

# ETHIOPIA



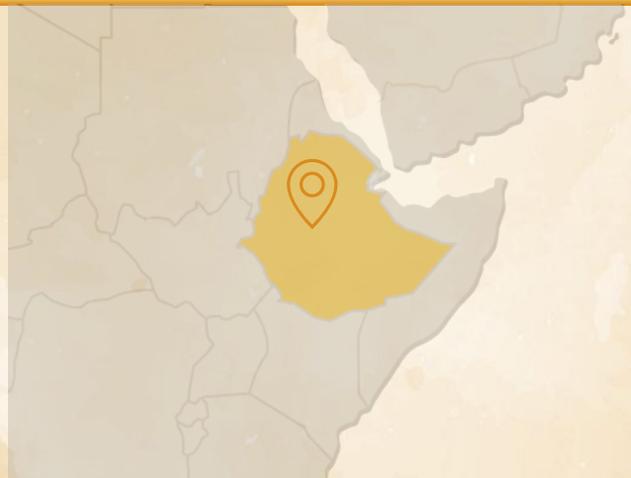
## Maruf Vermicomposting Initiative

*The mission of the farmers of the initiative is to improve the health and fertility of their farms using organic methods so that they and their families can benefit from improved incomes and healthy produce.*

### Map

The initiative is situated some 15km from the town of Guder in the Tuki Kuti District of the West Showa zone of Oromia Regional State. Guder is located 12km west of Ambo at latitude of 8°58'N and longitude 37°46'E, with an elevation of 1800-2800 meters above sea level.

The family-based agroecological initiative of vermicomposting is led and inspired by farmer Wakuma Lechisa and Abebe Tefera who are coordinating the expansion of the initiative in Tuki Kuti district promotes solidarity within socially integrated agricultural systems.



### Context



Approximately 40.9% of the total arable land of Ethiopia is affected by soil acidity. In the the Tuki Kuti District the soil is highly acidic, with pH commonly ranging between 4.5 and 5.5. The problem is reportedly currently increasing both in terms of area of coverage and severity.

Farmers are highly concerned as they have seen their crops yields decline as the acidity in their soil increases. Some lands have been abandoned due to declining fertility; acidic soil contain toxic levels of aluminum and manganese and is characterized by deficiency of essential plant nutrients such as P,N, K, Ca, Mg, and Mo.



## Description of the initiative

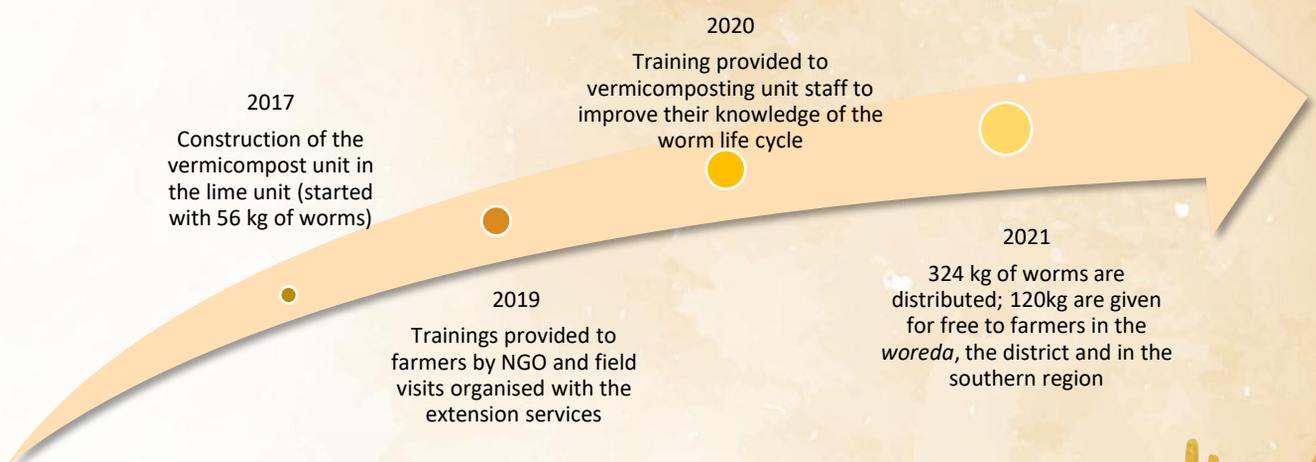
In order to address farmer concerns about declining soil fertility, the Oromia Bureau of Agriculture and Natural Resources has supported farmers to access different inputs for integrated soil fertility management to treat soil acidity. The initiative in the district started in 2018 and is currently practiced by vegetable farmers in the Tuki Kuti and Wolmera districts, primarily for potato production but also for the production of fruit and high value tree seedlings.

