



UPDATES

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April unfolded as a month of continued field engagement, shared learning, and new seasonal beginnings across Thanal's initiatives. With Vishu marking the beginning of a new year in Kerala, the month also carried a sense of renewal across farms, coastlines, institutions, and communities.

From coastal cleanup efforts and conversations around plastic alternatives to farmer-led agroecological practices and livelihood support across hamlets, the month reflected how environmental action often grows through steady, local participation. Exchanges with institutions, community monitoring systems, and continued engagement with young people further strengthened these processes on the ground.

Across projects and landscapes, the work during April remained rooted in collaboration, ecological responsibility, and the belief that long-term resilience is built through collective effort, observation, and care.

COASTAL ACTION AND COMMUNITY ENGAGEMENT

ALONG THE SHORELINE, COLLECTIVE ACTION CONTINUES

Two beach cleanup activities were conducted during April as part of the Plastic Free Coastline initiative, bringing together volunteers, institutions, and community members.

A cleanup was organised at Vettukadu Beach on 17 April, with 41 participants including representatives from Thanal, Allianz Technology, student volunteers, and Plastic Fischer. A total of 152.8 kilograms of waste was collected, of which 124 kilograms consisted of plastic waste, highlighting the extent of plastic accumulation along the shoreline.

A second cleanup was conducted at Anchuthengu Beach on 25 April with 47 participants. The activity

resulted in the collection of 152.69 kilograms of waste. Together, these efforts demonstrate the effectiveness of coordinated action while underscoring the scale of coastal plastic pollution.



RETHINKING WASTE THROUGH EXCHANGE AND REUSE



A Barter Shop and Single-Use Plastic Alternatives Exhibition was organised on 28 April at Lekshmi Menon Memorial Hall, Kowdiar, as part of the Plastic Free Coastline initiative. Participants were encouraged to bring plastic waste and exchange it for steel alternatives based on the quantity of waste contributed.

Participants bringing 1–2 kilograms of plastic received one steel product, those bringing 2–5 kilograms received two, and those contributing more than 5 kilograms received three items. This structure linked waste recovery directly with responsible consumption choices.

Despite a hartal and heavy rainfall, the event saw participation from 74 individuals, including representatives from institutions, organisations, and student groups. A total of 48.02 kilograms of plastic waste was collected through the barter process and directed to appropriate waste management channels.

The exhibition created space for dialogue on reducing single-use plastics and adopting durable alternatives in everyday life. The initiative also reached over 30,000 people through online engagement, extending its impact beyond the event.



EXTENDING CONVERSATIONS BEYOND THE COAST



Educational and community engagement activities continued alongside field actions under the Plastic Free Coastline initiative during the month. An orientation session was conducted at Government Women's College, Vazhuthacaud, engaging 47 members of the Plastic Task Force. Students worked in groups to propose ideas for creating plastic-free and environmentally responsible campuses, contributing practical inputs for future interventions.

At the community level, engagement with Kadinamkulam Panchayat led to the organisation of a meeting with 15 participants from different wards. Discussions focused on local concerns, project activities, and opportunities for collaboration. Participants expressed willingness to be involved in cleanups, awareness sessions, and follow-up initiatives, leading to the formation of a communication group for continued coordination.

Vendor engagement was also initiated at Shangumukham Beach, where interactions with five vendors explored current plastic usage, waste management practices, and challenges in adopting alternatives. These insights will inform the next phase of targeted interventions.

CLIMATE AND COMMUNITY SYSTEMS

LEARNING FROM MEENANGADI'S CLIMATE JOURNEY

During April, the Carbon Neutral Meenangadi initiative focused on strengthening institutional engagement and sharing its community-led climate model.

Representatives from Haiyya Foundation visited the Meenangadi Nature Learning Centre to understand the project's approach and implementation strategies. The interaction enabled an exchange of experiences and opened possibilities for future collaboration.

