 13 quintals, farmers decided to sell 10 quintals worth of produce for INR20,000 and set aside the remaining 3 quintals for purpose of seeding in the next season. Similarly with pumpkin crop, farmers harvested 600 pieces in first season with each piece fetching up a price of upto INR 30-40. After getting positive results from first harvest, farmers also plan to increase the area of cultivable land for next season. The farmers have revived their barren sandy land to cultivable irrigated land for income enhancement through application of organic farming and organic pesticides.

Forever Natural

I have never used chemical fertilisers in my field. Although I did not know the methods of ZBNF, I used cow dung-based manure to maintain soil fertility in my plot. Farmers in our area have always been using natural methods of farming to be in harmony with the nature. In 2017, I was introduced to better methods of natural farming by an organisation named SWATI. I now use local seed variants, make *Bijamrita* and *Jivamruta* from the cattle litter and sell the produce in the local market of Raikia and to the Kandhamal Apex Spices Association for Marketing (KASAM) organisation.

I grow local variant Turmeric in about an acre of my land, traditional rice and millets in half an acre each. I

Krisastam Pradhan

Pangananju, Raikia, Kandhamal, Odisha | **Grows**: Turmeric, Rice and Millets |
Livestock & others: 10 goats and 15 cows.
Support: Social Welfare Agency and Training Institute, Odisha

also grow ginger and a local variant of potatoes in patches. The climate here supports up to 3 cropping cycles a year, barring one dry month. The agriculture is rainfed since we don't have any irrigation project or canals in our area. For the turmeric, I treat the field with *Jivamrut*. After planting the shoots (pua) in April, the field is left on its own for a month. Following that, I cover the field with branches and leaves of Sal (Shorea robusta) as an achadana (Mulch). The layer prevents the growth of unwanted weeds, maintains soil fertility and deters soil erosion because of runoff rains. After some time, I remove the branches, while allowing the leaves to rot off in the field into biomass. I apply one or two dosages of *Jivamrut* to the standing crop, before harvest in December. Each dosage consists of Cow urine, *Neem* leaves, *Karanja* (Pongamia) and *Arakha* sap (Calotropis gigantea), procured locally by hired labour which costs me 200 rupees a day.

> **"I have noticed more outputs from my farm, reduction of cost and better plant health"**

I grow rice in the Kharif season while using local variants of seed. State seed distribution system is non-existent in our area, with seeds only black marketed by shopkeepers. Therefore, I resort to local variants only. Fifteen to twenty years back, I used to grow millets only, but we used to get very less price. So, I switched to a combination of Turmeric, Ginger, Rice, Millets, Potatoes, and local vegetables.

My field yields 10-12 quintals of rice and 24 quintals of turmeric a year. I sell half of the rice to the govt procurement agency at INR18 per kilo. The post processing weight of turmeric (Grade B) is about 5-6 quintals, which KASAM procures at INR61 per kilo (unlike the local traders who offer less than half the minimum selling price).

I have been an active member of the Odisha Millet Mission (OMM) with SWATI. I am also on the BOD of Raikia Farmer Cooperative Society, a 300-member organisation that is aimed at influencing the farmers for better farm methods. I have influenced other farmers to switch to natural farming methods using bio inputs. A few farmers of our region use chemical fertilisers to increase yield, but their soil fertility gets compromised within a short time. Most farmers in our village, therefore, still prefer traditional methods.

Self-reliant Homes

Jayanti's homestead along with her own house is about 5000 sq ft. Three years ago, she had planted some fruit plants in the home yard. She also grew brinjal, tomato and leafy vegetables in rainy season. Her husband Jagnnath grew only paddy in their 2 acres of farmland. Faced with rising costs of paddy cultivation, he discussed cotton cultivation with local agents.

Jayanti joined the project trainings of IGSSS and actively participated in the discussion on climate resilient nutritious food crops and round the year production of safe, clean and nutritious food. As a result of training sessions accompanied with critical reflection on agriculture and knowledge sharing, she began a field demonstration unit in her own home garden. Her husband Jagannath Bhoi supported her in this.

In the knowledge exchange meetings Jayanti learned to estimate her family's vegetable requirement and the production processes which could help her to meet the

Jayanti Bhoi

Kansil, Gajabahal Grampanchayat, Odisha | **Land**: 5000sqft homestead and 2 acres of farmland | **Grows**: Fruits, Vegetables like Brinjal, Tomato, Leafy vegetables, Paddy, Arhar, Black gram, Green grams, Beans
Support: Indo Global Social Service Society

needs. She planned to cultivate vegetables in her own home yard round the year.

Jayanti's family's daily intake was 800-1500 gm vegetables, which cost INR 50 to INR 60 as per market price. Hence, the weekly expenditure was of INR 350-400. Since vegetables were scarce in her village, she had to buy them from the market. As she did not have storage facilities, the vegetables perished easily within a couple of days. So, she purchased only in small quantities.

In the Kharif cultivation season of 2018, Jayanti received support for seeds and a vermicomposting bed from IGSSS. With this help, she started producing nutritious vegetables.

Jayanti prepared a crop cultivation plan of mixed cropping to produce more crops in her little land and with less water, through climate resilient farming practices. She grew 21 species in 2019 amounting to 1064 kgs and made a savings of INR 30,428 .

Now Jayanti is cultivating 21 types of vegetables and 7 types of flowers jointly with her husband Jagannath. They have prepared 8 types of bio pesticide, 3 types of hormones and 3 types of composts and after having applied in their own field, they have shared their knowledge among farmers.

Since the past one year, Jayanti has stopped buying vegetables form the market. Jagannath began earning INR 300 to INR 400 from sale of organic vegetables produced in their homestead. Jayanti now has 8 types of indigenous seeds. Her husband Jagannath has dropped the idea of cotton cultivation and cultivates green gram, black gram, beans after harvesting of paddy in addition to *Arhar* in the farm bund.

> **"Every farmer should produce and conserve seeds, organic compost and natural bio pesticides"**

Through her determination and perseverance over 18 months, Jayanti has succeeded to make her *gharbari* as farmer's field school. 15 farmers of the nearby villages have learnt from the experiences and knowledge of Jayanti and Jagannath.

Jayanti always gives importance to the role of women in the process of crop selection and poison free cultivation. She regularly includes women members from the Self Help Group for vegetable sapling production, preparation of bio pesticides and round the year mixed cropping.

Prized Return

For the last 20 years, there hasn't been any miraculous increase of production in chemical farming. Instead, we paid a huge amount ot cover the rising cost of the inputs which lead to an overall increase in cost of production. I realised that chemical farming is not economically viable, it rather tends to destroy the small farmers, because of the debt trap.

Five years ago, after attending several workshops and studying the books of Subash Palekar and Masanobu Fukuoka, I turned into a natural farmer at one go.

Initially, I suffered from decrease in the yield and many pest attacks. There was also a great deal of fear and ignorance about the new model within the family. We also faced some problems due to improper use of *Jeevamrita* and *Bijamrita.* I think a complete knowledge of the method would have led to no loss. After one year, I realized where the weak points and negligence on my part were. I continously kept improving and refining my methods.

Jarnail Majhi

Sangur, Punjab | **Land**: 8 acres | **Grows**: Sugarcane, Wheat, Paddy, Vegetables, Fruits, Pulses | **Livestock & others:** 1 cow, poultry
Support: Kheti Virasat Mission

The techniques that I use are those prescribed by Subash Palekar: Mix cropping, *bijamrita, jivamrita*. I try to follow a North-South orientation for my planting to optimize the reception of sunlight by my plants and enhance the photosynthesis process. I also use green manure. I have only one desi cow that gives around 11 litres of milk per day .

I use a special method for sugarcane. I use a small tool to take only the eyes of the sugarcane and not the pulp (which is much more economical). Then I treat these eyes with *bijamrita* and I leave it in fresh cow dung for 4 to 5 days. During this lapse of time, the eyes grow up to 2 inches, which is usually reached after one month when sown in the soil directly. Then, I use the eyes in a densely sown nursery after one or two months. When the plants are one foot tall, I transplant them using an 8 x 2 feet pattern in order to apply mix-cropping, with vegetables, commercial crops and eventually, ginger (that likes shade).

On my farm, I practice wheat-paddy rotation; I grow sugarcane and vegetable in intercropping; I also grow pulses. I do Paddling and flooding, use azolla as a nitrogen fixing water plant and I practice mulching when I grow wheat.

My other sources of income are from raising poultry and renting of my combine-harvester machine.

I recently held a food festival on my farm. I also encourage people to come and visit my farm, especially the youngsters.

I practice direct marketing mostly with people from the neighbourhood. It is becoming easier because nowadays there is a craze for healthy food among educated people, who are health and environment conscious. I sell my products at a premium price as they deserve it.

> **“Natural farming is also zero-budget farming and therefore it is independent farming.”**

Natural farming should be started in a cooperative way, where the farmers should be helping each other without relying on labour. The cooperative system would make it possible to prevent fraud and misuse of the techniques. A natural farmer should provide pure food for the society. He should claim the purity of his products with confidence.

To spread the ideals of natural farming to the new generation, we should have food festivals, events, workshops, we should create awareness about the disadvantages of chemical farming and the benefits of natural farming. Media and universities should partner in this mission.

I try to spread awareness by giving lectures and demonstrate how natural farming works.

Adding Diversity

Sulochana, a mother of 3, had a tough time since her husband, Maheshwar, fell sick and was unable to work. It had been tough for her to take care of the family and manage her 1.6 hectares of farm with major portion of paddy fields and about 20 decimal of homestead land and 60 decimals of fallows. Apart from the farm, she has one cow, one ox, one goat and 8 trees. She hardly had any resources to invest in the farm to improve production. In addition to the small piece of paddy farm, she had to work in the fields of others, as wage labourer, to earn living. She wished to grow more for her family and earn a regular income, but she realized that chemical farming, requires high inputs and money which she could not afford.

The SIFS orientation started with her engagement in Jyoti Sakhi Samuh, a self-help group (SHG) formed in her locality for training on credit activities and sustainable agriculture practices. The idea of SIFS, appealed to her and subsequently, she attended several training activities conducted as a part of programme and learnt to prepare compost, liquid manure and

Sulochana Devi

Deoghar, Jharkhand | **Land**: 1.6 ha farm , 20 decimal of homestead land and 60 decimals of fallows | **Livestock & others:** One cow, one ox, one goat
Support: Abhivyakti Foundation

pest repellents using plants and biomass available in the locality. She has now set up 5 bio digesters that include 1 vermicompost pit, 2 heap method compost units, 2 circle gardens, liquid manure and green manure preparation unit. The farm pond has been developed, and a trellis system has been established which is a regular source of vegetable for home and the surplus is sold to open market. She has also bred livestock mostly through small saving investments. In the shadow area of the land, Sulochana, along with other women of the village, has taken up group initiative for cultivation of turmeric and ginger for the first time in about 6 acres of land. The surplus production has helped them to establish a micro enterprise in self help mode for production and marketing of turmeric powder, gram flour and puffed snacks using the services of a common facility centre set in the nearby Goslidih village.

> **Small changes in my farm has put the things together, and presently I am getting more than 22 kinds of vegetables, spices and fruit from my backyard.**

SIFS has changed her attitude and outlook to farming approach and helped her to establish herself as one of the successful farmers. With successful integration of all 6 subsystems, Sulochana has been able to ensure yearlong food availability at home from her own farm. Inspired by the initial success, she has invested in small livestock and plantation at home, putting some of the group savings to scale up the enterprise. Her annual income from agriculture and through selling of home-developed produce has increased from zero to INR 42000 and has helped her to marry off her youngest daughter last year. In addition, she has annual savings of INR 9000 from reduction of external inputs used in her farm. She is training about 20 women in the locality on SIFS approach and encouraging them to follow the practices. The journey was never easy, and she recalls that her family was against SRI, but the rice production increased by 1.6 times, and next season, everyone wanted her to guide them how to sow paddy in line sowing method. The rice parboiler has further helped her to parboil about 2.5 tons of paddy single handedly without much fuss.

Sulochana, now, has plans to utilize all her fallow plots by pitcher irrigation to retain soil moisture over longer period. She wants to focus more on improving the production and finding solutions for manure requirement using the available biomass, as the cow dung is limited. She also looks forward to grow some fodder crops for steady supply of animal feed. The micro enterprise of turmeric, *sattu* and *besan* has sustained income in lean season. In future, she looks forward to increase the volume of production through better marketing of her produce.

Seeds of Hope

Dolu Damor lives with his wife, two sons, and a daughter. His livestock comprises of 2 bullocks, one buffalo, one cow, and two goats.

As is the case with many farmers, his financial position was not good, and so he abandoned the traditional farming and resorted to market driven chemical farming for greater profit. For many years he grew maize and paddy in Kharif

Dolu Damor

Amlapada, Banswara, Rajasthan | **Land**: 5 Bighas | **Grows**: Brinjal, Tomato, Ladies' Fingers, Bottle gourd, Pumpkin, Sponge gourd, Chillies, Coriander, Turmeric. Kharif crops - Maize, Pigeon pea, *Urad*, Rabi crops - Wheat, Grams, Red lentils | **Livestock & others**: 2 bullocks, 1 buffalo, 1 cow, and 2 goats
Support: Vaagdhara

season, and grams in Rabi season. Dolu took care of the farm, while his wife looked after the livestock. As weeding was not done properly, the crops suffered regularly. The family did not have enough to survive on. They had to take loans to feed the family. One year there was almost no rain and they could hardly grow anything. Additionally, they had to rely on heavy loans to buy seeds, chemical fertilizers and pesticides from market.

Dolu had almost lost faith in farming when he met a Vaagdhara facilitator. He informed Dolu about the farmers' group formed by Vaagdhara, where regular orientations on indigenous seeds, vegetable garden, fruit garden, organic pesticides and fertilisers, and livestock keeping were conducted. Dolu wanted to try his luck again and joined the farmers' group.

In these meetings he learnt about the indigenous seeds, compost making, *das parni*, *jivamrut*, *mathas* and *neem* based pesticides. He imparted the same lessons to his family members as he realised that all members of the family should be equipped with the knowledge of natural farming methods. He started vegetable and fruit garden. Regular use of chemical fertilisers had cost him the fertility of his land. So, in the first year, he did not have much profit. However, he had enough for his family and his input costs had come down. This restored his faith and next year Dolu planned his crops well and distributed chores to his family members. Understanding of the crop cycle helped him plan his crops well. He grew diverse Kharif and Rabi crops in his land.

> **"My family came together to put organized effort and it worked wonders!"**

There was enough to provide for the family, to sell in the market and keep seeds for next season. Now, his wife Tara Devi earns about INR 6000 every month. The older son ploughs the field and the daughter does weeding- there is no labour cost. He has come out of the cycle of taking loans. After the family expenditure, he makes a comfortable earning of INR140000 every year. Dolu is happy that the fresh, poison free vegetables from his garden has remarkably changed the health status of his family.

Slow but Steady

Anita Mahato is married in a poor farmer family and has a son and a daughter. They own little land and few livestock. Beldih, where she lives, is an adivasi village where most villagers depend on agriculture and daily labour for their livelihood. Being an adivasi, she had limited knowledge about agriculture. In a largely market driven agricultural scenario, Anita too was involved in mono-cropping and the use of chemical fertilizers. She was inclined towards growing a single

Anita Mahato

Beldih, Purulia, West Bengal **| Land**: 3 bigha | **Grows:** Paddy and Vegetables | **Livestock & others**: Cow
Support: Development Research Communication and Services Centre

high-price vegetable, even if it was out of season. Her financial situation suffered when the crop failed. The unsold vegetables, grown with chemical fertilisers, would rot quickly. Cultivation was challenging during the summer in the dryland due to lack of water. Her minimal livestock did not have enough fodder, suffered diseases and died very quickly. She was unable to provide her family's nutrition or see a way ahead in this situation.

