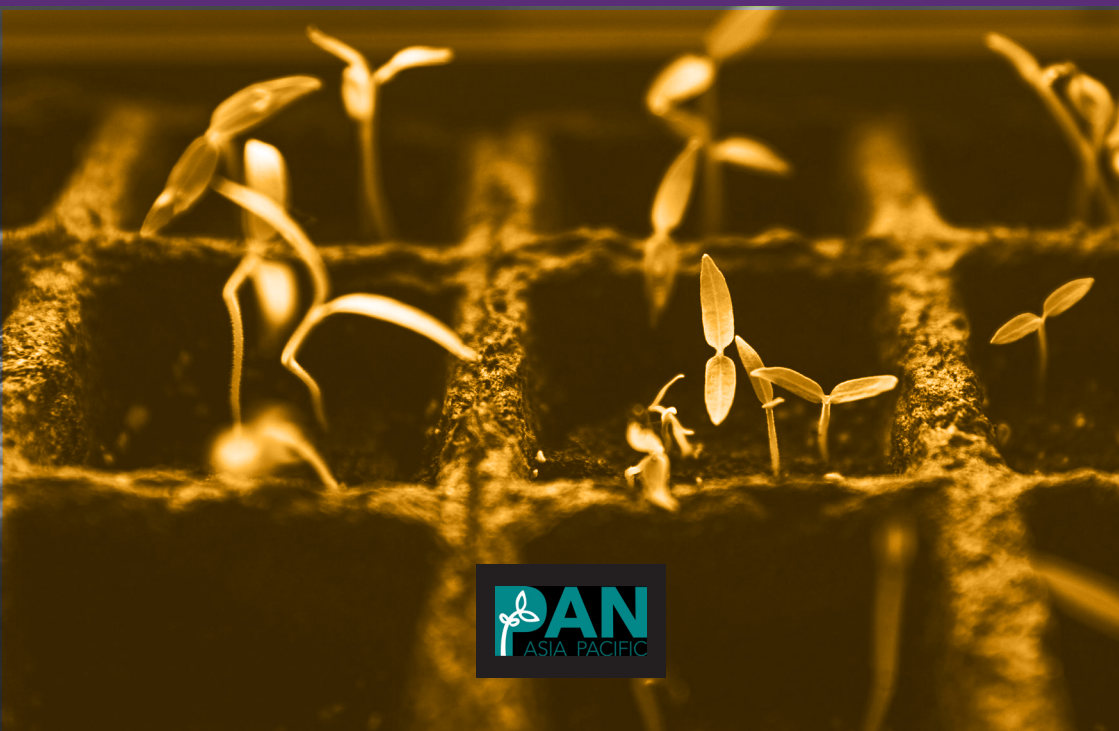
Women in agroecology:
Towards pesticide-free communities



PAN ASIA PACIFIC

Women in agroecology: Towards pesticide-free communities
Pesticide Action Network Asia and the Pacific
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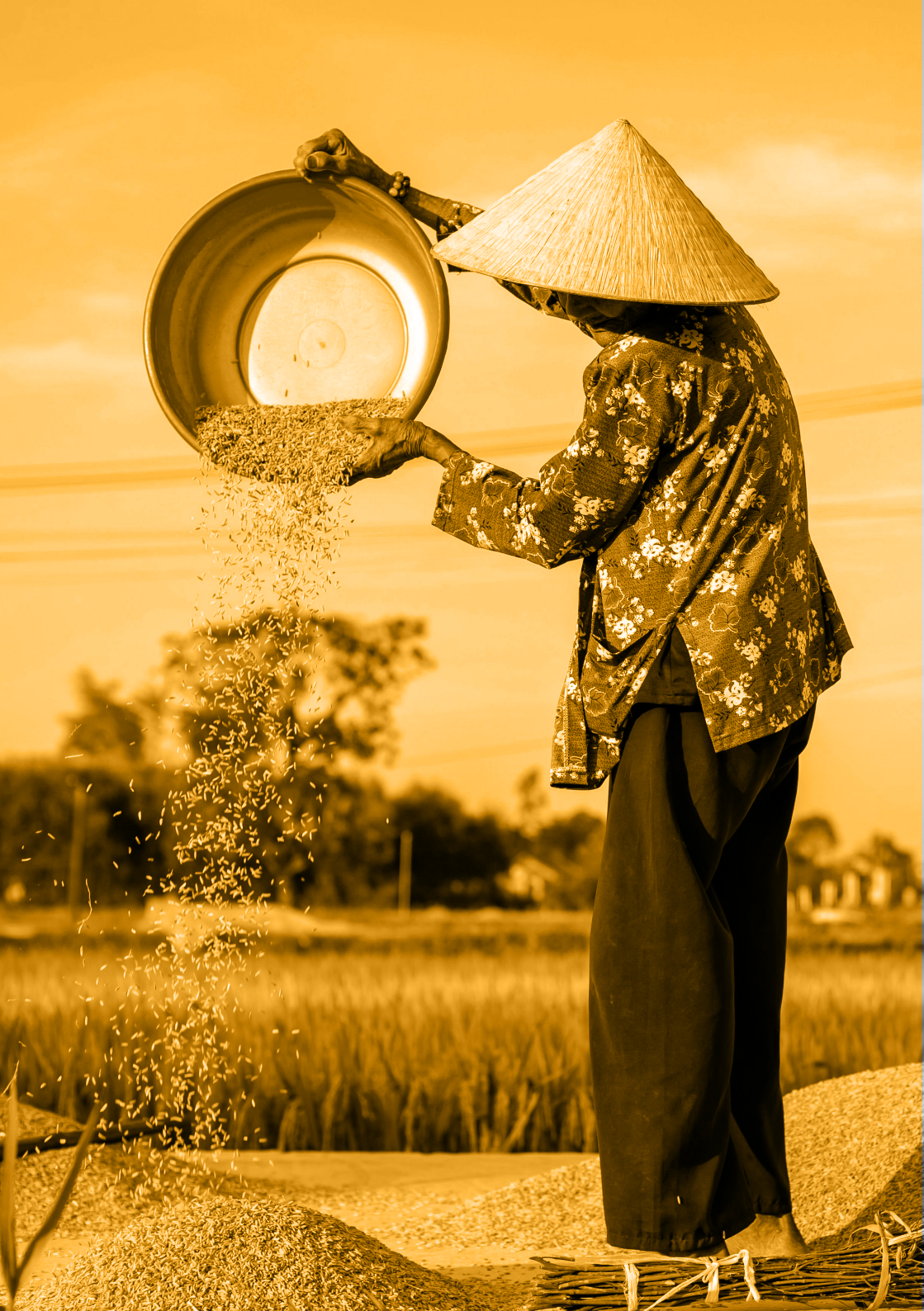
TABLE OF CONTENTS



Women Rise Up

INTRODUCTION

In the lush fields and quiet villages across Southeast and South Asia, change is taking root. Led by women whose hands have long tended the earth, a transformation is underway–one that promises not just to heal the land and revitalise the food it produces, but to liberate entire communities.

Dependence on toxic agrochemicals have bound countless of smallholder farmers to unending cycles of ill health, poverty and marginalisation, worsened by the continuous degradation and poisoning of ecosystems on which so much of their lives and livelihoods depend. Women are frequently at the forefront of exposure not just through pesticide application and its associated tasks, but also tasks considered as household chores traditionally done by women–such as washing equipment or their husbands' pesticide-soaked clothes, storing pesticides, or disposing pesticide containers. The 'double burden' borne by rural women who labour in and outside of their homes becomes even heavier when the impacts of pesticides, to which women are biologically more vulnerable to, are factored in.[1]

It thus becomes highly remarkable when women are individually and collectively able to free themselves from these burdens. This book tells the stories of 19 remarkable women

Agroecology is not just about a single farmer carrying out a holistic set of practices that is based both on traditional knowledge and modern ecological understanding. It is a community-led affair, a way of life centered on principles that uphold the rights of small farmers and people's food sovereignty.

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1 Quijano, I (2022). Gender: at the forefront of exposure. Pesticide Atlas. Heinrich Boll Stiftung.

from Vietnam, Laos, Bangladesh, Indonesia, and India, who are spearheading a movement from chemical-dependent farming to people-led agroecology. Many of these women are themselves survivors of poisoning. But instead of remaining victims, they have turned their sufferings into determination to reclaim what has been lost: whether it be their health, seeds, traditional knowledge, connection to land and community, or economic security.

Agroecology is not just about a single farmer carrying out a holistic set of practices that is based both on traditional knowledge and modern ecological understanding. It is a community-led affair, a way of life centered on principles that uphold the rights of small farmers and people's food sovereignty. It addresses not only food production, but also climate resilience, biodiversity conservation, and social equity. Agroecology helps build local, self-sufficient, and resilient food systems

that cater to the people's needs while nurturing the environment. Through their leadership and participation, not only do women become free to chart their own path towards self-empowerment and genuine and sustainable rural development. Women are also able to weaken the patriarchal, destructive, profit-oriented food and agriculture empire—one woman, one household, one community at a time.

This book is more than a collection of success stories; it is a call to action. As we face the global challenges of climate change, food insecurity, and health and environmental degradation, the wisdom and experiences of these women offer vital lessons for us all. Their stories remind us that the path to a sustainable future is not found in laboratories or boardrooms, but in the fields and forests, tended by those who understand the true value of harmony between human needs and natural ecosystems. While the strength of these women in agroecology are indeed remarkable, we must not just witness; we must act. Governments must ban Highly Hazardous Pesticides and institute supportive policies for people-led agroecology to thrive. May these women provide inspiration for the many urgent changes that we need to start cultivating today.