Representatives from Punalur Municipality also visited to learn about the Carbon Neutral Meenangadi framework. The team was introduced to planning approaches, emission reduction strategies, and community-level interventions. The team also visited Attakkolli pond and a master farmer's field for practical exposure to local implementation.

This engagement continued through a stakeholder meeting with representatives from Meenangadi Grama Panchayat, Punalur Municipality, and Thanal. Discussions focused on the structure, outcomes, and scalability of the initiative, with interest expressed in adapting similar models.



MONITORING COMMUNITY SOLAR SYSTEMS ON THE GROUND



Renewable energy systems under the Carbon Neutral Meenangadi initiative were monitored at Anganwadis in Thachambath and Mundanadapp to assess the performance of installed solar systems.

The systems have eliminated electricity bills, reducing dependence on conventional energy and improving cost efficiency. Technical improvements were initiated to ensure better protection of inverter and battery units.

Planning discussions were also held with the Panchayat to organise awareness sessions for Kudumbashree units, strengthening community engagement in carbon-neutral practices.

LOW-COST ECOLOGICAL PRACTICES TAKE ROOT IN FARMERS' FIELDS

Farmer-led agroecological practices continued to evolve across fields under the Mannorukkam project through simple, locally adapted interventions.

In Rajamma's field, coconut husk bunds were introduced around coconut trees to improve moisture retention and soil health. The coir helps reduce evaporation and slows surface runoff, allowing better water availability in the root zone. As the husk decomposes, it adds organic matter to the soil, improving structure and microbial activity while



enhancing crop resilience during dry periods.

In Narayanan's field, a low-cost physical method was adopted to protect cowpea seedlings from crab damage. Sticks were placed along crop rows to restrict crab movement and prevent disturbance to young plants. This approach reduced early-stage crop loss and supported healthier plant establishment without the use of chemical inputs.

These practices show how farmers are adapting context-specific, sustainable solutions that strengthen soil systems and crop protection while remaining resource-efficient.

KEEPING INDIGENOUS SEEDS IN CIRCULATION

Seed exchange activities continued to support crop diversity and conservation among master farmers under the Mannorukkam project.

Traditional vegetable and crop seeds conserved by farmers over time were identified and shared within the network based on cropping needs. This enabled wider access to locally adapted varieties that are better suited to regional conditions and seasonal variations.

The initiative supported the conservation of indigenous germplasm while encouraging farmers to diversify cropping patterns and reduce dependence on external seed sources. It also strengthened collaboration among farmers, reinforcing a shared approach to resilient and sustainable agriculture.

BUILDING RURAL RESILIENCE

STRENGTHENING LIVELIHOODS THROUGH SHARED LEARNING



Training programmes continued across hamlets under the Integrated Tribal Development Programme (ITDP) during April to strengthen technical knowledge and support sustainable livelihood practices.

An organic farming training session was conducted at Cherukara Community Hall for participants from Cherukara, Edathara, and Kallupacha under the guidance of Smt. Abhirami A, Agriculture Officer at Thanal Trust. The session introduced ecological cultivation methods that combine traditional practices with improved techniques. The training was supported using Sarvam Jaivam, a reference resource book developed by Thanal, along with QR-linked visual materials to reinforce practical understanding.

Apiculture training was also held at the hamlet level for new beneficiaries, alongside continued guidance for existing participants. Sessions focused on safe hive handling, colony management, and hygienic honey extraction. With support from trainers and master farmers, beneficiaries have begun harvesting honey, reflecting improved skills and confidence in beekeeping practices.

SUCCESS STORY



A SMALL SHOP AND A STEADIER FUTURE

Latha T. T., a resident of Karikulam hamlet, is the sole earning member of her family, supporting her household through labour under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). With her husband unable to work due to chronic illness, the income was often insufficient to meet daily needs, education expenses, and medical costs.

In March 2022, Latha received support under the NABARD Tribal Development Fund (TDF) project in the form of a petty shop. This provided her with a stable and locally relevant livelihood opportunity.