It was at this critical time that she came to know about the DRCSC. DRCSC discussed the problems of the farmers in her and nearby villages and motivated them. They offered solutions to agricultural problems.

Earlier, Anita used to cultivate her 3 bigha land with high yield seeds using chemical fertilizers and pesticides. After DRCSC's training sessions, she started practicing natural farming in 2017. In the first year, the produce was not as expected, and she faced a huge loss. Some group members discouraged her from pursuing natural farming. But Anita was focused on her goal. Surprisingly, next year, she observed that the weight and production of paddy had increased. The vegetables tasted better. The soil creatures, which had decreased due to the use of chemical pesticides, were now increasing manifolds. DRCSC taught her techniques for cultivating with minimal water. Now her food platter has become vastly diverse and nutrition rich.

> **"I want to continue my present farming practice and spread the practice in my group so that all the group members can find a better way of living"**

She now emphasises on cultivating a mix of seasonal and local crops. After her family's consumption, the excess vegetables are sold in the market. With her new gained respect from the family and with constant support of her husband, she has now been able to buy more livestock. DRCSC supported her by making a concrete cow floor and an azolla pit from where she is able to provide the fodder.

In the next few years, she wants to work on storing the organic seeds and practise cultivation using her own seed bank.

Health and Wealth

Ghyansam Singh is a small farmer with 6 family members dependent on him. He did not have the capacity to buy livestock, so he had to depend on chemical fertilizers from market. He used to grow paddy and maize during rainy season and wheat in 20 decimal land during Rabi season. Practicing mono cropping in the same piece of land throughout the year resulted in degradation of soil and increased pest attack and diseases. On the other hand, increased market price of fertilizers, seeds and pesticides directly affected his cost of production. In 2012, it became very difficult when Government of India reduced the subsidy on chemical fertilizers, and the cost of fertilizers increased. All these made his overall condition extremely vulnerable.

Ghanshyam Singh

Sonaraithadi, Jharkhand | **Land**: 60 decimal of land and 1 acre of leased land | **Grows**: Paddy, Maize, Wheat, Chickpea, Oilseed, Mustard, Finger millet, Pearl millet, Sorghum, Pigeon pea, Roselle, Vegetables | **Livestock & others:** 1 cow, 2 goats
Support: Pravah

During orientation of the SIFS Farmers Club in his village, he came to know about the concept of IFS, and was willing to give it a try. He learnt about farm planning and different techniques like SRI, SWI, intercropping, preparation of organic manure and biopesticides. But cow dung & urine, one of most important material for organic fertilizer, was not available to him. He started collecting cow dung from the fields and grazing area every single day and established a vermicompost unit. By the 3rd year, he was producing 24-27 quintals of vermicompost in a year.

Since 2012, he has started reducing application of chemical fertilizers in his own land and started the practice of planting various crops in his main field, home stead and kitchen garden. From Kharif season in 2013, he started cultivating paddy on his own 40 decimal land and 1 acre of leased land. In other 10 decimal land, Ghanshyam started intercropping of maize and cow pea with live fencing of roselle.

> **"We are successfully managing our field, cultivating a flourishing kitchen garden and have learnt superior techniques of growing food"**

By Common Lift Irrigation, Ghanshyam converted his seasonal fallow land fertile, and intercropped chick pea and oilseed, mixed cropped wheat and mustard in Rabi, and mixed cropped finger millet, pearl millet, sorghum and pigeon pea in Kharif.

Within three years, his situation reformed. Earlier he used near about 1.5 quintals of Diammonium Phosphate (DSP) and Urea and pesticides at INR250 per kg throughout the year in his own 60 decimal land. In 2012, he used only 75 kg urea and DAP. In 2013, he has totally stopped the use of chemical fertilizers. After consumption, the surplus products was sold at market, earning an extra INR10000 per annum.

Introduction of kitchen garden helped him to reduce the annual expenditure on green vegetables. Now he is utilizing his land fully for raising suitable field crops and vegetables. He is recycling all farm wastes and crop residues in the system. He has bought a cow and 2 goats and is cultivating fodder in 5 decimal of land and producing azolla for feeding his livestock.

In My Own Land

Sukhmabai, Rupsingh Waskel

Tatukheri, Madhya Pradesh | **Land**: 4 bighas | **Grows**: Vegetables, Maize, Ground nut | **Livestock & others:** 2 cows, 2 bullocks and 2 calves
Support: Samaj Pragati Sahyog

My husband and I were thrown out by the family after a couple of days of our marriage. Poverty drove us out of village and we moved 70-80 kms away to Malwa to work in the farms of big farmers for 12 long years. Those were difficult times. My husband used to get just INR1500 in the entire year. Our 5 children grew up in Malwa.

We managed to save some money and bought 2 bighas of land in our village. We returned after 20 years. My father-in-law gave us 2 bighas. He had never used organic manure in this land, and it was impossible to grow anything in that land. We took loans at high interest to buy seeds, fertilisers and pesticides which drained our resources.

In 2002, SPS started Women Self Help Groups, and we got loans on low interest rates and easy return installments. We could now save some money for family needs.

The organisation also trained us on chemical free farming. My husband, who had spent years carrying chemical fertilisers and pesticides on his back in Malwa, refused to believe that any farming could be done without chemicals. He had never ever seen or heard of chemical free farming. SPS took us to villages where farmers had been doing profitable chemical free farming and that turned him around. Now even if someone offer us free chemical pesticides, we will not accept. We prepare the organic pesticides ourselves for the last 5 years. We save almost INR12000-13000 every year, which we spent on pesticides earlier.

> **"If you take a photo of my land and that of my neighbours , you will see the difference."**

We have a pucca NADEP and a four chamber vermi compost pit which supplies us with 6-7 trollies of compost every year. At present we have 2 cows, 2 bullocks and 2 calves which do not supply enough manure yet. So, I buy cow dung compost from neighbours, whenever available. Honestly speaking, we still have some expenses on chemical fertilisers which we shall cut down very soon. I hope we shall be able to procure more livestock and build a cowshed, which will supply necessary manure.

We earn about INR70,000-80,000 from our land every year.

We could not have imagined such a turnaround in our wildest dreams 5 years back.

Sweet Success

Uday Dhibor

Radhakrishnapur, Birbhuum, WB | **Land**: 6 bigha+ 10 bigha pond | **Grows**: paddy, pulses and vegetables | **Additional Income**: Fish and Livestock
Support: Development Research Communication and Services Centre

Uday cannot forget the tough times his family faced when they switched over to natural farming. His fellow farmers made fun of him and vouched that he would incur loss and drop his newfound idea. His family also asked him to not pursue this further. But Uday held his ground.

Uday Dhibor, originally a fisherman, has some land where he did farming. DRCSC came to his village to conduct farmers' group meetings, and Uday joined. He learnt about organic practices through dedicated training programmes for farmers and started cultivation using organic manure.

In the first year of using organic manure, the result wasn't what he had expected. He almost lost hope and expressed his concern to the DRCSC team. He was assured that he was on the right track, but as it was a new technology, it might take a few attempts. Emboldened, he continued working, and the very next year his agricultural land was teeming with green vegetables. Uday's faith on natural farming was vindicated!! In the following years, both the quantity and quality of his produce along with his income increased manifold, and he did not look back again.

> **"Now my fellow farmers know that I made the right decision."**

Without chemical fertilizers, the population of earthworms in his soil increased so much that earthworms and the excreta were visible throughout the farm and field bunds. Using farm waste as organic manure has resulted in better decomposition of farm resources and has made the soil rich with micronutrients.

Today, his family sustains on the farm produce. The market price of his surplus vegetables like tomato, brinjal and bitter gourd is 30% above the market price and his trusted customers prefer to buy his tasteful and healthy chemical free vegetables.

Uday always wanted to adopt new ways for his family tradition of fish farming. He received training on integrated aquaculture from DRCSC and has learnt to make fish feed. He is doing extremely well in fish farming. With an aim of adopting integrated farming, Uday has now started rearing livestock at his home which feeds on his cultivated products, and in turn gives him an additional income.

Egged on

Hema Devi

Dadgaliya, Ranikhet, Uttarakhand | **Livestock & others:** Hens
Support: Lok Chetna Manch

As you enter Dadgaliya village, the kids from all around would surround you, and take you to every household, proudly showing the hens. Each hen has a name, and the kids know which one scratches when picked up, which one sleeps throughout the day, and which one lays eggs regularly.

It was not like this even 2 years back.

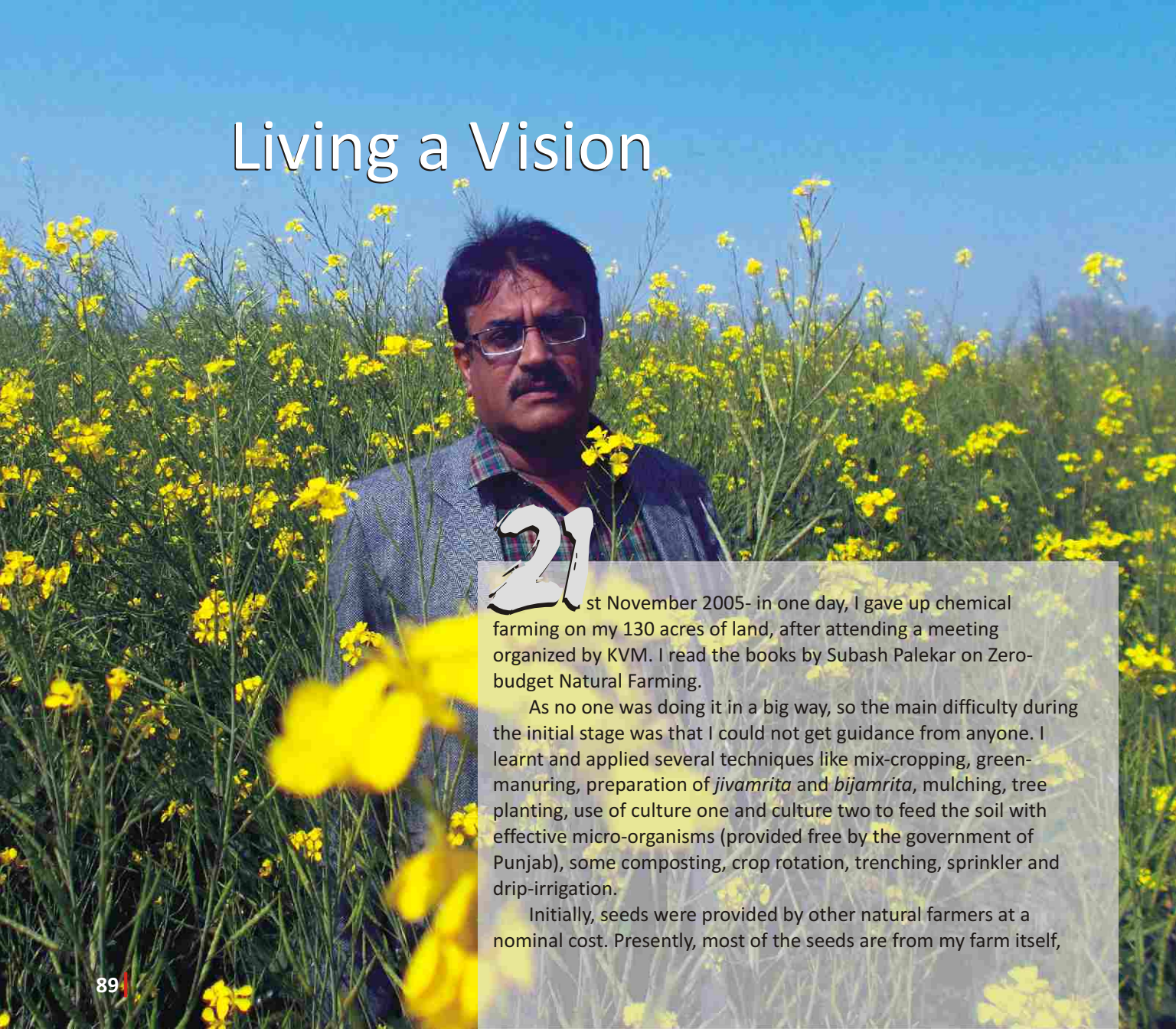
Dadgaliya is a remote village in the state of Uttarakhand with poor road access . Most households used to have a small garden where thy grew onion and garlic as cash crop and some vegetables for their own consumption. Erratic rainfall, scattered holding, low production of pulses and financial constraints emerged as key factors behind lack of protein in their diet.

It was Hema Devi, a rural service provider from Dadgaliya, who showed interest in raising chickens. She started with 6 local chicks, fed them with millet, pulses, wheat and green leafy vegetables. Within a couple of months, she was able to get enough eggs for her family. As the quantity of eggs became surplus, she began selling the eggs within her village, to encourage more villagers to practice poultry farming. She sold a few chicks to others within the village and shared her knowledge on poultry farming with villagers. At a time when income generation was at an all-time low around the country, Hema Devi ensured they got a steady additional income. Others joined gradually upon realising the success of their endeavour. The project also organised consultation sessions with the experts on improving rearing practices.

> **“It’s not merely my success. The entire village shares the credit.”**

The interest grew – now all the 60 families in Dadgaliya village have hens on their courtyard and eggs on their plate. Some of them earn as much as INR20,000 annually. Their chicken and eggs are sold from the doorstep.

Living a Vision



21st November 2005- in one day, I gave up chemical farming on my 130 acres of land, after attending a meeting organized by KVM. I read the books by Subash Palekar on Zero-budget Natural Farming.

As no one was doing it in a big way, so the main difficulty during the initial stage was that I could not get guidance from anyone. I learnt and applied several techniques like mix-cropping, green-manuring, preparation of *jivamrita* and *bijamrita*, mulching, tree planting, use of culture one and culture two to feed the soil with effective micro-organisms (provided free by the government of Punjab), some composting, crop rotation, trenching, sprinkler and drip-irrigation.

Initially, seeds were provided by other natural farmers at a nominal cost. Presently, most of the seeds are from my farm itself,

Vinod Jyani

Kathera, Fazilka, Punjab | **Land**: 130 acres | **Grows**: Food crops (including wheat) and fruits

Support: Kheti Virasat Mission

taken from the harvested crops and conserved. I cultivate four traditional varieties of wheat and plan to increase the diversity steadily and progressively.

I target the local market for those who can afford buying my products. People are constantly coming to my farm and buying my products. The greater mission, however, is to spread the knowledge about natural farming.

High yielding varieties and monoculture has caused great damage to our land and food habits. High-yielding wheat has far less protein. Millet used to be the main diet of rural people, but now it has disappeared from our diet. Most farmers only cultivate wheat and rice, and the rice is not even indigenous to Punjab. To solve this problem, the government should give direct subsidies to the organic farmers and stop importing chemical pesticides and fertilizers.

My duty as a farmer is to provide good and nutritious food to all. I try to celebrate diversity of food in my farm. I grow 40 types of food crops and more than eight different kinds of fruit. I believe in self-consumption and self-marketing. Further steps will be identifying biodiversity and forestry as well as using non-conventional sources of energy.

I use solar panels and biogas and I intend to use bullocks in order to stop using tractors on my farm. I plan to introduce more diversity over here and to be more self-dependent on building materials. The motto of my farm is “Traditional wisdom with modern technologies.”

> **“I was fed-up with chemical farming. When I realized that an alternative existed, I converted all of my land in one go.”**

My lifestyle has changed since I switched to organic farming. I started loving all living beings, birds and insects as well as all plants. Before my farming, I had no goal, it was just about making money. Now, my farming has become a goal in itself. I am practicing zero-budget natural farming. There is much less investment than under chemical farming, so there is no pressure or tension.

My mother and my wife have always been very supportive to me, in my mission of becoming a natural farmer. They have the responsibility of processing and marketing the product.

Too much centralization has left the local bodies without any power. Village people do not have a say in their future or on the projects that need to be supported, to create a positive impact on the village life. The government should help the farmers to process their production themselves and include them in decision making process on how the money should be spent.

