INDIA

Mission of Rythu Sadhikara Samstha (RySS)

'Zero-Budget' Natural Farming (ZBNF) is a holistic agroecological alternative to high cost chemical inputs-based agriculture that addresses the impacts of climate change, reduces input costs and creates sustainable farming livelihoods in ways that are rooted both in science and Indian tradition.

Map

The initiative is situated in rural Andhra Pradesh, in south-eastern India. Andhra Pradesh is a riverine state with 40 major, medium and minor rivers. The climate is tropical, with three seasons: monsoon, summer and winter. Climate change has exacerbated the climatic threats in the region, which is affected by drought and extreme cyclonic rain events.

Agriculture in this State is mostly dependent on rainfall. Agriculture and allied sectors contribute more than 29% of the Gross State Domestic Product of the Andhra Pradesh State. 62,17% (4,600,000) of the working population is still dependent on agriculture and allied activities. More than 37% of the state geographical area is sown to crops.

Context

Agriculture, which drives the region's economy, has become increasingly water intensive and expensive. As the water table drops, the costs of extraction rise, as does the risk of eventual failure of ground water.

In recent years, poor farmers in this arid region have been drilling deeper and deeper in search of water to support cultivation of thirsty, high-value crops promising greater returns but involving greater risks.

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Description

RySS, the corporation for farmers' empowerment, is a non-profit organization established by the government of Andra Pradesh in 2015 to promote '**Zero-Budget' Natural Farming**, which is now practiced in 13 districts by **354,000** farmers from 3,015 villages in 662 mandals (administrative blocks), on 260,000 hectares of land. ZBNF is a government-supported farmers' movement, for farmers, to farmers.

ZBNF trainers and extension workers are known as **Community Resource Persons** (CRPs), and are among **4,568**. Their lives have been transformed by implementation of ZBNF in their own fields, enabling them to communicate the **ZBNF principles** and practices to new farmers.

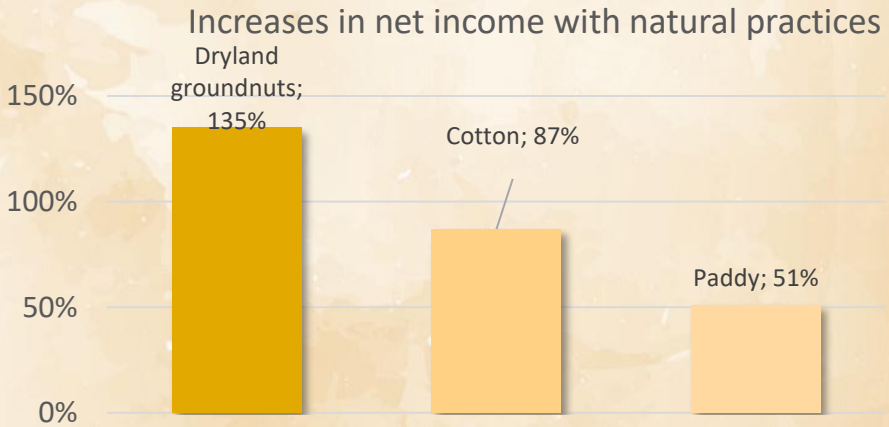
Farmers use four **treatments** to **enhance productivity at low cost**: **Bijamrita** (Seed treatments using local cow dung and urine); **Jiwamrita** (soil inoculant made of cow dung and urine); **Mulching** (ensure favourable microclimate soil); and **Waaphasa** (soil aeration).

These treatments are **chemical-free agriculture** at **lowest/zero-cost** and **enhance** the **incomes** of farmers.

