

INDIA



Renuka Bio Farms

The Mission of the initiative is to empower marginalized rural people, especially women, children and dalits so as to emancipate them to maintain a sustainable social change for good by restoring land and increasing resilience by enrichment of soil, rainwater harvesting and cross fertilization of indigenous knowledge and modern techniques of farming

Map

The initiative is located in the Chittoor district in the Rayalaseema region of the Indian state of Andhra Pradesh. The climate is tropical and the district receives an annual rainfall of 438 mm mm, most of this falling between June and December. Forests cover 30% of the land. Farming enterprises include mangos, tamarind and cattle.

Soils of the district are fertile., but Chittoor is one of the most drought prone districts in the country, a problem exacerbated by depletion of natural resources, global warming, increasing population pressure, pollution, loss of biodiversity and extinction of key species.



Context



Small-scale and marginal farmers in the district are disproportionately vulnerable to the severity of extreme climate events. < 90% of farmers own less than two hectares of land and live and work in a fragile ecosystem.

Agricultural products from the state include rice, groundnuts, pulses, chilies, neem (*Ajadirrecta indica*), tamarind, bananas, mangoes and cattle products.



Description

Renuka Bio Farms (RBF) was established in 2005 to restore a 20 acre degraded patch of land in Routhsurmala village of Tottembedu block. Since that time the initiative has gradually expanded and successfully used eco-restoration practices to create a productive agroecological production system on 1,000 acres.

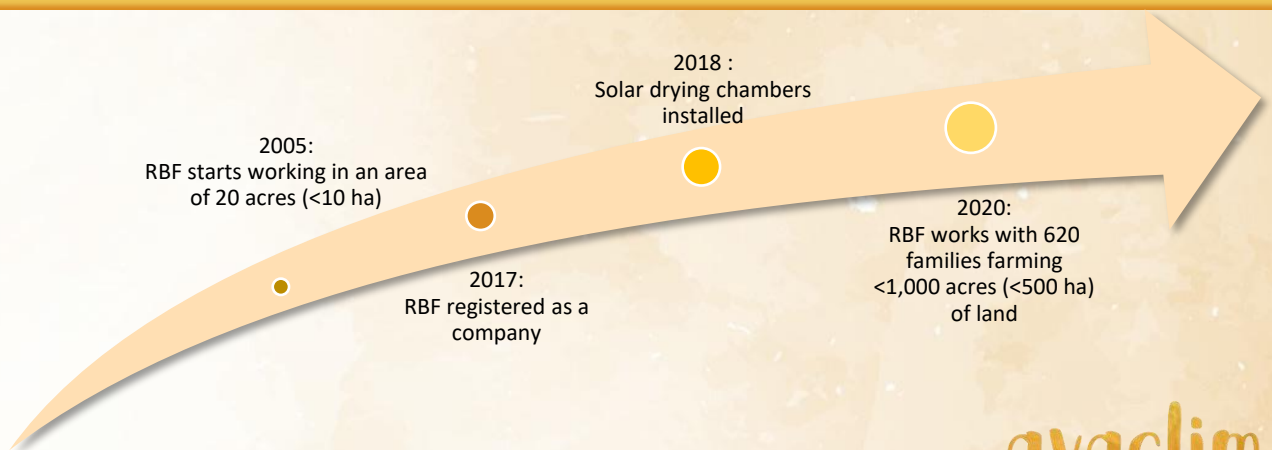
The initiative is supported by a team with expertise in agroecological farming, and demonstrates a balance between ancient knowledge and modern techniques without any chemical usage. RBF is an incubator for local farmers for capacity building and developing knowledge on agroecological methods of farming.

The initiative is focused on the well-being of the rural poor, regeneration of natural resources and watershed management and the promotion of organic farming and marketing. Empowerment of women and alternative banking are important elements of promoting of rural enterprises and livelihoods. The capacities of local government (Panchayati Raj) are enhanced by the initiative, to enable them to serve the communities more effectively.

The development of the capacities of the youth to promote sustainable development ensures the sustainability of the communities. The initiative reduces the cost of cultivation and enhances crop productivity, including by promotion of irrigated crops and effective water management techniques and dryland horticulture. Improving livestock productivity is also a priority.

Green manure agroforestry species and plants with insecticidal properties are grown on the borders of fields and farmers use ethno-botanical practices for control of plant pests/ diseases and for animal health care. They prepare and use “Bio-booster” and liquid manure and use them at least three times during the crop cycle for most crops. The initiative has been supported by advisors and scientists.

Trajectory





Results & Benefits



Sustainable agricultural practices have led to **increased soil fertility** and **controlled pests**. Production has increased despite limited water resources using **micro irrigation systems** such as drip irrigation, kitchen gardening and **off-grid power generation** through solar energy benefitting around 20 families.

Income levels of poor farmers have increased in the villages of Chittoor district. Average yields for paddy have increased from 25 up to 28 X 75 kg bags per acre. The replacement of external inputs with **cow-based products** has reduced the cost of production.