Off with Pests

Dildeep Kumari

Aryad, Alappuzha, Kerala

In an effort to make Aryad panchayat the first ever panchayat in the state of Kerala to go sustainable, a 10 member pest detection committee was formed. Mrs. Dildeep was among the ten members. Her knowledge on agriculture which has been passed on to her from her ancestors combined with her personal experience helped her to deal with the pests that attacked the crops in her locality.

For small scale farmers this committee helped to identify and resolve the issue of pest infestation through natural pest repellents.

> "Our endeavour has made us popular"

Considering the socio-economic conditions of the state, majority of the farmers find it very difficult to get the raw materials to make inputs naturally, especially because the state runs a non-animal integrated farming practice. So, the women in the locality came together to form a group named '*Navajeevan*' to collect the raw materials and make natural inputs and provide them to farmers at reasonable cost.

This helped the panchayat to be one of the most nature-friendly agri-panchayat in the state.

Later the Agriculture department merged this group under the BPKP (*Bharatiya Prakrithi Krishi Padhathi*) scheme. Now they receive funds to run the program and are giving the inputs to farmers for free.

Under BPKP Alappuzha, there are 5 panchayats which have 50 hectors of land. Each of them has a Farmers' interest group, and each group has a convenor. Dildeep is the convener for her panchayat.

She has selected 9 wards from her jurisdiction and selected 12 acres of plot from each ward. The produced natural input is provided to these plots for free. The rest of the input is sold outside.

The government has given permission to sell it at INR100 per litre, but they are selling at INR50 per litre.

They produce *Jeevamrutham*, *Ghana*, Egg amino and Fish amino. *Vrikshayurvedham* is also being made and is very useful. They sell *harithakashayam* for INR50. *Harithakashayam* is not present in any of the scheme as per records but is very effective. Procuring cow urine, however, remains a major hurdle.

The group is helping the farmers for 8 years and continues to do so to conserve the environment which is the driving force for them.

Road Less Travelled

Story of Pawan Muddana, founder of Paavanaganga Farms is a story of unfailing determination and untiring passion to realize one's ambitions.

Pawan Muddana hails from Bengaluru, Karnataka and was trained as a civil engineer during his bachelor days. For his Masters, Pawan moved abroad to the USA where he completed his Masters in Civil and Environmental engineering. During his time at college, Pawan took a keen interest in sustainability and waste management projects on the university campus. He aspired to pursue his career in the same field of waste management, but finally decided to come back to his hometown in Bengaluru. Once back, Pawan identified various avenues where he could start working professionally. After giving some thought and time, Pawan decided to apply his training from the sustainability projects he worked on abroad, in the field of agriculture, specifically, organic farming. Pawan recalls that when he intimated his parents about his decision,

Pawan Muddana

Pavanaganga, Bengaluru, Karnataka | **Grows**: Fruits
Support: Farmizen

everyone was left shocked. He couldn't gather any support for his project during its initial days.

Pawan started Paavanaganga farms in August 2019, just before the onset of Covid. He started with cultivation of guava and banana fruits. With minimal awareness of natural farming practices and a fervent desire to succeed, Pavan forayed into the realm of natural farming with limited hydroponic farming expertise. He sought out information from every source he could and sought the advice of other natural and organic farmers to aid him in his farming adventure. Through talking with other farmers and experts, combined with his own experience in sustainability projects, Pawan built the whole farm by himself with help from his friends. As Pawan recalls, "I tried hiring a few labourers initially as we had to dig holes for planting guava seeds but the cost for it was coming up to 2 lakhs. So, along with my friends, I purchased an earth auger machine and drilled 2400 holes for guava plantation. We achieved this at a total cost of less than INR20,000."

> **I have followed my dreams, by leaving behind my comfort bubble and security circle.**

Pawan's Paavanaganga farm is also known for its low cost innovations. By fusing conventional wisdom with modern methods, Pawan upgraded his farms by little innovations which drove down the input costs by a huge margin. One such innovation is the use of a pseudo-string system to support the banana crops against the traditional method of two-fold support system. This little innovation, according to Pawan, reduced the cost of cultivation of a single banana plant from INR150 to INR 2 per plant. Apart from this, Pawan has also mechanised a lot of basic farming functions such as automation of irrigation lines and crop cutting. These innovations have made Pawan's farm a talk among the local farmers who visit Pavanaganga farms to witness the innovation and low cost techniques employed by him.

Pawan Muddana might have started his venture recently, but his journey is an inspiring one which is an example of self-belief, self-learning and about never giving up. He independently built a farm that any natural farmer would be proud of.

"Even if anyone has less knowledge or no expertise… spending time on farm is the best way to learn," says Pawan.

Belief and Resilience

Bhurji Katara

Banswara, Rajasthan | **Land**: 4 bigahs | **Grows**: Fruits like Mango, Guava, Lemon, Papaya, Jackfruit , Java plum. Vegetable like Brinjal, Tomato, Ladies' fingers, Bottle gourd, Pumpkin. Spices like Turmeric, Coriander, Chillies etc. | **Livestock & others:** Bullocks, Cow **Support**: Vaagdhara

Bhurji, who lives with his wife and two sons, often wondered what he would do with the 2 bighas of barren land. It was the other 2 bighas, and his livestock comprising of 2 bullocks and 1 cow, which were the only source of livelihood for Bhurji and his family. The rainfed 2 bighas, however, could not produce enough and as a result, he had to migrate far, quite frequently, in search of work. He had his own land but had to buy food from market as the produce was not enough for entire year.

One year the crops failed because of excessive rainfall. He had to take loans to feed his family. He also failed to get daily wage jobs in his locality and his confidene hit a huge bump.

He then met a Vaagdhara facilitator who advised him on how to select his crops intelligently, plant them carefully, and use cowdung manure. He inspired Bhurji to join the farmers' group formed by the organisation. Bhurji trusted him and started attending the meetings of the group regularly. He learnt to dig pits, use cowdung manure, select indigenous seeds and prepare organic pesticides. He decided to put his learning into practice by applying the techniques to his barren land. It was not easy. His neighbours warned him that it was an impossible task.

> "What happened to my land is unbelievable!!"

The first two years were difficult. Much of the crops withered, but he did not let his conviction wither away. Two years of applying cowdung manure to the land brought surprising results. In the third year, the produce was less than expected, but it fulfilled the needs of his family.

Along with vegetables, he also planted fruit trees and spices, many of which survived the next time. He worked hard and applied all his knowledge. The barren land gradually became green with several vegetables and fruit trees. There is no need any more to buy food from market. The excess is sold out, which brings extra income.

In a matter of 3 years there's only green all around. It's an inspiration for all farmers and Bhurji now happily trains them on how to turn a barren land into a fertile one.


A Good Change

Shila Bai, Manga Paria

Khedi, Madhya Pradesh | **Land**: 19 acres | **Grows**: Cotton, Soy, Corn, Jwar, Bajra, Chilli, Lentils, Wheat, Chick pea, Vegetables
Support: Aga Khan Rural Support Programme (India)

Shilabai's family comprises of her husband and 9 children, of which 7 are married. Of the 19 acres land, 6 acres are irrigated, and 13 acres depend on rainfall. There is a well to irrigate the land.

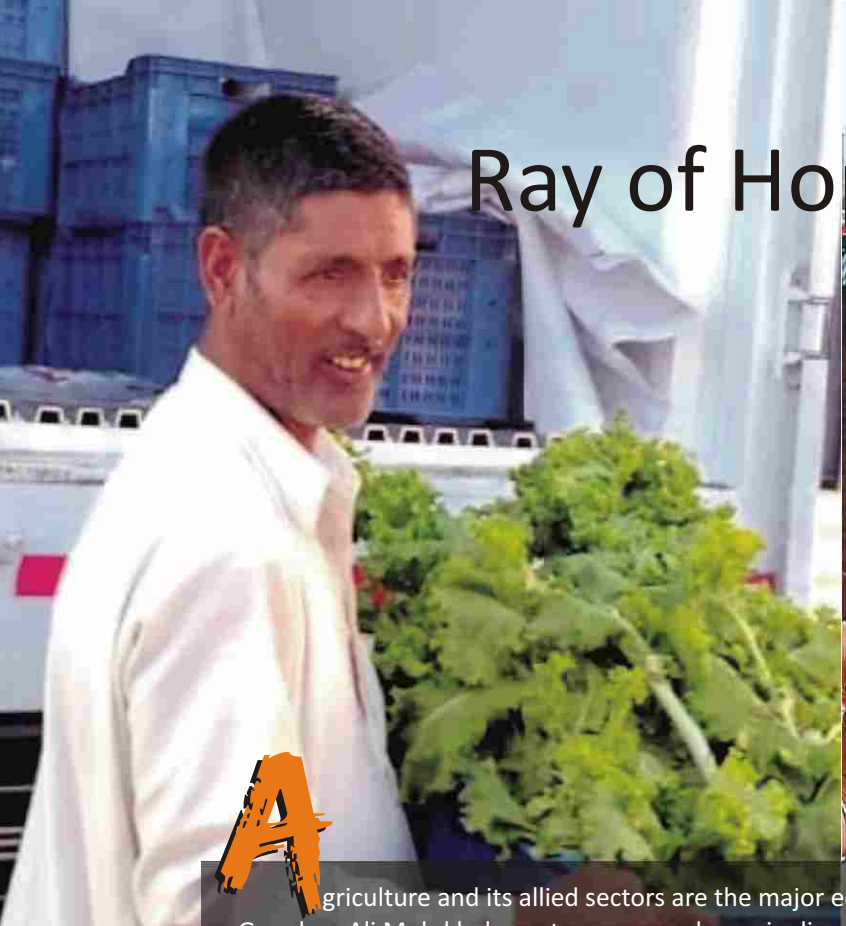
> **"My farm transitioned and so did my family."**

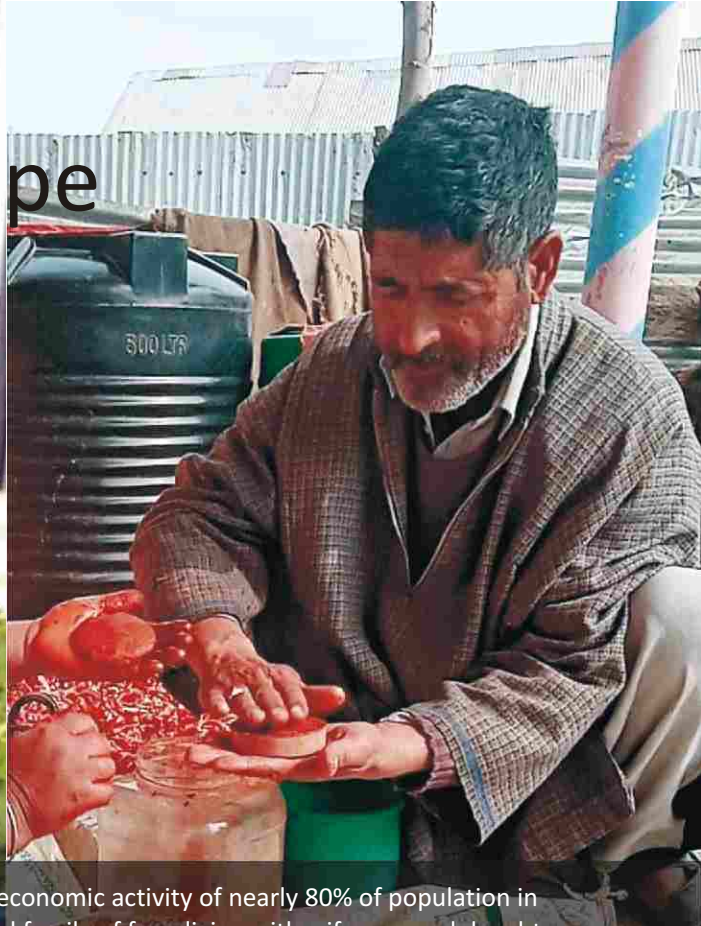
Shila bai met with opposition from her family when she made up her mind to try Natural Farming. In the face of the opposition, Sheela bai and her husband turned 75 acres of their land to natural farm. Their family spent INR70,000-80,000 on chemical fertilizers and INR 30,000-40,000 on chemical pesticides every year. If the crop failed for some reason, entire investment becomes an irrecoverable loss. Moreover, because of high chemical intake through the food, every other day a family member would fall sick, and had to be hospitalised. When they transitioned to natural farming, family members would rarely fall sick. The family also noticed that, returns from natural farming were same as in chemical farming and sometimes even more, given that input cost was negligible. The family embraced natural farming whole heartedly.

This year, Shila Bai has planted chillies in her 75 acres. She has used *panchpattikada* (five leaves concoction), Soy tonic, and *Mathastra* in the field. She has earned INR 77,000 @ INR100/kg. Subtracting her input cost of INR 5000 only, she made a grand profit of INR72,000.

Presently, they have converted the entire 19 acres of land into natural farm.

Ray of Hope





Agriculture and its allied sectors are the major economic activity of nearly 80% of population in Gamdoo. Ali Mohd belongs to a poor and marginalized family of four, living with wife, son and daughter in law. He lived with limited resources and his family's two ends hardly ever met.

Ali Mohd had 4 kanals (2023 square metres) of land, but he was not able to utilize the potential of the arable land properly. He had a small kitchen garden and was doing subsistence farming for survival.

However, when IGSSS approached Gamdoo, for the formation of groups under Occupational & Agricultural Rehabilitation project in the year 2018, he became a group member of the farmer producer group. IGSSS provided him many trainings and inputs on vegetable cultivation at field level. Gradually he became a progressive farmer and shifted from subsistence to commercial agriculture.

In 2018, he was supported with agriculture tool kit, poly house, vermi shed, irrigation motor under the project. He participated in seven days training cum exposure visit to CORD Chinmaya Organisation for

Ali Mohammad Bhat

Gadkhud Gamdoo, Jammu and Kashmir| **Land**: 4 Kanals |
Grows: vegetables
Support: Indo Global Social Service Society

Rural Development (CORD), Dharamshala in Himachal Pradesh organized by IGSSS, where he learned newer ways of farming and was motivated for doing farming at commercial level and supply the produce to market.

This was the turning point in his life, and he started cultivating seasonal crops for better market opportunities and realization of the price. Currently, he is doing organic vegetable cultivation and is utilizing available land resource properly. According to him, he is earning INR75000-95000 annually. Now, he is socio-economically independent and lives a better life with respect and dignity. Ali Mohd has an organic demo-site on more than two kanals of land. Many farmers visit his farming site, to get firsthand information and understand the practicality of different applications and techniques for better vegetable production.

> **"I have not only changed my life, but also that of other farmers."**

In 2019, promotion of Farmer Producer Organisations (FPO) was initiated by IGSSS, wherein Ali Mohd became a member of the same company. The farmer group of his area selected him as representative of shareholders of the company. Later on, Ali Mohd was elected as a member of the BOD for Shejaar Vegetable Producer Company.

"I feel proud that farmers trust me, I am in the BOD of FPO. I had never imagined that a small and resource poor farmer will be in the Board of Director for the producer company," Ali Mohd says.

Furthermore, in the beginning of 1st agri-season of 2020, whole world came under pandemic (Covid-19). As the head of the family, he met with many challenges. With complete lock down, there was no cash in hand, and with the banks being closed, all business activities were closed down. "Selling vegetables was the major source of my family income but due to lockdown, markets were closed and restrictions in movement made it impossible for consumers to buy vegetable products. I could not sell my produce and my livelihood was badly impacted. Supporting my family was a big challenge for me during that time."

Fortunately, Agriculture department issued a refrigerator van to Shejaar FPO on rental basis, for selling the vegetables with a permission letter. The BOD of the FPO converted this into an opportunity and started aggregation and collection of vegetables from farmers and sold it in market directly at reasonable rates. Ali Mohd played vital and active role in this joint venture and promoted Shejaar FPO as well. In this way he sold his produce and helped other farmer communities to get better price for their produce. "We have done business of more than 10 lakh rupees during covid-19 by selling vegetables, dry fruits and vermi-compost."

