

WHITE PAPER | JULY 2022

# Transforming food systems from the bottom up



How locally developed social innovations can strengthen  
enabling environments for soil restoration



german  
cooperation

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### Programme/project description

Global programme "Soil protection and rehabilitation for  
food security" (ProSoil)

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Cover: Farmers sowing maize in Western Kenya  
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On behalf of:



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## Message 1

# The sustainable management of soils is a key lever in the transformation of food systems

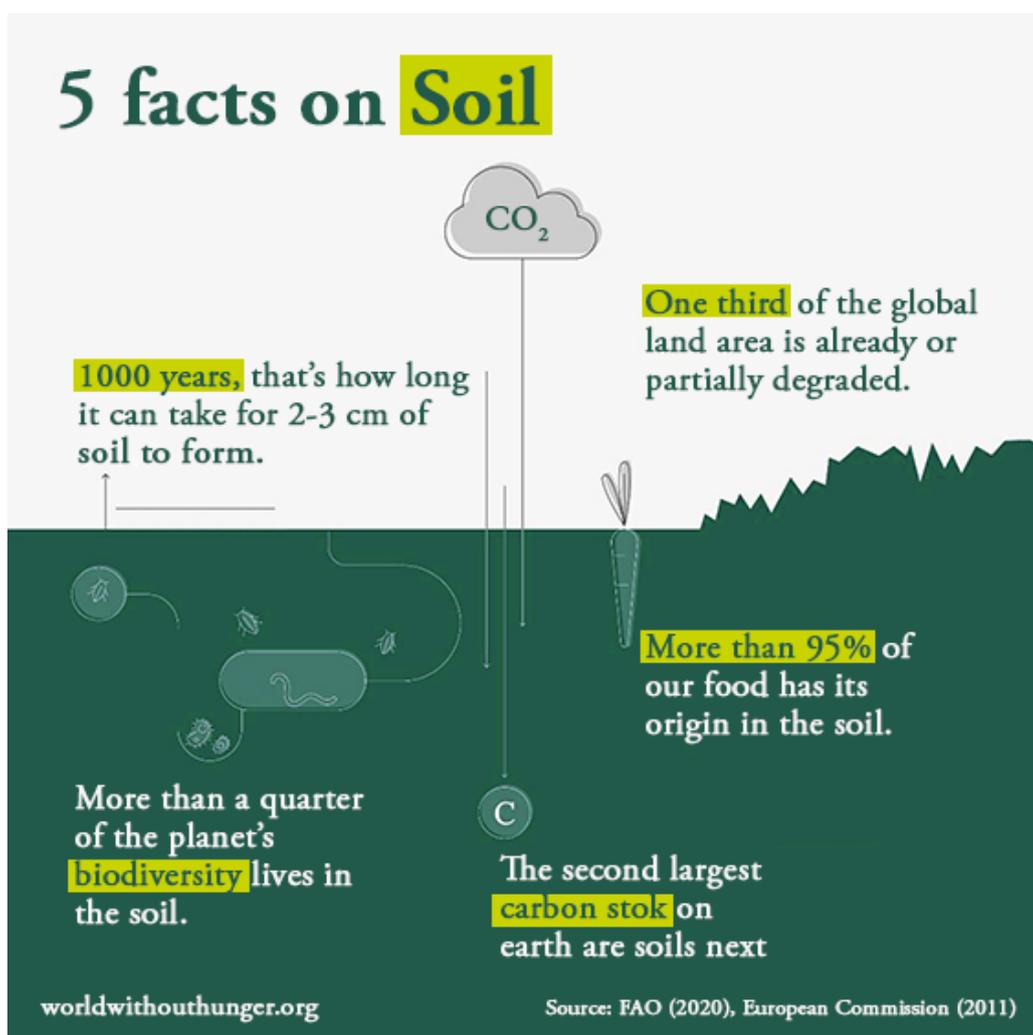
Our food systems are broken. Around 10% of the world's population (up to 811 million people) suffer from hunger. Climate change, environmental degradation, population growth and conflicts are the main drivers of food insecurity. At the same time, the way we produce food contributes to nearly 60% of biodiversity loss, 80% of deforestation, and up to 21% greenhouse gases (including land use and forestry).

The way we manage soils is key to the transition towards sustainable food systems. Beyond the provision of food and fibre, and livelihoods for millions of farmers, soils fulfil multiple other functions. They are the largest carbon sink on land.