Enduring the Poison

BANGLADESH

The indomitable matriarch: Pabitra Rani Das

The life of Pabitra Rani Das, a 55-year-old matriarch with three sons, two daughters, and 11 grandchildren, is deeply rooted in the soil of Doiyabari, a rural village in Daudkandi, milla. It has been unremarkable except for one thing: her remarkable strength and resilience.

For years, Rani worked side by side with her husband, their lives intertwined with the rhythms of the land. But fate had other plans. Two devastating strokes left her husband unable to continue to work, thrusting Rani into the role of both nurturer and provider for their huge family.

Rani reminisces about the days when she tended to the land with her own hands. In the past, she cultivated a diverse array of crops, including potatoes, malabar spinach, and red spinach. However, recent health setbacks—including dizziness while spraying pesticides—have pushed a shift in responsibilities.

Recent years have brought a cascade of health issues: dizziness that makes pesticide application impossible, an eye operation, and chronic asthma that constantly leaves her breathless. She travels to Dhaka every month for medical treatment, each journey a financial strain on the family's meager resources.

“What choice do we have but to keep going?”

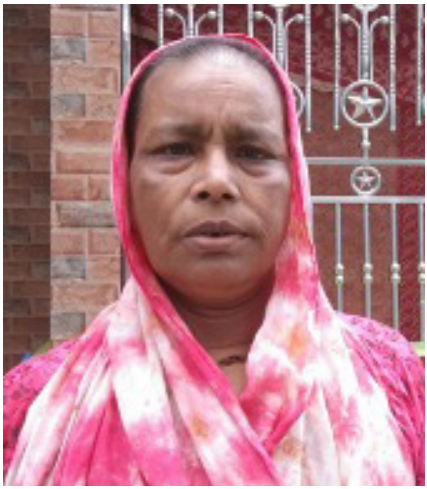
Now, her son and daughter-in-law have taken on the bigger farm responsibilities. Their crops have also been reduced to just two: rice and tomatoes, a pragmatic choice in light of Rani’s health problems.

As if her own trials weren’t enough, Rani’s elder son has endured multiple road accidents, each requiring surgery and adding to the family’s burden. Yet, in the face of these hardships, Rani’s resolve remains unshaken. “What choice do we have but to keep going?” she asks. This simple question encapsulates the ethos of countless rural families across Bangladesh, where resilience is not a virtue but a necessity.

While Rani no longer handles the physical demands of farming, but her presence in the fields is no less vital. She is the living memory of the land, a reminder of the toll that chemical pesticides exact upon small farmers through time. Her story also tells us that true strength isn’t about avoiding hardship, but about facing it head-on, day after day, with dignity and determination.

BANGLADESH

Undefeated by cancer: Anjali Rani



Anjali Rani blames chemical pesticides for her breast cancer. Anjali, a 55-year-old mother of three from Eliotganj, Comilla District in Bangladesh, sprayed chemical pesticides regularly for 30 years together with her husband, Jatilal Dev.

Jatilal died of lung cancer in 2011. After his death, Anjali continued to work in agriculture while she served as female union *parishad** member in the local government. To help her sons, all working as migrant labourers in Malaysia, she had to work extra hard to pay off high interest loans. Eventually, she was forced to sell a part of their family land.

Anjali was later diagnosed with breast cancer after complaining of extreme fatigue and lack of appetite. "I did not realise in the past how harmful chemical pesticides are. I do not remember the names of the pesticides we used, but my eyes used to get red when we sprayed them. If only I knew these and took precautions, I might not have cancer today," she said.

Anjali stopped using chemical pesticides nine years ago, when she joined the SHISUK Women's Association and received trainings that made her aware of the impacts of pesticides, and was taught how to make organic fertilizers and biopesticides. "Now, I am the one who instructs farmers on the adverse effects of pesticides on our body and health."

Because of her illness, she does not work as much in agriculture but still grows spinach and amaranthus

in small quantities in her remaining piece of land. She uses organic fertilisers from house waste, cow dung and fish scales. She attests that crop quality is better with organic fertilisers.

SHISUK also educated her on the negative effects of chemical pesticides on biodiversity. "Before, when we dug the soil, I used to see a lot of insects, worms, and bugs. There used to be swarms of bees in every farm. When we were doing chemical agriculture, we rarely see bees. When I stopped using pesticides, however, many varieties of birds could be seen again, like before. In nature, everything has a role. If biodiversity is not preserved, this system fails," she said.

Anjali hopes that everybody stops using chemical pesticides. "The government should find a way to replace chemical pesticides so that better agriculture can be done without harming the environment and the health of farmers."

**parishad – union council, also known as rural council*

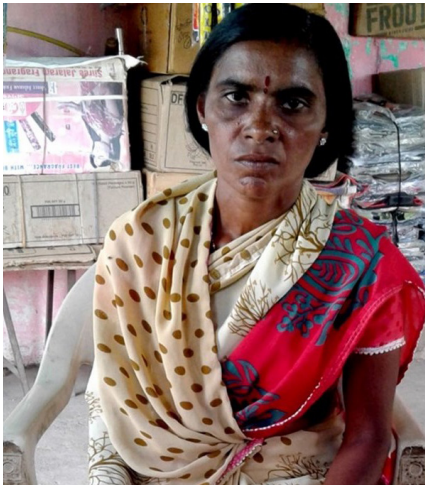
INDIA

Hoping for change: Sindhu Anil Vatile

Sindhu Anil Vatile, 48, is a cotton farmer from Amadi Village, Yavatmal District, Maharashtra. For the last 20 years, she has been using chemical pesticides on the six acres of land she farms together with her husband, Son.

Sindhu suffered her first serious case of acute poisoning in 2017. At that time, they were using a cocktail of the Highly Hazardous Pesticides profenophos, fipronil, and imidacloprid (Brand names: Profex Super, Police). Sindhu suddenly became unconscious while her husband was spraying these pesticides in their cotton fields. Sindhu experienced nausea, breathing difficulties, a burning sensation in her body. She also temporarily lost her eyesight.

Sindhu was taken to Yavatmal Taluk Hospital where she was admitted for four days and was given treatment for poisoning. According to hospital records, she was most likely poisoned by a cocktail of pesticides. She needed to rest and take medication for at least one month. The government gave her



compensation of INR 5,000 (USD 61) for hospitalisation and follow-up treatments.

After that incident, she and her husband realised how harmful pesticides are. However, they still spray pesticides in their cotton fields as they feel that they have no other option. They now use monocrotophos, another HHP (Brand name: Monocil) in their fields. Her son, Hrithik, also helps her husband in pesticide spraying. “Even after one poisoning incident, we are still using pesticides because

cotton farming is the source of income for our family. We're afraid that we won't be able to get a good yield and profit otherwise," she said.

Sindhu observes that years of pesticides use has heavily damaged the environment. During her childhood, there were a lot of spiders, earthworms, and frogs in their fields. Today, there are barely living organisms left. She is also worried about chemical contamination of their drinking water, and how this affects her family's health.

Sindhu also notes that each year, the cost of chemical inputs keeps increasing, but the yields stay the same. The farmgate prices of cotton have also not increased, contrary to farmers' expectations.

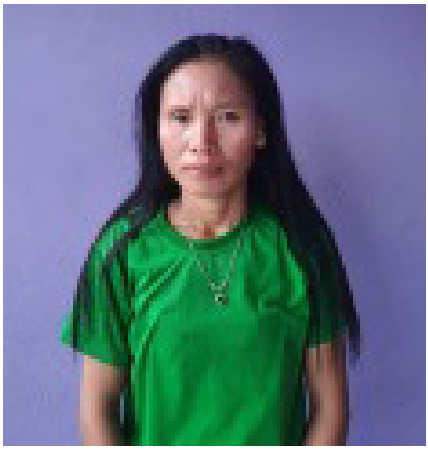
Sindhu believes in the need to stop using chemical pesticides. Right now, she does not yet know of alternatives. However, she, her son, and his son's friends are interested in transitioning to organic cotton farming. "I wish that someone comes to help us to reduce the use of pesticides and move towards agroecology in the near future. Let us hope that the younger generation bring a change in our small village, for the sake of future generations," she said.

Herbicides and heartbreak: Sunphone

In the village of Korngiew, nestled in the Kham District of Xieng Khuang Province, Ms. Sunphone, a 37-year-old woman toils on her 1.5-hectare farm. A member of the Khmu ethnic group, behind her quiet demeanor lies a devastating tale of poisoning due to pesticide exposure.

For the last 14 years, Sunphone has cultivated maize. In Korngiew, maize production is a cornerstone of livelihoods, serving an industry that supplies animal feed to neighbouring Vietnam. Like many in her village, she saw chemical herbicides as a necessary evil in the battle against stubborn weeds. Each year, she joined her husband in spraying these chemicals, unaware of the risks.

But disaster struck during one spraying session when a malfunctioning equipment released a torrent of toxic herbicides, drenching Sunphone and burning her eyes. Despite her frantic attempts to wash it off, the damage was done. Days after, she found herself suffering from excruciating



eye pain and breathing difficulties. The incident left an indelible mark on Sunphone's health, who struggled with chronic health issues for years.

The culprit? A potent herbicide mixture of Bravo480SL(glyphosate). Eventually diagnosed with lung cancer and forever plagued by debilitating eye problems, she found herself trapped in a cycle of hospital visits and mounting medical bills. "I can no longer toil in the fields with my usual vigour. Now, even the simplest tasks leave me breathless," she said.