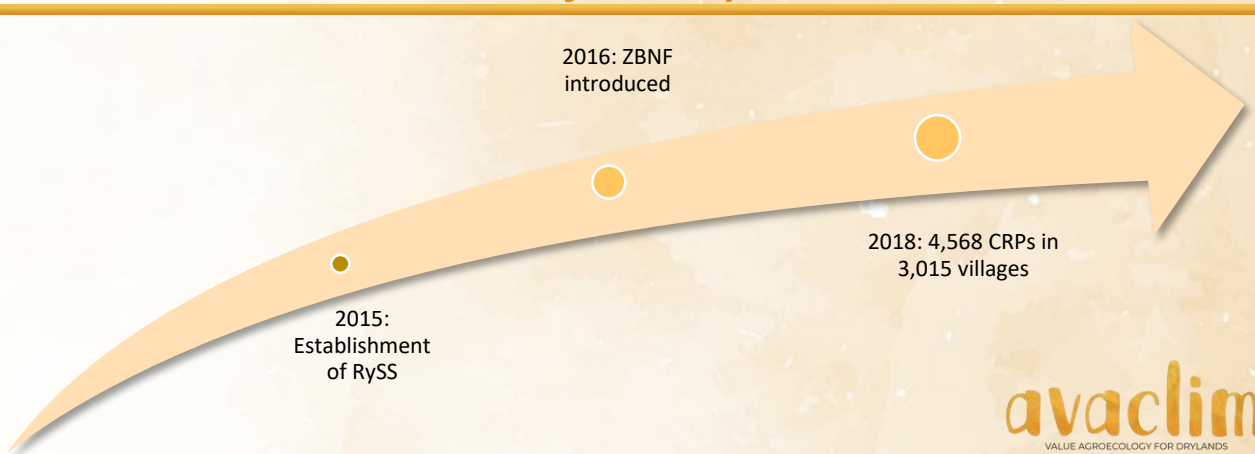
ZBNF utilises the existing institutional platform of **Women's Self-Help Groups** (WSHGs), for scaling, sustaining, and deepening the program.

354,000 farmers
161,000 women

260,000 Ha



Trajectory



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Results and Benefits

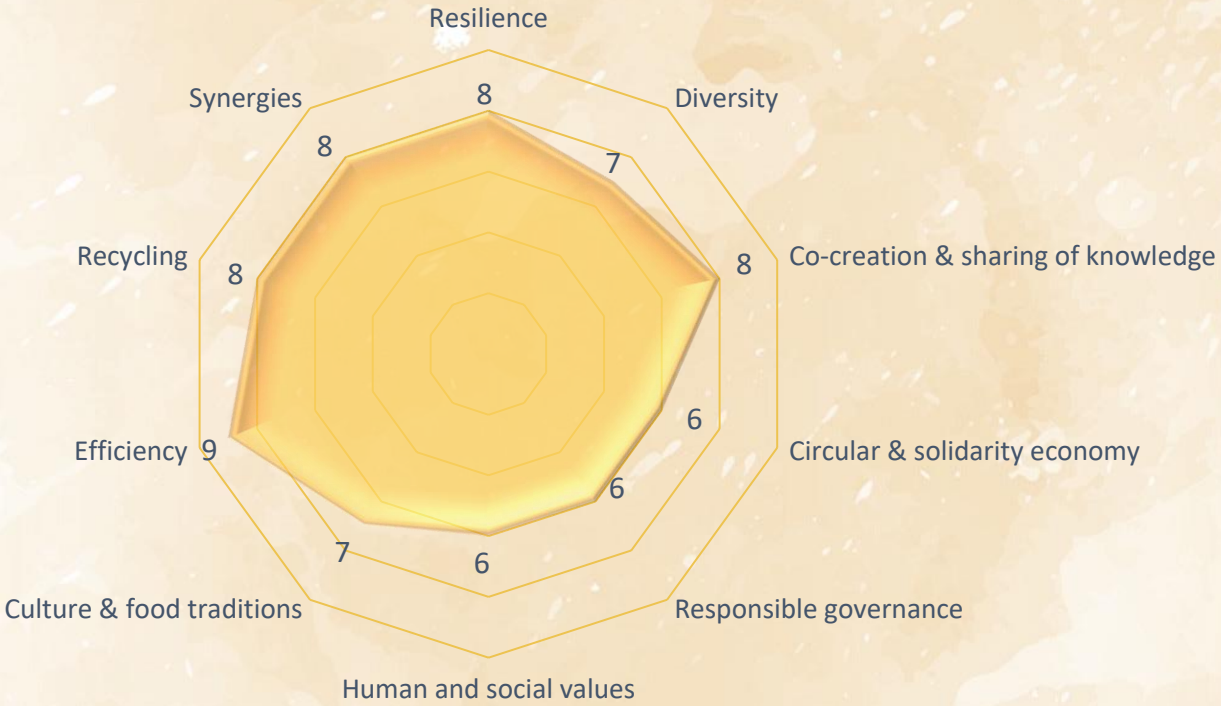
A **comparison of the cost** of **biological** inputs with that of **chemical** inputs has revealed that the cost of ZBNF inputs per acre is much cheaper. **Costs have been reduced** by **27%** in Srikulam district and by **90%** in Nellore district.

