Funded by the European Union

An ACP-EU Technology-Transfer Network on Rainwater Harvesting Irrigation Management for Sustainable Dryland Agriculture, Food Security and Poverty Alleviation in sub-Saharan Africa (AFRHINET)

Consortium

Implementing partners:

- Hamburg University of Applied Sciences (HAW), *Germany (Project Coordinator)*
- Addis Ababa University, *Ethiopia*
- University of Nairobi, *Kenya*
- Eduardo Mondlane University, *Mozambique*
- University of Zimbabwe, *Zimbabwe*

Associated partners:

- International Crops Research Institute for Semi-Arid Tropics (ICRISAT), *India*
- Southern and Eastern Africa Rainwater Network, International Centre for Research in Agroforestry (SearNet/ICRAF), *Kenya*
- WaterAid, *United Kingdom*

Budget

Total budget: €1,176,433.44
EU contribution: €999,968.42

Duration

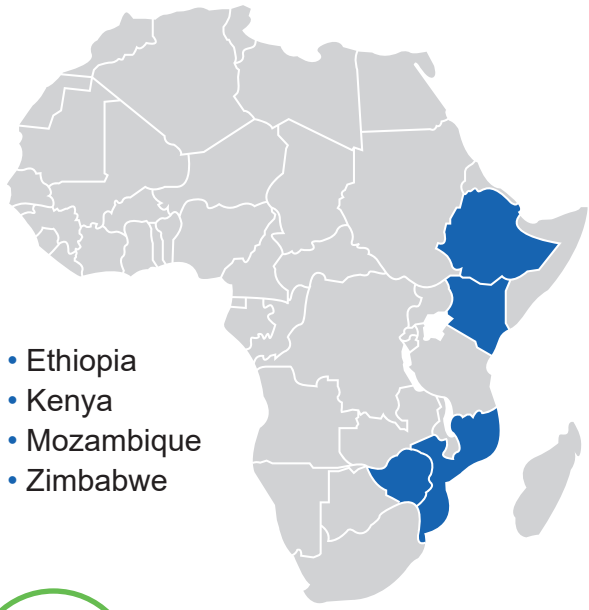
March 2014 – May 2017

Development challenge

Water scarcity is a major constraint on African agriculture and limited solutions to the problem. Furthermore, African countries have limited capacity to capitalise on water sources like rainwater for irrigation.

Notably, for small-scale off-season irrigation in rural arid and semi-arid areas of sub-Saharan Africa.

Countries of intervention



- Ethiopia
- Kenya
- Mozambique
- Zimbabwe

Project approach

The AFRHINET project took a multi-disciplinary and participatory approach on the transferring of rainwater harvesting Irrigation technologies with a market-oriented framework.

The involvement of universities, research institutions, relevant associations, NGOs and government as strategy to promote technology adoption at different levels was aiming to promote long-term access to and efficient use of rainwater harvesting irrigation (RWHI).

Together to fostering efficient cooperation and networking on improved food and water security, poverty alleviation and socio-economic and climate resilience and environmental sustainability.

Project results

Improved knowledge of scientist, technical practitioners, and politicians on technology-transfer and market-oriented framework strategy focusing on rainwater harvesting and its use in agriculture.

National R&T Transfer Strategies published to serve as a foundation for future policies.

1
Sub-Saharan Africa-ACP Regional Research Technology Transfer Strategy.

1
Transnational recommendation report on RWHI for sub-Saharan Africa.

A transnational ACP-EU network on rainwater harvesting irrigation (RWHI) for improved food security and poverty alleviation (AFRHINET) for sub-Saharan Africa was established.

370
Members from

8
International networks linkages.

68
Countries.

Compilation of best RWHI practice and 4 technical sheets:

- Manual water pumping with treadle pumps and gravitational irrigation with drip and hand watering (Ethiopia).
- Low-cost drip irrigation linked to an improved farm pond system (Kenya).
- Low-cost drip irrigation linked to an earth dam system (Mozambique).
- Solar powered pumping linked to a rock catchment system (Zimbabwe).

Improved capacities of S&T communities, business, MSMEs, NGOs and public institution on innovative Rainwater Harvest Irrigation Know-how and technologies.

4
Advanced Train-the-trainer courses for multipliers focused on theoretical and practical knowledge of RWHI technologies and practises with:

150
delegates from 4 countries.

