

# ETHIOPIA

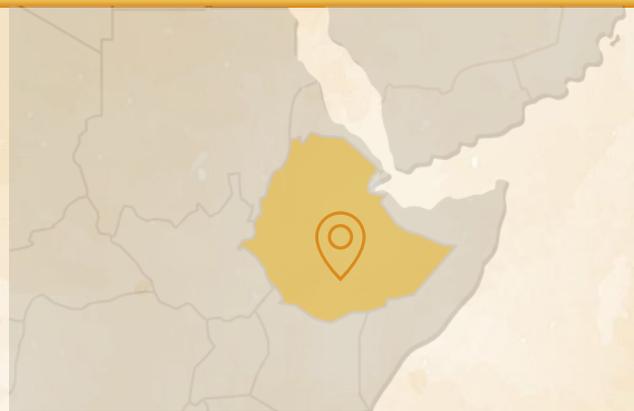


## Mission

*The farmers in the village of Udo Wotatie are dedicated to learning new agroecological techniques to enable them to enhance their livelihoods by producing and marketing their crops on a more sustainable basis.*

## Map

The initiative is located at Doribafano in the Hawassa zuria district, which in turn is located in the Sidama Regional State in the south of Ethiopia. This area is home to the in the Sidama community. It is situated at 6° 40' 0" N, 38° 30' 0"E.



The initiative is located in between the Central rift valley lakes.

## Context



The SNNPRS (Southern Nations, Nationalities, and Peoples' Region), where Sidama zone is located, is the most densely populated of the nine states in the Federal Democratic Republic of Ethiopia. The rural Sidama are mostly subsistence agropastoralists. Staple crops are enset (*Ensete ventricosum*) and maize, and less commonly wheat and barley.

Increasing climate change impacts have stimulated the farmers to adapt their farming practices to survive and thrive in this semi-arid environment. The area is also one of the country's major maize producing areas despite the serious climate variability and stalk borer infestation.



## Description of the initiative

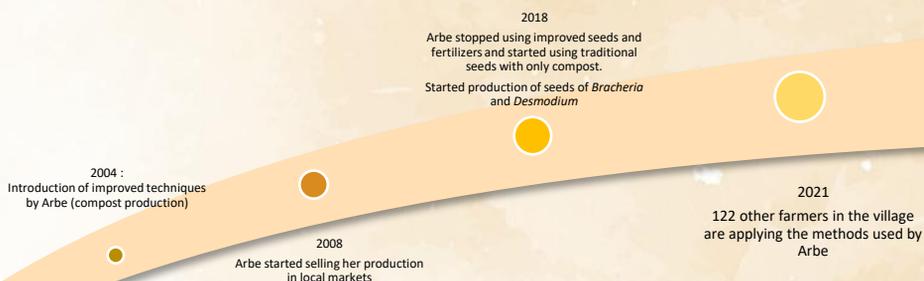
Farmers in the village of Udo Wotatie have adopted innovative farming practices to sustainably enhance their livelihoods and manage the challenges posed by stalk borer, which has in the past had a devastating impact on production of the primary staple grain, maize.

One of the pioneers of the community is Arbe, who grows maize, sugar cane, beans, enset, peppers, guavas and banana on her 0,5 ha farm. She markets sugar cane, chickens and eggs primarily at the Hawassa market although some buyers also come to her house. She began using innovative techniques on her farm in 2004 by improving compost production. On the advice of the Department of Agriculture, in 2008 she started to use improved seed and using fertilizer to stimulate the growth of the crops to improve the productivity. However, she noticed that some beneficial insects had disappeared from her farm (especially on beans and peppers). By participated in trainings she gained insights into the damage that fertilisers can cause to human and environment health and subsequently decided to stop using artificial fertilisers.

