Aranya
AGRICULTURAL ALTERNATIVES
Permaculture India - Forest Farming

ANNUAL REPORT
2022-2023

Aranya Agricultural Alternatives

CONTENTS

THE ANDHRA PRADESH IRRIGATION AND LIVELIHOODS IMPROVEMENT PROJECT (APILIP-II)

The Andhra Pradesh Irrigation and Livelihoods Improvement Project – Phase II (APILIP-II) is a JICA-assisted initiative focusing on modernizing irrigation systems, strengthening Participatory Irrigation Management (PIM), and improving livelihoods through agriculture, horticulture, animal husbandry, fisheries, and agribusiness development. In Guntur and Palnadu districts, Aranya Agricultural Alternatives was engaged as a Support Organization (SO) by the Water Resources Department (GoAP) to facilitate community mobilization, strengthen Water User Associations (WUAs), and implement livelihood promotion activities.

Activities and Achievements

- **Irrigation & PIM:** Covered 16 minor irrigation tanks; conducted socio-economic and technical surveys; prepared micro-plans; facilitated MoUs between WUAs and District Implementation Units; organized capacity-building for WUAs and para-workers.
- **FPO Promotion:** Four Farmer Producer Organizations formed and strengthened; 504 farmers trained in leadership, group management, and business planning. Mobilized Rs. 40 lakhs in member contributions for a chilli cold storage and godown (Rs. 8 crore project). Introduced a three-tier farmer institution model.
- **Agriculture & Horticulture:** Supported crop planning, training, and demonstrations; promoted Good Agricultural Practices (GAPs) under YSR Polambadi and Thotabadi; strengthened capacity of officials; assisted in dissemination of modern and climate-smart practices.
- **Animal Husbandry:** Facilitated farmer group mobilization; supported trainings, exposure visits, and adoption of good livestock management practices.
- **Fisheries:** Conducted household surveys; mobilized communities for tank-based fisheries; strengthened Fishermen Cooperative Societies; developed sustainable livelihood plans.
- **Pilot Programs:** Supported chilli value chain development through FPOs, Hi-Tech Nursery, and collective marketing. Introduced farm mechanization for smallholders with demonstrations and exposure visits.
- **Additional Expansion:** In 2022, covered 7 additional tanks in Palnadu (Veldurthi, Macherla, Durgi mandals).

The program directly engaged over 1,500 farmers across Guntur and Palnadu districts through institutional building, skill development, and livelihood promotion. Community institutions (WUAs, FPOs, FCSs) were strengthened for long-term sustainability. Farmers adopted improved agricultural, horticultural, livestock, and fisheries practices. A significant community investment of Rs. 40 lakhs was mobilized for collective infrastructure. Establishment of a Hi-Tech Nursery and chilli value chain initiatives demonstrated successful integration of irrigation rehabilitation with livelihood promotion. Through APILIP-II, Aranya has strengthened farmer institutions, improved productivity, enhanced incomes, and created sustainable livelihood opportunities.

Team visit to Pinneelli tank and interaction with WUA and farmers

Visit to Involu tank and interaction with Fishermen

NATURAL AND HUMAN ASSET BASED LIVELIHOODS FOR SC COMMUNITY:

In 2022-23, the continuation of Natural and Human Asset Based Livelihoods for SC community project by Department pf Science and Technology , Government of Indiawas carried out in Lingapur village, Nirmal district. This project has made notable progress in improving livelihoods and food security among the Scheduled Caste community through sustainable, low-cost interventions.

During the year, kitchen garden initiatives were strengthened with technical guidance provided for growing vegetables on raised beds. Farmers were trained to integrate both short- and long-duration crops, apply Jeevamruth regularly, and grow sun hemp as green manure to reduce weeds and improve soil health. As a result, families were able to cultivate a wide variety of vegetables throughout the year. In the rainy season, crops such as ridge gourd, bitter gourd, bottle gourd, lab lab, brinjal, and chillies thrived, while in the winter season, greens, onion, garlic, fenugreek, spinach, tomato, and brinjal were grown on one-acre plots. These kitchen gardens significantly improved household food security and nutrition.