Through consistent effort, she gradually built the shop into a reliable source of income within the community. To date, the enterprise has generated a profit of over one lakh rupees. Within the first year, Latha also completed formal registration of the business, strengthening its sustainability.

The shop now supports her family's expenses more steadily, and she is planning to expand the business further based on local demand. Latha's journey reflects how access to small-scale livelihood support, combined with individual effort, can lead to sustained income and improved household resilience.

FROM FIELD SCRAPS TO BIO-SHIELD: UNLOCKING THE SECRET PESTICIDAL POWER OF YAM AND GINGER

ABHIRAMI N G,
Project Officer, Thanal

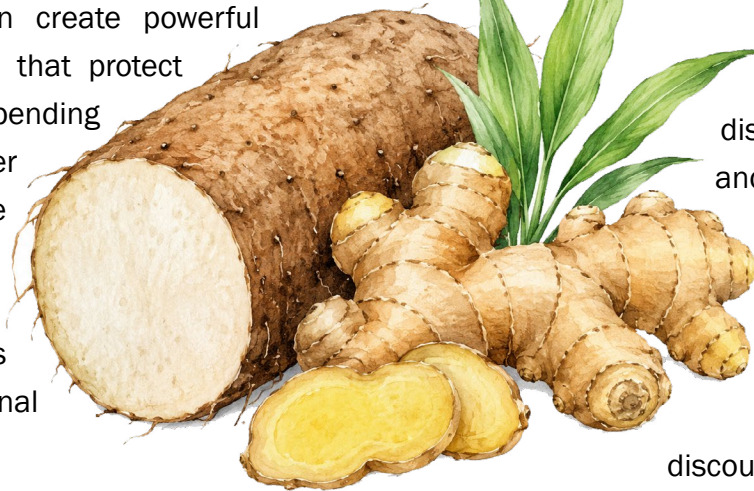
Are you throwing away one of your most valuable organic farming assets? Most growers focus entirely on the Elephant Foot Yam tuber, but the secret to effective, low-cost pest control lies in the stalk. However, according to Kerala Agricultural University standards, the pseudostem, stem-like structure formed by tightly packed leaf bases is actually the vital component for preparing high-potency organic mixtures. By repurposing what is usually considered “farm waste,” you can create powerful traditional formulations that protect your crops without spending a rupee on the tuber itself. In this article, we will explore the science behind using yam stalks and the precise steps to prepare this traditional organic solution.

Bioactive Compounds and Agroecological Potential of Elephant Foot Yam

Elephant foot yam is a tuber crop, and the pseudostem (petiole/stalk) along with its aerial parts are rich in organic compounds that make them highly valuable in traditional and sustainable farming systems. The plant, *Amorphophallus paeoniifolius*, is widely recognized for its potential as a botanical insecticide and organic fertilizer (Nedunchezhiyan et al., 2017). It contains a range of bioactive compounds that support its use in organic extracts as well as in traditional medicinal practices. The pseudostem and corm are particularly rich in secondary metabolites such as

saponins, tannins, phenolic compounds, and high levels of potash (potassium), which contribute to antioxidant, anti-inflammatory, and antimicrobial activities (Suba et al., 2025). These compounds not only enhance plant health but also play a significant role in natural pest and disease management.

Among these bioactive components, calcium oxalate crystals occur in a specialized needle-shaped form known as raphides, which are abundantly present in the tissues of the plant. These microscopic structures serve as an effective natural defense mechanism by



causing irritation, mechanical injury, and discomfort to herbivores and insect pests upon contact or ingestion (Botha & Venter, 2002). The sharp, crystalline nature of raphides can damage soft tissues and discourage feeding, thereby protecting the plant from biotic stress, the damage caused by living organisms such as pests and pathogens. In addition to their direct physical action, raphides often function in synergy with other phytochemicals present in the plant, enhancing its overall protective capacity (Konno et al., 2014). This combination of physical and chemical defense mechanisms makes elephant foot yam a resilient species in natural ecosystems.