In 2016 Arbe began using push pull technology with support from the NGO ICIPE, which provided seeds and trainings. Push pull technology promotes synergic plant-plant and insect-plant interactions that control stalk borer. *Desmodium* (push) is planted as a repellent intercrop and *Bracharia*, Napier grass (pull) is planted as a trap plant for the larvae of the stalk borer, which die in the sticky sap of the plant. *Desmodium* also has other beneficial effects: its allelopathic root exudates control parasitic striga, it increases availability of nitrogen and shades the soil. After successfully testing the push pull technology in one of her fields Arbe applied it in other fields She also undertakes mixed cropping with symbiotic plants (maize and beans), crop rotation and mulching, and uses wood ash to control pests.

With the technical support of ICIPE, she now produces seeds of *Bracharia* and *Desmodium* for use by other local farmers.

## Trajectory





## Results & Benefits

In 20 years, Arbe has transformed her subsistence farming into a market-oriented agricultural system. She has been able to build herself a house and with the income generated from the farm she has sent two of her seven children to college.



With a 10 X 13m plot planted to maize and *Desmodium*, Arbe can produce one quintal of quality maize, which she sells for 1,400 ETB. In addition, she produces feed for her livestock, which allows her to avoid buying fodder from external sources and to save 9,000 ETB. Arbe has observed an increase in biodiversity in her soil: there are now more rhizomes on the roots of her beans.

Crop diversification and the withdrawal of chemical fertilizer have contributed to enhanced biodiversity and resilience of her farm. The agroforestry approach she has implemented around the house has allowed her to benefit from high value fruits such as peach (locally called kok), kazmir (*Casimiroa edulis*), guava and papaya. It has resulted in an increased production of wood and has buffered the impacts of floods and reduced soil and wind erosion.



122 farmers in the village are now applying these techniques, including push-pull technology, on a total of 8,37 ha of land. Arbe has served as a role model for other farmers in the community and demonstrated the value of agroecological practices. She plays a pivotal role in improving the sustainability of her community.

# Lessons learned & reflected FAO principles



## Resilience

The agroecological practices applied in this village contribute to the resilience of the environment and of the community as an adaptation to climate change.

## Diversity

The initiative harnesses natural processes for pest management and soil fertility enhancement, boosting production and conserving agrobiodiversity.

## Co-creation & sharing of knowledge

The initiative is based on the community's willingness to experiment and adapt practices. The research was conducted by the farmers, who participated in the collection and sharing of data.

## Synergies

Push pull technology promotes synergic plant-plant and insect-plant interactions. Intercropped *Desmodium* repels stalk borer from maize while *Bracharia* grass attracts and traps the insects.

## Recycling

The leguminous plant *Desmodium* is used to increase soil fertility and to protect soils from wind and water erosion and improve the soil organic matter. In addition, it is used to feed cows, providing manure for compost..

## Human & social values

The initiative is supported by the youth and female farmers coordinator of the district agroecological network. It improves gender relations and promotes solidarity within socially integrated agricultural systems.

## Culture & food traditions

The initiative enhances the production of maize and other traditional staples, fruits and important livestock feeds in the territory.

## Efficiency

The practices improve the efficiency of use of agricultural resources use and reduces dependence of external inputs for seed and to control pests and enhance soil fertility

## Responsible governance

The initiative is based on farmer participation and management of the land, with support provided by local government agricultural extension offices.

## Circular and solidarity economy

Farmers market their products locally and sell *Desmodium* seed within the local community and beyond. Farmer to farmer learning about seed exchange and supply are also practiced.

# Contacts and Bibliography

## Contacts:

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Doribafano

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Sidama Regional state

## Bibliography:

1. Vulnerability and Resilience of Sidama Enset and Maize Farms in Southwestern Ethiopia. Robert J. Quinlan & Co. 2015. Journal of Ethnobiology 35(2):314-336. To download : use this [link](#).

The AVACLIM project aims to create the necessary conditions for the deployment of agroecology in arid areas.

For more information : [www.avaclim.org](http://www.avaclim.org)

## Financial partners:



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May 2021

Redaction : CARI, ISD, EMG

Editing : CARI

Design : pikopiko.io

Photos credit : Sara Moyret