Soil health has been enhanced, which is essential for **plant health**. Soil **fertility** has also been enhanced in tandem with a gradual **reduction** of **chemical fertilizers** by using green manure, azolla, the application of silt from tanks (earth dams), mulching, natural earthworm castings, cattle manure, Neem cake and compost.

Results from Ryss-led **cropping experiments** show that farmers growing **paddy** using natural practices and have had a **51%** increase in their net income as compared to their non-ZBNF counterparts. For commercial crops, like fed **groundnuts** and **cotton**, the increase in net income was **135**% and **87**% respectively. Farmers who are traditionally vulnerable to economic shocks now have a valued **safety net** against short-term shocks with this increase in net income.

A total of **1614 Crop Cutting Experiments** (CCEs) conducted by RySS in ZBNF and non-ZBNF crops in 2017 in Kharif crops have shown encouraging results: **88**% of the CCEs have shown **increase** in net **incomes** due to increases in yield and decrease in cost of cultivation; Increases in yield were observed across all major **food** crops and **cash** crops.

Lessons learned and reflected FAO principles



Resilience: 8

ZBNG techniques have shown evidence of improved resilience of farmlands and crops in the face of extreme weather events. Farmers' resilience to drought has been enhanced. Crop residues are used to mulch fields, improving the moisture retention capacity of soil.

Diversity: 7

Adoption of ZBNF reduces the release of harmful chemicals to the air, water and soil. It minimizes the adverse impacts on the health of farmer and consumer, and on biodiversity. Several farmers have reported the return of certain bird and animal species to farmlands.

Co-creation & sharing of knowledge: 6

Farmer-to-farmer knowledge dissemination and demonstration of ZBNF farming practices conducted by master farmers at farmer field schools are good example of sharing of knowledge. The program has a video dissemination component to accelerate the knowledge sharing and awareness-raising process.

Synergies: 8

ZBNF techniques have checked adverse impacts of climate change successfully. Farmer awareness about the impacts of soil degradation, soil nitrogen contamination and crop burning on climate change has helped contribute to climate change mitigation.

Recycling: 8

ZBNF inputs are biological and are produced on-farm at little or not cost by the farmers. As a form of regenerative agriculture, ZBNF practices enhance ecosystem services and biodiversity for food security and sustainable livelihoods.

Human & social values: 6

ZBNF is resource efficient as it conserves financial and natural resources while increasing crop yield. The program helps participating farmers to enhance their livelihoods across the agricultural value chain.

Culture & food traditions: 7

Diversification of farm production has provided the nutritional advantages of a more diverse diet. By drawing on Indian traditions appreciation for culturally appropriate food is enhanced. Indigenous open-pollinated seed is widely used.

Efficiency: 9

Crop cutting experiments of both commercial and food crops indicate that ZBNF farmers in AP have witnessed a sharp decline in input costs and an improvement in yields. As a result, they earn better net incomes.

Responsible governance: 6

The initiative is organised by the State government and managed by RySS, which is a non-profit organization. In each village, Community Resource Persons, women's self-help groups and their Village Organizations (VOs) provide leadership.

Circular & solidarity economy: 6

Participating farmers form Self-help Groups at the village and cluster federation levels. Theses farmers' institutions facilitate aggregation for their produce to achieve economies of scale and enhance their negotiation power in the marketplace.

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The AVACLIM project aims to create the necessary conditions for the deployment of agroecology in arid areas.

For more information : www.avaclim.org

Financial partners:

gef

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