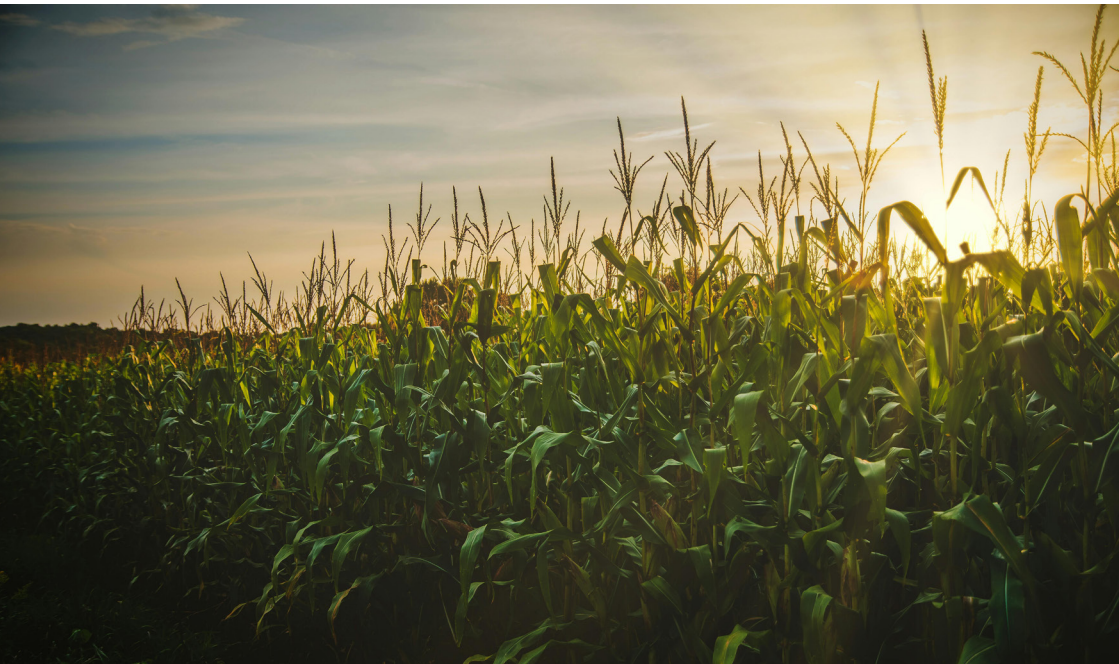
Sunphone's concerns extend beyond her own suffering. Witnessing the devastation wrought by pesticides on her own health, she now harbours fears for her community and its dependence on highly toxic pesticides. She speaks of dead fish floating in nearby rivers, grim reminders of the damage pesticides inflict upon nature.

Despite her hardships, Sunphone's maintains her aspirations of a future where her village embraces pesticide-free farming practices, where awareness replaces ignorance, and where the health of both people and the environment takes precedence over profit.

Sunphone is aware that she can't change her past. But with determination borne from personal tragedy, she hopes to shape her community's future. "My fervent desire is to participate in pesticide awareness campaigns, educate my fellow villagers on the perils of pesticide use, and spare others from the agony I endure," she asserts.

"I can no longer toil in the fields with my usual vigour. Now, even the simplest tasks leave me breathless."

In a small Laotian village, one woman's story serves as a cautionary tale—with a major call to action.

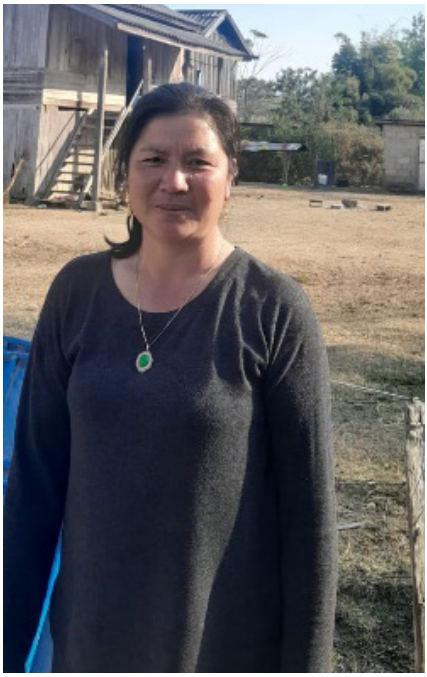


Wanting out of the toxic cycle: Davan Inthongsy

Davan Inthongsy, 40, lives in Longpiew Village, Kham District, Xieng Khuang Province in Laos. Belonging to the majority ethnic Lao Loum (or lowland Lao) people, she plants maize and rice on 2.5 hectares of native customary land.

Davan uses chemical pesticides on maize. However, she doesn't know the brand names and active ingredients of the pesticides she uses. As is common in many Asian farming communities, Davan only relies on the products that sellers recommend and are not informed of their risks. "I mix insecticides with maize seed before planting. Then, I spray herbicides and insecticides once a month after the maize grows. Sometimes, I hire a person to apply herbicides," she said.

Davan has been farming for 15 years. After handling pesticides, she usually experiences poisoning symptoms such as nausea, dizziness, headache, and excessive sweating. "Usually when I mix the pesticides I feel dizzy, and after I spray pesticides, I get skin rashes."



The health impacts of pesticide use sometimes make her too unwell to work. "Time and money are wasted on medical care," she added.

Davan observes negative impacts of pesticides on the environment. There is little biodiversity, especially beneficial insects that serve as natural pest control. She also attests

that pests eventually become resistant to chemical pesticides. “When you use pesticides again and again, they no longer work.” Thus, pests such as armyworms and locusts have actually increased.

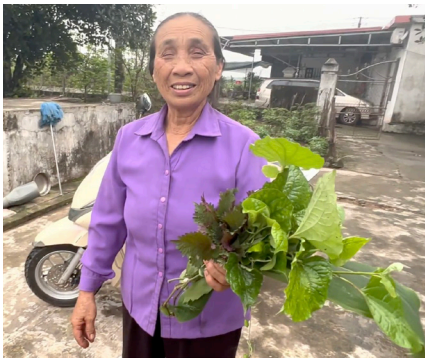
Nutrients in the soil have also decreased, forcing her to add more amounts of chemical fertilizer each year.

Davan shared that she would like to get out of the toxic cycle of chemical farming. While her community has not yet taken any action to reduce pesticide use, she hopes that it will someday as more farmers are becoming aware of its harmful impacts, not just on their health and the environment, but their livelihoods as well.

“We would benefit from a workshop, for instance, on the effective natural use of herbs to destroy weeds and pests. I would like to have more recommendations on how to manage weeds and pests so that I don’t need to use pesticides and herbicides that negatively impact human health and the environment,” she said.

VIETNAM

Her fields of resilience: Do Thi Thin



In a quiet hamlet in Hai Cuong commune, Nam Dinh province, 72-year-old Mrs. Do Thi Thin's weathered hands tell a story of resilience. Her calloused fingers, now swollen and painful, bear witness to a life spent nurturing the earth—and the hidden cost of that devotion.

"Look... here... here," Thin begins her narrative by sharing her battle scars. "For two years now, my fingers have swollen as if filled with pus. I endure the pain, massaging them with my homemade herbal remedies."

Thin's journey is a testament to human resilience. Widowed at 44, she found herself sole caretaker of a 0.72-hectare rice field—a responsibility that would eventually grow to 2.43 hectares. With no other option, she took on the grueling task of pesticide spraying, unaware of the silent poison she was exposing herself to daily.

Spraying pesticides in rice fields from dawn till mid-morning became Thin's daily routine. She recalls spraying around 30 tanks of pesticides per crop cycle. Despite experiencing symptoms of pesticide poisoning—including bouts of sickness and dizziness—Thin soldiered on, driven by necessity and mostly oblivious to the dangers posed by the chemicals she was handling.

Aside from growing rice and cultivating her vegetable garden, Thin also worked as a hired weeder. She removed grass by treating them with herbicides. "Herbicides were used extensively against weeds, but I can't recall their names," Thin shared.

Thin often worked without proper protective gear. She recounts her

reluctance to wear cumbersome raincoats or gloves. “It is too hot and uncomfortable,” she said with a laugh. Instead, she opted for makeshift protection—a handkerchief tied to her palm-leaf conical hat that only covers her mouth and nose, and fabric gloves for her hands.

However, the toll of pesticide exposure became more evident with time as Thin battled with persistent headaches, swollen joints, and nausea. “A severe incident occurred over 10 years ago when I was over 60,” Thin recounted. “I was spraying a large amount of pesticides, using more than 10 spraying tanks each day. That time, I didn’t have enough money to take care of myself or afford nutritious food to aid in my recovery. After one spraying session, I felt nauseous and developed a severe headache. I collapsed before I could wash my feet upon returning home. I had to call for emergency assistance from the local healthcare staff,” she said.

Thin’s nephew took her to the commune health center, where she received treatment. She had to stay at home for several days to detoxify and recover from the poisoning.

Today, Thin suffers from various health issues, including debilitating joint pain. She relies on heavy medication to alleviate various health symptoms whose causes remain unidentified. She believes that pesticide exposure is a major contributing factor to her health problems—an observation affirmed by her doctor.

“Prioritise your health above all else. Our yields may recover, but our bodies may not.”

Yet, even in retirement from spraying, Thin can’t escape the lingering presence of pesticides. The air around her home near the fields serves as a constant reminder of the sacrifices made for her livelihood.

