

A close-up photograph of a hand holding a handful of dark, rich soil. To the right, the root system of a plant is visible, extending into the soil. The background is a blurred field of similar soil and plants.

Good practices in capacity building and awareness creation on sustainable nitrogen management

David Kersting, GIZ – Project Manager
Soil Protection and Rehabilitation of degraded Soils in Western Kenya
UNEP – GPNM Webinar “Advocating Organic Farming for Sustainable Nitrogen Management in Africa”



Implemented by

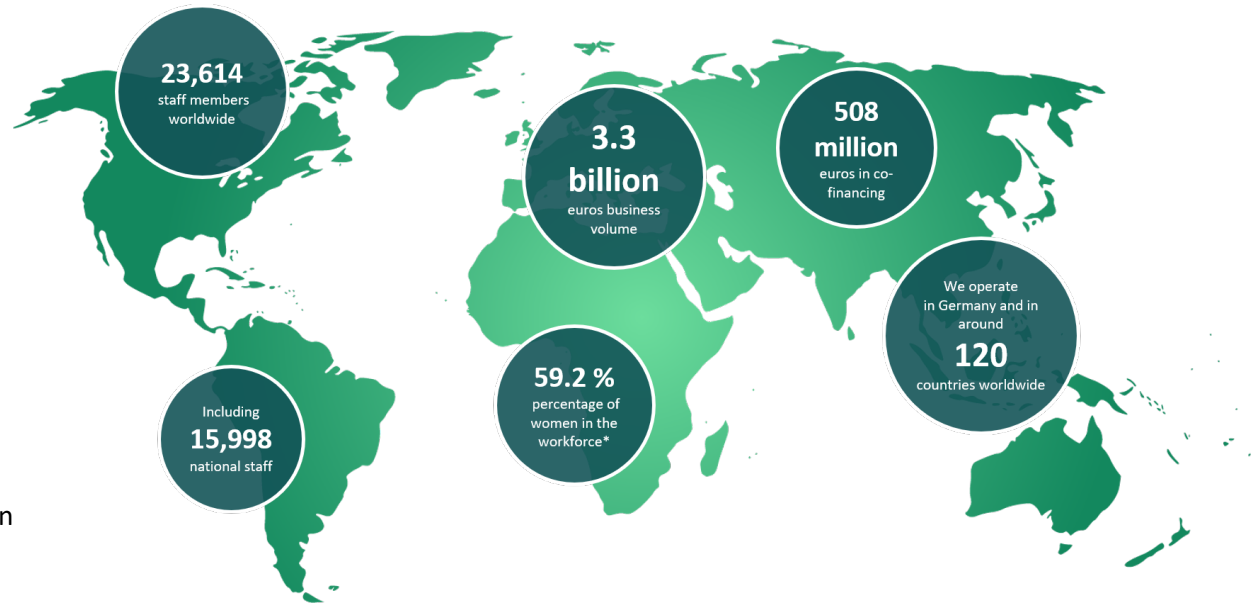


Who we are

GIZ Worldwide

As a public-benefit **federal enterprise** we support our **partners** in their efforts to shaping a **future worth living** around the globe.

- We support the German Government in achieving its objectives in the field of international cooperation
- We promote international education work and human **capacity development**.
- As a federal enterprise our work is based on **German and European values**.



Global Programme „Soil Protection and Rehabilitation for Food Security“ (ProSoil)

The programme in a nutshell



Duration

11/2014 – 03/2026



Budget

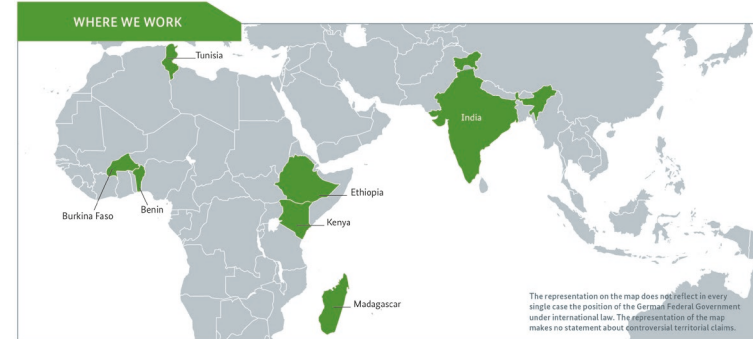
Contract value: **240 million EUR**,

incl. 3 million EUR co-financing by the Bill & Melinda Gates Foundation and 20 million EUR by the European Union

