

# Protection and rehabilitation of degraded soil in India



## Context

Half of India's population works in the farming sector. In rural areas, smallholder farming continues to constitute the basis for local food security. Yet about half of India's territory (147 million ha) is affected by land degradation caused by water and wind erosion as well as soil salinization and acidification due to inadequate agricultural practices or inappropriate irrigation. Cropping areas are under increasing pressure from high population growth, intensive land use and climate change. The Indian states of Madhya Pradesh and Maharashtra are particularly affected by drought and soil erosion, which increase cropping risks for smallholder farmers.

State programmes and subsidies focus on irrigation systems and mineral fertilizers. Agro-ecological practices and alternative techniques to improve soil health and soil organic carbon contents are not yet sufficiently mainstreamed. At state level, public advisory services reach only a fraction of farmers and sustainable soil management is not a core component of their training. Learning experiences regarding the successful implementation of agro-ecological approaches by civil society organisations, the private sector or the scientific community often do not find consideration in policy-making processes.

## Activities in India

- **Competences for soil health management:** Farmers are trained in implementing agroecological measures for climate-smart soil protection and rehabilitation and apply those independently. Women have access to trainings on the management of homesteads and community nutrition gardens to increase and secure food and nutrition security.
- **Nutrients from urban organic waste for soil fertility management:** The Urban-Rural Nutrient and Carbon Cycle (URNCC) initiative establishes sustainable market-oriented approaches and value chains e.g., a digital marketing platform and business models to use city compost and *Terra Preta* in rural areas.
- **National network for the promotion of biochar and bioresources for soil health management:** Members of the network have access to training and exchange events. The network disseminates practical learning experiences, scientific studies and business models for the production and application of biochar and other

### Our objective

Approaches for soil protection and rehabilitation have been implemented on **155,000 hectares**.  
The situation of **50 percent of women** has improved.  
**Yields** on the treated fields increase by **28 percent**.  
The **broad-based implementation** of soil protection and rehabilitation for climate adaptation and mitigation is made possible.

climate-relevant soil improvers.

- **Digital solutions:** A digital-analogue extension approach supports the agricultural extension system in fulfilling its extension mandate efficiently. Digital planning instruments support landscape-based approaches for soil protection.
- **Videos as a key to success:** Learning videos and testimonials in local language serve to disseminate knowledge and have been viewed over 7,500 times.



## Regions

5 districts in the state of Maharashtra and  
2 districts in the state of Madhya Pradesh

## Duration

04/2015 – 12/2024

## Budget

25,030,000 EUR

## Commissioning party

German Federal Ministry of Economic Cooperation and  
Development (BMZ)

## Implementation partners

National NGOs, National and international research  
institutions, Agricultural advisory and training  
institutions

## Lead executing agency

National Bank for Agriculture and Rural Development  
(NABARD)

## Target group

Smallholder farmers and producer groups



## Practical example

### Empowerment through access to knowledge and knowledge transfer

"If we can show that we can harvest more with sustainable cultivation methods than before, then this will also convince the other farmers" - thanks to sustainable soil management and innovative cultivation techniques, the rice fields where farmer Rajkumari from the Mandla district in the Indian state of Madhya Pradesh works deliver 30 percent higher yields than before. The leader of the Kuruvahi Mahila Sabha, a women's collective consisting of 80 farmers from three villages, passes on the necessary knowledge about sustainable soil management to other women and thus strengthens their role in agriculture, family and village community.

"Last year, only a few women farmers tried the concept of sowing paddy seeds in a row. This year, everyone is trying it on a small piece of land. We learn how to make low-cost organic fertilizers and pesticides from locally available products such as leaves, jaggery (unrefined cane sugar), cow urine and manure." Through the direct transfer of knowledge about agricultural technologies, women are empowered to implement sustainable approaches on farms independently. Thanks to the newly acquired role, women are respected, and their concerns are heard. Rajkumari got to know the methods of sustainable soil management in a training supported by the Soil Protection and Soil Rehabilitation for Food Security project.



### Impacts

Through the work of the project, not only around 25,000 hectares of land have been rehabilitated in Madhya Pradesh. Women's access to the various administrative levels such as the Gram Sabha (general body at village level) and the Panchayats (village council) has also improved. Sustainable farming methods have been introduced in 4,662 women-run home gardens and ten community nutrition gardens.

By the end of 2022, the project had reached a total of **54,027 smallholder farmers**, 51 percent of whom were women. On a total area of **52,680 hectares**, agroecological measures suitable for **adaptation to climate change** were implemented and 9,337 soil health cards were issued.

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