Restoring and protecting soils can store around 3.4 to 5 gigatons of carbon per year. Soils also host a quarter of the world's biodiversity and play a key role in water purification and storage as well as nutrient cycling.

However, soils are under threat. Up to 40% of soils worldwide are degraded. The major drivers include harmful agricultural practices and expansion and land use conversion from natural ecosystems like peatlands, forests and grasslands.

While the COVID-19 crisis and conflicts have reshuffled priorities, there is a greater need than ever to ensure that soils are high on the political agenda – especially in the transformation of our food systems.



## Message 2

# The 'One World, No Hunger' initiative has opened a space for food system transformation and innovation

The transition towards sustainable agri-food systems is an enormous task that requires technological and social innovation to not only develop the right solutions but also ensure that these are implemented at the needed scale. The 'One World, No Hunger' initiative (EWOH) of the German Federal Ministry for Economic Cooperation and Development (BMZ) has made innovation its guiding principle.

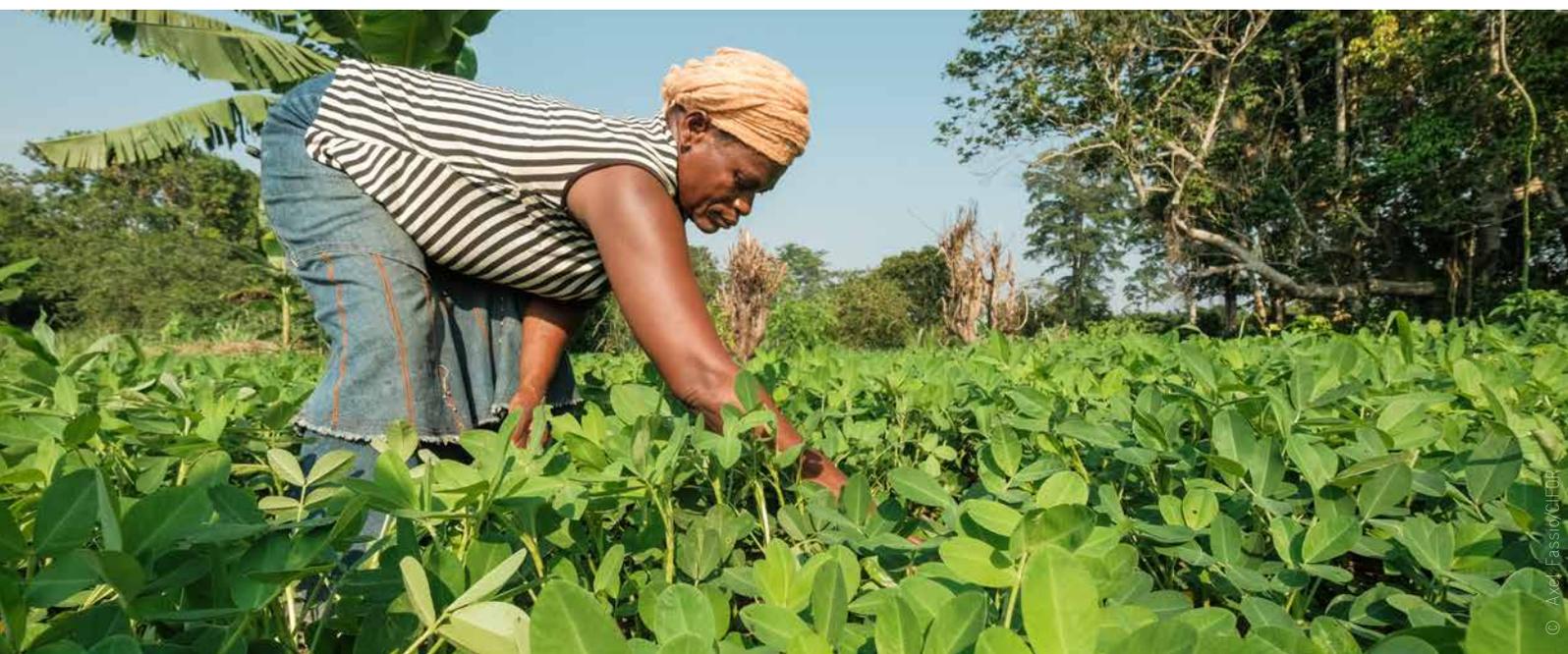
With around 1.5 billion EUR of annual investments, Germany is the second largest donor to fighting hunger. The EWOH has established a network of 'Green Innovation Centres for Agriculture and Food Sector' in 15 countries. Through this network, actors at local, national, and international levels collaborate to innovate agricultural value chains, with the aim of improving incomes for millions of farmers.

