



Many ask if **NATURAL FARMING** works. APCNF farmers prove it works **WONDERS!**

Presenting evidence that Natural Farming is
pro-farmer, pro-planet, and pro-people



Rythu Sadhikara Samstha (RySS)

Andhra Pradesh Community managed Natural Farming (APCNF)

Department of Agriculture, Government of Andhra Pradesh

A Farmer-Driven Science Practice Is Rewriting Agriculture

Farmers of Rythu Sadhikara Samstha's Andhra Pradesh Community-Managed Natural Farming (APCNF) are transforming food and farm systems through farmer-led science and practice.

The science has now been widely adopted by farmers in the APCNF movement.

In less than a decade, APCNF has become the world's largest scaled agroecology initiative. As on date, 1.8 million farmers, i.e. 30% of the farmers in the State, are enrolled in Natural Farming, covering an area of 800,000 hectares. Significantly, the number of farmers increased from 1.13 million to 1.8 million (a 60% increase over the previous year).

Redefining Success for Farmers: Farmers who shift to Natural Farming see profits from year 1 itself.

By Year 5, farmers see:

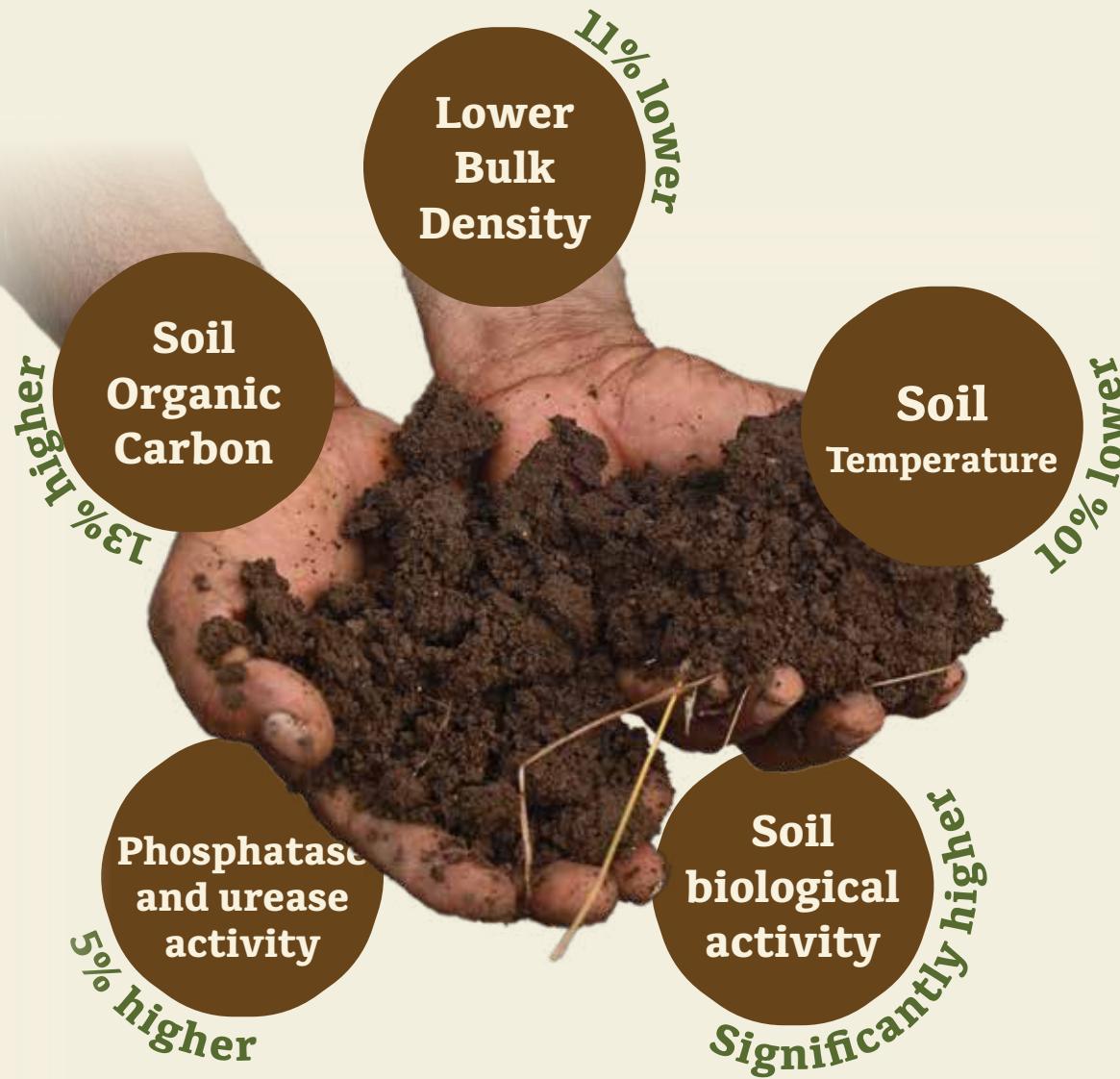
- Minimal weeds due to poly cropping
- No pest or disease pressure due to high brix value (11 to 21%) against (6-9%) in conventional crops
- Water requirement is cut to half due to changes in key factors – soil porosity becomes greater, water holding capacity of the soil increases, and roots penetrate deeper
- Requirement of bio-stimulants drops to less than half
- Yield increases appreciably (by at least 30%)
- Net income increase is 50% (as recorded across five major crops with nature-centric inputs)
- Improved plant physiology, leading to greater climate resilience
- Safer and tastier food for farmers and consumers by eliminating chemical residues and improving nutrient density



A growing body of evidence from the APCNF movement is making a compelling case for Natural Farming based on agroecological principles and methods.