As Thin’s daughter takes over the family fields, she advises caution. Reflecting on her journey, she remains hopeful that a safer, more sustainable future awaits the next generation of farmers.

Her message to her daughter and fellow farmers is clear: “Prioritise your health above all else. Our yields may recover, but our bodies may not.” Through her experiences, Thin implores us all to heed the warning signs and strive for a future where farming no longer causes such suffering and pain.

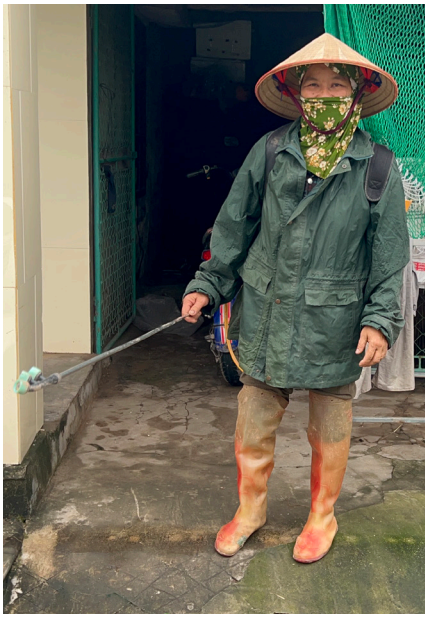
A farmer's dilemma: Le Thi Khuyen

At 62, Le Thi Khuyen still faces a daily battle that has been ongoing for years. She feels trapped in the toxic pesticide treadmill. But in a world where economic pressures often clash with health and environmental concerns, getting off is not that easy.

Khuyen and her family manage a 0.36-hectare rice field in Hai Cuong commune, Nam Dinh province. Despite two annual rice harvests, their earnings are meager—a mere USD 40 to 81 per crop after expenses. It's a stark reminder of the financial tightrope walked by many rural families in Vietnam.

To compensate, they try to earn money through other means, including raising pigs and chickens and operating rice milling machines. In Khuyen's younger days, she sold rice in local markets. However, she was forced to stop as she grew older and frailer.

The true cost of their livelihood, however, extends far beyond financial struggles. Khuyen's husband, once responsible for



pesticide application, now battles tuberculosis and gout—the bitter fruits of pesticide poisoning. His illness forced Khuyen to take on this dangerous task herself three years ago. "Hiring help is too expensive," she explains. "We can't afford it."

Four to five times per crop or depending on the severity of pest infestations, Khuyen dons protective gear and methodically

"It affects not just me. I've seen also dead fish in nearby waters after spraying."

sprays pesticides on her fields. Each session targets multiple pests and diseases, from rice hoppers to blast disease. The entire rice field takes her an entire day to complete, using approximately 10 to 12 pesticide spraying tanks.

Afterwards, she always struggles with fatigue and discomfort. Despite her precautions, the health effects of pesticide exposure are undeniable. She experiences chronic dizziness and nausea. "It affects not just me. I've seen also dead fish in nearby waters after spraying," she said, noting the environmental impact of pesticides.

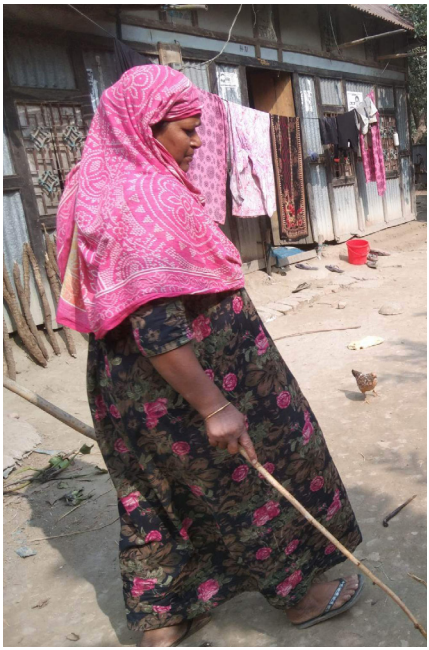
Because of these dangers, Khuyen recently opted for biological pesticides. However, she worries about their limited efficacy against certain pests. She struggles with the probability that abstaining from chemical pesticides could lead to crop loss and food insecurity.

Khuyen's story underscores the harsh choices faced by farmers reliance on pesticides for survival. It urges us to seek solutions that support farmers like her, ensuring a future where food security doesn't come at the cost of health and environmental well-being.

Forging the Future

BANGLADESH

Overcoming obstacles of poverty: Jahanara Begum



Hailing from a poor family in the village of Dokkhin Doulatpur in Cumilla District, 38-year-old Jahanara Begum only reached primary education. "My father's earnings as a farmer were insufficient to continue my schooling," she said. While unable to attend school like other children, Jahanara found solace in the rhythms of the countryside. She worked alongside her father in the fields, gaining invaluable insights into farming at a young age. "Holding my father's hand, I learned about farming," she reminisces.

Then marriage brought new responsibilities and thrust Jahanara into the role of a provider for her own family. "After getting married, I had to take responsibility for my family again. My husband didn't earn much so I had to help out in the fields," she said. Together, they cultivated vegetables for sustenance before venturing into paddy farming through leased land. With little resources and community support, it was a challenging period for the couple.

An encounter with a woman leader in the community introduced Jahanara to the concept of financial empowerment. Jahanara began contributing a modest sum monthly to the Shomiti Women's Enterprise, laying the groundwork for future savings. A training session led by Shikkha Shastha Unnayan Karzakram (SHISUK) also proved to be a crucial turning point in her life.

Now we know how to save our resources, and achieve something big from a small step."

"One day, Ms. Chinu Rani took me to an organisation called SHISUK for training, and I learned a lot about the harmful impacts of chemical pesticides," she shares. With this newfound knowledge, she transitioned to eco-friendly farming practices and minimised pesticide usage. This has enhanced the quality of her produce.

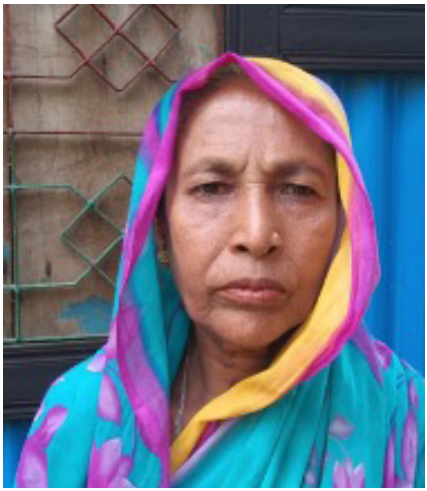
Jahanara further diversified her endeavours with poultry farming. "Today, I have no difficulties. My unemployed husband works in the fish project, and my elder son works there as well," she shares. Her dedication to her family's well-being is evident as she balances multiple responsibilities with grace and determination.

In the future, Jahanara wishes to build a commercial poultry farm. "I thank SHISUK for teaching us how to transition to agroecology. Now we know how to save our resources, and achieve something big from a small step," she expresses with gratitude.

Jahanara's story embodies the resilience and tenacity of rural women, who with their unwavering determination to break barriers are able to achieve self-sufficiency for their family. Despite the disadvantages of early poverty, empowerment and perseverance allowed her to overcome obstacles and embrace the prospects of a brighter tomorrow.

BANGLADESH

Healthy and earning: Razia Begum



"By using biopesticides instead of chemical pesticides, my family has received many benefits. Now we don't need to buy pesticides, and there are no diseases in the family. The vegetables taste better than before. In the past, my grandson did not like to eat papaya but now he eats papaya a lot since I stopped using chemical pesticides."

This was the testimony of Razia Begum, 60, from Bashra Village, Eliotganj in Comilla District, Bangladesh. Razia said that her grandson also used to have a skin disease from when they used chemical sprays. "But now everyone is healthy and free from disease."

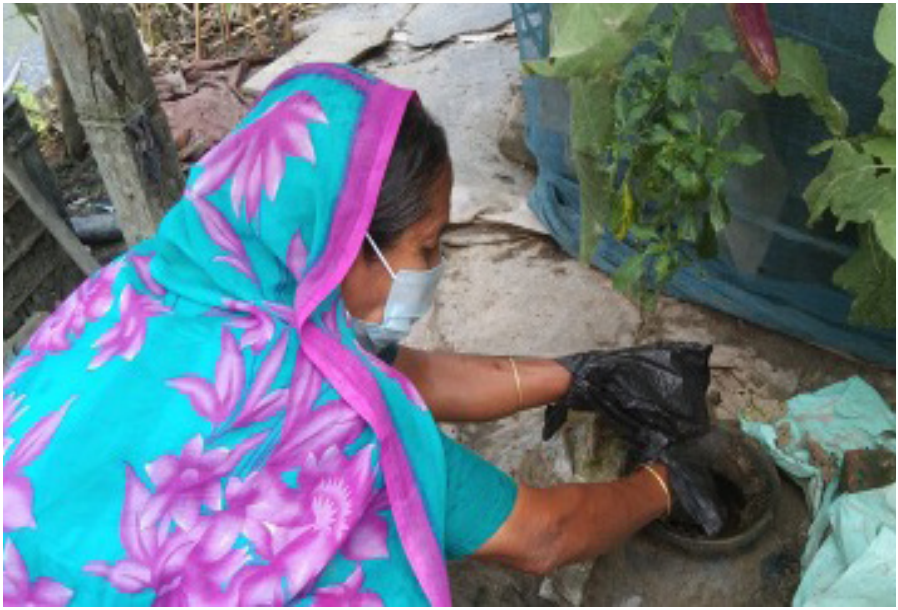
Razia is a member of SHISUK women's community enterprise Ananna. She has stopped using chemical pesticides for a year. Now she only uses biopesticides in her family's agricultural land of less than a hectare, where she grows vegetables such as papaya, tomato, pepper, gourd and brinjal. Razia also owns a cow farm where she gets her main income.