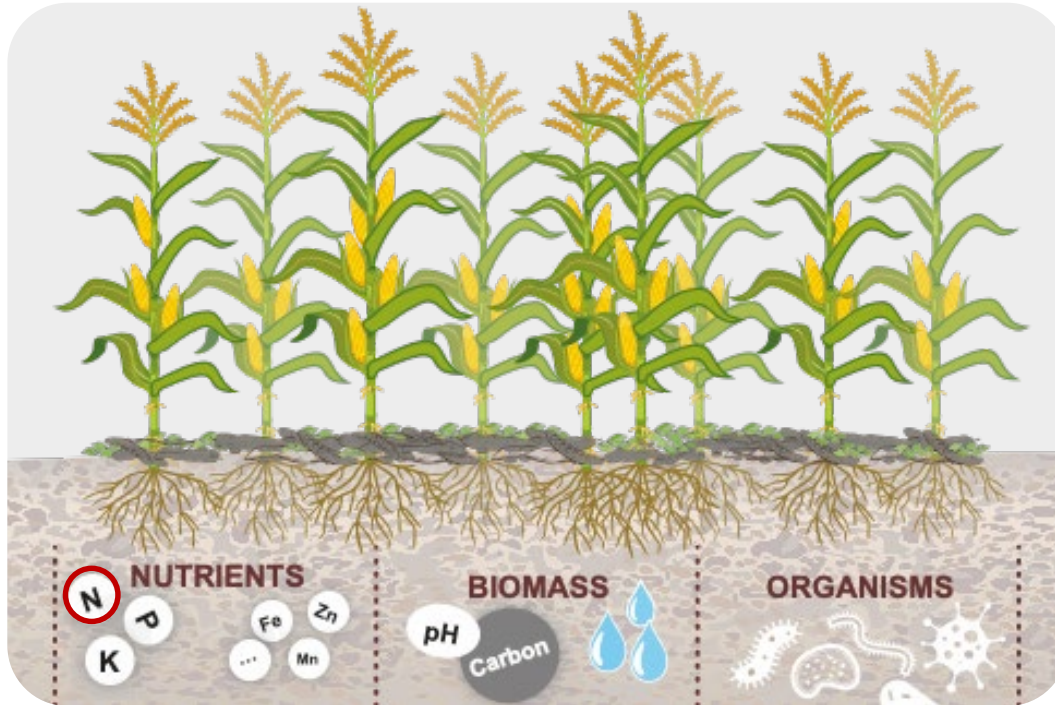


Goal

Large scale implementation of sustainable approaches to soil protection and the rehabilitation of degraded soils.
8 Projects in 7 countries



The role of biological N-fixation in Integrated Soil Fertility Management



- N is **one of many** but a critical soil health indicator
- Biomass availability benefits nutrient availability → ISFM builds on synergies between **mineral and organic** soil amendments
- ISFM enhances **resource efficiency** → not a question of ideology but an economic necessity
- Organic farming (biomass-based soil amendments addition only) works under **favourable market conditions**

Potential and limitations of biological N-fixation (example: *mucuna pruriens*)

- ProSoil promotes a range of **green manure cover crops** in the framework of the ISFM concept; among them velvet bean (*mucuna pruriens*)
- **Multiple benefits** of *mucuna pruriens*
 - Up to 300 Kg/ha of nitrogen (substitute for fertilizer)
 - Biomass production → soil organic matter
 - ground coverage → protection against soil erosion
- Experience shows that adoption by farmers is most likely to be sustained if there's a secondary **purpose beyond soil health** enhancement
- Potential for human consumption is limited by **high processing requirements** and **limited demand**
- Other purposes livestock / fish feed, medical purposes face context-specific **barriers** (cost, demand, certification, etc.)



Good practices in promoting biological N-fixation

- Think **beyond N-fixation** from the start!
- Transforming a farming system means changing behaviour and continuous consultation with farmers (**minimum of 3 years**)
- Be conscious **that different audiences** require different ways of communication (age, gender, position)
- Understand farmers economic realities (usually emphasize **resource efficiency** rather than fertilizer substitution)



Conclusion and recommendations

- Governments to investment into **agricultural extension services**
- Governments to **incentivize good agricultural practices** such as green manure cover crops (through rules, **regulations** and **subsidies**)
- Support private sector investment in biological N-cycling **beyond immediate agricultural production**
- Where economically feasible; create an enabling environment for **organic farming** in Africa and worldwide