

INDIA



Dharamitra

The mission of Dharamitra is to bring about the sustainable development of rural people by the judicious management of natural resources and promotion of ecological agriculture. The organisation promotes appropriate eco-friendly technologies to address problems faced by marginalised rural people so as to conserve the environment and promote sustainable development.

Map

The initiative is located in Central India, encompassing Vidarbha District and the adjoining districts of Madhya Pradesh and Chhattisgarh. Vidarbha lies on the relatively level, northern part of the Deccan Plateau which has a tropical savannah climate with dry conditions prevailing for most of the year, and a monsoon season between June and September. In this area the mainstays of agriculture are cotton, soya beans, pigeon peas and chickpeas. Most crop farming is rain fed. The main cash crops of the region are cotton, oranges and soya beans. Traditional crops are sorghum (jowar), pearl millet (bajra) and rice.



Context



Dietary based anaemia is a wide-spread problem, especially amongst young women. The area is facing an acute agrarian crisis. One of its causes is climate change and the increasingly unpredictable monsoon resultant crop failure. Farmers increasingly extract ground water through bore wells to overcome this misfortune. To dig bore wells, farmers borrow at prohibitively high rates of interest from private money lenders, and the ground water table is dropping rapidly.



Description

The initiative is supported by Dharamitra. A range of activities are undertaken including **sustainable agriculture** and income generation, **alternative cultivation practices** and **organic recycling** and **renewable energy**. Soil and water conservation, greening of land through tree cover and introduction of bio-diversified systems in farming. The farmers in each village have organized into "**Farmers' Study Groups**", which are facilitated by a **trained motivator**, who is a young practicing farmer from the same village.

Dharamitra has supported the **agroecological transition** by providing farmers with access to viable non-chemical agricultural practices through training, demonstration and exposure visits. Follow up and monitoring has helped address any problems and data on crop yields as well as cost-benefit of crop production has been collected and analysed. The randomly collected soil samples from farms of the beneficiaries are also analysed for physical, chemical and microbial parameters.

Research and **technical innovation** has supported the agroecological initiative. Scientific validation of the **qualities** of **liquid manures** (Panchgavya, Armitpani and five variants of Sanjeevak) involved chemical analysis of plant nutrients and microbial and fungal analysis and revealed that these organic growth promoters contained **beneficial microbial populations** which helped in soil amelioration.

Home kitchen gardens produce 15 to 20 types of vegetables in the courtyards of homes of more than 2,500 families in 35 villages. Benefits accruing to these families include abundant availability of organically grown fresh vegetables for **self-consumption**, more consumption of vegetables by women, saving of cost usually incurred for purchase of vegetables and improvement in general health.

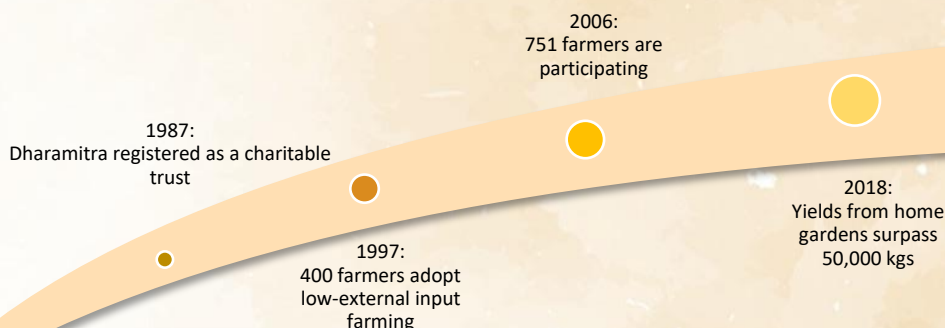


<2,000 small-scale farm families participate



322 kitchen gardens yielded, about 150 to 200 kg of vegetables per family

Trajectory





Results & Benefits



A **cost-comparison study** examined costs of inputs for the conventional chemical-based farming system and a comparable system under OGP treatments showed that the average monetary savings under the OGP system was **42%** for pigeon peas and **75%** for wheat.

A **soil amelioration study** revealed that soil samples drawn after harvest of crops showed higher levels of **plant nutrients** and beneficial **microbial populations** in the plots treated with **OGPs** compared to that of the soils under chemical treatment as well as control plots. This is associated with positive changes to the soil profile in terms of its natural fertility.