Risk for Gain

Mulchand

Kumarkheda, Khalwa, Khandwa, Madhya Pradesh | **Land**: 5 acres | **Grows**: Ladies' fingers, Bottle gourd, Sponge gourd, Brinjal, Chili, Pumpkin
Support: Aga Khan Rural Support Programme (India)

I grew up in a family of farmers in Madhya Pradesh. In the past few years, due to certain changes in climate, my crops started failing and I started putting more chemical pesticides and fertilizers to get better crop yield. As a result, the input cost for my land increased gradually and there was also a degradation of quality. The soil became hard.

I had received training on natural farming and conservation agriculture by Aga Khan Rural Support Program India in 2015. I was not convinced about natural farming fully, but I was curious to see the result. So, I started practising conservation agriculture in a part of my farmland.

> "Unless we take risks, we shall never succeed"

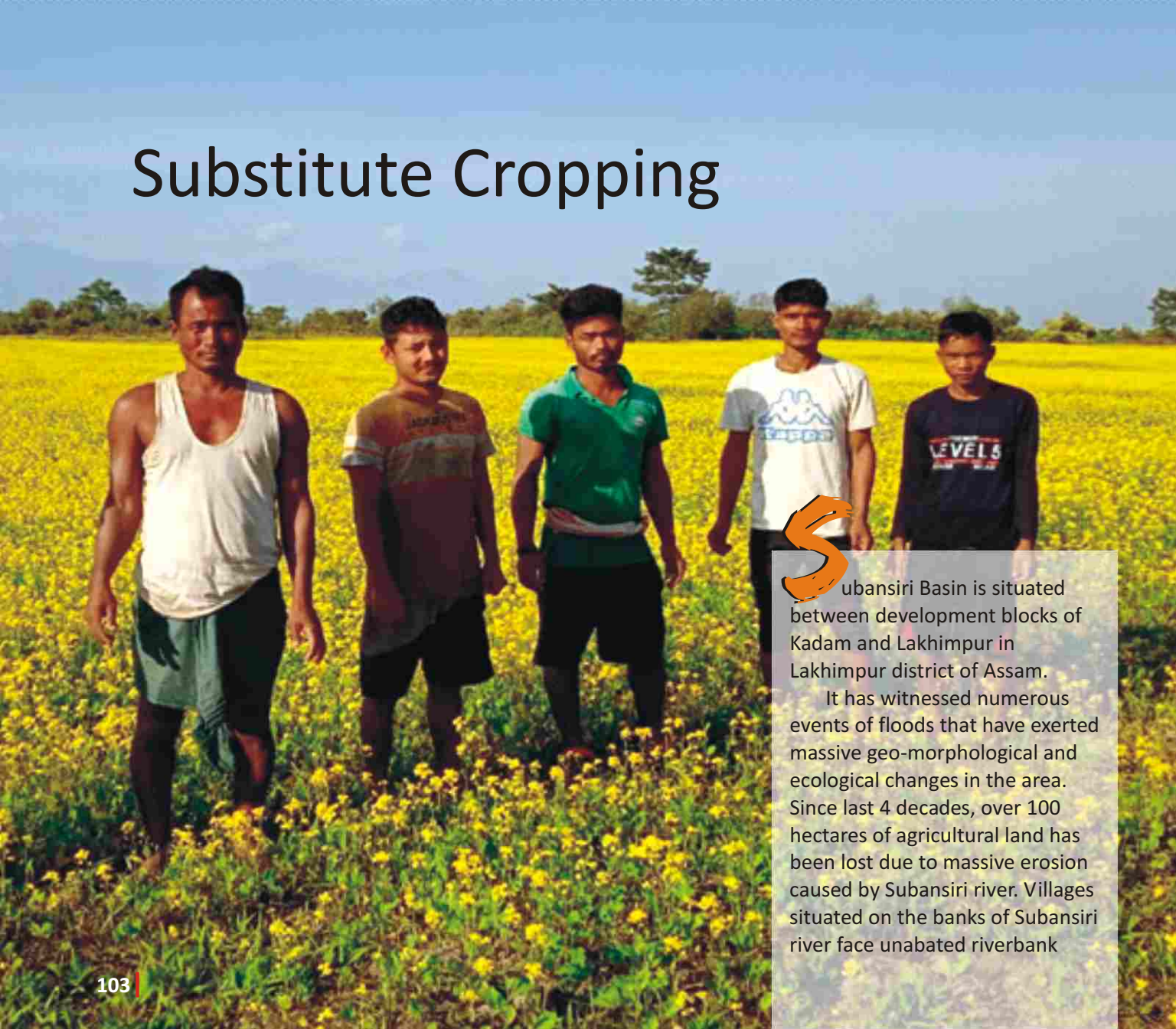
I realised that the plot under conservation agriculture required much less water than usual. The soil quality and texture also improved. In the first year, the crop yield was relatively less than usual, but when I observed changes in soil texture and quality and presence of earthworms on top layer of soil, I realised that I was on the right path. So, I expanded the cultivable plot under conservation agriculture to 0.5 acre and then there was no looking back. I stopped using chemicals altogether.

Currently I am doing conservation agriculture in 1 acre of land and in rest 4 acres of land I am practising natural farming, where I use *Bijamrit, Amrit pani, Panchpattikadha*, GGOC (ginger garlic onion chili chutney), soya tonic, *matkakhad* etc. This has kept the pests at bay and improved the quality of my crops. Earlier, the input cost was INR10,000 per year but now I don't spend a single penny on chemical fertilizers and pesticides.

Having gained courage from this experience, I have also started cultivating vegetables organically in kitchen garden in the backyard of my house. Consuming home-grown organic food has improved the health of my family.

Initially I struggled to believe the fact that crops can be grown without chemical use. But after using natural and organic fertilizers and pesticides my perception has changed. Our past generations used to do natural farming without using chemicals. Why did we stop believing them? As a farmer I understand that our risk-taking capacity is less. But if we are not taking the chances or risks for the change we need to see, how can we see the face of success?

Substitute Cropping



Subansiri Basin is situated between development blocks of Kadam and Lakhimpur in Lakhimpur district of Assam.

It has witnessed numerous events of floods that have exerted massive geo-morphological and ecological changes in the area. Since last 4 decades, over 100 hectares of agricultural land has been lost due to massive erosion caused by Subansiri river. Villages situated on the banks of Subansiri river face unabated riverbank

Subansiri Basin

Lakhimpur, Assam | **Land**: 260 bigha | **Grows**: Mustard
Support: Indo Global Social Service Society

erosion and deposition of silt due to the floods caused by breach of embankments. This has resulted in the shrinking of agricultural lands annually by leaving them behind either as uncultivable or infertile. Consequently, it has also negatively affected the life of the riverine population causing forced displacement of many due to hostile weather conditions and lack of food and income insecurity.

To salvage a persistently deteriorating situation, IGSSS made an action-based intervention under the project title, "Action for Holistic Rural Development" in the villages surrounding Subansiri basin, with an aim of enhancing food security and income of the local farmers. The objective of the project was to convert uncultivable and barren land into cultivable farms by introducing scientific farming practices. Owing to abundance of water in the region, paddy farming is a traditional practice in the area. However, due to heavy collateral damage caused during annual floods, paddy farming is an unsustainable option. To compensate for the financial loss, IGSSS action plan involved substituting paddy farming with cultivation of mustard crops. Mustard is a cash crop with quick harvest time and therefore could fetch good financial returns in a relatively shorter period of time.

> **We know that we have made a smart choice**

IGSSS volunteers worked with 10 groups constituting of 54 farmers from 9 villages who were trained on scientific farming practices and commercial cultivation of mustard at local Krishi Vigyan Kendra, Lakhimpur. Besides the capacity building, farmer groups were also supported with 780kgs of locally grown mustard seeds. The seeds were cultivated in around 260 bighas of barren land immediately after the flood in the month of October 2021. The crop was harvested in the month of January and February 2022. The first batch yielded healthy return both agriculturally and financially. The total harvest from 260 bighas of land from 780kgs worth of seeds was over 400 quintals. Selling of the produce considerably increased the individual income of the farmer with each farmer earning around INR25000. After the encouraging results of the pilot project, more farmers are expected to join the initiative with over 19 quintals of mustard seeds already stocked for distribution in the next season.

Garden of Hope

Madhu Kamru Damor is a tribal farmer who lives with her four children and husband Kamru. She cultivates maize, wheat, mung, and vegetables. Earlier, the cultivation was rain-based, but by saving some money from agricultural income, she dug borewells and started irrigating her land.

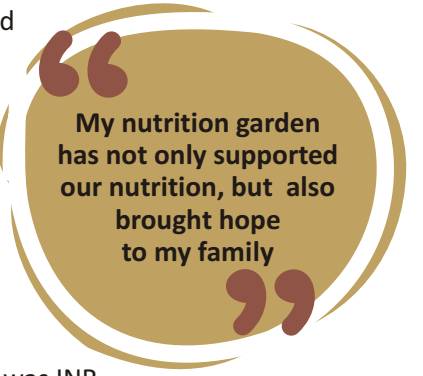
Vaagdhara formed the Mataji Mahila Saksham Group in 2018. The Mahila group has been instrumental in ensuring sustenance for the members and has ensured better livelihood by connecting the members to government and non-government schemes. Vaagdhara's facilitators informed the women about various schemes in the monthly meetings of the month.

Madhu Kamru Damore

Mahudikheda, Pippalkhut, Pratapgad, Rajasthan | **Land**: 5 Bighas | **Grows**: Brinjal, Tomato, Lady's finger, K*akadi*, Chilli, G*ilki*, Bitter gourd, Bottle gourd |
Livestock & others: 2 buffaloes, 2 bulls, 1 cow.
Support: Vaagdhara

They emphasised on three key points: true farming, true childhood and true swaraj. They explained the need of integrated farming, seed collection, preparing vermicompost and pesticides. Pesticide and compost making tools such as drums, jharas, tanks were distributed free of cost to all the women in the group, so that all women could prepare vermicompost in their own homes and move towards poison free farming.

Vaagdhara helped the women to build a nutrition garden. They supplied seeds of vegetables such as brinjal, tomato, lady's finger, *kakadi*, chilli, *gilki*, bitter gourd and bottle gourd. Madhu started her garden in June 2020 and sold vegetables worth INR 25000 during Kharif season. From August 2020 to March 2021 she did not have to buy any vegetable from the market and saved almost INR 10,000. Vaagdhara also gave Madhu saplings of chilli, which she planted in her nutrition garden. She produced 30 kgs of red chilli from these. She made an income of INR5600. The onion seed that Vaagdhara gave her was planted in the nutrition garden and produced 50 kgs of onion. The need of the year was fulfilled!



They were informed about Mahatma Gandhi National Rural Employment Scheme and the process of the application. Both Madhu and her husband got their cards as well as job under MGNREGA. Madhu got 97 days of employment, between October 2020 to December 2020, and got INR 17460. Her husband got a total of INR 17460 i.e. the total household earning was INR 34930. The amount was helpful for the education of their three children and eased their household expenditure.

"I am thankful to Vaagdhara for ensuring my basic rights of livelihood by reducing the dependence on the market through guiding me to grow a nutrition garden for my family ."

Weaving Nature

Dilip Baskey is a father of four daughters. He has to feed seven members in the family and the sole medium of his livelihood is agriculture. Dilip used to practice natural farming initially and grew local and indigenous crops. He used organic manures like cow dung and bird wastes in his field. But he shifted to chemical farming as it became a common practice in his village. He started using hybrid seeds and, like other farmers, he used Thiamine and other chemical

Dilip Baskey

Kalajhor, Ghatsila, Purbi Singhbhum, Jharkhand | **Land:**
Grows : Seasonal vegetables, Oil seeds, Spices, Herbs, Pulses, Millets, Mushroom, Maze and indigenous varieties of Paddy | **Livestock & others:** Buffalo, Duck, Hen, Pigeon, Fish
Support: Centre for World Solidarity

fertilizers in his land, as a result of which, his soil quality was compromised. The yield went down and the produce was also unhealthy.

Dilip's younger daughter had attended a nutrition camp run by Centre for World Solidarity (CWS), as she was in the MAM category (Moderate Acute Malnutrition). Thus, he got in touch with the organisation. His mindset transformed when he attended a training on Integrated farming system (IFS) and organic farming. He realised how chemical farming was harming his field and the health of his family. With support from CWS, he started developing the IFS model and reduced his need to use fertilizers and chemicals, thereby reducing the cost of production.

Today, he conducts agriculture practices with better integration of all essential subsystems: land, pond, livestock and forest in his farm. He prepares vermicompost and organic manure and grows Azolla to feed birds and buffalo. He also uses duck, hen and pigeon wastes in his field before ploughing. He has a fish pond management system and uses cow dung and duck wastes to feed fish, which has reduced the cost for the fish feed. He is self-sufficient now as he grows paddy, vegetables and livestock which provides for his income. He has also designed a horticulture plantation where he does vegetable and mushroom farming. His dependency on chemical fertilizer has reduced and he uses organic pest control methods. His farm is getting increasingly sustainable. He also teaches his fellow farmers about the harmful effects of chemical fertilizers.

> **"It's not just my health; its also the health of those who eat my vegetables matter"**

Dilip is highly intuitive and understands the importance of nature and its system. He works very hard in his field and enjoys his work. He wants his next generation to continue the noble work of farming that he does.

Ownership to Land

Manjulaben had been a farmer for last 32 years. She recalls that during her father's time there was very little use of chemicals, only to fight diseases. As she grew up, she saw an increased use of chemicals in the farms for increased production, and by the time she was married, the situation was dire.

In 2019, Bavla Mahila Vikas Sangathan started a campaign on women and organic farming, with the support of Working Group for Women and Land Ownership (WGWLO) in 10 villages. This was also done in Manjulaben's village.

Manjulaben realised that chemical farming is not

Manjulaben

Rajoda, Bavla, Ahmedabad | **Land**: 3 bighas | **Grows**: Paddy and vegetables

only harmful for the health of her family but is also ruining her land. She shared the realisation with Gobardhan bhai, her husband. Gobardhan bhai refused to help her in the transition and said she will have to take up the entire responsibility alone. Manjulaben rose up to the challenge and it was decided that in the forthcoming season, 1 bigha out of their 3 bighas will be devoted to natural farming.

In the next kharif season, they planted local varieties of brinjal, ladies' fingers and moth beans, where they used only cowdung and *amritpani*. The input cost, naturally, was much lower. Manjulaben decided to go to the market herself to sell the products, so that she can make her customers aware about her process of growing the vegetables. Her neighbours were surprised as this was not usual for the village women. However, they liked her vegetables very much. They did not refuse the little extra money they had to pay for her tasty vegetables. This built the confidence of Manjulaben and Gobardhan bhai.

> **"My land is my mother which feeds me…I can't poison my mother."**

In the kharif season, she acquired local varieties of seeds from Bavla Mahila Vikas Sangathan and learnt to make plots. She sowed 5 kgs of *Ambamor*, a local paddy variety, in 1.5 bighas. However, a late rain dried up the land. Manjulaben got worried and then came up with a solution. She made a solution of 1 kg cow dung in 10 litres of water and put it in the paddy fields. Her solution worked well and the paddy survived.

Going forward, she realises that there is a dearth of local seeds in her area, so she wants to create a local seed bank from where she can distribute to other farmers.

She also realises that despite her efforts, her name is not included in the land rights, and for all government schemes, she has to apply through her husband. A decision has been made by the couple to include her name in the land ownership. That's definitely a great win for her!!

Rejuvenated

Dinesh comes from an agricultural background with his entire family involved in agriculture for generations. He has been working on the farms since his childhood and started working as an independent farmer since grade 10th. Growing up, all farms in Dinesh's village including his own practiced chemical farming, but in 2006 a training intervention program by agriculturist Dr. Surendra Dalal introduced the farmers of Igrah village to organic farming.