Aside from the health benefits, Razia also receives a handsome income from selling biopesticides at a local store for 30 BDT per kilo (100 BD = 1 USD). "The demand for biopesticides is increasing. Because many people are still unaware of the benefits of biopesticides, it is still taking some time to sell them in large quantities. But as SHISUK continues to spread knowledge on its benefits, the demand goes up too. Also, the price of biopesticides is a lot cheaper than chemical pesticides so many people are now choosing it."

Razia said that she did not get support from the government. But she received trainings from the local organisation SHISUK (Shikkha Shastha Unnayan Karzakram). "They also supported me in building a concrete ring house for making vermicompost. Because of this, I am now able to contribute financially, and everyone in my family appreciates me and listens to my opinion."

It is very easy to make biopesticides, she said. "All you need is one kilogram of Bishkatali (herb), neem leaves, 20 mahogany seeds, 10 kilos of cow's urine, and a small amount of water in a clay pot. Just mix them all together in the pot and bury in soil for 40 days and then the solution is ready to use."

Razia added that she also learned that chemical pesticides destroy biodiversity. "Many people are still not aware of the importance of preserving the biodiversity. I think biodiversity needs to be protected. If biodiversity is not preserved, the environment will not be in a good state. If birds and other organisms are destroyed, then pests would increase, resulting in low yields."



From housewife to pioneer: Sudha Chechi

Sudha Chechi is a remarkable woman who has defied traditional gender roles to become a rural woman leader and manager of Thanal's Agroecology Centre in Kerala, India.

Sudha's journey began at the age of 19. As is customary in many parts of India, she became a homemaker in the early days of her marriage. "My father did not ask about what kind of man I would marry. He only wanted to know if he owned paddy lands," she recalls. After her marriage, Sudha went to live in her husband's house where she was required to cook and serve everyone—all in all 14 people in the house each day. If she had to go to her parents' house, she had to ask permission from her parents-in-law. By age 23, Sudha had had enough. She took her two children and went back to her parents' home. She didn't want to be confined to such a life.

Knowing that she had to be self-sufficient, she pursued her interest for farming and agriculture. Having been raised in one of the indigenous communities in their area, she

studied various methods and techniques through self-teaching and hands-on experience in their small plot of land. Eventually, her husband supported her.

Sudha's efforts did not go unnoticed. Eventually, she became a respected woman leader in their local community. In 2016, she got a call from Thanal Trust, which invited her to work part-time as a field officer in the Agroecology Centre to help other women farmers adopt organic and agroecological practices in the farm. A year after, her husband suffered an accident which hindered him from doing any hard labour. Sudha suddenly became the breadwinner of their family.

Sudha's hard work, dedication and expertise paid off and she was promoted to the position of farm manager of the Agroecology Centre. "When I joined Thanal, I had no idea about preparing organic inputs and what their benefits are. I was mostly interested in practicing agroecology because I wanted healthy food for my family. I learned everything from the trainings I got from Thanal, until I also became a trainer myself." Every year, Sudha trains around 250 women at the Agroecology Centre on organic methods and practices.

As the overall manager of Thanal's agroecology farm, Sudha is responsible for overseeing all aspects of the farm's operations. This includes managing the farm's yield and agroecology practices, supervising the farm's workers, and ensuring that the farm is productive. Sudha has also been instrumental in introducing new organic technologies and techniques that have helped increase the farm's yields and improve the quality of its produce. Her knowledge of medicinal plants on the farm also reflects her interaction with the local tribal population.

As a strong advocate for agroecology, Sudha has helped Thanal raise awareness of its benefits and potential in India. She has worked closely with farmers to encourage them to adopt these practices, and provided training and support to help them make the transition to more sustainable farming methods.

Among the key ways that Sudha has promoted agroecology is through the use of organic fertilisers, such as compost and vermicompost which are produced using natural materials from cow manure and urine and kitchen waste; as well as the use of natural methods and traditional knowledge to promote plant growth and control pests, such as crop rotation and natural pest control to create a more diverse and sustainable agricultural system.

Despite her many achievements, Sudha remains humble and dedicated to her work. She is also a vocal advocate for women's rights and empowerment, encouraging other women to pursue their dreams and overcome societal barriers. Her leadership and expertise have made her invaluable to the success of Thanal's Agroecology Centre.

"I am very happy now. I became confident because of my practical experience. I am now able to stand on my own and I wish the same for other women. Every woman should be independent, instead of depending on others to survive," she said.

Friend to agriculture: Yogita Gajanan Dhurve

The contribution of women in agriculture is well known. Women participate in everything from field preparation, sowing, weeding, to harvesting and cleaning. In India, many women farmers are adopting new and creative methods of farming, including agroecology, to find solutions to their problems. One such woman is Yogita, a farmer from the village of Chandrapur, Yavatmal District, Maharashtra.

Yogita Gajanan Dhurve, 35, got married at the age of 19. Coming from an agricultural family, she started farming in 2012 in the conventional chemical-intensive method that was practiced by most farmers in Yavatmal. After three years of conventional farming, she realised that the expenses incurred from chemical inputs are very high. Each year, the expenses keep getting higher with no increase in the quantity of yields. She and her husband went through their expenses, yields and profit and understood that there is very little profit to be made. They needed to think of something else to survive.

Around that time, they heard about an organic farming training in Hyderabad led by an organisation named Umand. Yogita decided to attend the training where women from other places in India also participated. She came to know of several agroecological farming methods, including how to make organic inputs that can be used as alternatives to chemical pesticides and fertilisers.

Yogita started to experiment on organic farming first on one acre of land, growing toor daal (red gram) and jowar (sorghum). She applied various organic inputs such as neem oil emulsion and khanajeevamrut (organic manure), and used different pest repellent methods such as light

traps and yellow traps in the fields. Within three years, she gained a lot of experience and achieved good results. This encouraged her to expand organic farming to five acres. She also acquired farmer-led certification through the Participatory Guarantee System.

Yogita and her husband are also farming crops for their household consumption. Wheat, jowar and toor daal are cultivated in the fields, while onion, tomato, green chili and other vegetables are grown in their kitchen garden. They maintain six to seven vermicompost units. Cow dung and cow urine from their own cattle are used for preparing organic inputs. Not anymore dependent on commercial seeds that require chemical inputs, they are now using their own treated seeds for next year's planting season.

For the last three years, Yogita and her husband have not needed to go to the hospital because of any illness. They attribute this to eating good organic food from their own farm. "We are very happy. Our expenses are much reduced. We are getting good yield and high-quality products that are sold very easily," she said.

Spiders, butterflies and birds in their fields have noticeably increased. They set up dwellings for the birds where they can sit and can eat pests in the fields. They observe that parrots, in particular, are highly effective in pest control.

Yogita and her husband also planted many varieties of fruit trees like mango, chikko, and lemon. When they were practicing chemical farming, edible plants were not present in the fields. Now, edible plants are thriving. Elderly farm workers helped them identify these edible plants, since most of the knowledge on their use and preparation have been lost to the younger generation.

In her village, Yogita is called as "krishi sakhi," meaning, "friend to agriculture." Now considered as a master trainer on organic farming, she has trained many women farmers on agroecology practices since 2015. In 2022, she was awarded the Jaivik India Award in recognition of her expertise in the field of organic and natural farming. She is currently part of a big network of organic farmers in the state of Maharashtra.

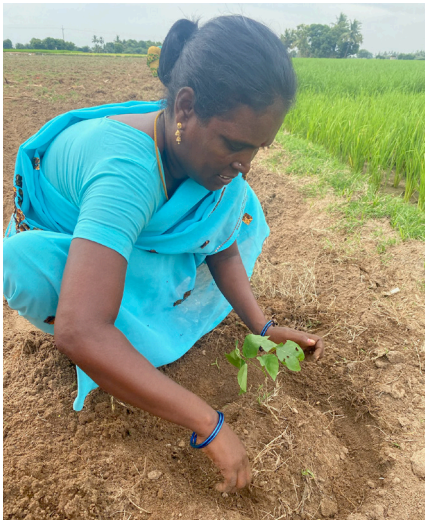
Yogita is very proud that she is an organic farmer and an independent, self-sufficient woman from the very small village of Chandrapur. She is grateful for the huge amount of support given by her family and the entire community.

Triumph of the landless: Shakila Kalaiselvan

Shakila Kalaiselvan is the founder and leader of the Pallur Dalit Women's Collective in Arakonam, Vellore District in Tamil Nadu, India.

The Pallur Dalit Women Collective was formed in 2016 when Shakila sought the help of the Society of Rural Education's (SRED) Dalit Women's Movement to claim 7.5 acres of illegally-occupied common land (waste lands) in two areas in their community. After series of training meetings on Dalit Rights and Land Rights, Shakila organised and mobilised 40 Dalit women to assert their entitlements at the District Administration for Land Titles.

Growing up, Shakila had a very rough childhood. Her parents were landless agricultural labourers. Her father eventually left them for another woman, leaving her mother to raise two daughters single-handedly. Shakila saw how her mother had to struggle to support them with very measly labour wages. "She worked every day in the fields, but when it was time for harvest we always still had nothing to eat."



