

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



WELCOME TO THE FIRST NEWSLETTER OF THE AFRHINET PROJECT!

Dear Reader,

AFRHINET is a technology transfer network on rainwater harvesting and small-scale irrigation in rural arid and semi-arid areas of sub-Saharan Africa. This three-year project aims to foster the knowledge and use of rainwater harvesting technologies for supplementary irrigation (RWHI). The project focuses on the implementation of integrated capacity-building activities, the establishment of research and technology-transfer centres and a transnational network, and demonstration activities in the field of RWHI. The action of the project takes place in Ethiopia, Kenya, Mozambique and Zimbabwe.

This first issue introduces the main goals and key activities of the AFRHINET project. In addition, it also features the initiatives undertaken during the first year of the project.

Happy Reading! Josep de Trincheria & Sanyukta Kanwal

JOIN THE AFRHINET NETWORK!

One of the core activities of the AFRHINET project is to build a transnational network which serves as a platform for cooperation and exchange of experiences in the field of RWHI for sustainable dryland agriculture, food security and poverty alleviation.

Other organisations are welcome to benefit from the information, activities and experiences of the project. Network members include, but are not limited to, science and technology communities, businesses/micro-enterprises, NGOs, policy-making actors, and local community groups. The geographical focus of the network is the African continent and rural arid and semi-arid areas of African Caribbean and Pacific group of states (ACP) countries.

After the first year of the project, AFRHINET currently has more than 100 network members including a few who represent organizations like the Southern and Eastern Africa Rainwater Network (SEARNET), WaterAid, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), RAIN Foundation, the Greater Horn of Africa Rainwater Partnership (GHARP), FAO, UNICEF, Engineers without Borders, Action Against Hunger, and many more!



A community-based group in Kisasi (Kenya) working in their horticultural crops along a sandy dry riverbed / Spate irrigation from a nearby road in Kibwezi (Kenya). Source: AFRHINET project

Register for free membership at

<http://www.afrhinet.eu/transnational-network.html>

RATIONALE

Food insecurity and water scarcity have negative economic impacts and exacerbate poverty, especially in rural communities of arid and semi-arid areas. One of the main driving factors of this problematic is the dependence on rainfed agriculture in regions where the rainfall pattern is erratic and unreliable, and droughts are recurrent.

Because RWHI management consists of simple and low-cost runoff storage systems which are highly suitable for dryland areas, it is expected to have great potential to benefit the marginalised rural communities of sub-Saharan Africa. If an increased number of such systems are cost-effectively coupled with small-scale irrigation and dryland agriculture practices, a positive contribution to water availability, food security and robustness against climate variability and climate change can be expected.



Seedling cultivation in Nyayo village (Kenya). Source: AFRHINET project

FOCUS

Capacity-building activities, and the transfer and demonstration of innovative RWHI management technologies aim to encourage and foster the development and use of rainwater harvesting as supplementary irrigation. This is also expected to allow small-scale agricultural activities during the dry season. It may also foster the diversification of local income-generating activities for smallholder farmers.

Development of endogenous and self-replicable capacities on RWHI management

A two-phase capacity-building programme focusing on the scientific basis and the practical implementation of RWHI management is planned to be implemented during the second year of the project. In addition, advanced training materials complemented with practical experiences and lessons learnt will also be developed and published.

Research, technology-transfer and adoption centres

5 Technology transfer centres have been established in Ethiopia, Kenya, Mozambique, Zimbabwe and Germany. The Centres are expected to serve as hubs of knowledge and expertise in the field of RWHI management and dryland agriculture in the rural areas of sub-Saharan Africa. Furthermore, they will also afford improved

capitalisation through dissemination and exchange of innovative and effective RWHI management practices.

Demonstrations of innovative RWHI management

Effective demonstrations relative to RWHI will not only support, but also reinforce the idea of alternative concepts to local community groups, academic and scientific institutions, businesses/micro-enterprises, and non-governmental and public organisations. The main rationale behind this is to be able to effectively show the local communities the many benefits associated with implementing cost-effective RWHI projects for food security and poverty alleviation, and in the process, assure them of its substantial feasibility and even more, its sustainability.

Networking activities

Networking activities are specifically designed to enhance the networking capacity of academic and scientific institutions with other relevant stakeholders at national and international levels. In addition, these activities will afford a platform for cooperation and exchange of experiences in the field of RWHI management for sustainable dryland agriculture, food security and poverty alleviation. Furthermore, regular networking, dissemination and promotion events will also be implemented and materials published.