Skill development activities were also taken up with a focus on computer training and tailoring. Educated youth who were trained in MS Office received certificates and successfully found employment as data entry operators, earning between Rs. 5,000-6,000 per month. Tailoring skills were imparted to eight members, who secured part-time employment within their villages, providing paid services and earning an additional income of Rs. 1,000-1,500 per month. Alongside this, backyard poultry units were promoted in 10 families, each provided with 18 hens and 2 cocks. This intervention not only improved household nutrition through regular consumption of eggs and meat but also created opportunities for income generation through the sale of poultry products, further contributing to improved family health and livelihood.

At the final evaluation meeting, Mr. Raghuram Das highlighted the tangible improvements in food security, income generation, and self-reliance within the village. In June 2022 final certificates were given out to those who were trained in MS Office and Tailoring.

RESTORE PROMISE OF WATER

In 2022-2023 Nirmal district, under the RPOW Project, desiltation work was carried out in one village in two tanks, where a total 2.3 modules (23,000 cubic meters) of silt were removed. This intervention directly benefited 182 farmers, improving water storage capacity, enhancing soil fertility through silt application, and strengthening local livelihoods.

In Koratikal village, farmers applied the desilted soil from the tanks to their turmeric fields. Although the soil was not black in color, it significantly improved aeration and soil structure, leading to higher productivity. Farmers expressed their satisfaction with the intervention

PERMACULTURE EDUCATION

The Permaculture Design Course (PDC) at Aranya is an internationally recognized program that introduces participants to the ethics, principles, and practices of permaculture. It provides both theoretical knowledge and practical experience in ecological design, regenerative agriculture, and community resilience. The course equips individuals with the skills to design sustainable systems for food, water, energy, shelter, and social structures. Through a combination of classroom sessions, hands-on farm activities, and group design projects, participants learn how to apply permaculture to diverse landscapes and communities.

In the year 2024-2025, a total of 204 participants joined the PDC, reflecting both the national diversity of India and international interest in permaculture education. Of these, 182 participants came from 17 states across India, while 12 international participants represented 12 different countries, bringing together a unique blend of perspectives and experiences. This diversity not only strengthened the richness of dialogue but also allowed for deep cross-cultural learning, as participants shared common challenges and region-specific solutions. 20 Students were given scholarship for those who cannot afford but are working with communities who can make a bigger impact.

PERMACULTURE TEACHERS TRAINING:

In February 2023, Aranya Agricultural Alternatives conducted a Permaculture Teacher Training attended by 25 participants, all of whom had previously completed a Permaculture Design Certificate (PDC) and were keen to share their knowledge and teach permaculture. The course curriculum covered essential aspects of effective teaching, including understanding adult learning styles, planning lessons and sessions, facilitating participatory learning experiences, using teaching tools, creating safe and inclusive learning spaces, and managing courses at both grassroots and diverse cultural settings. Participants also explored teamwork, course logistics, and strategies for personal and professional development within the field of permaculture education.

The training was facilitated by Narsanna Koppula, Jedidiyah Alfred, and Padma Koppula, who combined practical experience with teaching expertise. By the end of the course, participants gained confidence in facilitating permaculture courses, engaging diverse learners, and applying participatory and experiential teaching methods. The program strengthened their ability to inspire and educate others, expanding the network of trained permaculture educators ready to implement and share regenerative practices in their communities.

EXPERIENTIAL PERMACULTURE WORKSHOP:

An experiential permaculture workshop was conducted in Nirmal district for participants eager to move beyond theory and gain hands-on learning in the field. The workshop focused on practical applications such as reading a site, conducting sector analysis, identifying water harvesting opportunities, and digging percolation Tanks (PTs). Through direct engagement on the land, participants not only built practical skills but also deepened their understanding of how to apply permaculture principles in real-life contexts.