Now, with the women's collective farm, Shakila attests, "This is the first time in my life that I get to bring home whatever I harvest. Before I couldn't do that with my labour wages. It is the best feeling, to know that you are tilling your own land and growing your own healthy food."

Shakila and the Pallur Dalit Women Collective availed of the trainings

provided by SRED on organic farming and agroecology. SRED also supported them by providing a solar water pump to irrigate both lands. They were also provided with agricultural instruments and seeds that helped them preserve their own organic seed bank. Through the women's perseverance and collective action, the lands became fertile and rain-fed, free of chemical pesticides and fertilisers.

As Dalit women who historically were not allowed to own lands, be independent in decision-making and were always discriminated against due to caste and gender, Shakila and the Pallur Dalit Women Collective serve as inspiration to all Dalit women. Because of their success, Shakila was able to mobilise 40 more women to occupy another 2.5 acres of land in Pallur. The collective had also already identified some 18 more acres to claim and have started an organic seed bank in preparation for organic farming in these lands.

Through the years, as a collective, the women have been cultivating and harvesting lentil, corn, green gram, red gram and millets. SRED assisted them with various training programmes on natural farming methods, including the preparation of vermicompost, natural manure and biopesticides.

The collective members equally share the produce after harvest. They built their own water tanks and rainwater-collecting ponds from scratch. They put up their own pipelines for irrigation. They have also set up their own office where they keep their agricultural instruments and seeds for organic farming.

To share their successful and inspiring story, Shakila also travels to attend meetings and conferences at the local, national and regional levels. She attended the Regional Comprehensive Economic Partners (RCEP) meeting in Hyderabad, the All India Kissan Movement in New Delhi, the Delhi National Conference of Women organised by Makaam, and the National Dalit Conference in Pune to represent landless Dalit women, and promote organic farming and agroecology.

From pesticide survivor to agroecology champion: Misnawati

In the shadow of vast oil palm plantations, 45-year-old Misnawati modestly tends to a small cassava farm. Her calloused hands, once victims of chemical burns, now coax life from the soil with gentle determination.

A member of the Sakai minority, Misnawati cultivates a 1000-square-meter plot. It is a tiny fraction of the vast, biodiverse ancestral lands they used to call home until the lands were taken and transformed into monoculture plantations. In Kandis District, Siak Regency, PT Ivomas Tunggal Perkasa—a subsidiary of the palm oil giant Golden Agri Resources—oversees 31,000 hectares of land once inhabited by the Sakai Minority Tribe.

"We used to live in harmony with the forest," Misnawati reflects. "Now, we struggle to maintain our identity and our connection to the land."

The plantation is organised into seven estates and employ over 5,000 workers under harsh labour conditions. Indigenous peoples who used to make a livelihood from cultivating land now live in barracks housing with their families.

Misnawati worked as a contractual labourer for PT Ivomas Tunggal Perkasa for three years. Her primary task was to spray glyphosate—commonly known as Round-Up—on the endless rows of oil palms. She sprayed daily for one week each month. Regular exposure to glyphosate took a toll on her health. It manifested in symptoms such as shortness of breath, itching, and allergies.

"Our ancestors knew how to farm without poisoning the earth or themselves. I realised we needed to reclaim that knowledge."

These adverse effects disrupted her ability to work effectively. Health symptoms did not abate despite the medical treatment she received within the plantation. This strengthened her resolve to abandon chemical farming altogether, and began advocating for safer alternatives for herself and her community.

She turned instead to the wisdom of her ancestors and the promise of agroecology. "Our ancestors knew how to farm without poisoning the earth or themselves," she explains. "I realised we needed to reclaim that knowledge."

Today, Misnawati is a leader of the women's group Serikat Perempuan Indonesia (SERUNI). Through her work with SERUNI, she empowers other women to reclaim control over their land and resources. Agroecology has become a tool for economic empowerment, providing income opportunities while preserving ecosystems crucial to food security.

In her farm, pest management relies on natural predators and companion planting. Soil fertility is nurtured through composting and crop rotation. The land hums with biodiversity, a stark contrast to the silent uniformity of the surrounding plantations.

"When women control the seeds and the soil, we control our futures," Misnawati asserts. "Agroecology isn't just about farming—it's about freedom."

Misnawati acknowledges that transitioning from chemical-dependent agriculture, especially in the heart of Indonesia's palm oil monopolies—requires patience, knowledge, and community support. Yet, Misnawati remains unwavering in her commitment to advance agroecology. She hopes for a future where farmers, especially women, can practice sustainable farming practices, free from the dictates of large corporations.

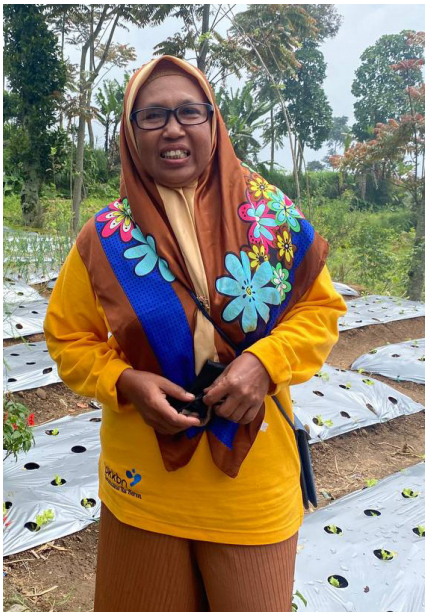
From pesticide victim to agroecology champion, she embodies the potential for transformative change through struggling for land and sustainable farming in the face of corporate dominance and environmental degradation.

Lessons in farm management: Majinah

Growing up in a rural village in Wonogiri, Central Java in Indonesia, Majinah was used to hearing about and experiencing for herself the negative impacts of pesticides—the "unpleasant smell" that reaches her when her neighbours spray pesticides, the nausea that her friends usually complain of after spraying. She also observed that soil fertility goes down through the years with the constant and ever-increasing use of chemicals.

So when she inherited a small piece of land and decided to go into farming full-time five years ago, she was convinced that it must be done sustainably and in harmony with nature. Majinah joined the Natural Sustainability Women's Group (Kelompok Wanita Lestari Alam). Through the group, and several agroecology workshops led by Yayasan Gita Pertiwi, she became confident enough to break free from conventional practices.

Today, she grows paddy rice, vegetables, mustard, corn, tomato, and soy using mostly agroecological



practices that she has learned collectively with other women. In their group, each woman has defined roles and contribute to farming responsibilities in various ways.

"The first thing I had to come up with were resources to transition to agroecology. I managed to overcome this by implementing the transition stage by stage. For example, I didn't

own the livestock needed in order to produce organic fertilizer. So I still used chemical fertilizers during the initial phase. But when I had enough income to buy ducks, I was then able to produce my own fertilizers without worrying about buying," she said.

Majinah and the women in her group use available resources, such as banana leaves and neem, to produce natural pesticides. They also plant flower plants (e.g. marigold) around crops to repel pests. To maintain biodiversity and soil health, she implements a system of crop rotation.

She tries her best to prevent chemical contamination from nearby farms through various ways. Majinah uses the duck coop as a "buffer area" to reduce pesticide drift. She also uses dry bamboo leaves as an irrigation filter, to help in filtering pesticide-contaminated water.

"My current practice costs cheaper than when I had to buy inputs. Organic produce also fetches a different price compared to conventional produce, and brings more profit. My pesticide-free products attract many local people. I already have regular customers," she said.

Majinah underscores the importance of ecological balance in her farm, including healthy livestock and other animals. This proves useful in pest management. For instance, even if there are rats, the presence of snakes reduces crop loss due to rat attacks.

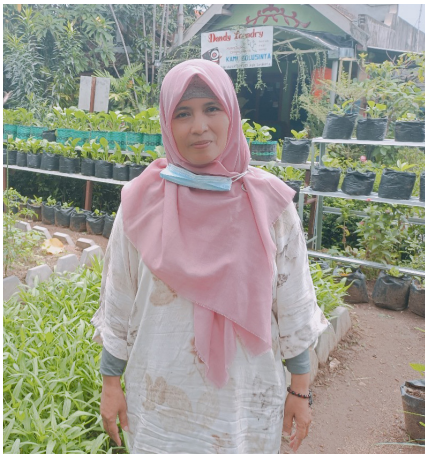
Overall, she feels empowered as a woman who is able to make her own decisions on the farm, including on fertilizer production, seeds conservation, and managing farm resources. The lessons she learns makes her gain more knowledge, experience, and confidence to inspire others in her community.

Collectively food secure: Sukamti

Sukamti, 55, is farming for the first time in her life. A former seamstress, she was encouraged to try agriculture by the women's farming group called Ngudi Makmur (Trying to be Prosperous). Ngudi Makmur is a collective farming initiative of 35 women farmers in the village of Joglo, Banjarsari, Surakarta City in Indonesia. It was established in 2018 when a landlord agreed to let the women farmers use his land rent-free for an initial period of five years.

The group plants a diverse number of crops in their collective farm, including vegetables (water spinach, spinach, long beans, cucumber, eggplant, chilli and lettuce) and butterfly pea. The women cultivate honey as well as maggots (black soldier flies) for use in feeds and composting. They also raise chickens and cattle, and do fish cultivation.