Extension agents provided farmers with training opportunities focused on ecological production of organic vegetables through the use of lime-amended vermicompost as a means of building healthy, fertile soil and then helping them reduce their extreme dependence on inorganic inputs, primarily artificial fertilizer. Assessments of the pH of farmers' soils at the nearby Holeta Agricultural Research Centre determined the optimal lime amendment required. Lime and worms from a government-owned lime and worm company were subsequently provided to enable the farmers to start vermicompost production.

The impact of lime to reduce soils acidity and to promote agricultural productivity in the short and long term is maximized when lime is correctly applied simultaneously with other agroecological practices such as incorporation of vermicompost in soils, crop rotation rotation and association of symbiotic plants.

The District Agriculture Office uses practical and experiential learning methods in its extension approach. These are implemented in the field, where farmers test the concept at demonstration sites and learn how to prepare and use vermicompost. Trainings are given by NGOs and field visits are organized by the regional office.

## Trajectory





## Results & Benefits

The investment needed by farmers to build the vermicompost box production is a maximum of 4 000 ETB. The approach is easy to implement because it can be applied using only family labour on small plot of land.



In West Shewa some farmers have earned more than 200,000 ETB from sales of vermicompost, according to Mr. Tekle Idossa, West Shewa Soil Fertility Process Owner of the Oromia Bureau of Agriculture and Natural Resources (Agro Profocus, 2019).

There are ecological and other benefits from the application this technology, such as:

- Microbial activity is increased in the worm castings compared to the soil
- Improved water holding capacity of the compost-treated soil
- Increased awareness of the benefits vermicomposting and agroecological production systems



Farmers observed increased yields (from 5 to 7 quintal of potatoes) and an increase in the maturity rate of tree seedlings (in 1 year instead of 2). In addition, they are saving 12,800 ETB annually by not buying fertilizers.

# Lessons learned & reflected FAO principles



## Resilience

The production system is based on ecological processes, ecosystem services and the enhancement of ecological functions, thus contributing to adaptation to the impacts of climate change.



## Diversity

The initiative is based on the use of natural processes for building soil fertility. These processes enhance and conserve soil biodiversity in farmers' fields.



## Co-creation & sharing of knowledge

The processes of gaining and disseminating knowledge are participatory: farmers undertake research and participate in data collection, interpretation and knowledge sharing processes.



## Synergies

Organic vegetable production using vermicompost depends on the interaction of micro-organisms, insects and other life forms in the soil to increase its fertility in the long term.



## Recycling

The compost is produced by using the available crop residues, leaves, and livestock manure. These are ingested by the earthworms to produce the compost.



## Human & social values

The extension and training approach has contributed to the empowerment of farmers, enhancing social interaction and cohesion.



## Culture & food traditions

Vegetables are a crucial part of the traditional diet, and organic production improves the health of the population by providing more nutrients.



## Efficiency

The production system reduces the use of external inputs and is more sustainable than the conventional system due to the increased efficiency of use of available resources.



## Responsible governance

The initiative is implemented at a household level, with individual links to the local markets and with the support of the district agriculture office.



## Circular and solidarity economy

Agricultural products produced by the initiative are locally marketed and consumed.

# Contacts and Bibliography

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## Bibliography:

1. Sara Assefa, Agroprofocus Agroecological Network publication 2019
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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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