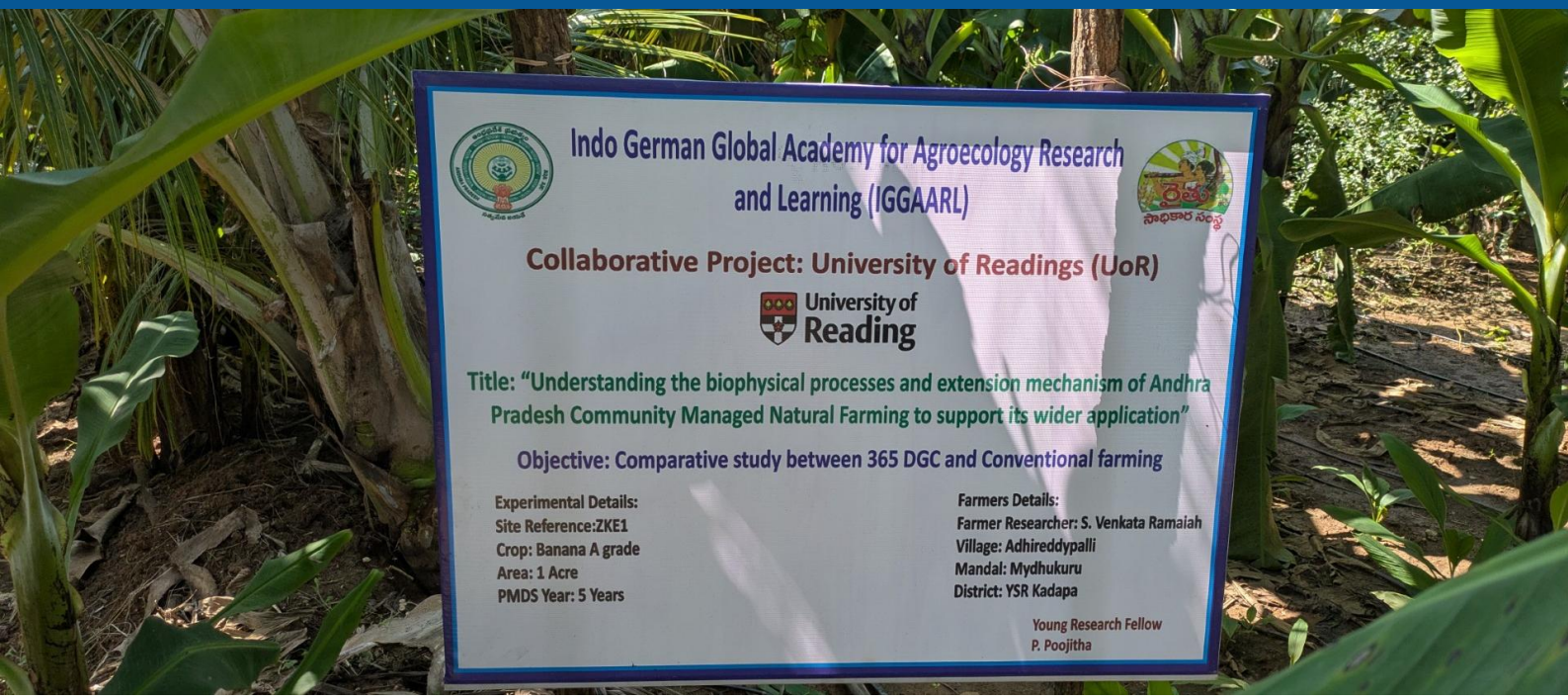
Evidencing Natural Farming Research in India

University of Reading



Project Activities

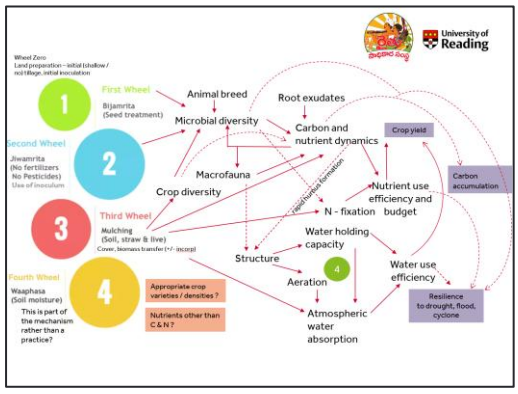
The University of Reading has been developing an evidence base to support Andhra Pradesh Community Managed Natural Farming (APCNF) in India in understanding the strengths and challenges, the extent that success has come from context-specific conditions, and whether there are principles that could be useful for scaling the approach. An interdisciplinary team of soil and social scientists from the University of Reading and Rythu Sadhikara Samstha (RySS) have been working together since 2018 to develop an holistic understanding of APCNF, capacity, methodologies and policy advice.