From the beginning, the group has used agroecological methods as part of an integrated farming system. They were inspired by the group



Yayasan Gita Pertiwi who informed them about the adverse impacts of pesticide use and the benefits of agroecology. To control pests, they use garlic fermentation and eco-enzymes. Organic fertilisers derived from the farm are used to boost plant growth. Since they do not use chemicals, there are a lot of beneficial insects in the farm such as butterflies, bees and spiders.

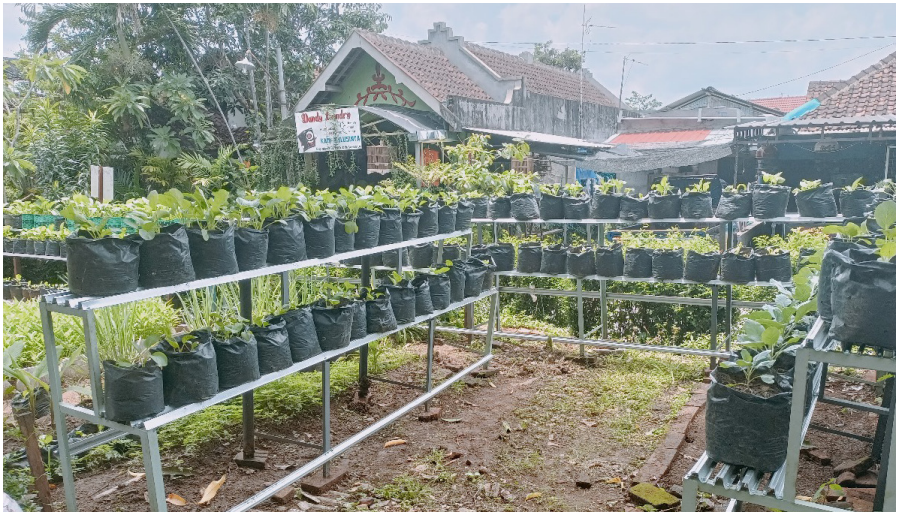
The collective farming initiative first and foremost secured the food needs of the women farmers. Members of the group can take the vegetables from the garden for their own

family's consumption. "Especially during the pandemic, we felt that our immune system was improved due to the consumption of organic vegetables," said Sukamti.

Meanwhile, whatever the women earn from selling the crops are split among the group, with those who work more also earning more. The group also earns from making processed food products, such as syrup/juice from butterfly pea (sirup telang), butterfly pea candy (candy telang), papaya chips, moringa and butterfly pea sticks, water spinach sticks, snacks (onde-onde) and other herbal drinks (jamu). They also produce eco-print cloth, or clothes stamped with leaf prints from the farm.

"I have significantly improved my skills and knowledge in farming. I also share my knowledge on agroecology to other groups in the community in order to motivate them to work on sustainable agriculture and avoid the use of chemical products. I want to convince them that the yields are as good, if not better, than conventionally grown crops," she said.

Sukamti continually improves her knowledge and understanding by joining workshops and trainings, as well as browsing the internet for resources. The more she experiences and learns, the more she believes in the positive impacts of agroecology on health, environment, and livelihoods.



Journey to agroecology: Khaimouk Thammavong

In Khungvieng Village, 29-year-old Ms. Khaimouk Thammavong cultivates a modest 0.2 hectares as part of the Lao Loum ethnic group's ancestral lands. Lao Loum literally means 'lowland Lao', and refer to the inhabitants of the river valleys and lowlands along the Mekong River. For the past three years, Khaimouk has been practicing integrated or agroecological approaches to farming that is closer to her ancestor's way of life; one that is based on interconnectedness with land and community, rather than one that merely chases after income and productivity.

Khaimouk's decision to completely avoid chemical pesticides came after personally witnessing their detrimental effects. One of her cousins suffered from severe pesticide poisoning, and experienced chronic headaches, dizziness, and vomiting. She did not want to suffer the same fate and became determined to learn how to farm differently.

Her journey to agroecology began when she started integrating

with her husband's family, who were members of an organic group. Khaimouk learned about the techniques of organic farming through workshops organised by the Sustainable Agriculture & Environment Development Association(SAEDA). With newfound knowledge and community support, she determinedly tackled the challenges of transitioning. Among the first topics she learned were on seed conservation and alternative pest management.

"Practices that nurture biodiversity and enhance soil fertility goes a long way in preventing pests and diseases," she emphasises. Instead

"Agroecology allows me to participate in decision-making. I now have greater control over my life."

of chemical pesticides, she produces bio-pesticides and diligently applies other farm techniques to manage pests and diseases. Additionally, she integrates livestock with farming and utilises dung to create organic fertiliser.

Khaimouk is pleased that organic produce yields higher prices at the market. The lack of costly inputs has allowed her to save on costs, improving her livelihood. She typically earns USD 2,000 to 3,000 yearly for selling produce twice a week. Furthermore, her family has been free from the illnesses associated with chemical farming. For Khaimouk, the improvement in her family's health and well-being is priceless.

Khaimouk takes pride in her farm's biodiversity. In particular, she grows many varieties of rice, which she has carefully nurtured over many years. Traditional crop varieties such as coriander, garlic, and maize also thrive alongside commercial crops. Most of her crops have proven to be resilient, even amidst changing weather patterns.

As a woman, Khaimouk finds that agroecology challenges gender inequalities. This mainly happens as women get more involved in the community while practicing agroecology. "Agroecology allows me to participate in decision-making. I now have greater control over my life," she said. She further shared that Lao Loum traditional knowledge has been better preserved, and local food production bolstered by collective efforts to transition to agroecology.

Khaimouk emphasises the importance of education and awareness in growing the agroecology movement. Collaboration—such as partnerships between farmers and scientists—is also crucial in sustaining and further developing sustainable food systems, she said.

For Khaimouk, the journey to agroecology is a never-ending one of learning and empowerment.

Seeds of empowerment: Chai Khemmavong

Forty-eight-year-old Chai Khemmavong has been farming for 25 years in two hectares of customary land in Kuaymor Village, Kham District, Xiengkhuang Province in Laos. She plants traditional rice varieties and vegetable crops such as garlic, coriander, spinach, and long bean using agroecological practices.

Most of her early years was devoted to monocropping and chemical-intensive agriculture. She felt that her health suffered a lot back then. "When I used chemicals in my farm, my health was not good. I was constantly suffering from various illnesses. After I reduced the use of chemicals, my health has improved a lot," she said.

Upon receiving information on the negative impacts of pesticides, as well as advice on how to transition away from their use, she was emboldened to try more sustainable practices within an integrated farming system. "District agriculture and forest technicians, as well as the local non-profit SAEDA advised me on new techniques. I learned biological plant protection techniques, such as how to use mold/fungus to control pests, integrated cropping, and mulching to slow down weed growth. These all reduced my need for pesticides."

Local seed conservation is key to maintaining crop diversity. In many farming communities, women like Chai usually play the important role of seed saving. "I propagate my own seeds. Every two years, I collect and select seeds. I choose seeds that grow into strong plants, with no disease. The crop varieties are much more resilient to droughts and flood," she said. With diverse

cropping, she also observes that the soil is much more fertile.

Transitioning to agroecology has reduced farming costs by over three-fourths. Before, she used to apply chemical fertilisers four times a month. Now, she only applies chemical fertilisers once a month. For the rest of the time, she uses organic fertilisers made mostly from chicken dung. Chai earns around USD 1,500 per month. Although still not enough for all of her family's needs, the reduced costs of chemical inputs have helped improve her income.

Biodiversity has improved around the farm, which now has a lot of earthworms and other beneficial insects.

Many households in her village have also started to reduce pesticides use, motivated by the need to protect their health and the environment. Chai is enthusiastic about this development. "I always give information about agroecology to the community for people who are interested and want to transition." Together with other villagers, she wants to learn new techniques and develop markets for organic produce.

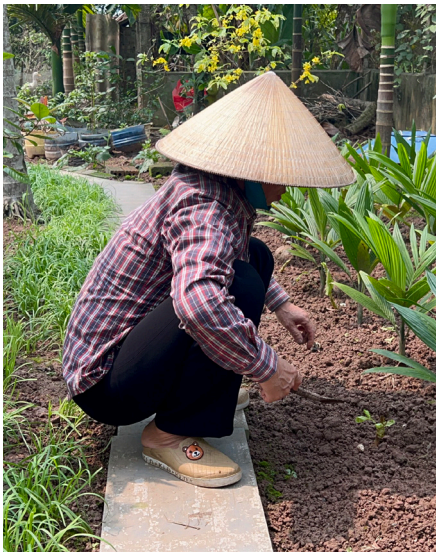
Sustainable farming has also helped empower her as a woman. "I now have the right to spend the money I have earned and can make more decisions in the house. I can also exchange my experiences on agroecology with other women in my community," she said.

Tending to the earth: Pham Thi Yen

Mrs. Pham Thi Yen, a 60-year-old resident of Hamlet 6 in Hai Cuong commune, Hai Hau district, Nam Dinh province, was once a dedicated local health worker in the commune's health centre. Five years ago, she retired after three decades of service. However, retirement didn't slow her down. Instead, she redirected her energy towards farming.

Yen and her husband own five acres of rice fields and another five acres dedicated to other crops, vegetables, and seasonal fruits. They produce beyond what is needed to be food self-sufficient. Often, they share or sell their surplus produce to neighbours and local markets.

Unlike many conventional farmers, Yen made a conscious decision over a decade ago to abandon the use of pesticides in favour of natural alternatives, such as homemade garlic-chilli pepper concoctions. Drawing from her 30 years of experience at the commune health centre, she is acutely aware of the dire consequences of pesticide overuse, motivating her family



to transition to agroecological practices.