The initiative's vision is to achieve Sustainable Development Goal 2 (No Hunger) without compromising the natural resource base on which food production depends. Hence, another core programme is 'Soil Protection and Rehabilitation for Food Security' (ProSoil). The programme seeks to protect and restore over 706,000 ha of land, an area 3.5 times the size of Mauritius. The programme adopts a multi-level approach. It works with affected smallholders at the

local level promoting best agricultural practices and at the political level shaping agricultural policies for holistic soil strategies, and it collaborates with research to innovate and strengthen the enabling environment for soil restoration.

### → THE OBJECTIVES OF THE ONE WORLD - NO HUNGER INITIATIVE UNTIL 2024

-  Improve nutrition for more than 7.5 million people, particularly women and children
-  Boost incomes for 3.2 million smallholder households
-  Support 2 million people coping with the impact of climate change
-  Access to agricultural financing for 1.9 million smallholders
-  Restore soil fertility of 1.7 million hectares of degraded land
-  Secure land rights for at least 140,000 smallholder households
-  Support more than 330,000 individuals accessing employment opportunities



## Message 3

# Research in development is a key avenue to innovate for food system transformation

Research plays a key role in the 'One World, No Hunger' initiative. TMG, a think tank for sustainability based in Berlin, has been responsible for the accompanying research for ProSoil. By supporting social experimentation to address entrenched problems at the community level, the **accompanying research** has served as a platform and breeding ground for innovation. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and TMG have **worked hand in hand** to tackle some of the structural barriers to soil restoration. This has contributed to more secure land rights in **Burkina Faso** and **Kenya**, and wide **knowledge transfer between farmers in Benin**.

Research for transformation must involve the agents needed for this change. The accompanying research was thus embedded in **multi-stakeholder, transdisciplinary collaborations** across local, national and international levels. Sustainable

solutions were developed in close cooperation with farmers, communities, and institutional stakeholders that are affected by the issues and responsible for implementation of the developed solutions. The collaborations were built on different knowledge systems and on a level playing field contributing to socially legitimate and locally adapted solutions to governance gaps (see Key Message 5 on social innovations).

**"The [EWOH] initiative helped create networks in many partner countries, linking agricultural research and applied science, business and civil society, farmers – typically small businesses themselves – and small and medium enterprises in the agricultural sector."**

(GIZ, 2022: Ideas, approaches and solutions of the special initiative "ONE WORLD – no hunger", Technical Report)



Sustainable, socially robust solutions to food system transformation can only be found in close collaboration with farmers, local communities, partners from the government, and agribusinesses, among other stakeholders. The community-led land lease guidelines in western Kenya were developed in such a joint and iterative way. Read more about how the lease guidelines are developed here or watch our short film (English and Kiswahili). © TMG Research gGmbH

## Message 4

# Few projects scale up as they fail to proactively create an enabling environment

Even after decades, investments have not yet reached the required scale to transform our food systems. **Project indicators often focus on short-term indicators** such as yield increase instead of addressing barriers to upscaling.

Technocratic solutions to soil restoration are plentiful, but they **often fail to address entrenched socio-cultural and governance barriers** that hinder farmers from adopting sustainable soil management practices. The transformation of food systems thus requires both technological and social innovation.

The accompanying research to the EWOH's global soil programme ProSoil involved an in-depth analysis of 39 programmes for sustainable land management (SLM) and agricultural development in **Benin, Burkina**

**Faso and Kenya**. This analysis found that the programmes have a hard time reaching out to support farmers to practise SLM in the long-term. Insecure land access, poor provision of agricultural extension services, and inputs and lacking labour and financial means are among the **structural\_barriers** to the adoption of SLM by smallholders.

**"Counting household adoption at the end of a grant project is a poor metric of whether these people can and will sustain adoption after the project closes, let alone if adoption will reach others and actually contributes to improved livelihoods."**

(Woltering et al. 2019 in "Scaling – from "reaching many" to sustainable systems change at scale: A critical shift in mindset")

## Insight story

# How insecure access to land limits women's investments in soil restoration in Burkina Faso

**Land tenure insecurity is a main impediment** to agricultural production and sustainable natural resource management. In Burkina Faso, women, who make up half of the agricultural labour force, are often **discriminated against in land allocation, control and ownership**. Under customary land governance regimes, which prevail in rural Burkina Faso, women's land use rights can be withdrawn at any time. As women improve the productivity of their land, **they increasingly risk losing it**. Land right holder, often their husbands, often seize the land to produce cash crops. This phenomenon is commonly referred to as **'forced rotation'**. Hence, many women refrain from making long-term investments in land productivity, such as soil fertility measures, which limits their potential to enhance agricultural production, incomes, and financial autonomy.

