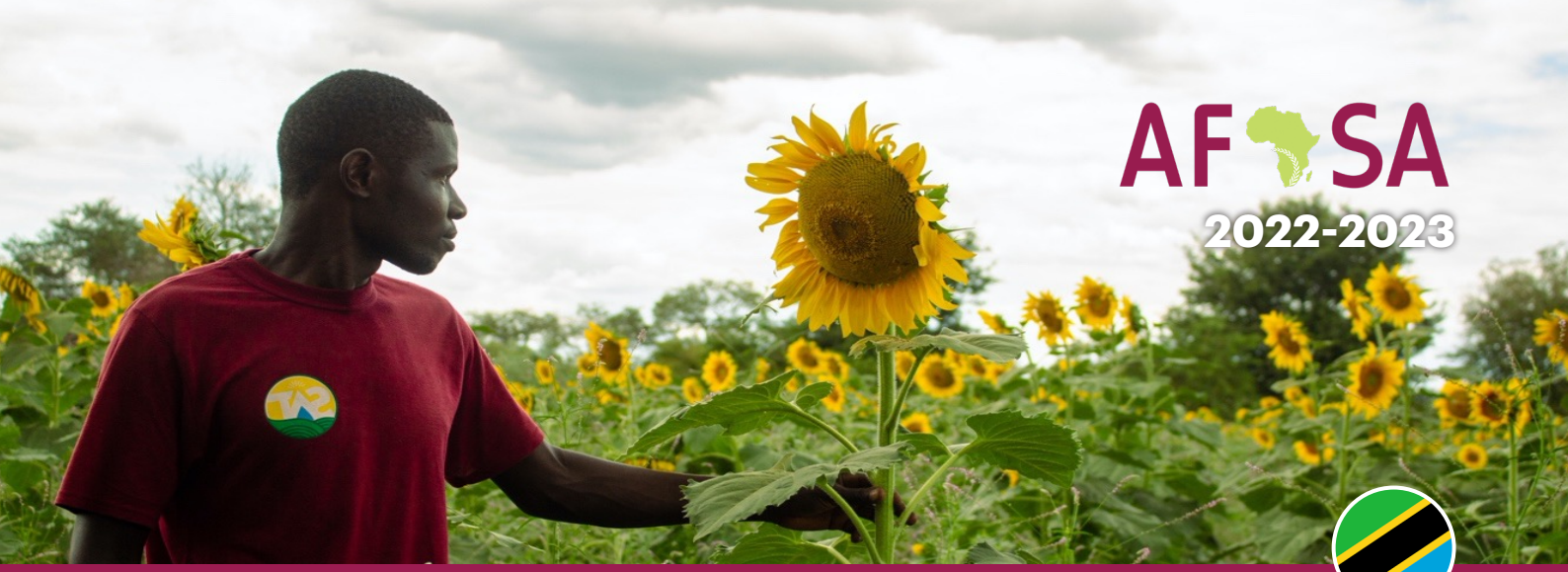


AFSA 2022-2023

FARMERS' VARIETIES ARE ADAPTED TO LOCAL CHALLENGES. BOOSTING PRODUCTIVITY THROUGH PROMOTION OF FARMERS' VARIETIES IN MOROGORO, TANZANIA.

"With farmer seeds we have been experiencing miracles in our production. We are assured of production. Despite having salinity in our soil, we still use the seeds and get good yields, we neither purchase new seeds each year again nor incur high cost of production."

Mzee Miti Mingi, farmer, Kilosa District in Morogoro.

The success story

Salinity, pests, and diseases are some of the most serious environmental stressors that negatively impact agricultural production. The effects of climate change have led to water shortages, soil pollution and increased soil salinization. These factors, plus the loss of arable land and increased human population, are now major threats to agricultural sustainability.

In the arid district of Mvomero and some parts of Kilosa District in Morogoro, Tanzania, family farmers struggle with saline soil. High soil salinity is caused by several factors, including mineral weathering, irrigation, underground water and inappropriate chemical fertilizer applications. As a result, farmers may experience poor crop production, crop loss, plant withering and dry land. For many years farmers in these districts have been facing high production costs to combat the salinity of their soil and pest and diseases such as Fall Army Worm, rusting of maize leaves, mildew disease, fusarium and stalk wilt, paddy brown spot, and bacterial leaf blight diseases. To boost production, farmers often use unsustainable and expensive farming methods, including chemical fertilizers and hybrid seeds.

Sustainable Agriculture Tanzania (SAT) promotes ecological organic agriculture and advocates for the use and preservation of farm saved seed. However, some farmers are unaware of the precious value of their local varieties and do not have adequate skills in the preservation and multiplication of seeds. Further, some of the local seeds are becoming lost due to government's promotion of improved seed[1], which is costly, not suited to saving and recycling and often not resilient in challenging environments. Focus group discussions in Menge Village, Mvomero District, revealed that improved varieties of maize were producing low yields due to pests, diseases and other environmental challenges, compared to the yields of some farmers' varieties of maize and sunflowers. Farmers in Kilosa reported that local rice seeds were resistant to salinity and more productive than improved varieties.