She prides herself in choosing the health of her family and the integrity of her produce above other considerations. Reflecting on her transition, Yen said, "Pesticides are a thing of the past. Now, with a deeper understanding and community awareness, I prioritise the safety of our health and the quality of our agricultural products."

In addition to her pesticide-free approach, Yen practices sustainable waste management on her farm. Utilising compost pits to recycle organic waste into nutrient-rich fertiliser, she exemplifies the agroecological principle of minimising waste.

Yet, the transition has not been a walk in the park. At first, the sight of her neighbours spraying pesticides fueled apprehensions. She feared that their produce would outshine hers, and often worried about pests migrating from their fields to hers. Moreover, embracing agroecology meant grappling with higher costs for biological pesticides and investing time in crafting homemade remedies from ginger, garlic, and chilli peppers. However, her conviction in safeguarding herself and her loved ones from harm prevailed.

And so she persevered. Gradually her soil became richer and more fertile, devoid of the harmful residues left behind by chemical fertilisers and pesticides. As the Vietnamese proverb goes, "A bird would perch in a safe place." Her pesticide-free haven became a sanctuary for wildlife, attracting birds and other pollinators with its lush greenery and absence of toxic odours.

"Pesticides are a thing of the past. Now, with a deeper understanding and community awareness, I prioritise the safety of our health and the quality of our agricultural products."

Eager to share what she has learned, Yen actively engages fellow farmers in her community, advocating for the adoption of sustainable practices. Her approach is rooted in thoughtful communication and hands-on guidance, emphasising the need for tailored, small-group discussions and practical field trips. Yen has remained a dedicated member of the pioneering rural female farmer group in Hai Cuong commune since 2020.

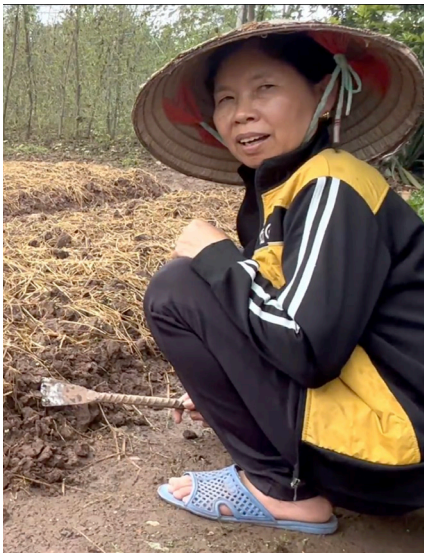
In her relentless pursuit of agroecology, Yen underscores the importance of persistence. She recognises that effecting change requires continuing education and a patient and inclusive approach. Through her leadership and unwavering commitment, Yen tends to the earth and the people in her community who are paving the way towards a greener, healthier future.

Growing green: Doan Thi Phuong

In the heart of Nam Dinh province, Mrs. Doan Thi Phuong, a spirited 58-year-old from Hamlet 8 in Hai Cuong commune, tends to her two-acre plot. Her garden is a vibrant tapestry of seasonal vegetables and fruits such as cove beans to pumpkins, thriving with life. It tells a story of resilience, innovation, and community transformation.

Phuong's journey began in 2017 when an agricultural company's presentation opened her eyes to the hidden costs of conventional farming. "If I abused a lot of pesticides, I will be the first and most affected in my health," she reflects. This realisation sparked a personal mission to embrace eco-friendly alternatives, particularly A2 probiotics.

As a member of the local women's union, Phuong found herself at the forefront of Hai Hau district's movement for agroecology. For Phuong, it was like opening a window to a new world. "It made me realize the importance of environmental protection," she says, her eyes alight with passion.



"That's what inspired me to make a change in myself."

The transformation was nothing short of remarkable. Vegetables nurtured with A2 probiotics burst with flavor and freshness, standing in stark contrast to their chemically-treated counterparts. But Phuong didn't stop there. She went on to create biopesticides and organic fertilisers. With the ingenuity of a seasoned alchemist, she concocted natural pest-fighting brews from

"It made me realize the importance of environmental protection. That's what inspired me to make a change in myself."

ginger, garlic, and chili peppers. While not a cure-all, these herbal remedies offer a gentle alternative to harsh pesticides.

All these shifts benefitted her health and the environment in her farm. Along with diversifying her crops, she was able to meet her family's needs and even sell the surplus to local villagers.

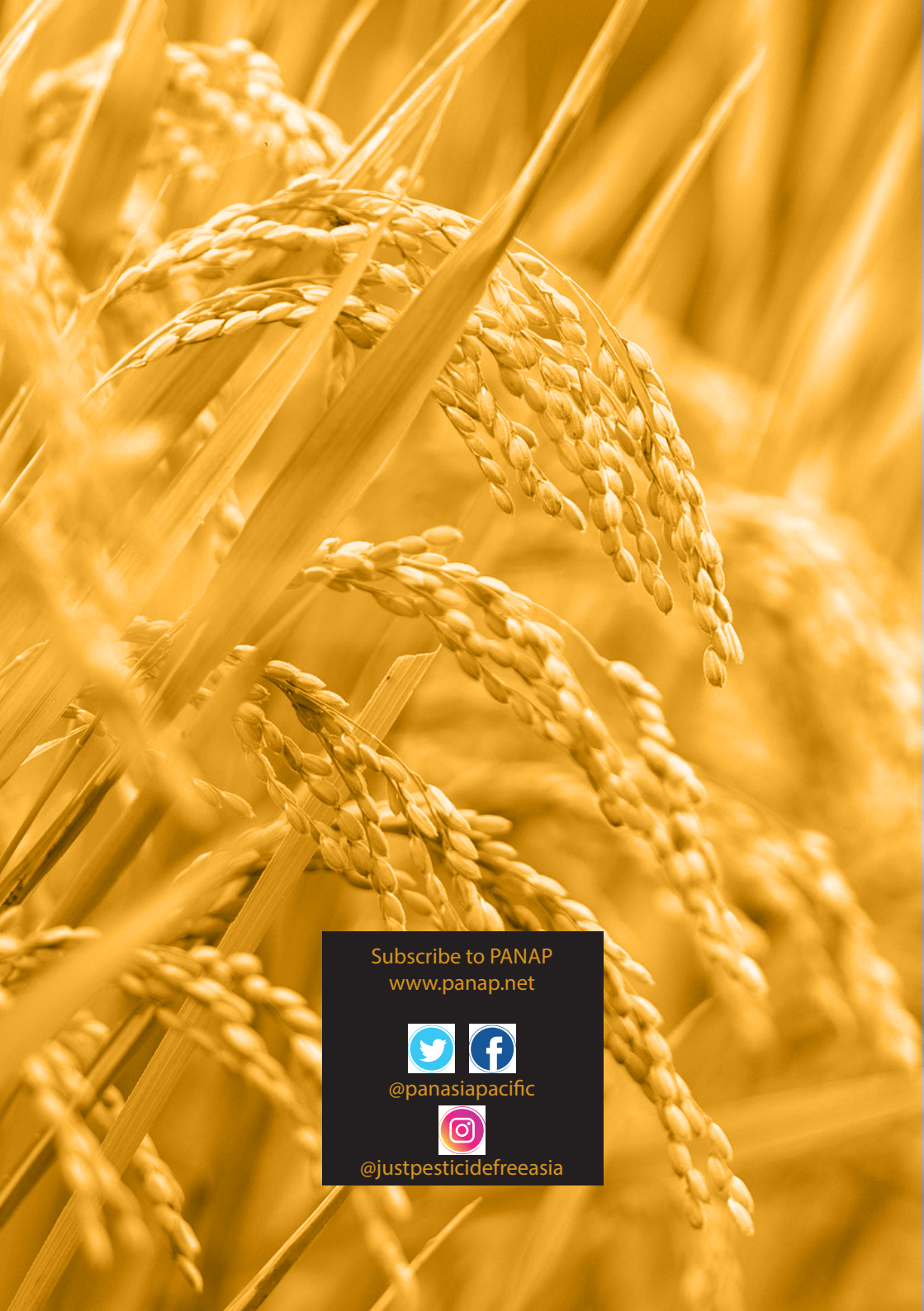
Yet, Phuong's green thumb isn't solely the product of natural talent. She's a lifelong learner, eagerly attending annual training courses hosted by the district agriculture department. Armed with knowledge and constantly honing her skills, she's become a vocal advocate for environmental protection in her commune, leading initiatives from waste classification to green composting.

The path to change wasn't always smooth. "You must be patient and persistent," Phuong advises, acknowledging her initial skepticism about high costs and low yields—myths associated with ecological agriculture. But her determination prevailed, driven by a vision of a healthier future. "Using probiotics has contributed to soil improvement, making my gardening work much easier," she explains.

Today, Phuong's garden is a testament to the power of agroecology. Worms wriggle beneath the soil, mantises flutter among the trees – signs of a thriving ecosystem nurtured by sustainable practices.

Yet, Phuong's aspirations extend beyond her own garden. She dreams of scaling her operations and inspiring others in her community to embrace agroecology. "I desire to learn how be an agroecological model," she shares. Despite the uphill battle of changing ingrained habits, Phuong remains undeterred, recognising the importance of steadfast advocacy in fostering change.

Phuong is hopeful for a future where agroecology becomes the norm. Her story is more than just about tending a garden; it embodies the spirit of change, a path towards a more sustainable and equitable future.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