Currently, Dinesh grows seasonal crops and vegetables on his 7 acre of land organically, with the help of his family. In terms of income, there is no difference between organic and chemical produce, as he receives the same amount for his produce as his counterparts who practice chemical farming. However, the transition from chemical to organic farming entails a lean period and could prove challenging, especially for the small farmers. From his own experience, Dinesh narrates,"when I decided to turn towards organic farming, I didn't get much support from my

Dinesh Redhu

Igrah, Jind, Haryana | **Land**: 7 acre | **Grows**: Seasonal crops and vegetable
Support: Indo Global Social Service Society

friends, family or neighbours… In addition to it, there was a lean period of 2-3 years, where soil was still recovering and both the production and income was low."

The wait was worthwhile, as once the soil was rejuvenated, the land started producing high quality natural output which got good returns in the market. Seeing the success of his methods, Dinesh gradually started to get support for organic farming. At present his whole family is involved in organic cultivation of farms. Fellow farmers often visit him to gain insights and tips on natural methods of farming. His advice to all those who want to adopt organic agriculture is a simple one - educate oneself about organic agriculture and then embark on organic farming. He knows that it requires a lot of dedication and persistence in initial years and the farmer has to consistently tend the soil and land to help it recover its nutrients.

Over years, Dinesh has been able to convince his fellow farmers about adopting organic farming and while the numbers are still low, there has been a steady increase in the numbers each year. The biggest hurdle, however, according to Dinesh, is the consumers' perceptions about organic food. This, he believes, is shaped from a lot of fake and misleading notions. One of the biggest misconceptions among the consumers is of organic products being expensive. Dinesh Redhu explains that it's not actually the organic products which are expensive but it's the inferior products being sold in the name of healthy food which makes organic produce look costly. Nonetheless, Dinesh also agrees that cost of organic produce can sometimes be marginally more than the conventional chemical produce owing to the efforts of the farmer in doing a naturally sensitive farming which takes care of everything from crops to soil and the microbes within.

> **"The key to organic farming is patience and faith"**

The adoption of organic farming in Dinesh's village has increased considerably since the time he started. That bodes positive news for the future of organic farming and its farmers. As of present, around 28 farmers with a total of 50 acres of cultivable land are registered and certified under the government's Participatory Guarantee System (PGS) scheme for organic farming. In addition to this, there are 100 acres of unregistered cultivable land which is used for organic farming and is in the due process of getting PGS certification.

Story of Dinesh Redhu is a hopeful example of young and next generation farmers, who are carrying forward the knowledge of organic farming and spreading the importance of maintaining a healthy balance in biodiversity.

Learning and Sharing

I retired as a teacher from Niali high school in 1992. During the idle days of retirement, I realised that I should continue working as I was still able. So, I decided to take up farming in my own land. At first, I hired labourers and started growing a high yielding variety of rice crop, locally known as Savitri crop. Initially the yield was good but in the following years there was a pest infestation which ruined my crop.

I consulted the agriculture department officials who told me to sprinkle hexafluoride in the field to prevent pests. I engaged a labour to sprinkle 30 Kgs of the pesticide in my field. During the course, he felt dizzy and fainted in the field. I got worried and brought him home and gave him warm milk. I made

Natabara Sarangi

Balipatna, Khurda, Odisha |
Rajendra Krushi Chasa Gabesana Kendra | **Land**: 3 acres

up my mind to not use the pesticide anymore and dug a hole and buried the pesticide. But then I realised that if it is so dangerous then what effects would it have on other living beings. So, I barricaded the hole completely.

Meanwhile, I came across Fukuoka's book 'One Straw Revolution' which focussed on farming naturally. I followed the steps and eventually was successful in the methods. As an organic farmer, I wanted to use indigenous crops, but there was a problem in finding local varieties as most of the farmers have shifted to commercial crops. After a lot of searching, my son and I found 5-6 indigenous crops in the first year, and we have since continued to collect and propagate the 700 different varieties we collected from all over the country. Importantly, the grains in our grain museum are shared with the farmers, who give back a new set of the same seeds, thus continuing the cycle. Farmers receive one or two varieties, so that they can harvest it easily.

> **"It's about the revival of what we knew about farming thousands of years back and lost in the name of modernity."**

With time, we developed our own training centres where our farmers would become master trainers with hands-on-experience of organic farming. Along with distribution of seeds, we also teach the farmers on how to use vermicompost and create their own fertilisers and pesticides from cow urine or neem trees. Sometimes the farmers are concerned about the economic viability of the organic crops, but once they realise that the cost of production in organic is lesser, they want to try out. So far, we have trained over 1500 farmers in organic agriculture.

Owing to our efforts, the Govt. of Odisha has converted our research centre into a State Resource Centre. Here, we try to study the nutritional qualities of organic products and we have found that they have higher nutrients than the commercial varieties, and also reduce the health hazards of farming with artificial fertilisers and pesticides like cancer and other diseases. We realised that commercial farming severely impacts the microorganisms, water retention capacity of the soil which leads to soil erosion and in turn affects every living being. Organic farming preserves topsoil quality.

I want to push agriculture into a mainstream subject in the schools where the students have hands-on experience of farming in their school, and home. Only then they will regard farming as a respectable profession.

A New Dawn

Elu Bai

Devasiya, Devas, Madhya Pradesh | **Land**: 13 bigha | **Grows**: cereals, pulses and vegetables
Support: Samaj Pragati Sahyog

It's a busy morning for Elu bai and her husband Govind. Having collected compost in a bamboo basket from the NADEP pit in her backyard, she rushes to the bullock cart, where Govind is waiting. She has seeds of sorghum, maize, pigeon pea, sesame, *moong*, black gram, *dangrey, okhra, kankri*, pumpkin, bottle gourd and lablab beans tied in a bundle. They are off to their 13 bigha plot where they are sowing their kharif crop. Equal amount of compost to the seeds ensures good growth right from the roots. They do not believe in chemical fertilisers or pesticides anymore, although they know it's tough to drive away birds for a month initially.

Despite stories of children eating urea by mistake and a goat dying for the same reason in the village, farmers in the village were tempted to emulate the big farmers and started using chemical inputs for quick profits for the last 20 years. Elu bai and Govind had fallen into the same trap. The crops were infested with new diseases which could not be cured.

'Hope' came as Elu bai joined a self-help group facilitated by Samaj Pragati Sahyog. She received trainings on preparing the soil, seed germination and treatment, and preparation of organic compost and pesticides. Repeated trainings, visits and screening of instructional videos convinced them that natural farming reduces cost and is definitely the healthier option. They took to natural farming with great enthusiasm.

Sorting, germinating and treating seeds before sowing is a habit now. 5 leaf organic pesticide or a concoction of onion, ginger, garlic and chilli keep the worst pests at bay. It is work intensive, but low cost. They have saved one and a half lakh in this process. They make 6 trolleys of compost, twice a year from their two NADEP pits. They are looking forward to further increase the yield of compost to ensure healthy soil and healthy crops for all the farmers.

> **"We never buy pesticides because we care for the health of our land and our children."**

Healthy Profits

Sher Singh is a well-known face in Shahkot. In fact, of all farmers who come from nearby villages to sell their vegetables, he is the most sought after, notwithstanding the fact that his offerings are priced INR15-20 higher than market price. They are sold within two and a half hours of his arrival in the city.

Sher Singh never believed that going organic will actually spell big profits for him. “A friend advised me to go for it, claiming it has great future. I never believed him but started experimenting since I always wanted to go natural. As the amount of agrochemicals used in fields is rising, so are the diseases. I felt I can serve society by offering healthier

Sher Singh

Shahkot, Punjab | **Land**: 14 acres | **Grows**: Vegetables, Pulses, Turmeric and Wheat
Support: Kheti Virasat Mission

food," he recalls.

At first, Sher Singh got very dismal results. The vegetables took longer to develop and were really small. "Now it's been five years and not only the produce is good, but they also taste great. It's because of the organic tag, that my vegetables are in great demand across Shahkot today," he says.

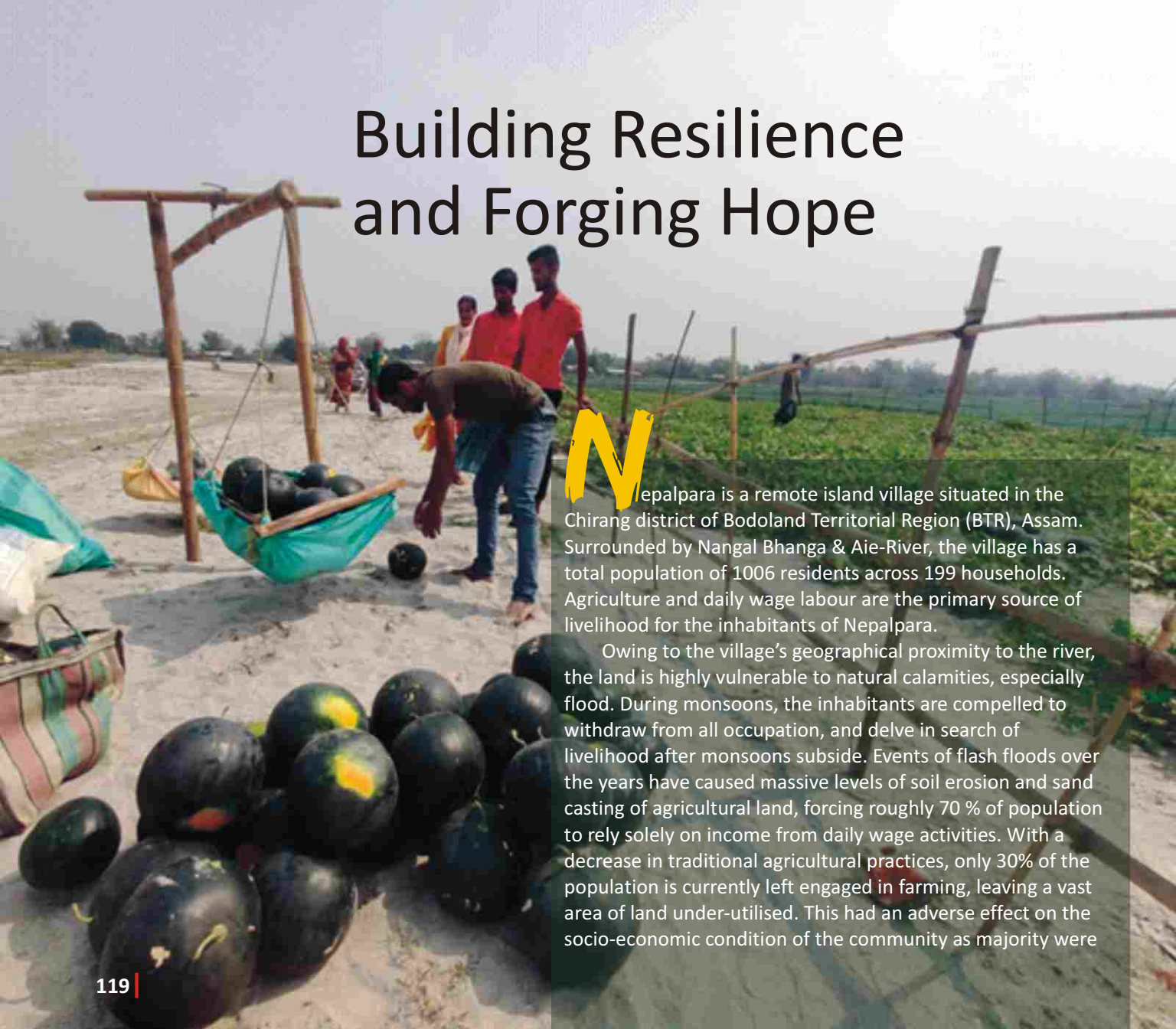
Till 2009, Sher Singh was only selling vegetables at his village Mirpur. But in 2009, when he decided to turn organic, it also opened new avenues. He started taking vegetables to Shahkot where his friend, who earlier motivated him to take up chemical-free farming, also referred a few customers. "Buyers are usually initially reluctant as the vegetable is costlier than those grown using chemicals. So, they start with small quantities but after experiencing better quality, they stick to it. Many say, instead of spending on medicines in future, we would instead buy costlier but better food today," Sher Singh informs. With the word-of-mouth publicity, his popularity has risen so much that he does not need to go to each and every house to sell the vegetables. "I have around 35-40 families which are regular buyers. Others just call me on mobile, get to know my location and reach there to get their supplies."

> **"People are getting aware about what they are eating"**

Of the total 14 acre of his farmland, Sher Singh is doing organic farming on six acres, including 3-4 acres kept for vegetables. He also grows turmeric, basmati rice and wheat without any chemicals. "When I started with organic, the yield dropped immediately but then recovered gradually with each passing year. Now the vegetables also look as good as vegetables of any other farmer. But I still have to sell them at higher rate as these take more time to grow," he explains. Sher Singh's motor-run cart offers around 30 vegetables, pulses, turmeric and *dalia* (bulgur).

In the field, he applies a mixture of cow dung and urine, jaggery and gram flour, which has given remarkable results. "I also make mulch of unnecessary grass and vegetable waste. It helps increase the soil biomass," he informs. Sher Singh still gets questions about the higher than market rates from newcomers. "I tell them I sell vegetables, not poison, and they understand. Once city residents start demanding chemical-free food, farmers would be pleased to provide them and cost would not be an issue," he says optimistically.

Building Resilience and Forging Hope



Nepalpara is a remote island village situated in the Chirang district of Bodoland Territorial Region (BTR), Assam. Surrounded by Nangal Bhanga & Aie-River, the village has a total population of 1006 residents across 199 households. Agriculture and daily wage labour are the primary source of livelihood for the inhabitants of Nepalpara.

Owing to the village's geographical proximity to the river, the land is highly vulnerable to natural calamities, especially flood. During monsoons, the inhabitants are compelled to withdraw from all occupation, and delve in search of livelihood after monsoons subside. Events of flash floods over the years have caused massive levels of soil erosion and sand casting of agricultural land, forcing roughly 70 % of population to rely solely on income from daily wage activities. With a decrease in traditional agricultural practices, only 30% of the population is currently left engaged in farming, leaving a vast area of land under-utilised. This had an adverse effect on the socio-economic condition of the community as majority were

Nepalpara Village

Nepalpara, Sidli, Chirang, Assam | **Land**: 800 bighas | **Grows**: Watermelon
Support: Indo Global Social Service Society

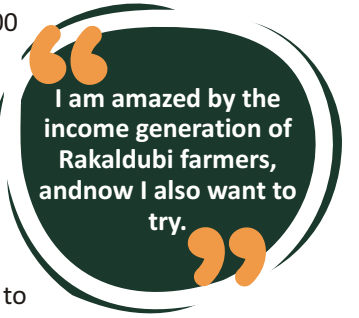
forced to feed on meagre wages from daily labour.

Bondesh Ali, a villager, had been working as a daily wage labourer, since 2016 in which flood breached their source of livelihood and devastated the 12 bigha's of cultivation land by leaving it sand casted.

Realising an opportunity to transform the problem into solution, IGSSS adopted the village in 2018 and intervened with an aim of making sand casted lands fit for farming and help the community revive agriculture. In 2019 the farmers were provided sustainable agriculture training in collaboration with Krishi Vigyan Kendra (KVK) to explore smart agricultural practices through exposure visits where the farmers got first-hand experience on sand casted land cultivations. In 2020, IGSSS started its pilot project with 1 household and provided the beneficiary with seeds of watermelon crop for cultivation in the 4 bighas of sand casted land. Hope began to rise when the demo model resulted in generating INR30,000 – 40,000 income within 3-4 months.