Progressive land policies promoting gender equality exist, but **enforcement lags behind in Burkina Faso**. Even where law implementation is advancing, women are discriminated against in the registration of land, due to patriarchal institutions and law enforcement. It is thus imperative to find alternative ways to secure women's land rights to strengthen an **enabling environment** for soil restoration in particular and sustainable food systems at large. Against this background, Burkinabé NGO Groupe de Recherche et d'Action sur le Foncier (GRAF) and TMG embarked on a journey to develop **intra-household tenure agreements** to secure women's land use rights in southwestern Burkina Faso (see social innovation #2).



Village meeting to jointly develop the *Tem Sesiabun Gorado model*, an alternative approach to farmer-to-farmer knowledge transfer based © LRIDA

“...although social innovation seems to be one of the key requirements of successful rural development, its role in this area is often underestimated.”

(Neumeiner 2012 in “Why do Social Innovations in Rural Development Matter and Should They be Considered More Seriously in Rural Development Research?”)

## Message 5

# Social innovations can strengthen enabling environments from the bottom up

Besides technological innovations, social innovations play a key role in transformation processes. This is especially pertinent in the context of soil restoration. Soil management practices are not socially, economically, or culturally neutral; their long-term adoption often requires **changes in behaviours, attitudes and institutions**.

**Social innovations** are solutions anchored in local contexts that address common problems in new ways. They are not only concerned with **what** is to be achieved (outcome) but specifically **how** the solutions are developed (process).

The accompanying research led by TMG developed social innovations to tackle the structural barriers of soil and land restoration. The innovations address women’s land rights within the household in Burkina

Faso, land leasing in Kenya, and farmer-to-farmer knowledge transfer in Benin.

Together with grassroots partners, innovations were developed through a locally embedded process. The innovations seek to overcome governance gaps, such as lacking local structures to secure land rights for vulnerable groups. By jointly developing the innovations, participating actors acquire new skills and change their attitudes and perceptions. Such processes thus strengthen local institution building and policy implementation. Due to embedment in socio-cultural contexts, the innovations are more likely to benefit from greater social acceptability, and therefore a higher chance of being scaled up and sustained. Notwithstanding the widespread support for these innovations, political will and financial investments are key to the upscaling of any innovation.

# Tem Sesiabun Gorado – an innovative farmer extension approach in Benin

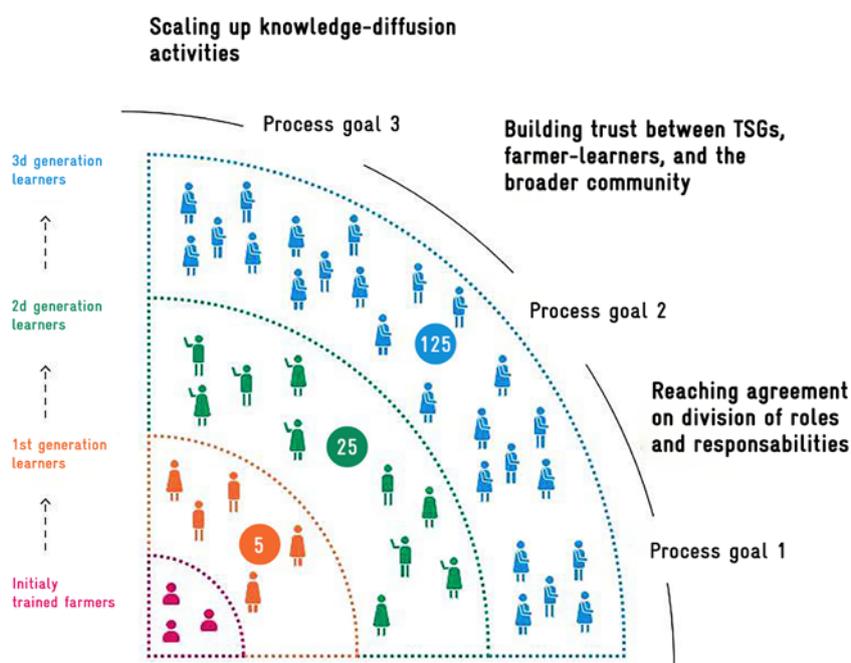
A common challenge of sustainable land management (SLM) initiatives is to reach many farmers, particularly beyond the direct beneficiaries. In northern Benin, TMG Research, together with GIZ and the Research Laboratory for Innovation in Agricultural Development (LRIDA) of the University in Parakou, Benin, have innovated in the field of agricultural extension. The accompanying research project has led to the development of the 'Tem Sesiabun Gorado' model: an alternative approach to farmer-to-farmer knowledge transfer based on the principle of social debt. Tem Sesiabun Gorado (TSG) literally translates into "messenger of the restoration of degraded soils". Rather than offering financial incentives to individual farmer trainers, the model seeks to build collective ownership of and accountability for the knowledge diffusion process, and hence ensures its sustainability in the long term.