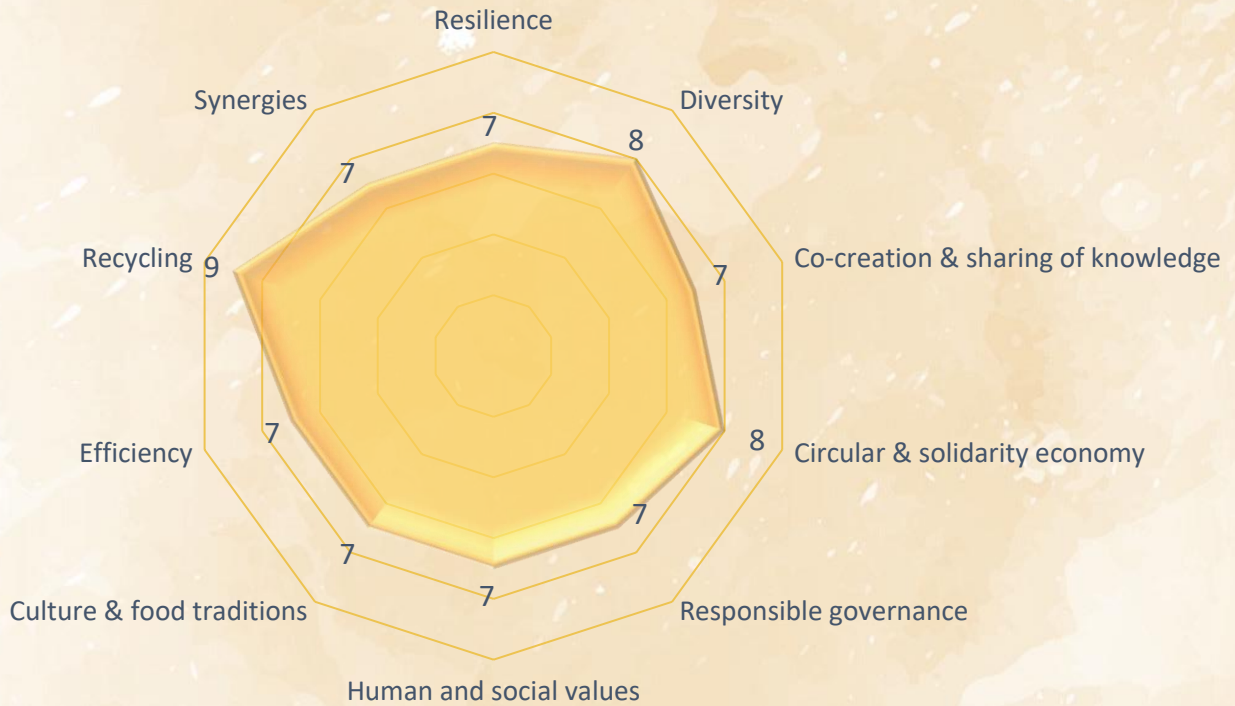
A **comparative study** of the **yields** achieved for cotton, pigeon peas, soya beans, Bengal gram and wheat under different treatments showed that the crop yields of grains and other produce under agroecological conditions was higher than chemical treatment by **23%** to **53%**.

In Wardha district, the haemoglobin of 373 women from 5 villages was tested revealing that 60% - 90% of women in each of the five villages had haemoglobin count between 7 and 9, indicating moderate to severe anaemia. The same year, 75 families raised kitchen gardens. When 115 women from these families were tested again a year later, the number of women with a healthy haemoglobin count of 11 and above had risen from 9 to 100.



Small dams and irrigation canals constructed with the active participation of local people enabled irrigation of **820 ha** of drylands owned by 339 farmers in four villages in the Yavatmal and Buldhana districts. Productivity of crops has increased, and multiple crops are grown in different seasons. After 11 years the system is being very successfully managed by the Water Use and Management Committees elected by the villagers.

Lessons learned and reflected FAO principles



Resilience: 7

Ecological agriculture incorporating traditional practices and scientific research has enhanced the resilience of people, communities and ecosystems. Appropriate technologies have also contributed to enhancing resilience.

Human & social values: 7

Water Use & Management Committees based on common values promote equitable access to water resources. Health education has improved nutrition and reduced anaemia. Livelihoods are enhanced by reducing production costs, decreasing dependence on markets, improving soil health, increasing crop diversity, enhancing net profits.

Diversity: 8

Farmers have diversified their crops with locally adapted traditional varieties, and regenerated land, water and biodiversity with good natural resource management practices. Joint Forest Management reverse the damage of deforestation, overgrazing and forest fires. Tree cover is restored and biodiverse farming systems are in place.

Culture & food traditions: 7

Farmers produce and consume a much wider variety of food crops and medicinal plants based on the traditions of the area, resulting in healthy, diversified and culturally appropriate diets.

Co-creation & sharing of knowledge: 8

Traditional knowledge is synthesised with appropriate modern technologies to address farmers' concerns. Strong farmer networks enable information sharing and women play an important role in seed selection and seed saving. Farmers' Study Groups promote collective learning.

Efficiency: 7

Use of local technologies, resources and knowledge that optimize and sustain yields with minimal negative impact on the environment has decreased dependency on external inputs. Organic kitchen gardens reduce household expenditure, improve health and reduce medical expenses.

Synergies: 8

Land and water resources are rehabilitated with bunds, water harvesting structures, mulching, cover cropping and contour plugging and planting. Plant/animal based extracts enhance crop production. Crops suited and adapted to the region create synergies in the farming systems.

Responsible governance: 7

Grass-roots governance structures such as Water Use and Management Committees work with Dharamitra, a non-governmental voluntary organisation (NGO) that is structured as a charitable trust.

Recycling: 9

Effective management of rainwater and ground water resources recycles water resources within the production system. Nutrients are recycled using organic growth promoters based on local inputs. Organic waste materials make low-cost paper, board and fuel briquettes.

Circular & solidarity economy: 8

Self-organised 'Village Agricultural Funds' meet the monetary requirements of farmers for purchasing inputs for the agricultural operations. Sale of surplus produce has improved livelihoods, and Producer-Consumer Linkages have been developed to facilitate the sale of surplus organic food.

Contacts and Bibliography

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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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