The experimental model was successful in not only optimising the output of farm produce but also rekindled hopes of livelihood security in Nepalpara households through solving the problem of cultivation on sand casted lands. Following its success, in 2021, approximately 120 households replicated the watermelon cultivation in more than 500 bighas of sand casted land.

"After spending of INR 21,000 in 2020, my income generation was about INR 90,000 and witnessing the profit, I expanded the cultivation with an investment of INR 1,10,000 in 2021 and is expected to generate an income of INR 4,00,000. Over 80% farmers have been replicating the watermelon model because it has been sustainable and profitable for us who do not hold the fertile cultivation land," says Nagor Ali.



In 2022, more than 180 farmers of Nepalpara and neighbouring villages utilized the sand casted lands for cultivation of watermelon, pumpkin, cucumber, bitter gourd and peas spread across over 800 bighas of land.

"I am amazed by the income generation of Rakaldubi farmers, and now I also want to try," says Amar Ali.

The intervention brought a positive change in the community by training them to be self-reliant through adoption of climate resilient agricultural practices. Proactive participation by the farmers in adoption of sustainable and climate friendly practices enabled them to revive cultivation on their lands along with ensuring their income and food security.

Guarding Nature

I have been among those very few fortunate beings who get a chance to closely and constantly be in the arms of nature. I worked as a forest ranger before I got into farming. During my tenure, I was intrigued by the co-dependency I saw in the forest among the animals and other living beings. This also made me think that we are only exploiting our mother Earth and barely giving her anything in return! This was when I started exploring the concept of sustainability.

I first came across Natural Farming when I visited Gujarat on an official tour. It was an eye opener when I saw that one could grow crops without using any kind of chemicals! I soon got in touch with many other people who practised agro-ecology and also spent a lot

Babu Singh Yadav

Dhamana, Badnavar, Dhar, Madhya Pradesh | **Grows**: Fruits& Vegetables like Lemon, Chikoo, Guava, Mango, Papaya, Amla (Gooseberry), Brinjal, Carrot. Tubers like Ginger, turmeric, Taro root, Potato. Vines – Watermelon, Pumpkin, Bitter gourd. Ashwagandha, Satvar, Paddy, etc.

of time reading about these techniques.

In every region I was posted in, I made sure to find farmers who practised organic farming and learn things from them. By 2018, I was fully invested in the idea and started practicing on my little piece of land. Soon enough I was able to notice the difference between the vegetables that were bought from the market and the ones that grew on my farm.

That was when I was fully convinced about the natural farming techniques and wanted to expand. Today my farm is a home for earthworms, Lady Mantis, beetles, and many other insects that have immensely helped in enriching the fertility of the soil, while also increasing its water holding capacity.

I have also implemented modern means of irrigation like drip irrigation to use minimum water, keeping in mind the balance of the environment. Long-living plants like *Neem* have been planted on the exteriors which also help in keeping a lot of rodents away.

> **"All these years we have exploited nature enough and it is about time we realize this and start taking steps to protect our mother earth"**

The whole purpose of practising this mixed cropping method is to continue the productivity of the land while keeping the fertility of the soil intact. Not just that, the total crop failure due to uncertain rainfalls is also reduced along with the reduction in pest infestation.

It's just been 3 years since I have practiced Natural Farming and I cannot wait to see what is more in store for me! It's like every day I wake up and discover new things which makes me want to learn so much about nature!

Initially, when I had practiced natural farming, I was sceptical about it, but gradually it has become a part of my life.

Man is but a part of Nature, and his war against nature is inevitably a war against himself! We need to protect nature before it's too late.

Garden of Profit

Taku Devi

Kadwa, Amri, Banswada, Ghatol, Rajasthan | **Land**: 4 bigha (rain fed) | **Grows**: Vegetables | **Livestock & others:** 2 buffaloes, 2 cows
Support: Vaagdhara

Taku devi lives with her small 3 member family and earns a living from her farm. She realised that the input costs of chemical farming has made it difficult to make profits and the health of her family members has also been compromised.

Her search for poison free food eventually led her to grow chemical free food in her own land. She joined the SHG group formed by Vaagdhara and started participating in the programmes. In the trainings organised, she learned about how to increase produce through natural farming and to not use chemical fertilisers and pesticides. She learned how the land becomes infertile and the food becomes poisonous. The SHG trainings helped her to learn about techniques to grow more crops with minimum inputs. She started an organic nutrition garden in her home.

During the lockdown phase, when there was little business, Taku devi grew vegetables (Tomato, Brinjal, Tinda, Chillies, Bottle gourd, Spinach, Coriander, Fenugreek etc) from a vegetable seed kit provided by Vaagdhara. After ensuring nutrition for her family, she made a profit of INR40,000 from March 2020 to June 2020. In her nutrition garden she used 3000 kg of cowdung manure to grow 3 quintal onions. After storing 50 kgs for the family, she sold the rest at INR 25 per kg and made a profit of INR6250. She made a profit of INR 1500 from her 15 kgs of lemon, and she sold ghee made from the milk of her buffalo @ INR 800, making a profit of INR 8000.

> **A small transition but a big leap for me**

"I can't express my gratitude to Vaagdhara for lending their support and opening my eyes," says Taku devi.

Multiple Cropping

Girish Krishnamurthy

'Rocky Ridge Farm', TN | **Grows**: Vegetables | **Livestock & others:** Cows
Support: Bhoomi College

My idea is to produce all types of fruits and vegetables so that we can serve a family with all its needs. This is the reason why we don't focus only on one crop. We chose to plant around 25 varieties of vegetables, and we used the Natural Farming method inspired by Subhash Palekar and it has worked very well.

When a person grows multiple crops in a single plot, the nutrition gets shared with the members of the family and also with the neighbours. Multiple cropping can increase production and income. It also has additional benefits like increased crop diversity, improved functioning of agricultural systems and spare land for biodiversity. The pest attacks are minimised because there is not enough base of one crop for the pests to survive. So, pest control is much more integrated in the growing process and there is reduced use of inorganic fertiliser and pesticides. Sometimes we use *panchagavya* just to rejuvenate the soil otherwise we mainly use green manuring and mulching techniques to keep the ground fertile.

> "There is an increasing demand for organic food in towns and cities. People understand the difference."

Based on these simple, natural processes and layered farming, we are able to achieve very good results and are currently serving between 60-80 families around Bangalore with our fresh produce. We also breed cows and home deliver fresh organic milk and paneer.

A Transforming Journey

Years ago, Manveer took the initiative to practice only organic farming in his village. Presently, organic farming is a growing practice in his village as he continues to guide and mentor younger farmers about the natural methods.

Manveer Redhu first started farming when he was in 9th grade, along with his father and elder brother. In 1994, he started farming independently. Initially he had adopted chemical farming as the practice was widely prevalent across the state and input materials were also easily available.

"After the green revolution, majority of farmers started using chemical fertilisers and pesticides on the field... I remember our elders cautioning against these methods, but the promise of high yield was too good to ignore. But few years later, the effects of excessive use of chemicals started showing in the ecology of the village. Although the yield was high, a lot of farmers I knew, faced problems in their land... Either the soil was losing fertility, or the underground water was getting polluted... my only advice to them

Manveer Redhu

Igrah, Jind, Haryana | **Grows**: Foodcrops
Support: Indo Global Social Service Society

was to adopt natural methods of farming."

Plagued with pollution of water and soil, farmers, under the guidance of Manveer Redhu, decided to turn towards organic farming. However, the transformation from chemical to organic farming is a slow and long process and doesn't happen overnight.

Recounting his personal journey, Manvir Redhu says, "In 2006, I stopped using pesticides on the crop, by 2009 we had completely stopped using herbicides and fungicides, and by 2013, I was able to complete my transition to organic farming. Organic produce becomes costly at times as the productivity breaks down… it's only after a couple of years that the yield increases in organic farming."

Once recovered, the soil nourishes itself naturally through ways of pollination and converting natural biodegradable waste into manure such as vermicompost. Manveer Redhu fondly remembers his early training days as an organic farmer. Although he has no formal education, he worked closely with his mentor and agriculturist Dr. Surendra Dalal to understand the subtleties of organic agriculture. "He taught us how nature keeps revitalising itself through natural agents such as insects… He educated us about insects and its relationship with plants and land."

The onus of adoption of organic farming not only lies with farmers, but is also shared by the consumer, feels Manveer Redhu. Without a steady consumer base, organic farmers won't receive their livelihood. Although the awareness around organic farming is gradually rising, yet there are certain misconceptions which stop consumers from buying the genuine product. Consumers who can afford, should directly approach an organic farmer and remove the role of middleman to ensure genuine produce.

"The easiest way for consumers to get genuine and healthy produce is to adopt and support an organic farmer like a family doctor… this will be a big support and incentive for the organic farmer and also for the consumer."

> **"Our fathers warned us against chemical farming."**

Manveer Redhu might not be as young as other farmers of the current generation, but his towering knowledge and experience in the field of organic agriculture acts as a guiding light in his village for those who wish to follow in his footsteps. Over his years of association with IGSSS, he has helped in expanding the scope of organic farming by knowledge sharing, seed sharing and training fellow farmers in running and operation of crop processing machines.

Braving Cyclones

Our ancestors are from Ramganga village where they have lived for the past 100 years and there had rarely been a time when they had to depend on the market for their food. However, of late, we could hardly grow one or two vegetable crops, and paddy grew just once a year in spite of chemical inputs which were meant for quick and increased production. For almost all our daily needs we became solely dependent on the local market. The changing climate, frequent natural hazards and occasional water logging further made farming difficult. It was difficult for the

Kalpana Khanra

Ramganga village, Patharpratima Block, South 24 Parganas, West Bengal | **Land**: 1 acre farmland and 0.165 acre of homestead land | **Grows**: Bitter gourd, Chilli, Brinjal, Radish, Okra, Bottle gourd, Amaranth, Tomato, Sponge gourd, Ridge gourd, Paddy |
Livestock & others: Cows
Support: Development Research Communication and Services Centre

family when my husband migrated to other states for months in search of work.

In 2012, I became a member of the Nadi Mahila Samity (a mutual cooperation group), an initiative started by DRCSC. I attended a series of training sessions on sustainable and nature friendly farming practices.

> **My husband has not migrated for the past 4-5 years…he works in our farm, where he is more needed**

Growing food without chemicals was something new and insightful for me. The most valuable learning for me was usage of locally available low-cost materials to make good manures and pest repellents. So, with regular interactions with the local field staff and support from the DRCSC team for manure, seeds, bio-pests repellents and *neem* oil, I began natural farming.

In 2018, we revamped 0.66 acres of our farmland. We raised land & embankments for vegetable cultivation, prepared low land for paddy and made pond and drain system for fish cultivation. Thus, we were able to grow all kinds of leafy vegetables, fruits, creepers etc all round the year. In the paddy field of 0.33 acres, we cultivated desi *Dudheswar* paddy in monsoon and green gram in winter. We have 5 cows; milk is consumed at home and excess is sold in the local market; the dung goes for biogas. The slurry is composted and used as manure. We also had chickens, goats and ducks but they had to be sold off as they were affected during the Amphan cyclone.

We can now harvest and sell through 9 months a year. The selling was highest in lockdown last year, when there was high demand for chemical-free organic food. We enjoy the fish from our pond everyday and the rest are sold to the trader. Our average income from farming has grown from INR20,000 in 2018, to INR50,000 in 2019.

Apart from reduction in cost of production and increase in income, we now have nutritious and safe food for our family all year round. The best part is that natural hazards and changing climate have not affected us drastically. If one farm patch suffers, production from the other patches is sufficient.

Protecting the Land

I inherited this piece of land from my father. It was only in 1993 that I got seriously involved in farming. Like everyone else, I followed the herd without pausing and questioning myself on what I was doing and why. It was around 2015 that I had the opportunity to attend a workshop conducted by Subhash Palekar. Something itched my brain!

I hadn't heard about chemical-free farming till then. It made me wonder if

Balvinder Singh

Ghanari, Una, Himanchal Pradesh | **Grows**: Apple, Mango, Turmeric, Ginger, Sesame, Native Spices, Greens like Mint leaves, Spinach, Vegetables like Pumpkin, Lady's finger.

this was practically possible. Days passed and I kept gathering information about natural farming from various sources. During my research, I came across studies that showed vast amount of agricultural land in India to have permanently gone barren because of excessive use of chemicals.

That was the moment I made a vow that I shall harm my land no more with the chemicals and switched over to natural farming. Being someone who had spent all his life spraying chemical fertilizers to the crops, switching over to natural farming was not an easy ride. I have had my fair share of highs and lows.

> **"From being ridiculed by the neighbours to conducting demonstrations on natural farming across my village, I can say I have come a long way!"**

Initially, I found it difficult to track progress. I saw that the yield was low as compared to previous years; however, I didn't let this setback come in my way and patiently waited. I soon introduced mixed cropping methods as well as crop rotation in my farm.

This helped the soil to slowly get back the lost nutrients and also boosted my confidence during the off-season. A year later, I could see the fruits of my hard work, quite literally! As mentioned before, the sail wasn't smooth; there were times when local animals destroyed my crops. I felt bad, but on the bright side, this was the first time, in ages, that I saw animals eating my crops which in some way meant that my produce was getting safer, and perhaps tastier!

I put fence around my farm and started growing vines and local greens around the fence. Since I did not have livestock of my own, I find it difficult at times to procure animal manure, therefore I try to recycle the plant waste as much as possible.

It's been 5 years now since I have made this wise decision and I'm glad I did.

It's all about taking one bold step at a time! All you need to do is believe in yourself no matter what.

Sprouts of Future

Ajola Devi

Sirsa, Palajori, Deoghar, Jharkhand | **Grows**: Saplings of Tomato, Brinjal, Chilli, Cabbage, Cauliflower, and fruit crops like Papaya
Support: NEEDS

Ajola Devi is a small farmer from Deoghar, who has a big family to look after. It was very difficult for her husband to feed the whole family from his small income. Ajola Devi wanted to share the responsibility.

> **It feels nice to be able to support my family**

She started her business of poly nursery with other village women. She joined the NEEDS Green College and then underwent the Fast Track Program. Her business idea was to establish one poly nursery to cater to 500 farmers.

Timely availability of vegetable saplings is one of the basic constraint faced by farmers in the region. Therefore, with an accessible poly house, farmers can simultaneously practice paddy cultivation along with vegetable cultivation, thanks to timely availability of soilless saplings. Soilless saplings are free from diseases as the growth medium of these seedlings are coco peats instead of soil and their growth is stimulated through controlled parameters.

Ajola devi and her SHG group members sell seedlings of crops such as tomato, brinjal, chilli, cabbage, cauliflower, and fruit crops like papaya. She was trained and guided regularly by the Green College Project team. The group is able to provide quality planting material for their own village, and also caters to the need of the nearby villages.

Ajola Devi earns an additional income of INR 25700 per season. With an increase of income every season, she is confident of setting an example in the region and inspire fellow women farmers to follow suit.

Building Connections

Organic or natural farming is a healthy and a sustainable option to chemical farming, however, owing to the high yield and mass consumption, the majority of farmers tend to keep chemical farming as their preferred farming technique. Lack of local and national level networks for supply and distribution of organic produce has greatly impacted the availability of actual natural produce in commercial markets. To fill the gap, several farmers, local bodies and enthusiasts have taken up the initiative to build up the resource and capacity networks at local level. The purpose of these networks apart from creating a market for organic produce is also to provide logistical and capacity support to small farmers who can benefit from the resources and the calling

Anantha Naturals farm, situated in Ananthapur, Andhra Pradesh is one such example of local network building which provides logistical support to the small farmers of Ananthapura. Anantapur is known for horticulture, being a big agroclimatic zone with more than

Parthasarthy Nara

Anantha Naturals

Ananthapur, Andhra Pradesh | **Grows**: Fruits like Papaya, Pomegranates and Grapes

Support: Farmizen

20,000 hectare of land under cultivation in the district. Anantha Naturals was started by Parthasarthy Nara in 2013. Born and brought up in an agricultural family, Partha is a professionally trained computer engineer having completed M.Sc. in Computer Science followed by 11 years of work experience in the IT sector. In 2013, Partha decided to use the resources and expertise present in the family to open up Anantha naturals.