While the plant inherently possesses these protective features, their effectiveness can be further enhanced through the preparation of a concentrated fermented extract from the pseudostem. The process of fermentation helps to release and activate these bioactive compounds,

including raphides, making them more readily available for external application. When this extract is sprayed onto crops, it essentially transfers the plant's internal defense mechanisms to other, more vulnerable plants that lack such natural protection. In this way, elephant foot yam serves as a valuable resource in agroecological farming, offering an eco-friendly and cost-effective solution for pest management and crop health improvement.

Unlocking Bioactive Potential

The bioactive potential of elephant foot yam stalk can be effectively utilized by preparing a fermented extract in combination with ginger (Inji), which enhances its pesticidal and antimicrobial properties. The Chena-Inji (elephant foot yam- ginger) fermented extract can be prepared using 5 kg of fresh elephant foot yam pseudostem (chena thandu), 500 g of ginger, 500 g of jaggery, 5 litres of cow urine, and 10 litres of water. The pseudostem is chopped and crushed, and the ginger is ground into a coarse paste. These are mixed with jaggery in a clean container, followed by the addition of cow urine and water. The mixture is kept covered in a shaded place and allowed to ferment for 7-10 days, with daily stirring to ensure uniform fermentation. Once a characteristic fermented smell develops, the mixture is filtered to obtain the extract. For use, the filtrate is diluted at a ratio of 1:10 with water and sprayed on crops at 10-15 day intervals to support pest management and improve plant health.

Natural shield for sustainable crop protection

In the pursuit of sustainable and residue-free agriculture, organic formulations derived from locally available crops have become vital tools for modern farmers. By harnessing the natural pungent alkaloids of ginger and the protective chemical properties of yam, this mixture provides a dual-action defense mechanism. It serves as an eco-friendly alternative to synthetic chemicals, helping farmers manage crop health while preserving the

natural ecosystem of the farm.

The Chena-Inji combination acts as a powerful, dual-action botanical shield by providing biochemical contact toxicity against sucking pests like aphids, jassids, thrips, and whiteflies. Simultaneously, it offers mechanical deterrence against soft-bodied chewing insects through the ingestion of residual calcium oxalate raphides. The pungent gingerol compounds act as a natural repellent, creating an "invisible barrier" that prevents adult pests from landing or laying eggs on your plants, while also acting as an antifeedant that stops caterpillars from consuming the foliage (Journal of Entomology and Zoology Studies, 2024). For the farmer, this means a significant reduction in leaf-curling and sap-depletion without using toxic chemicals.

On the disease-specific front, this mix is a potent preventative against fungal pathogens that cause Leaf Spot, Downy Mildew, and Rhizome Rot (Aghazadeh et al., 2016). The ginger component contains natural antimicrobial agents that inhibit the germination of fungal spores on the leaf surface (Kalhor et al., 2022). For best results, farmers should apply the extract during the early stages of growth or immediately after the first sign of rain to prevent the onset of rot and infection.

Towards sustainability

The Chena-Inji formulation represents a practical and sustainable approach to crop protection by integrating locally available resources with traditional knowledge. Its dual action against pests and diseases not only reduces dependence on synthetic chemicals but also supports soil health, biodiversity, and long-term farm productivity. Regular use of such botanical extracts can strengthen the resilience of cropping systems while minimizing production costs and environmental risks. Promoting and adopting these eco-friendly practices will play a crucial role in advancing agroecological farming and ensuring safe, residue-free food production for the future.

NEWS, MEDIA & ENGAGEMENT

AGROECOLOGICAL FARMING REACHES WIDER PUBLIC ATTENTION



The Mannorukkam project and the work of its master farmers were featured in Mathrubhumi following an interaction with the Kalpetta bureau. The coverage highlighted the project's focus on agroecological practices, the role of master farmers in promoting sustainable agriculture, and the challenges faced in market access.

Photographs of harvesting activities and field practices were shared to support the story, bringing visibility to ongoing work across Meenangadi. The feature contributed to wider public awareness of farmer-led initiatives and the importance of strengthening local, sustainable food systems.