For more information, please visit the following links on our website:

Capacity building

<http://www.afrhinet.eu/project-focus/capacity-building.html>

Research, Technology Transfer and Adoption Centres

<http://www.afrhinet.eu/project-focus/research-and-technology-transfer-centres.html>

Demonstration trials

<http://www.afrhinet.eu/project-focus/demonstration-trials.html>



Farmer using oxen to till crop fields in Kisasi (Kenya). Source: AFRHINET project

KICK-OFF MEETINGS AND MULTI-STAKEHOLDER WORKSHOPS

These events were meant to debate on the needs, capacities and measures to improve the inclusion and impact of RWHI management into agricultural, food security and poverty alleviation policies. In addition, they also intended to put an emphasis on the specific local context of the partner countries and serve as a first opportunity to identify cooperation partners, and strengthen the link between relevant stakeholders in the target countries.

International Kick off meeting and multi-stakeholder event in Hamburg, Germany on 12th-14th May 2014

The AFRHINET Project was officially inaugurated with an international kick-off meeting from 12th-14th May 2014 at the Research and Transfer Center at University of Applied Sciences, Hamburg, Germany. During the multi-stakeholder event on 14th May 2014, some of the commonly practiced rainwater harvesting techniques used in the partner countries were showcased. An emphasis was laid on the storage of rainwater during the rainy season and also the potential and prospective uses during the dry season were discussed. The event was attended by relevant stakeholders and the project partners and associates from Ethiopia, Kenya, Mozambique, Zimbabwe and Germany. If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/events/14-regional-kick-off-meeting-and-multi-stakeholder-event-hamburg.html>



Group picture of the AFRHINET partners and associates in Hamburg, Germany. Source: AFRHINET project

National Kick-off meeting and multi-stakeholder workshop event in Nairobi, Kenya on 5th August 2014

The event aimed at providing a forum to assess the needs, capacities and measures to improve the impacts of rainwater harvesting irrigation (RWHI) management on agricultural, food and poverty alleviation policies. The event was attended by relevant national stakeholders with a special focus on policy- and decision-makers, scientists, practitioners and local communities. Furthermore, it aimed at exploring ways to effectively implement the project activities in the Kenyan context. The workshop also focused on providing the scientific evidence-based presentations that would adequately appraise policy and institutional reforms.

If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/events/31-national-kick-off-meeting-and-multi-stakeholder-event-kenya.html>

National Kick-off meeting and multi-stakeholder event in Maputo, Mozambique on 18th September 2014

The event was highlighted with several discussions and presentations focusing on the exchange of experiences between relevant institutions at a national level. This involved evaluating policies in the water sector specific to the use of rainwater for irrigation purposes as well as establishing cooperation and a close nexus between academic and research institutions, NGOs, government institutions and local communities. If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/events/30-national-kick-off-meeting-and-multi-stakeholder-event-mozambique.html>

National Kick-off meeting and Multi-Stakeholder event in Harare, Zimbabwe on 22nd September 2014

The workshop focused on an analysis of capacities and needs in the field of RWHI in Zimbabwe. In addition, parleys on the promising use of solar energy and also the development of underground water reservoirs took place. If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/events/32-national-kick-off-meeting-and-multi-stakeholder-event-zimbabwe.html>

National Kick-off meeting and Multi-Stakeholder event in Addis Ababa, Ethiopia on 5th August 2014

The workshop focused on building food, poverty and climate resilient communities by means of implementation of the AFRHINET project activities. If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/events/15-national-kick-off-meeting-and-multi-stakeholder-event-ethiopia.html>



The project coordinator of the AFRHINET project in Ethiopia introduces the project goals and activities to Ethiopian stakeholders. Source: AFRHINET project / Picture of attendants at the kick-off event in Nairobi, Kenya. Source: AFRHINET project



A FOCUS ON THE BASELINE STUDIES

The AFRHINET project conducted comprehensive and extensive baseline studies in Ethiopia, Kenya, Mozambique and Zimbabwe. These were meant to assess the potential for research and technology, capacity needs, and potential market-oriented products in the field of RWHI. The methodology for the baseline studies was a combination of exhaustive literature reviews with in-depth interviews with

relevant institutions and experts in this field of knowledge in each of the partner countries. As part of this process, a validation exercise of the baseline studies also took place. In addition, the knowledge gathered in each of the national baseline studies was further collated into a regional baseline study focusing on sub-Saharan Africa and other rural arid and semi-arid areas of ACP countries.