The project started with the plantation of banana crop and once its harvest reaped good returns, Partha's family agreed to expand the scope of organic farming and thus Anantha Naturals was formed. At present several fruit crops such as papaya, pomegranates and grapes are grown in the farm. Partha reflects that his vision for opening up an organic farm was to be resourceful for both the farming community and consumers. He wanted to do "...something which is accessible to everyone, which is good for both the producer and farmers."

Having stayed in Ananthapura for a considerable amount of time, Partha is well acquainted with the challenges faced by the organic farmers. It is difficult to convince the consumers about the goodness of organic produce, Partha says, who mostly are misled by the bright and shiny colours of chemically treated produce.

"Certain myths of the market have impacted the sales of organic produce in general… such as organic is expensive or it looks dull and dirty".

Another issue which Anantha naturals proactively pursues is to build and maintain the local farmer network to foster crop and logistical support between farmers. The whole of Anantha farm is based upon the cooperative model of farming encouraging collective working of farmers.

"Customers require many varieties… you need all the vegetables, fruits and milk, pulses, spices and other value added products that I cannot do alone. Actually, that's the reason we started the collective initiative. We educate the farmers, give them seeds and provide them market access through our platform."

> If you create some kind of collective structure at village level we can bring many people back to the villages and create employment at village level

Going ahead, the vision of Anantha Naturals remains focused towards expanding the network of farmers, consumers and retailers.

Story of Partha and Anantha naturals is an encouraging lesson in taking charge and initiative for bringing the change one wants. Untiring efforts of Partha, his family and all the farmers in the collective has given a successful working model of an organic collective where small farmers are engaged in natural farming. This will not only help in increasing their returns, but also with the security and safeguarding of income and livelihood.

A Quick Profit

Torgaon is a small village on a dryland and drought prone area of Aurangabad. Sunita led a regular life of a homemaker with her family of five in the village after getting married at an early age. It was only in December 2018 when Sunita met resource people from IIRD-Green College (GC) and came across the many possibilities of learning new skills to start her own enterprise. “Two years ago, I wouldn’t have thought that I could own a successful goat farm,” says the 32-year old.

IIRD Green College is located 13 kms from Porgaon. When she met a course coordinator of IIRD-GC, she developed interest in getting trained on animal husbandry and start her own business. She joined a 3-week training on goat rearing management and was the first woman to join the GC trainings from her village.

“During the course, I learnt about the variety of goats and their management, about goat rearing and feeding, building goat shed, their diseases and vaccinations, business planning and marketing,” shares Sunita. One month after completion of the course, Sunita purchased two goats and started her business. In February 2019, she even received a seed capital of INR20,000

Sunita Madhukar

Porgaon, Paithan, Aurangabad, Maharashtra | **Land**: 5 acres | **Grows**: Leafy vegetables, Millets, Wheat, Pulses and fodder | **Livestock & others:** Goats
Support: Institute of Interdisciplinary Research and Development, Maharashtra

from IIRD's Bhumi Organic Farmers club of Porgaon. By the end of the March 2019, Sunita received comprehensive knowledge and know-hows of business planning, marketing policy and monitoring. With the support received from IIRD, she started her small-scale goat farming business unit.

Considering her zeal and enthusiasm, in April 2019, Sunita was selected by the GC for the Fast Track programme to accelerate her business. She participated in a 5-day Fast Track innovation camp where she gave concrete shape to her dreams of expanding her business and prepared a business model. During her journey, she was constantly supported and guided by her mentors from IIRD. Sunita also reached out to the local Kisan Vikas Kendra (KVK) and veterinary officials to plan her business better. Her family completely supported her with the business.

> **"It feels good to be an inspiration to others in the village"**

Based on the learnings received from the Green College and KVK, Aurangabad, Sunita designed and developed a goat farm with 50 goats. She also consulted the college and village level farmers group to identify the best local breed of goats for her farm. With inputs from all the stakeholders, she decided to purchase *Osmanabadi*– a local breed, which are sturdier and more suited to local conditions than breeds such as *Sirohi, Sangamneri,* and *Bor* from other states.

Sunita invested a start-up capital of INR50,000. She also received 11 goats under the *Navinya Purna Yojna*, of the Veterinary Department, Govt. of Maharashtra. It is a special scheme for women, tribal and minority households. Currently, Sunita's goatery has 22 goats. Besides giving them mineral supplements and timely vaccinations, Sunita is also aware of the local market conditions. During the last festival of Bakri Id, she was successful in selling 7 male goats earning an income of INR70,000. Goat rearing business provides good profit within a short duration. It is especially profitable in drought prone areas like Marathwada and rain-fed farming areas.

Sunita, now a successful goat rearer, excitedly shares, "Even landless households can start this type of a business. Goat is known as the cow of poor people. It gives us milk, manure and money". Sunita is a model in the village to youth and women farmers. She is supporting other women in her village and has a women's group of small, marginal and trained farmers. Besides the goat farm, Sunita is also cultivating organic leafy vegetables, millets, wheat, pulses and fodder for the goats in the 5 acres of seasonally irrigable land owned by her family. She also supports the women group in organizing their respective farms and get the organic certification under the PGS-India system.

Earning Fame

"Get down at Lanjan bus stop and ask anyone about the farmer who rears desi cows and does organic farming... they would know me," Gurmeet Singh says. His farm is just around 100 metres from the bus stop, marked by a big shed sheltering 18 cows and calves - all of indigenous breeds.

The farm has a vegetable patch in front, followed by an orchard of guava, pomegranate, amla and naseberry. Land for grains is neatly portioned to the right. A pond on 2.5 bigha collects rainwater and water supply from the canal, for irrigation.

Deeply influenced by Guru Nanak's teachings of compassion, Bhagat Singh's socialism and Osho's discourses on detachment, Gurmeet was always looking for a way out of chemical-laden farming. A friend who attended a meeting of the Kheti Virasat

Gurmeet Bawalpur

Bhawalpur, Punjab | **Land**: 10 acre | **Grows**: Vegetables, Fruits, Grains |
Livestock & others: 18 indigenous cows and calves
Support: Kheti Virasat Mission

Mission (KVM), informed Gurmeet about this opportunity to learn. It was a turning point he was waiting for. After learning about organic farming, Gurmeet started with 5 acres and within two years had whole of his 10-acre farm chemical free. The wheat production dropped to 4 quintals per acre in the first year but due to his efforts every acre of the land now yields 9-11 quintals.

The farm which, being highly acidic, was not suitable to grow vegetables, is now sending the greens to families in Chandigarh, Patiala and Rajpura, testifying that 45-year-old Gurmeet has come a long way in last 10 years. “I am consistently reducing area under paddy, replacing it with vegetables. Paddy is now confined to 2 acres,” he says.

Gurmeet has adopted several traditional seeds and innovative techniques to maximise benefits from organic farming. He has also managed to deal with infestation of weeds, one of the side effects of using natural manure like cow dung. “I have realised that rotating the crops can easily help. So, after harvesting wheat, I grow green fodder on the same plot and replace paddy with corn,” he says.

With untimely demise of his younger brother, Gurmeet also got the responsibility of leasing out another 10 acres farm belonging to his brother’s family. Fortunately, a lawyer from Patiala, also interested in organic farming, stepped forward, and now Gurmeet is also guiding him on how to pursue the nature’s ways.

The marketing of his produce has gone places. Several families pick up the wheat while Punjab Agro Industries Corporation Ltd, a government organisation, procured Basmati rice last year at a premium price of INR 500 per quintal over and above the prevailing market rate. The vegetables go to nearby cities while a group of youth from Chandigarh also procure milk of the indigenous cows, which is known to be beneficial for health.

> **“Organic farming demands simpler lifestyle which is a rarity nowadays”**

Gurmeet keeps cows, not for dairy, but for use of their dung to improve soil fertility. The pond, built with subsidy of INR8 lakh from the State Horticulture Department, has helped to save groundwater and money. “The use of borewell has gone down by one fourth. Moreover, I can easily drain out water from the wheat fields to the pond instead of pleading neighbouring farmers,” Gurmeet informs.

“Farmers pursuing natural ways can join hands with each other and pursue cooperative farming. That’s the only way things can improve,” says Gurmeet.

Change of Strategy

Prabin Hansda has 15 members in his family. 6 months in a year, he used to stay in the cities as a labourer, and was trapped in loaning and re-loaning money to meet his and family's daily needs. He was finding it difficult to pull himself away from this trap. To feed his big family, he migrated to other places with his family, in search of earning livelihood after the kharif season. Agriculture was rainfed and lack of irrigation facilities could not ensure him of the produce. Climate hazards like droughts every alternate year, intensified the uncertainty of getting the produce. He had trees in his farm but was not aware of how to use

Prabin Hansda

Brawadih, Purulia, West Bengal | **Land**: 3 acres | **Grows**: Paddy, Pigeon pea, Ground nut, Vegetables | **Livestock & others:** 4 cows, 8 goats, 9 ducks and 30 hens
Support: Society for Promotion of Wasteland Development

the trees to generate income. He was rearing livestock, but during migration, he was forced to leave them behind. He cultivated paddy in his 2 acres land only in the kharif season. His total cost of cultivation for paddy was INR 8000 and production was 20 quintals which could support his family only for next 6-8 months.

In 2012, he became part of a farmer's club, when SPWD started to implement Sustainable Integrated Farming System. After group's formation and training, he started preparing compost, both solid and liquid manure, in his farm regularly to supply nutrients to the crops and slowly changed from mono-cropping to mixed-cropping system. He started using trees as fodder, for mulching and for making bio-pest-repellents. He also introduced cultivation of lac insect on his farm. He was rearing livestock earlier too, but after the intervention, care for feed, health and housing of the livestock improved. The rearing of birds increased the farm income. The selling of eggs from birds ensured cash flow to his household. Cultivation of azolla fern as feed for the livestock and ducks improved the health condition of livestock and birds.

> **"I wish someone had guided me earlier in these techniques. It has changed my world."**

During the Kharif season of 2013, Prabin applied SRI techniques in his land of 1 acre, where his yield doubled compared to the previous years. Straw was used as feed for cow and also used in vermi bed and bio-dung. Apart from this, with the support from the project, Prabin has made a small water reservoir with which he can cultivate crops in Rabi season. He practices mixed cropping of pigeon pea and ground nut. He rears 4 cows, 8 goats, 9 ducks and 30 hens. The farming elements support one another and reduces external inputs. For instance, the crop provides fodder for the livestock, and the livestock dung is converted into different forms of manure for the crop. Moreover, their waste is also used in biogas to produce fuel for household cooking.

Now Prabin can support his family at the time of crisis, as he keeps reserves for the crisis period. Prabin is the master trainer for the Farmer Field School in the village. Prabin does not take loan from money lenders anymore. Instead, it is he who supports other farmers in times of crisis.

New Innovations

Call it by any name - *Nagali, Nachani, Ragi* or Finger Millets - this coarse grain is integral to the tribal farming practice and local food tradition. *Nagali* is our constant, while other types and crops may vary from year to year.

My family owns 2 acres of land that lies at the outskirts of the village and another 1.5 acres that lie in the forest area adjacent to the village. The land is non-irrigated, and monsoon is the only cropping season in which we cultivate rice and some lentils along with *Nagali.* We have also planted a couple of mango and cashew trees on our farm.

With 4 quintals of *Nagali* and 8-10 quintals of rice, our annual income from farming was around INR 40,000. In the non-agricultural season, I used my masonry skills and earned another forty thousand. My wife and I worked under the government's MGNREGA, which helped us to get an additional income by working locally. With this income, we could educate our two sons well.

Until three years ago we cultivated *Nagali* by traditional method. Over the years, the production was going down and the yield barely sufficed our household consumption. *Nagali roti/bhakari*, which was a staple diet, was replaced by rice and *daal*.

Motiram Bhangare

Ghosali, Pimpalwati, Peth , Nashik , Maharashtra | **Land**: 2 acres+1.5 acres |
Grows: Nagali, rice, lentils, fruits
Support: Pragati Abhiyan

In 2018, Pragati Abhiyan, a Nashik-based organisation, offered a solution. They proposed a new improved organic cultivation method for *Nagali*. Shifting away from the traditional cultivation methods was not an attractive idea for most farmers, but I decided to be part of it.

In the initial year, I was the only farmer in the village cultivating *Nagali* by a non-traditional *Char Sutri* method. I learned the steps and implemented them sincerely. Traditionally, we use the broadcasting method to plant saplings when they are grown enough to survive on their own and leave the crop to grow. In the newly adopted method, we treated the seeds with *beejamrut* and developed a plant nursery. I used 20-21 days old plantation ready saplings in the land, placed them in a row by keeping enough distance (25-30 cm to be precise) between the saplings to give them space to grow. While I used the new method in one part of the land, I used the traditional method of seed broadcasting in the other part.

The difference began to show within first four days itself. While with the earlier method it took around 15 days for a plant to stand on its own, the nursery-grown saplings were standing firm within four days. Seeing the result, my interest got enhanced.

Within a month of the plantation, there was a visible difference in the two plots. With the traditional method, the growth of plants was less and uneven, as compared to taller, leafy and dispersed plant growth in the other area.

My wife and sons helped me with plantation and later in the de-weeding process. Since the plants are spaced out, the weeds grow faster and need to be removed often. Pragati Abhiyan taught me to use a cycle weeder, to do de-weeding efficiently. For pest control, I sprayed *neem* oil (Azadirachta indica extract) diluted in water. Except for the neem oil, I did not have to buy anything from the market. The seeds and mixes were from home or locally available. Thus, the input cost was minimal.

> **"I am not growing a different crop, I am just growing it differently."**

After sixty days the crop was ready for harvesting. Not only my farm produced more, but my production was also the highest among the farmers in the five blocks, who were then motivated by Pragati Abhiyan to use the improved method. Our per acre yield was 32 quintals, while it was only 2.25 quintal per acre with the traditional method.

I am using the same method since 2018. With seasonal changes, production can vary, but it is much more beneficial. My experience has motivated other farmers to adopt the new methods. I have supported 30-35 farmers in the village and almost 70% of the farmers are now cultivating *Nagali* with improved methods. With sizeable produce, we may think of selling it again in the market. Right now, we use it at home. We have enough stock of *Nagali* and it has now again become a part of our daily diet. I can also share with anyone who wants it.

Sustainable Practices

Agriculture is the primary source of livelihood for the residents of Paniyamerani village who generate a major part of their income from selling their produce to the market. For better returns, farmers eye maximum harvest with minimal damage or wastage. To achieve this, farmers often take help of scientific farming practices, but at times lack of knowledge misleads to overuse of scientific methods which, in turn, can cause harm to the agricultural produce.

Padumi Gohain

Paniyamerani, Gogamukhi, Dhemaji, Assam | **Land**: 5 acres | **Grows**: Sali paddy, bitter gourd, coriander, mustard, green vegetables and tomatoes
Support: Indo Global Social Service Society

Padumi Gohain, aged 42 years, is a local resident of Paniymerani village who lives along with 6 other family members. Family of Padumi cultivates Sali paddy every year in the monsoon and grows Rabi crops like bitter gourd, coriander, mustards green and tomatoes. Each year, Padumi invests sizeable amount of her income and efforts in her farm. However, due to pest infestation and lack of manure in the soil, her production output suffered repeatedly giving her low returns. Padumi was facing losses due to poor produce, along with overhead costs of transportation and procurement of raw material. To cut her losses and increase the production, Padumi turned towards the use of chemical fertilisers, hoping it would remedy the existing conditions of land. Due to lack of knowledge about its usage, the cure turned into a curse, hurting the farm's productivity even further.