♂ **59** ♀ **91**

4
Capacity-building and train-the-trainer courses on RWHI technologies and practises for local communities, with over:

200
participants.

♂ **136** ♀ **64**

3
Sets of capacity-building and train-the-trainer materials on how to use rainwater in different contexts.

Project results (2)

Improved collaboration between Ethiopia, Kenya, Mozambique, and Zimbabwe universities.

AFRHINET Research and Technology Transfer Centres (RTTCs), a network of centres with offices at:

- University of Nairobi (Kenya)
- University of Zimbabwe (Zimbabwe)
- Eduardo Mondlane University (Mozambique)
- University of Addis Ababa (Ethiopia)

8

Rainwater storage facilities, consisting of underground water dams, small ponds and roof-top collection.

9 paper/research publications between 2017 -2018.

Impact

The AFRHINET project has generated positive impact by transferring Rainwater Harvest Irrigation (RWHI) technologies such as underground water dams, roof-top irrigation, and overflowing mounds. to communities and small-scale farmers in Ethiopia, Kenya, Mozambique, and Zimbabwe, as well as strengthening of advanced capacity building of S&T communities, businesses, micro-enterprises, and other private, non-government, and public institutions through training on Rainwater harvesting technologies.

Sustained Impact

The sustained impact of AFRHINET has been reflected on the two memoranda of understanding signed and the multi-donor alliance created in Kenya.

Signed **Memorandum of Understanding** (MoU) between the Ministry of Environmental Water and Natural Resources (MEWNR) Kenya, Jomo Kenyatta University of Agriculture and Technology (WARREC), University of Nairobi and Kenya Rainwater Association (KRA) to foster cooperation on Water and Environmental issues.

The **Billion Dollar Business Alliance for Rainwater Harvesting**, the signed partners are the World Agroforestry Centre (ICRAF), the World Food Programme (WFP), G. North and Sons Equity Bank, Jomo Kenyatta University of Agriculture and Technology, KCB Bank, Kenya Climate Innovation, Kenya Rainwater Association, Ministry of Agriculture, Livestock and Fisheries, Ministry of Water and Irrigation, National Drought Management Authority, Rafiki Bank, SearNet, University of Nairobi, Vison Fund Kenya and World Vison.

Signed **Memorandum of Understanding and Cooperation** (MoU) between Addis Ababa University, WaterAid and the Federal Ministry of Water and Irrigation of Ethiopia on fostering rainwater harvesting.

Strong and sustained dissemination of AFRHINET training documentation by other organisations and projects such as the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA) with its SAAIKS Knowledge Hub , the AfriAlliance (2016 to 2021) financed by EU Horizon 2020 research and innovation programme, and the Tropical Agriculture Platform TAPipedia.

Sustained impact concerning knowledge transfer has been seen in the different projects' publications, with researchers and practitioners extending the influence of the project implementation beyond the project research publications such as "**Roads: Instruments for Rainwater Harvesting, Food Security and Climate Resilience in Arid and Semi-arid Areas**" (2018), "**Knowledge, Attitude and Practice in Water Resources Management among Smallholder Irrigators in the Tsavo Sub-Catchment, Kenya**" (2019).

RWHI technical information supported policy makers and politicians in the implementation of:

- Mozambique's National Agricultural Policy and Strategic Plan.
- Ethiopian Agricultural Sector Policy (2010-2020).
- Kenya's Vision 2030 development agenda to meet the UN's Sustainable Development Goals (SDGs).
- Zimbabwe's Agricultural Policy Framework 1995-2020.

Sustained Impact (2)

Other organisations and projects disseminated and maintained training materials, such as the:

- Centre for Coordination of Agricultural Research.
- Tropical Agriculture Platform TAPipedia.
- AfriAlliance (2016 to 2021) financed by EU Horizon 2020 research and innovation programme.
- Development for Southern Africa (CCARDESA) with its SAAIKS Knowledge Hub.

Key lessons learned and best practices

The importance of creating and strengthening collaborations and partnerships in rainwater harvesting at private and public level.

The importance to be supported with more micro level data collection, such as strengthened baseline pre-project in order to carry and effective and exact impact assessment on quantitative basis.

Lack of funding support for replication at community level.

Limited timeframe on the running of this type of project that first needs to train target groups and beneficiaries.

Low technology adoption.