Environmental evaluation of the APCNF system

Scientifically evidencing environmental system benefits has focused on five themes: nutrient budgeting; carbon dynamics; resilience to climatic stress; soil microbial ecology; and quantifying water use. Experiments have been run for 3 seasons, in 6 agriclimatic zones across Andhra Pradesh. These evaluate the performance of APCNF compared with conventional chemical input and organic amendment systems. Results indicate no yield penalty associated with the first year of conversion to an APCNF system. This is a positive outcome due to lower financial input and beneficial environmental impacts.

Assessing the influence of individual components of the APCNF system

We examine the effects of different APCNF inputs (Bijamrita, Solid Jiwamrita, Liquid Jiwamrita, and Achhadana) on crop yield and the relationship between soil physical, chemical and biological parameters. Analysis finds crop performance is improved if all components are used but no clear mechanism for what is driving this has yet emerged.



Understanding farmers' motivations for adopting APCNF

Using innovative participatory photography

We developed an innovative participatory photography methodology, integrating group collages, with women in self-help groups from 6 villages across 3 locations in Andhra Pradesh where APCNF was being promoted. Dialogical narrative analysis of the data focused on farmers' stories, those who tell them, those who listen to them, and ways that subjective interpretations of these stories can influence actions and decision-making. Understanding local perspectives and rationales for adopting APCNF helps organisations supporting the communities to better communicate their work and develop shared priorities.

Using a Forum Theatre approach

Forum Theatre is an effective participatory approach with longstanding traditions in rural society in India, allowing farmers to share their individual experiences within a group setting. The responses and interventions by spectators were used to validate local challenges and success stories, initially established through the photography-based narratives and provide capacity building with the NGO partner to engage communities in discussions about innovation options. Capacity building in RySS supports alternative ways to engage communities in APCNF agendas.

Evidencing livelihood outcomes with APCNF adoption

Using a gendered survey

We conducted an in-depth gendered survey in the low rainfall district of Anantapur where APCNF biophysical benefits were most evidence and livelihoods are particularly vulnerable to food insecurity and the impacts of climate change. A survey of 300 households compared those using only APCNF with those using only conventional chemical inputs. Identifying not only household levels outcomes, but gendered insights are important to reveal how benefits from APCNF are distributed within the houeshold. The results showed improved control for women APCNF farmers, with more control on entitlement exchange, leading to better food security, household resilience and gendered social change.

Using a household economy approach

Adopting a household economy methodology across the three main agroclimatic zones across Andhra Pradesh, helps reveal the importance of market accessibility for exchange entitlement of APCNF production and food. This builds on insights from the gendered survey. We follow 270 households, using a multi-stage sampling approach to show differences between households in 6 villages, through a baseline year. The approach offers a method for comparison with environmental evaluations to build a stronger interdisciplinary understanding of the system and for future monitoring of APCNF impacts.

Implications for policy and extension practice

Translating learning from our empirical research in Andhra Pradesh has supported policy makers and organisations who are interested in sustainable agricultural transitions and smallholder farmers livelihoods. Our scientific studies show no yield penalty and significantly lower input costs during the first year after the adoption of natural farming, demonstrating that it can deliver sustainable productivity, economic stability, and social transformation.

It is important to promote the benefits of natural farming , train extension works in natural farming to increase drought resilience and environmental benefits and build partnerships with farmers to synthesise existing practices to inform and monitor the expansion of natural farming. Details can be found in our policy brief.

For more information, please contact: Prof Henny Osbahr (University of Reading) Email: h.osbahr@reading.ac.uk or
URL: **http://research.reading.ac.uk/zbnf**

For more information, please contact: Prof Henny Osbahr (University of Reading) Email: h.osbahr@reading.ac.uk or
URL: **http://research.reading.ac.uk/zbnf**