UNCULTIVATED GREENS WORKSHOP

Aranya Permaculture Farm hosted a unique Uncultivated Greens Workshop attended by 33 participants, creating a meaningful day of learning from the community. The true teachers of this workshop were the local women farmers from Bidakanne, who had collected and introduced participants to 51 varieties of wild edible greens—most of which are often overlooked or unknown. The workshop challenged the common notion that greens are limited to spinach or kale, instead highlighting the nutritional richness of uncultivated greens that grow abundantly in the wild without human intervention. Through interactive discussions, participants explored their nutritional value, diversity, and methods of cooking. The event emphasized the importance of documenting this traditional knowledge, reconnecting with elders, and re-observing our surroundings to rediscover these “old” foods that hold immense potential for improving diets and resilience

ADVANCED SOIL COURSE

Aranya hosted an Advanced Soil Course facilitated by the renowned soil biologist Dr. Sultan Ismail, who guided 27 participants on a profound journey into the world of living soils.The course explored soil not just as a resource but as a dynamic, living system that sustains all life. Through lectures, demonstrations, and discussions, participants deepened their understanding of soil biology, nutrient cycles, and the vital role of soil fauna. The course emphasized practical approaches to conserving and regenerating soils within farming systems, aligning strongly with Aranya's vision of ecological stewardship.This learning experience inspired participants to look at soil as a vibrant, biotic community-one that requires care, respect, and protection for the well-being of ecosystems and communities alike.

PERMACULTURE & ARCHITECTURE COURSE:

Aranya hosted a Permaculture and Architecture Course with 16 participants, exploring the intersection of ecological design and sustainable built environments. The course highlighted how permaculture principles can be integrated into architectural practices to create climate-responsive, resource-efficient, and community-centered spaces. Participants engaged in discussions and hands-on learning that emphasized designing with natural systems, using local materials, and aligning human habitats with the surrounding ecology. This program strengthened understanding of how built structures can harmonize with landscapes, reflecting permaculture's holistic approach to both farming and living spaces.

TRAINING ON PERMACULTURE FARMING - MEDP NABARD

As part of the Micro Enterprises Development Program (MEDP) under Aranya Agricultural Alternatives, a 15-day training program on Permaculture Farming was conducted from 3rd February to 25th March 2023 for tribal women and self-help group (SHG) members. The program, supported by NABARD, aimed to enhance sustainable agriculture practices, reduce dependency on chemical fertilizers and pesticides, and promote soil health, biofertilizers, and organic farming techniques. Training sessions were conducted both in classrooms at Gram Panchayat, Singapore Village, Khanapur Mandal, and on-site at Aranya Permaculture Farm, Kothapet Village.

The training covered a comprehensive curriculum including permaculture principles, permanent farming systems, nutritional kitchen gardens, crop rotation, mixed orchards, millet cultivation, seed preservation, soil fertility management, nursery management, composting, greywater systems, and bio-liquids such as Jeevamrutham, Ghana Jeevamrutham, and Amruth Jal. Participants also learned natural pest management through Neemasthram and Agni Asthram solutions, and the use of border plantations and bio-fencing for crop protection. Hands-on demonstrations and practical exercises on circle beds, keyhole gardens, and compost pits enabled the women to implement these techniques effectively on their farms.

The program successfully empowered women with knowledge and skills to create sustainable, productive, and climate-resilient farms. Participants gained confidence in producing organic crops, conserving native seeds, managing water and soil health, and creating livelihoods through agriculture. The final day included a feedback session, certificate distribution, and discussions on future action plans, ensuring that the women were equipped to continue practicing permaculture principles and promoting ecological farming within their communities.

PERMACULTURE TRAINING FOLLOW-UP & EVALUATION VISITS

Aranya team members Narsanna Koppula and Sneha visited Malegaon in Pune and several farms of PDC alumni in Nashik during 2022-23. An alumni meet was also organized, bringing together around 45 participants, of whom nearly 30 were actively applying their learning from the PDC in diverse ways. It was inspiring to witness the range of initiatives that had emerged after their training. Some alumni were working on land restoration, water harvesting, and food production, while others were creating vibrant urban gardens, making bio-enzymes, or experimenting with social permaculture and seed sharing. Several had taken the path of community engagement, teaching, and entrepreneurship, demonstrating the adaptability of permaculture principles across different contexts.

