



INDIA

INNOVATIONS IN AGROECOLOGY

ENGINEERING TRANSFORMATION THROUGH ZERO BUDGET NATURAL FARMING (ZBNF)

The Government of Andhra Pradesh (AP) adopted an innovative, climate change resilient, zero budget natural farming (ZBNF) intervention in 2015. The purpose was to cover 500 000 farmers by 2020, ensuring farmer welfare, consumer welfare, and most importantly, food security for present and future generations.

Currently, farmers are in deep distress on account of poor soils, ever increasing cultivation costs, and increasing risks. Climate change is further exacerbating risks.

Zero budget natural farming, pioneered by Subhash Palekar, enables farmers to improve soil fertility, drastically reduce costs and risks, reduce irrigation requirements, and increase yields. ZBNF farmers also provide consumers with chemical-free, nutritious foods. Food security is ensured through continuously increasing soil organic matter, water-holding capacity, and biodiversity. At present, 160 000 ZBNF farmers are on board in Andhra Pradesh.

ZBNF best-practitioner farmers are playing a central role in taking the programme to other farmers, thus propelling the ZBNF to scale up exponentially. Their success in knowledge dissemination is phenomenal. With their leadership, the vision is to convert all 6 million farmers in Andhra Pradesh into ZBNF farmers by 2024; it is the future of farming, rooted in Indian tradition.

DESCRIPTION OF THE INNOVATION

ZBNF leverages the power of photosynthesis to close the carbon cycle, and build soil health, crop resilience and nutrient density. It is a radical paradigm shift from mainstream, chemical input

based agriculture. ZBNF promotes poly cultures to keep the ground covered with biomass at all times. It also improves soil microbiome, through indigenous cow urine and dung-based bio-inoculants.

Main upper photo: Comparing ZBNF Millets Yield with Non-ZBNF

Soil microbiome convert nutrients in the soil from 'locked' to 'bio-available' forms, and thus create a sustainable nutrient exchange system between plants, microbes and soil.



DESIGN AND SHARING OF THE INNOVATION

Scaling-up ZBNF is founded on farmer-to-farmer extension. Our model is built around farmer-to-farmer knowledge dissemination by best-practitioner ZBNF farmers, through customized models, farmers' collectives, Farmer Field Schools and human-mediated

videos. The number of these champion farmers has now reached 1 000, and will go up to 30 000 to facilitate reaching out to 6 million farmers. The State Department of Agriculture has internalized ZBNF, thus ensuring the long-term sustainability of the innovation.

Critical partnerships have been forged with the Government of India, Azim Premji Philanthropic Initiatives, UNEP, FAO and CGIAR institutions, for financial resources, scientific validation, and technical support in scale-up.



SOCIAL, ENVIRONMENTAL AND ECONOMIC IMPACTS

ZBNF enhances social equity, as the smallest and poorest farmers benefit immensely from it.

Farmers benefit economically from the very first season. Crop Cutting Experiments (1 614) conducted in 2017 indicated that 100 percent of the farmers reduced their cultivation costs, and 88 percent had higher yields in the first season itself.

There are also immense ecosystem benefits through increased soil organic matter, water retention, and biodiversity; air and water pollution, as well as greenhouse gas emissions are reduced.

BENEFIT FOR FAMILY FARMERS AND FOOD AND NUTRITION SECURITY

Farmers gain a profitable livelihood through agriculture. Crop Cutting Experiments at this stage offer additional benefits of USD 340/ha per season for farmers. Yields are increasing across crops, and food grown is chemical-free, nutritious, and tasty, all of which ensure food and nutrition security.

LESSONS LEARNED AND RECOMMENDATIONS

ZBNF works on a large scale in multiple agro-climatic zones. Farmers benefit with each season and it ensures food security for present and future generations. Based on universal principles, ZBNF helps reclaim planetary boundaries, making the farmer-led ZBNF approach eminently scalable.

Zero Budget Natural Farming is a highly cost-effective intervention. A farmer accrues an additional USD 13 for every dollar spent on the transformation process. All in all, ZBNF makes a vital contribution to society.