[1] *Improved varieties are bred for industrial agricultural systems. They have reduced genetic base compared with the high variability present in the genetic materials farmed traditionally. They also usually require external chemical inputs for peak performance.*

In 2020, SAT started an initiative called Preserving Seed Diversity in Tanzania in two districts of Morogoro Region where some excellent farmers' varieties can be found. For example, the hardiness of local maize seeds known as red cob (*kigunzi chekundu*), white cob (*kigunzi cheupe*) and purple cob (*kigunzi cha zambarau*) proved to be resistant to fall army worm. Excellent varieties of local sunflower seeds that are named after their characteristics were also identified, namely sunflower of mixed colour (*alizeti zebra*) and white sunflower (*alizeti nyeupe*). Others important local agro-biodiversity included fruits, such as local black passion (*pesheni nyeusi za kienyeji*) and local cucumber (*tango la kienyej*). Local amaranthus varieties, mchicha lishe and mchicha wa kienyeji were found to be tasty as well as resistant to pest and diseases. In Kilosa, farmers' paddy varieties – kaniki, supa kijivu, supa and mbawa mbili are appreciated for their ability to produce well in saline areas.

The project supported farmers in the identification, production (multiplication) and preservation of farmers' seeds through trainings conducted at SAT's Farmers Training Centre, and later on their groups. A seedbank was built from where further training is conducted. Through this process, farmers are able to identify and access quality local seeds that produce good yields because they are adapted to their environmental context of local pest and diseases and increased soil salinity. These seeds are also appropriate for low-resource farming systems as they don't require external chemical inputs.

How Preserving Seed Diversity in Tanzania was implemented

This initiative was implemented by SAT with financial support from Diversitatis Foundation. The aim was to disseminate knowledge about seed production to benefit family farmers and increase income generation, with an emphasis on the selection of appropriate quality seeds to improve yield and build climate resilience. Seeds were identified through farmers' knowledge and farmers provided different varieties during trainings. After several trainings these farmers were able to identify local farmers' varieties that increase yields and ensure production in sparse environment such as in saline and alkaline soils. The initiative initially targeted 400 farmers in Mvomero District, which then rippled out to other farmers. The activities that were carried out are briefly outlined below.

Mobilization and identification of farmers:

Small scale farmers were identified and trained in the identification of seeds for preservation, multiplication, and food production.

Introduction and training:

Farmers were introduced to Farmer Managed Seed Systems (FMSS), identification of seeds and field management, seed multiplication and preservation methods for assurance of quality seeds and challenges facing the farmer seed system. With the financial support from Diversitatis Foundation, SAT made follow-ups with the trained farmers and encouraged them to share knowledge and experience on FMSS.

Seed multiplication:

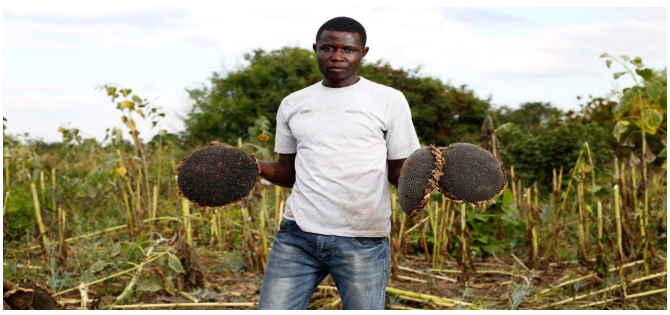
Smallholder farmers who save seed in Mvomero, Kilosa and Kilombero were linked with the seed bank management committee at SAT. This enabled farmers and SAT to identify seeds that best respond to environmental challenges for popularization and multiplication. Pioneer farmers attended seed fairs which were organized locally and nationally to access a variety of local seeds, as well as those not available in their communities. Farmers with many varieties shared their seeds for multiplication and food production in seed trainings and lead farmers trained their fellow farmers on seed selection and multiplication in their areas.

Seed distribution to farmers:

Farmer managed seeds were sourced from Dodoma and distributed to farmers in Mvomero District for seed production and multiplication. They were given the seed with the condition that they multiply and share with their fellow farmers and return part of it to SAT to strengthen the seed bank.

Construction of the Seed bank:

A seed bank was built at SAT Farmers Training Centre in Vianzi to preserve local seeds, carry out training and source seed for multiplication and distribution to farmers. All types of seeds were purchased from Dodoma; vegetables seeds including spinach and Chinese cabbage, fruits (local passion and cucumber) and cereals, mainly paddy (*domo la fisi, kitenge, mbawa mbili*). Others were collected in seed fairs and all were stored in the seed bank.



Key Lesson

Farmers may be unaware of the value of their local seeds in responding to challenges such as salt affected soils and local pests and diseases. Their knowledge and agro-biodiversity is key to increasing food production, food security and vibrant livelihoods. Assisting farmers to build their skills and capacity to identify, preserve and share local seeds increased access to appropriate seeds within villages and communities.

It also built solidarity amongst farmers and created a springboard for powerful advocacy for FMSS. The evidence of the importance and efficacy of FMSS needs to be documented and further research and dialogues with government on these issues must go ahead.

CROPS4HD

This document is an output of the CROPS4HD project (www.crops4hd.org): a consortium of SWISSAID, FiBL, and AFSA supported by the SDC and LED. CROPS4HD has three major components: production, market and policy advocacy.

AFSA, which is responsible for advocacy, is a broad alliance of civil society actors involved in the fight for food sovereignty and agroecology in Africa. Its members represent small-scale farmers, pastoralists, hunters/gatherers, indigenous peoples, faith-based organisations and environmentalists from across Africa. It is a network of networks, currently with 37 members operating in 50 African countries.

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