The meet not only served as a space to evaluate progress but also as a platform for mutual learning and encouragement among practitioners. The diversity of projects reflected how permaculture is not limited to farming but extends into lifestyle choices, ecological entrepreneurship, and community resilience. The visit reaffirmed the importance of follow-ups and alumni networks in strengthening long-term impact, as participants expressed enthusiasm to continue sharing knowledge and supporting each other in their journeys. This experience highlighted how the seeds sown through PDC courses have grown into a wide network of change-makers working for ecological and social regeneration.

IRRI SEED EQUAL PROJECT

Aranya Agricultural Alternatives collaborated with the International Rice Research Institute (IRRI) under the CGIAR Seed Equal Initiative to implement this Project in Miryalaguda area of Nalgonda District, Telangana. This initiative aims to improve access to high-quality, climate-resilient, and market-preferred rice varieties, particularly for women and marginalized smallholder farmers, with the long-term goal of enhancing agricultural productivity and food security.

Implementation in Kharif 2022: Aranya engaged with KVK Kampasagar officials and progressive farmers across identified clusters. A total of 23 farmers from 10 villages participated in On-Farm Trials (OFTs), Cluster Demonstrations, and Mini-Kits involving eight new rice varieties.

- On Farm Trials: Conducted with 10 farmers across 5 villages. While orientation was provided on nursery management, only 7 farmers followed the recommended practices, with 3 mixing seeds. Unexpected weather conditions, including heavy rains and a canal breach at Vempahad, led to losses for some farmers, though the remaining crops performed well.
- Cluster Demonstrations: Farmers cultivated Telangana Sona, which showed good growth and yield of 20–22 quintals per acre despite some lodging (15–20%). While farmers were satisfied with crop performance, they expressed concern over low market prices (₹1,900 per quintal) compared to other varieties.
- Mini-Kits / Head-to-Head Trials: 8 farmers in 2 villages cultivated 7 varieties, with crops looking promising at the time of reporting and harvest expected within weeks.

Capacity Building & Field Visits

Farmers received training on nursery management, sector-specific practices, and varietal characteristics. In September, Dr. Sarvesh Shukla (IRRI Scientist) visited demonstration sites, including the Varietal Cafeteria at KVK Kampasagar, where different cultivation methods (drum seeding, direct sowing, and transplantation) were observed. An interaction meeting at Bankapuram facilitated direct dialogue between scientists, NGO partners, and farmers, allowing concerns about crop growth, resilience, and especially marketing to be openly discussed.

Outcomes & Learnings

- Farmers successfully cultivated and evaluated multiple new rice varieties, building awareness of their traits and resilience.
- Market demand remains a challenge, as newer varieties are not yet well-established in local trade networks.
- Despite climate risks, the project demonstrated strong crop performance and engaged farmers in participatory varietal testing.
- Women and marginalized farmers gained exposure to improved seed systems and capacity-building exercises, aligning with the Seed Equal Initiative's goals.

This collaboration between Aranya, IRRI, and CGIAR has laid the groundwork for farmer-centered varietal validation, knowledge exchange, and sustainable seed system development in Telangana's rice-growing regions.

SEED DISTRIBUTION – OFT, MINI KIT & CLUSTER DEMONSTRATION


PR 126


PR 126

BIOCHAR PROJECT:

Aranya, in collaboration with WE-Act Company, implemented its first Biochar Project to reduce open-field burning of crop residues and enhance soil fertility.

An interactive meeting was held with the Mandal Agriculture Officers, during which village-wise and crop-wise data for Jharasangam Mandal was collected. The data revealed that approximately 15,000 acres were under cotton cultivation. It was also observed that crop residue burning had taken place across these areas, resulting in an estimated 22,500 tons of carbon emissions being released into the atmosphere.

The pilot phase was conducted in the villages of Kambalapalli and Narsapoor, where awareness meetings encouraged farmers not to burn cotton and red gram residues. Farmers contributed their crop residues to the project in exchange for Rs. 500 per acre. In the first year, 500 acres of crop residue were collected and converted into biochar at Kambalapalli, which was then "charged" with compost and farmyard manure and applied to cotton and chili crops.

The crop residue, averaging one ton per acre, was used for biochar production. From this biomass, approximately 250 to 275 kg of biochar was produced per ton. This prevented further carbon emissions from burning but also contributed to sustainable soil health practices through biochar application.