YOUNG PEOPLE ENGAGE THROUGH FIELD LEARNING



Students from various colleges continued to engage with Thanal's initiatives through internship opportunities during April. Nine interns participated during the month, taking

the total number of interns involved this year to seventeen.

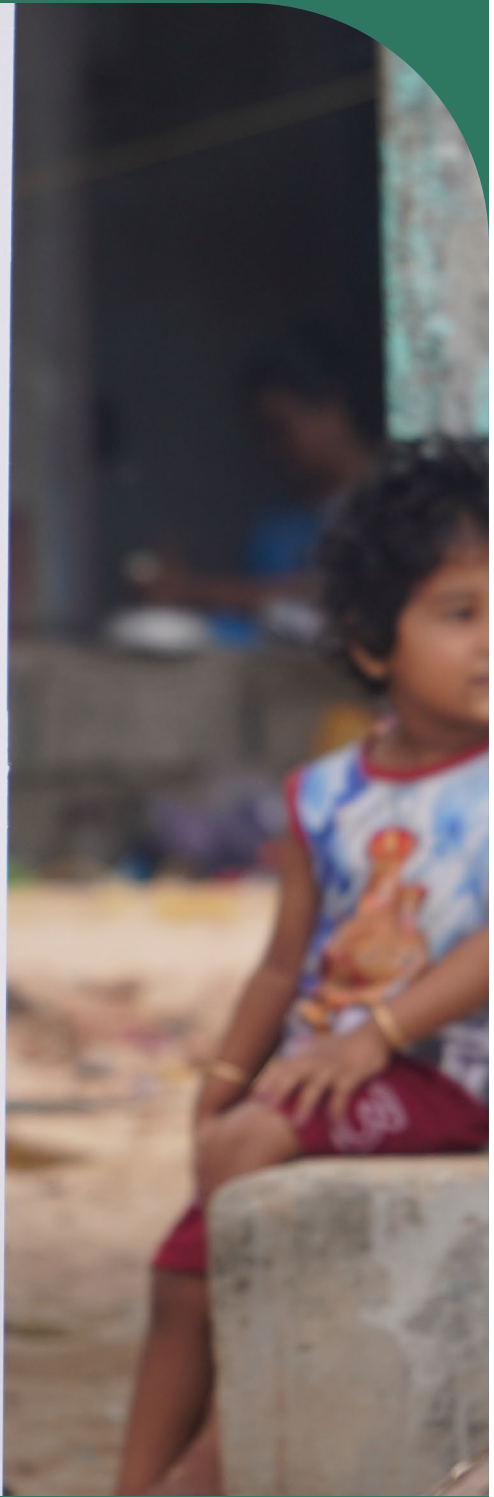
Their involvement supported field activities, documentation, and event coordination, while offering hands-on exposure to environmental and community-based work. These engagements create learning spaces that connect young people with environmental issues in practical ways.

Alongside this, Gouri, a ninth standard student who had attended a recent barter shop event, volunteered in a subsequent programme. Her continued involvement reflects how early exposure can encourage deeper engagement with environmental action.

...and's leading environmental
... For nearly four decades, we
...ed at the grassroots to protect
...ns, revive traditional knowledge, and

WHAT WE DO

- ✿ **AGROECOLOGY & BIODIVERSITY**
Protecting indigenous crops and promoting climate-resilient natural farming
- ✿ **CLIMATE ACTION**
Driving community-led solutions for a low-carbon and climate-resilient future.
- ✿ **ZERO WASTE & CLEAN AIR**
Reducing waste and pollution through sustainable, circular practices.
- ✿ **SUSTAINABLE LIVELIHOODS**
Strengthening rural and tribal communities through resilient livelihoods.
- ✿ **ENVIRONMENTAL EDUCATION**
Inspiring youth and communities to act for a sustainable future.
- ✿ **COMMUNITY PARTNERSHIPS**
Collaborating with diverse partners to scale sustainable impact.



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