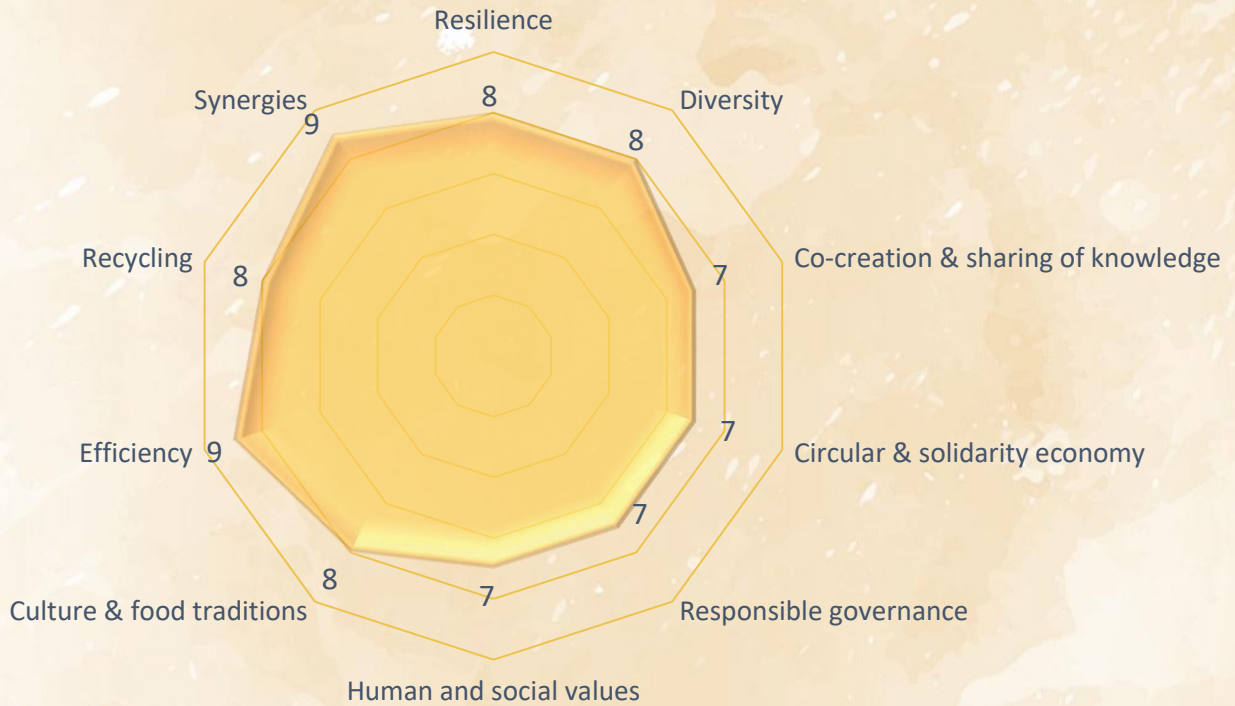
Rainwater runoff is managed more effectively using bunds and farm ponds, thus increasing **biodiversity** in soils and above ground. The diverse farm ecosystems attracts sparrows and other birds into the habitat. Land, water and biodiversity are being regenerated through **conservation efforts** and good **natural resource management practices**.

Beneficial Microbes are produced and used at farm level, increasing the **effective microorganisms** in the **soil**. Neem powder used as a **bio-fertiliser** to regenerate depleted soils, and as **bio pesticide** to control pests. Native breeds of cattle have been conserved and their by-products utilized for agriculture activities.



Moringa has been adopted as a '**super food**' and is produced by many of the participating farmers. Mango and sapodilla (*Manilkara zapota*) are produced for their nutritional and health benefits. Agroforestry species *Gliricidia sepium* and *Cassia siamea* are grown to provide fodder for livestock.

Lessons learned and reflected FAO principles



Resilience: 8

Enhanced soil organic carbon and effective water management have reduced vulnerability to drought and excessive rainfall. Sustained production of a wide range of health giving and income generating food crops and other products have enhanced the health and general resilience of participating farmers, their families and communities.

Human & social values: 7

Local traditions and values underpin the initiative. Exposure of people to harmful toxins has been minimised and yields have been protected from pests. Active participation by women has created amore equal society and the youth have been drawn back to agriculture.

Diversity: 8

Cropping systems include diverse vegetables and millets that contribute to food and nutritional security. Agroforestry species contribute to agrobiodiversity and effective management of rainwater have increased biodiversity in soils and above ground.

Culture & food traditions: 8

The initiative has had a positive impact on the diets, health and lives of small holder farmers. Farm diversification, better use of local resources and greater access to markets have resulted in significantly increased levels of food security.

Co-creation & sharing of knowledge: 7

Agricultural practices based upon traditional seed harvesting and knowledge of the health-giving properties of trees (Nakshatra Vana, or Garden of Stars) and scientific knowledge are integrated in the farming techniques. The bottom-up agroecological approach systematically builds on the knowledge and traditional practices of local people.

Efficiency: 9

Farmers produce green manures, "bio-booster" supplements and liquid manures from their own resources to maintain fertility. They practice ethnobotany to control of pests and diseases of crops and for livestock health. Micro irrigation systems reduce water use.

Synergies: 9

New synergies have been created in the form of mixed and integrated farming systems. Water harvesting practices retain water in soils, field residues are used as livestock fodder, and livestock manure and urine sustains on-farm ecosystems. Greater self-reliance and empowerment have reduced poverty and ensured food security.

Responsible governance: 9

Farming families are organised in self-governed Self Help Groups and Farmer Producer Organizations, creating responsibility and accountability. The initiative is guided by a competent technical team and an Advisory Board that includes scientific experts.

Recycling: 8

Natural fertilisers from cattle urine and dung maintain fertility and farm waste is converted into cattle feed and compost. Rain and groundwater resources are harvested and conserved by renovation and de-silting of farm dams. Open-pollinated varieties of seeds are conserved to reduce costs and conserve local genetic resources.

Circular & solidarity economy: 7

A network of Farmer Producer Organizations links farmers to customers in the surrounding countryside. Linkages have been created for marketing Moringa products, vegetables and mangoes. Economic benefits are retained within the community to build stronger and sustained livelihoods.

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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:



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