The TSG is a farmer who is nominated by fellow villagers to receive SLM training (and inputs such as seeds, depending on the project). By acquiring know-how and inputs, the TSG contracts a social debt that

they are obliged to pay back to their community. A concrete example of this principle is the linking of knowledge dissemination to access to seed inputs. In standard agricultural extension projects, free seeds are usually reserved for trained farmers, or those hosting demonstration plots. By contrast, the TSG model stimulates farmer trainers to repay their social debt by not only sharing the knowledge gained, but also 'giving back' some of the seed received from the project that they have subsequently multiplied on their own farms. Likewise, the farmers – usually at least five – who have received training (and seeds) from the TSG must repay their social debt. In the following season, they must choose fellow farmers to whom they transfer knowledge (and seeds).

Given the success of the TSG model, the GIZ ProSoil project has adopted the TSG model as its main upscaling strategy. Between 2019 and 2021, the TSG model reached over 93,000 farmers in over 400 villages.

To learn more about the TSG model, please read our Technical Guide ([EN](#) and [FR](#)).



## Social Innovation #2

# Innovating women's land access in Burkina Faso

When rolling out soil and land restoration programmes, it is crucial both from economic and social justice standpoints to secure and protect legitimate claims to land. Yet the implementation and enforcement of land policy is weak in many countries, including Burkina Faso. In the context of the accompanying research to GIZ's ProSoil programme, Burkinabé NGO GRAF and TMG Research have developed a social innovation to improve women's tenure on family farms.

The [model for securing land access for women](#) builds on traditional land governance systems. Essentially, land use rights agreements are negotiated between the male head of household and his spouse or other female relatives. The goal is to modify existing tenure arrangements to enhance equality and security for women.

At the end of a [multi-phase process](#), involving a broad range of local stakeholders, including village leaders and local administrators, the male head of households assigns a plot of land to his wife, sister, daughter, etc. This land is GPS-recorded and registered in a collective community document. The transfer is made in front of local authorities and community members in an official village assembly. The process of the land right transfer is crucial. It is important to embed the social innovation in socio-cultural realities, such as the need for endorsement of traditional leaders, to create social legitimacy for the tenure arrangements. Villagers' decision-making power over the process and their consensus further underpins the legitimacy of these arrangements.

Given the positive effects of the models on women's tenure and their ability to invest in agricultural production, ProSoil has supported its dissemination to a total of 16 villages, where over 1,600 women benefit from more secure land access today.

For more information about the process, please read our technical guide ([EN](#) or [FR](#)) or watch our short films ([EN](#) or [FR](#)).