Evidence That Natural Farming Improves Soil and Plant Health

Findings from 365 Days Green Cover (365 DGC) farms show:



- Soil Organic Carbon: 13% higher
- Soil Structure:
 - Bulk density 11% lower than that of conventional farms
 - Lower bulk density indicates better porosity and structure
- Soil Temperature: 10% lower
- Soil Moisture: 29% higher
- Soil Biology:
 - Phosphatase activity is higher by 5%
 - Increased urease activity
 - Overall, soil biological activity is significantly higher

These outcomes confirm that Natural Farming restores biological processes critical for plant health.

Evidence that Natural Farming Improves Water, Energy and Biodiversity

Validated APCNF findings demonstrate:

- Water consumption is reduced by 50% to 60%, which is very significant across different moisture contexts
- Fields with 365 Days Green Cover Crops show marked improvement in soil moisture – as much as 29% higher
- Consistent adoption of methods improves water infiltration rate to as high as 40% more
- Reduced energy use and greenhouse gas intensity due to:
 - Lower external input manufacturing
 - Reduced groundwater pumping
- Soil biodiversity resurgence:
Natural farming soils recorded a 625% higher earthworm population (232 vs. 32 per m²) compared to conventional farming soils.



Evidence that NF Impacts Nutrition

From 129-village pilot studies:

- Anaemia reduced from ~61% to ~44%
- Dietary diversity improved significantly

This links farm practices directly to household nutrition outcomes



Evidence That Natural Farming Improves Incomes and Resilience



From three years of independent studies, APCNF farmers recorded:

- 5–36% reduction in cultivation costs
 - Average cost reduction: 24%
- Higher net incomes, as compared to non-APCNF farmers
(Source: 5 years CCE studies by IDS)
- Increased cropping intensity through:
 - Intercropping
 - Relay cropping
 - Seasonal rotations
- Land Equivalent Ratio (LER): 2.5 under 365-day green cover
 - Demonstrates higher annual output per hectare than monocropping
 - Gains driven by internal ecological synergies, not external inputs

Evidence from Climate Shock

Field observations and records show that across the coastal districts, APCNF fields demonstrated better cyclone resilience compared to non-APCNF fields. The fields showed lower lodging percentages for paddy and banana, stronger root systems (greater root length and rhizosheath perimeter), and registered higher yields after the cyclones, including Cyclone Montha in October 2025.



IGGAARL – Knowledge From APCNF Farmers to the World

Excellence for the Ecosystem

Established in 2022 through a partnership between the Government of Andhra Pradesh and KfW, the Indo-German Global Academy on Agroecological Research and Learning (IGGAARL) is a pioneering initiative.

IGGAARL is:

- Envisioned to evolve into a Global Centre of Excellence for Agroecology and Natural Farming
- Designed to become part of a future University for Natural Farming & Regenerative Agriculture
- Built to maximise farmer participation, with APCNF farmers acting as:
 - Mentors
 - Researchers
 - Knowledge carriers



Minds Dedicated to Further Knowledge

IGGAARL's research ecosystem includes:

- 2000+ researchers
- 24 PhD scholars
- 100+ post-graduates
- Over 50% women participation

Three Pillars of Action

Since inception, IGGAARL has:

- Focused on high-priority research themes
- Invested in key innovation tracks
- Developed farmer education programs
- Created short-term courses for open access to knowledge

Key Global Collaborators of IGGAAARI

- **University of Reading (UOR), UK:** To compare poly-cropping models against conventional systems through a multi-layered "field-to-lab" approach
- **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) India:** To analyse how NF practices shape microbial communities in soil, seeds, and plants that drive crop resilience and sustainable productivity
- **Potsdam Institute for Climate Impact Research (PIK), Germany:** To assess the performance of natural farming under varying climatic conditions using process-based crop modelling
- **The Energy and Resources Institute (TERI) India:** To evaluate soil carbon sequestration potential and socioeconomic resilience and to align natural farming with global SDGs and climate finance opportunities



Rythu Sadhikara Samstha,
2nd Floor, Sahasra Apartment, Block - 2,
Opposite Hosanna Mandir, Amaravathi Road,
Gorantla, Guntur, Andhra Pradesh,
INDIA - 522 034



Contact Us
info@ryss.ap.gov.in
+91 863 294 0145