Biochar orientation meeting with farmers

FARMERS PRODUCER ORGANIZATIONS SUPPORT (FPOS):

Aranya has facilitated and supported the formation of 15 Farmers Producer Organizations (FPOs) across Andhra Pradesh and Telangana. In Andhra Pradesh, 12 FPOs were registered under the MACS Act and three under the Companies Act. Of these, 12 FPOs in Kurnool district have been handed over to the Agriculture Department. In Telangana, two FPOs are currently being supported: Adilabad Farmers Producers Organization (AFPCL) and Koratikal Farmers Producers Company Ltd.

Adilabad Farmer Producer Organization - This FPO is comprised of nearly 90% members from Scheduled Tribe (ST) communities and WADI farmers. While farmer mobilization was relatively smooth, collection of membership fees and share capital proved to be a major challenge. The FPO CEO played a critical role by traveling across villages, motivating farmers, and ensuring contributions were made. Achieving the target of 500 members was a significant milestone. NABARD supported this FPO for two years by providing financial assistance for the CEO's salary and a grant of ₹5 lakhs. During this period, systems were established for maintaining financial records, share capital accounts, auditing, and business plan preparation. Training programs for the Board of Directors (BoD) were also conducted. Although overall progress has been gradual, a strong foundation has been laid for sustainable growth.

Bidakanne women FPO : This FPO was initiated with 150 women members. Initially, membership and share capital mobilization was completed for 100 members, later reaching the full strength of 150. Capacity-building efforts focused on training the Board of Directors and executive members in account management, receipt book printing, voucher writing, and record keeping. The Women FPO also applied for key operational licenses, including FSSAI, Udyam, and other relevant registrations, enabling it to formalize its business activities and prepare for future scaling.

FARMERS SUPPORT PROGRAM:

In 22-23, Aranya ran a program to promote the growing of desi (local) vegetables. As part of this, 20 farmers were selected from three villages-Bidakanne, Khasimpoor, and Machnoor. They were given native vegetable seeds to grow. The aim was to bring back traditional seed varieties for both farmers and consumers. The idea for this program had come from the farmers themselves.

Over two years, the farmers grew vegetables using these seeds. The produce was then collected and sold to interested consumers. Many people who tasted the vegetables said the flavor reminded them of their childhood — a taste that had been forgotten over time.

One more observation was that each village's soil produced different types of greens and vegetables. This showed how local soil and native seeds worked together to create unique and flavourful produce.

Desi vegetable production

School Education: As part of permaculture education, every month 2-3 hours program will happen Bidakanne primary school. Every month on different topic will be taught to the children. In the school compound it is rocky and hardy soil. Aranya supported for plantation and fencing provided for school compound. Entire school

January to April of 22-23 , Aranya provided 2 bags of ragi flour to the local government school in Bidakanne for making ragi porridge for the children.

Recognition by Government of Telangana

Aranya founders Narsanna and Padma Koppula were felicitated by the Governor of Telangana, Dr. Tamilisai Soundararajan, in recognition of their outstanding contributions to rural communities though Permaculture. This honor highlights their lifelong dedication to community empowerment and regenerative practices.

Sneha from Aranya attended the Seed Equal Workshop by IRRI in Bhubaneswar, Orissa-July 2022.

In July 2022, a Seed Equal workshop for India was held in Bhubaneswar, Odisha.Participants included research scientists, extension officers, seed system actors, university and institutional representatives, and farmer leaders from various state. The objective of the Seed Equal workshop in Bhubaneswar was to build capacity and awareness among key stakeholderson developing inclusive and equitable seed systems in India's rice sector. The meeting also aimed to facilitate dialogue on integrating women and smallholder farmers more fairly into seed delivery pathways, ensuring their access to improved, climate-resilient, and market-preferred varieties on equitable terms