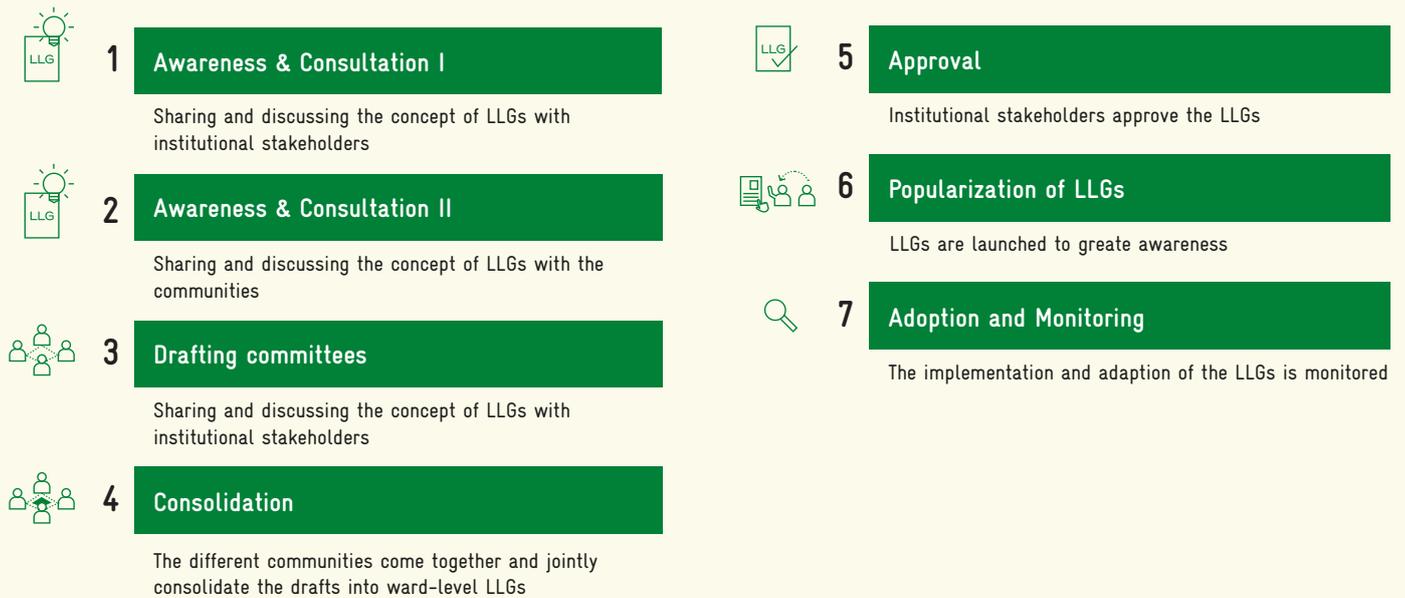
“Someone can have a land title but not be able to exploit the field simply because on the village level the people do not agree with him or her managing this field.”

(Dr. Saïdou Sanou, founding member of GRAF)



Man transferring permanent land use rights to his wife in front of the mayor of Satiri municipality, Southwestern Burkina Faso  
© S. Koudougou/ GRAF

## Process of developing community-led land lease guidelines (LLGs)



### Social Innovation #3

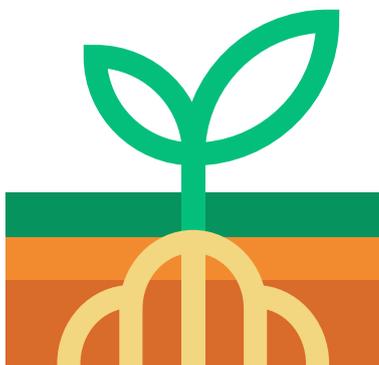
## Making land rights more secure through community-driven lease guidelines in western Kenya

Kenya is a country of high agricultural potential, but soil fertility is declining. Insecure access to land has been identified as a **major obstacle to sustainable investment in soil protection**. This particularly affects tenant farmers with short-term and oral leases, many of whom are women and young farmers. These informal leases are often short-term and offer little incentive to invest in soil and land conservation.

Against this background, **Shibuye Community Health Workers (CHW)** and TMG Research developed community-driven lease guidelines as part of the accompanying research for ProSoil. The guidelines are based on communities' local realities and endorsed by local authorities. The development, piloting and institutionalisation of the lease guidelines involved stakeholders from the community level, including local chiefs, up to the county level.

Some remarkable impacts have already been observed following the uptake of the guidelines by smallholder farmers over the past two years. According to interviews with farmers, the guidelines have reduced land conflicts through transparency in the leasing process. Overall, land tenure increased with the adoption of the guidelines. The lease agreement clearly specifies the terms of leasing; hence farmers feel more secure in leasehold transactions. A recent study interviewing 78 land tenants found that the number of soil management practices more than doubled with the adoption of lease guidelines. Some critical challenges remain, however: investments in awareness raising about the guidelines are required, especially to better inform farmers about the benefits of formal leasing. Some farmers, especially the less educated and illiterate, fear that they would sell off their land by signing an agreement.

For more information about the lease guidelines, read our **Facilitator's Guide**.



# TRANSFORMING FOOD SYSTEMS FROM THE BOTTOM UP

SOCIAL INNOVATIONS  
FOR SOIL RESTORATION  
15 JULY 2022 | 9:00–11:00 UTC

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