Despondent from bearing continuous losses, Padumi lost hope in agricultural practices and thought of giving up cultivation of Rabi crops. She decided to work as daily wage labour within agriculture sector in the neighbouring villages, to support her family. It was during this lean phase of her life that an IGSSS made an intervention. IGSSS had initiated a project on bio-pesticides as a part of which training sessions were conducted with farmers to promote proper use of organic fertilisers. One such training session was conducted with farmers of Paniymerani village on 22nd September 2020 in which Padumi participated.

> **"The profit I made is unbelievable. I want to share my knowledge with all"**

In the training session, Padumi was able to expand her knowledge about organic farming and also learn about the process of making organic manure and bio-pesticides which are easy to prepare and harmless for human-beings. Post workshop, she applied organic farming practices along with bio pesticides to bolster her farm's productivity. The results were emphatic. Just by employing simple practices of insect trap and *jivamrut*, she was able to double her income from INR 5,000 to INR 10,000 per season.

Along with increased yield, she and her family are also consuming nutrition rich food which has increased the health and food adequacy of her family. Elated with her present living condition, she has pledged that she will continue the organic farming and will also teach other farmers of the village about its importance.

Backyard Experiment

I come from a farmer's family. When I first started farming, I didn't think about it much and simply followed the herd. At the same time, I was also working as a teacher at a school in my village, and while I was teaching the students about pollution and its negative effects, it hit me that, in a way, I was also contributing to it. That was when I started to explore ways and methods to avoid chemicals on my farm.

In 2003, I joined Dr. Kaushal's workshop on natural farming. I am still grateful for that day because I learned about natural farming and

Dharam Singh

Maina, Sihor, Madhya Pradesh | **Land**: 5 acres | **Grows**: Turmeric, sugarcane, Jeera, Jowar, Ajwain, Onion, Garlic, Soybean

connected with a lot of other people who were into natural farming.

Even though I had done a lot of research from my end, I still was sceptical about the idea of farming without the use of any chemicals. All my life I have seen and been with people who have used chemicals during farming. Switching completely to organic farming felt strange at first, so I started with a very small portion of land.

This helped me to experiment without the fear of incurring losses and also served as a contrast to the other part of the land that had been farmed using conventional methods.

Little by little I started extending this plot and soon enough I had my entire farmland sustaining on natural farming! In 2004, I became an active member of the State's Organic Farming organisation and started advising on organic farming and its benefits.

I started teaching people the importance and use of manure obtained from the livestock and agricultural wastes. Initial 2-3 years were tough because people kept discouraging me and made odd remarks about my practices. I refused to listen to them.

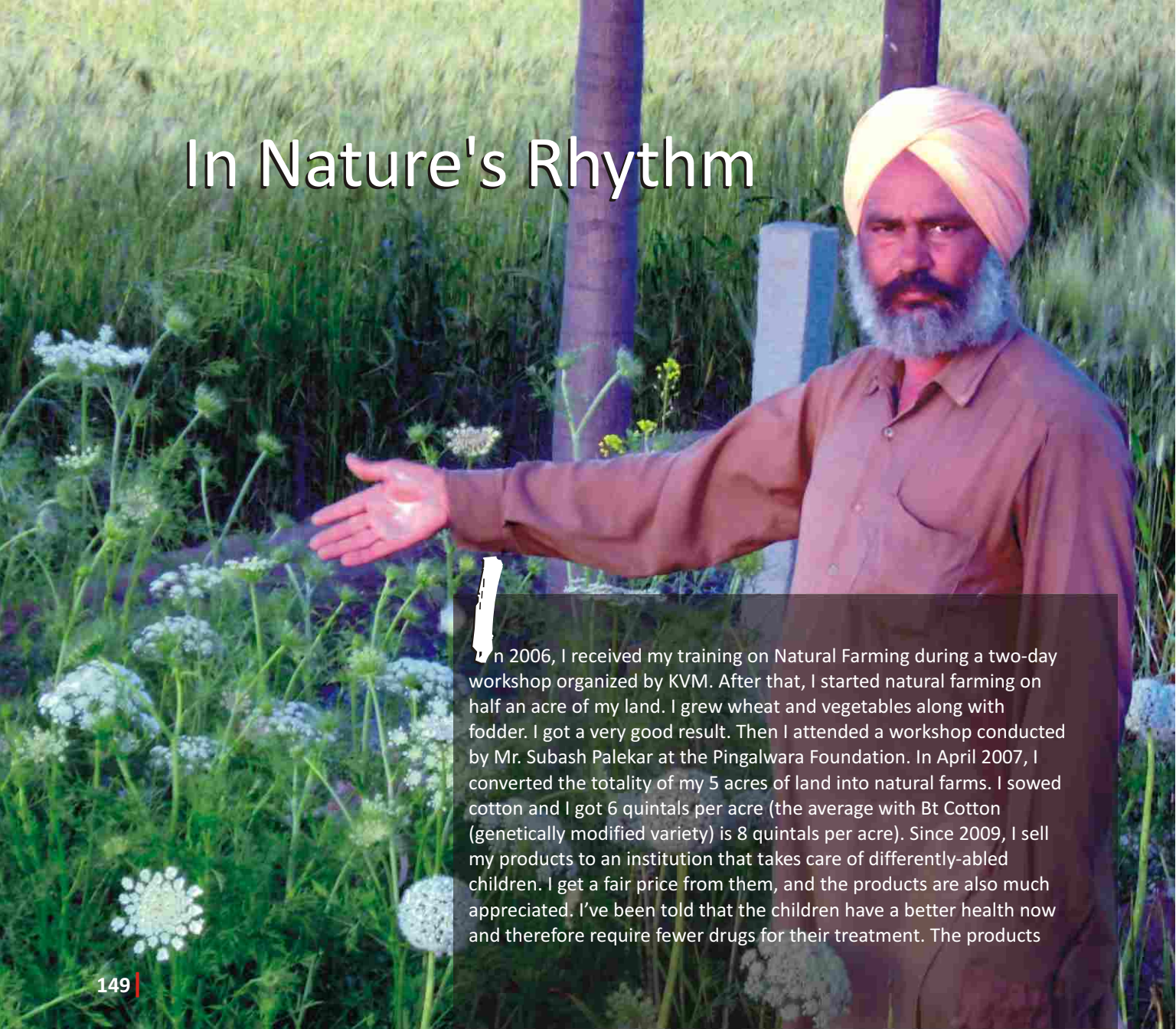
Around 2007- 2008, my practices became popular and the people from neighbouring villages wanted to learn more about the secret of zero investment farming!

A lot of people were surprised at the fact that I hadn't paid a single visit to the fertilizer outlets in the city for the past 4-5 years. I even started getting calls from those outlets claiming they had "naturally processed chemical fertilizers". I did not fall into their traps, because I knew there are no such naturally processed chemical fertilizers that would in any way be better than the ones that I had processed myself!

> **"Start small and see the magic of natural farming yourself. I'm sure you will fall in love with the process as much as I did!"**

It has been more than 15 years now since I have been practicing natural farming and my work also has been recognized by a lot of people. I was also awarded by 'The Art of Living' organization for my zero-budget farming techniques. Natural farming, for me, started started as a backyard experiment and it is delightful to see so many farmers across the country adopt chemical free farming practices.

In Nature's Rhythm



In 2006, I received my training on Natural Farming during a two-day workshop organized by KVM. After that, I started natural farming on half an acre of my land. I grew wheat and vegetables along with fodder. I got a very good result. Then I attended a workshop conducted by Mr. Subash Palekar at the Pingalwara Foundation. In April 2007, I converted the totality of my 5 acres of land into natural farms. I sowed cotton and I got 6 quintals per acre (the average with Bt Cotton (genetically modified variety) is 8 quintals per acre). Since 2009, I sell my products to an institution that takes care of differently-abled children. I get a fair price from them, and the products are also much appreciated. I've been told that the children have a better health now and therefore require fewer drugs for their treatment. The products

Amarjeet Sharma

Chaina, Faridkot, Punjab | **Land**: 5 acres | **Grows**: 60 crops
Support: Kheti Virasat Mission

from my farm are also used by my family.

In 2007, I started a seed bank to conserve indigenous seeds and progressively became self-sufficient. I want to encourage cultivation of our traditional crop varieties among other farmers. So far, I am able to grow 60 different types of crops on my land. I am distributing the seeds to friends who are willing to start natural farming. I distributed seeds of traditional varieties of wheat (*Bansi, Chaval Katta, Mundri* and *Sharbati*) along with traditional seeds of cotton, *jowar* and *bajra* to more than 200 farmers. I have travelled far and wide to collect the seeds, which include *black corn* and R*ajmah* varieties from Sikkim and *Bansi* variety of seeds from Maharashtra because of their ability to withstand pests.

> **People who grow with chemical pesticidesdo not eat their crop because they know that these products are not good for their health**

In chemical farming almost every year, we see the cost of the inputs increasing, either because they are more expensive, or because we need to use them in larger quantities. So, in these conditions, the farmer has to witness the decrease of his profit margin while the production reaches a plateau. The fertilizers are heavily subsidized by the government, and it is well known that the good yields under chemical farming are a temporary consequence of chemical's toxicity. The cost of using chemicals in agriculture cannot be calculated only in monetary terms, it is now becoming more and more evident that the quality of the water we consume has deteriorated and eventually our own health has to pay the toll of the environmental degradation induced by the use of chemicals.

Since I started Natural Farming, I have been able to reduce the consumption of water on my farm by around 50% because I am systematically using trenches.

I am the president of an Environment Society which is presently engaged in talks with NABARD to supply equipment worth Rs 10 lakh as a special grant.

Having said that, one should not believe that natural farming is an easy solution. This kind of farming requires much more labour, so one has to be ready to actually spend more time on the field in order to grow natural products, because nature has its own pace and rhythm.

it is not always easy to market natural products at a small scale. For example, millet is good for health, gives stronger immune system, is very tasty, requires less inputs (water, time, etc) and attracts friendly insects; but nowadays in Punjab, there is no market for millet as the tradition of consuming millets and its recipes has disappeared.

Documenters

Names	Name of the Organisation
AnnyatamaBasu	DRCSC, WB
Rakesh Garasiya	Vaagdhara, RJ
Raj Laxmi Purty	Centre For World Solidarity
Pramod Kumar	Centre For World Solidarity
TirtharajGohain	Sesta
Laxminarayan	SPS. MP
Anirban Banerjee	DRCSC, WB
Deepika	AKRSP-I, MP
Pathan Sharifa	WGWLO, GJ
Pradip Kumar Swain	SWATI, OA
Anjali &Piyuli	NCNF
Avleen Kaur	Freelancer
Shreya Patel	Freelancer
Riya	NCNF
Devika Hegde	Freelancer
Sital	NCNF
Kuriakose	NCNF

Names	Name of the Organisation
Debashish Mohanty	Freelancer
Anshuman Das	Welthungerhilfe
Sanjeev	KVM
Ratikant	NCNF
Vikas Meshram	Vaagdhara, RJ
Shavira Banerjee	Bhoomi College
Shreyas Joshi	Lok Chetna Manch
Purnabha Dasgupta	PRASARI
Sunil Kumar Gadie	VIEWS, OA
Kartik Joshi	AKRSP-I, GJ
Sisir Kumar Dash	SWATI, OA
Priya Agarwal	NCNF
Indu Kumari	IGSSS
Daoud Md. Khan	IGSSS
Showkat Hussain	IGSSS
Netaji	IGSSS
Amar Kumar Gouda	IGSSS

Facilitating Organisation for Natural Farming mentioned in this booklet

■ Abhivyakti Foundation, Jharkhand	www.avfindia.org/
■ Aga Khan Rural Support Program -India, Madhya Pradesh	www.akrspindia.org.in/
■ Bangaluru Sustainability Forum, Karnataka	www.bengalurusustainabilityforum.org/
■ Bhoomi College, Tamilnadu	bhoomicollege.org/
■ Bhoomi Ka	www.bhoomika.com/
■ Centre for World Solidarity, Jharkhand	cwsorg.in/
■ Darbar Sahitya Sansad, Odisha	dssodisha.org/
■ Development Research Communication and Services Centre, West Bengal	www.drcsc.org/
■ Farmizen, Karnataka, Andhra Pradesh	www.farmizen.com/
■ Human Development and Resource Centre, Gujarat	hdrc-sxnfes.org/
■ Indo Global Social Service Society	igsss.org/
■ Institute of Interdisciplinary Research and Development, Maharashtra	iird2015.wordpress.com/
■ KhetiVirasat Mission, Punjab	khetivirasatmission.org/
■ Lok Chetna manch, Uttarakhand	lokchetnamanch.in/
■ Network for Enterprise Development and Enhancement, Jharkhand	www.needsngo.in/
■ Pragati Abhiyan, Maharashtra	www.pragatiabhiyan.org/
■ PRASARI, West Bengal	www.prasari.org/
■ Pravah, Jharkhand	www.pravahjharkhand.org/
■ RythuSadhikaraSamstha, Andhra Pradesh	apcnf.in/ryss/
■ Samaj Pragati Sahayog, Madhya Pradesh	www.samajpragatisahayog.org/
■ Seven Sisters development Assistance, Assam	sesta.org/
■ Society for Promotion of Wasteland Development	www.spwd.org/
■ Sristi, Gujarat	www.sristi.org/
■ Social Welfare Agency and Training Institute, Odisha	www.swatiodisha.org/
■ Voluntary Association of Agricultural General Development Health and Reconstruction Alliance, Rajasthan	vaagdhara.org/
■ VIEWS, Odisha	www.viewsindia.org.in/

Abbreviations

APCNF	Andhra Pradesh Community Managed Natural Farming
BOD	Board of Directors
BPL	Below Poverty Line
HRDF	High Ridge Deep Furrow
ICRP	nternal Community Resource Person
IFS	Integrated Farming System
IMC	Indian Major Carp
MAM	Moderate Acute Malnutrition
NIFS	Nutrition Sensitive Integrated Farming System
NPM	Non-Pesticide Management
NRM	Natural Resource Management
MGNREGA	Mahatma Gandhi National Rural Guarantee Act 2005
NABARD	National Bank For Agriculture and Rural Development
NADEP	An organic composting method named after its finder Narayan Deotao Pandharipande from Maharashtra
OMM	Odisha Millet Mission
RySS	Rythu Sadhikara Samstha
SHG	Self Help Group
SIFS	Sustainable Integrated Farming System
SRI	System of Rice Intensification
SUSI	Scaling up sustainable intensification
SWI	System of Wheat Intensification
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organisation
ZBNF	Zero Budget Natural Farming

Bhoomi Ka – www.bhoomika.com

B*hoomi Ka*, literally meaning - from the earth, aims to increase the demand for, and supply of clean, green and fair foods and acts as a switch to sustainable food consumption and production patterns by addressing the life of food from production to consumption via market. entire food value chains.Bhoomi Ka is shaped up as a network of eco farmers, ecopreneurs, and consumers aiming to transform food systems in India.

Indo-Global Social Service Society (IGSSS) – www.igsss.org

Indo-Global Social Service Society (IGSSS) is an NGO working with the mandate for a humane social order based on truth, justice, freedom, and equity. Since 1960, IGSSS works for development, capacity building and enlightenment of the vulnerable communities across the country. With its presence across India, IGSSS has set its thematic focus on promoting sustainable livelihood, building climate-resilient communities and livelihood systems, energising the youth as change makers, protecting communities from disasters, advocating for the rights of urban poor. Gender and Youth are underlining theme across all its interventions.

National Coalition for Natural farming – nfcoalition.in

The National Coalition for Natural Farming is a collaborative platform to build knowledge and capacities in multiple dimensions among all stakeholders to accelerate the learning, practice and policy related to agroecology-based farming in India. The coalition works with special emphasis on socially marginalised groups, regenerating environmentally vulnerable areas. It organises farmers' collectives with women farmers in leadership roles. The work of the coalition is being carried forward through state chapters, led by state-level coalitions of partners in each state.

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igsss Indo-Global Social Service Society