Media coverage

• కవర్ స్టోరీ

శాశ్వత సేద్యపు వెలుగులు

పర్మాకల్చర్ నిపుణులు నర్సన్న, పద్మ

పర్యావరణ అత్యవసర పరిస్థితులు చుట్టుముడుతున్న నేపథ్యంలో కాంక్రీటు అరణ్యాల్లో ఉద్యోగాలు చేసుకుంటున్న వృత్తి నిపుణులు మేలుకొంటున్నారు. తిరిగి ప్రకృతి వైపు తెలివిగా అడుగులు వేస్తున్నారు. నగరాలు, పట్టణాల పరిసర ప్రాంతాల్లో కొద్దో గొప్పో సొంత భూమి సమకూర్చుకొని తాము తినాలనుకునే పంటలను తామే పండించుకొనే ప్రయత్నాలు ప్రారంభిస్తున్నారు. తెలుగు నాట కోవిడ్‌కు ముందే ప్రారంభమైన ఈ ట్రెండ్ ఇప్పుడు మరింత పుంజుకుంటోంది. ముఖ్యంగా హైదరాబాద్ నగర పరిసర ప్రాంతాల్లో పర్మాకల్చర్‌ను అనేక కుటుంబాలు అనుసరిస్తున్నాయి. దాన్నే జీవనశైలిగా మార్చుకుంటున్నాయి. ప్రముఖ పర్మాకల్చర్ నిపుణులు డా. నరసన్న, పద్మ శిక్షణ ఇస్తున్నారు. శాశ్వత ఆహార, ఆరోగ్య, పర్యావరణ సేవలందించే సమగ్ర స్వీయ సేంద్రియ సేద్య విజ్ఞానపు వెలుగుదారులు పరుస్తున్నారు.

'పర్మాకల్చర్' అంటే..?

పర్మనెంట్ + అగ్రికల్చర్.

శాశ్వత ప్రయోజనాలను అందించే ఓ నూతన వ్యవసాయ విధానం.

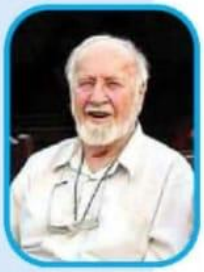
ఇంకా విడమర్చి చెప్పుకోవాలంటే.. పర్మాకల్చర్ (శాశ్వత వ్యవసాయం) కేవలం సీజనల్ పంటలను సేంద్రియంగా పండించే పద్ధతి మాత్రమే కాదు. భారతీయులకు, ముఖ్యంగా తెలుగు నేలకు, పర్మాకల్చర్ భావనను పరిచయం చేసిన కీర్తి శేషులు డాక్టర్ వెంకట్ మాటల్లో చెప్పాలంటే.. 'పర్మాకల్చర్ అన్నది ఒక ప్రత్యామ్నాయ జీవన విధానం. జీవావరణంలో ఒక భాగమై దోపిడీకి గురికానివ్వని సహకార సంబంధాలపై ఇది ఆధారపడి ఉంటుంది.

భూమి, ప్రజల సంరక్షణకు అవసరమైన సుస్థిర, నైతిక, మనగల వ్యవస్థల రూపకల్పనకు ఇది పనిచేస్తుంది!'

ఆస్ట్రేలియాలో పుట్టి.. అంతటా విస్తరించి..

శాశ్వత వ్యవసాయ భావన దాదాపు ఏభయ్యేళ్ల క్రితం ఆస్ట్రేలియాలో

ప్రజలకు, పరిసరాలకు మధ్య సుహృద్భావ సంబంధం..



ప్రకృతిలోని జీవావరణ వ్యవస్థలను పోలిన వైవిధ్యం, స్థిరత్వం, ఆటుపోట్లను తట్టుకునే గుణం కలిగిన వ్యవసాయ ఉత్పాదక జీవావరణ వ్యవస్థలుగా వ్యవసాయ క్షేత్రాలను రూపొందించి, నిర్వహించటమే పర్మాకల్చర్. అది ప్రజలకు, వారి పరిసరాలకు మధ్య ఒక సుహృద్భావ సంబంధాన్ని ఏర్పరుస్తుంది. ప్రజల ఆహార, ఆవాస, ఇంధన, ఇతర భౌతికమైన, భౌతికేతర అవసరాలను సుస్థిర పద్ధతిలో తీరుస్తుంది.

- బిల్ మాలిసన్, పర్మాకల్చర్ పితామహుడు

('పర్మాకల్చర్.. ఎ డిజైనర్స్ మాన్యువల్' నుంచి)