Waterhole in a sandy dry riverbed connected to irrigated horticultural crops in Kisasi (Kenya). Source: AFRHINET project



Farm pond used to irrigate Mango trees in Machakos (Kenya). Source: AFRHINET project



Hand-pump used to irrigate crops and fruit trees in Machakos (Kenya). Source: AFRHINET project

KEY HIGHLIGHTS OF THE BASELINE STUDIES

A revision in the universities and agricultural colleges' curricula along with the need for establishing more knowledge sharing platforms was identified to be a key need in all the partner countries. In order to promote technology transfer and adoption of innovative practices more efficiently, the need for a stronger nexus of co-operations and collaborations between key stakeholders, improved dissemination of technological information through workshops, and demonstrations trials on-the-ground were highlighted.

With regard to the type of RWHI technologies to be used, it was concluded that more assessments need to be made in order to identify the best available technologies. However, the strategic importance that cost-efficiency of these technologies plays, in terms of their adoption was recognized. A set of endogenous technologies and practices currently implemented in each of the partner countries were identified. These technologies will be the main focus of the AFRHINET activities during the next two years of the project.

In addition, the main research outcomes of the studies called attention to the need for improved capacity building and customized trainings, focusing on imparting the appropriate know-how on the use, implementation and maintenance of RWHI systems among the rural communities. Relative to the topic of collection and storage of rainwater, constructive suggestions for improvement of, and better integration of RWHI technologies were opined by the experts. The need for concrete market-oriented research was also given equal weightage.



Irrigated Mango tree production at the end of dry season in Machakos (Kenya). Source: AFRHINET project



Irrigated farm using the water from a nearby earth dam in Machakos (Kenya). Source: AFRHINET project

NEXT ACTIVITIES IN THE PROJECT PIPELINE

1. Tailor-made Advanced Capacity-Building Courses

Advanced capacity-building and train-the-trainer programs in RWHI focusing on the scientific and theoretical dimension of RWHI, project management and fund-raising, and technical capacity to practically implement RWHI, are currently being designed so that they can successfully be implemented during the second year of the project. Through this, it is expected that multipliers from scientific and technology stakeholder groups, i.e. scientists, academics, practitioners, policy-makers and small-scale entrepreneurs are empowered with the necessary skills and endogenous know-how pertinent to the field of RWHI application and management. Thereby, contributing to a more effective transfer of innovative and cost-efficient knowledge and expertise to local communities and the market.

AFRHINET also endeavours to address gender equality and ethnic balance while building project teams during the training sessions. A conscious effort is being made to engage women and minority groups in the customised capacity-building programmes that combine theoretical and action-learning modules. Find more information on capacity-building on the link below:

<http://www.afrhinet.eu/project-focus/capacity-building.html>

Road harvesting coupled with small-scale irrigation of fruit trees in Machakos (Kenya). Source: AFRHINET project



2. Development of Technology Transfer Activities

Research, Technology Transfer and Adoption Centres have been established in each of the partner countries during the first year of the project. The Centres are expected to serve as hubs of knowledge which will provide a plethora of information and will link worldwide, pertinent technology and know-how relative to supplemental RWHI and sustainable agricultural management in rural dryland areas of sub-Saharan Africa and the ACP region. During the second year of the project, regional and national research and technology-transfer strategies in the field of RWHI will be developed. Find more information on our technology transfer and adoption activities following this link:

<http://www.afrhinet.eu/project-focus/research-and-technology-transfer-centres.html>



Selling agricultural produce using irrigation water from a farm pond in Machakos (Kenya). Source: AFRHINET project

3. Demonstration activities

These activities will have a special emphasis on S&T communities, businesses/micro-enterprises, NGOs, public institutions and local communities in Ethiopia, Kenya, Mozambique and Zimbabwe. The main focus will be the development and implementation of innovative and cost-effective RWHI management. This is meant to demonstrate to the target groups, that the adoption and successful implementation of RWHI projects is feasible. During this process, all the actors and multipliers involved in the WP's activities will obtain practical knowledge and useful experiences which are meant to be disseminated and promoted afterwards. Find more information on our demonstration activities following this link:

<http://afrhinet.eu/project-focus/demonstration-trials.html>



Sand storage dam connected to a small-scale irrigation system in Machakos (Kenya). Source: AFRHINET project



Farmer irrigating Mango trees at the end of the dry season in Machakos (Kenya). Source: AFRHINET project

INTERNATIONAL NETWORKING, PROMOTION AND DISSEMINATION WORKSHOP IN NAIROBI, KENYA ON 25TH FEBRUARY 2015

The event focused on “Building Capacities, Establishing Networks and Fostering Transfer and Adoption of Rainwater Harvesting Irrigation Technologies”. The event aimed at forming a nexus between relevant stakeholders such as scientific institutions, stakeholders, small scale businesses, government and non-governmental organisations. This was meant for an efficient cooperation and exchange of information, know-how and experiences in the field of RWHI. In addition, a summary of the baseline studies and its results were presented and discussed here. During the event, the establishment of the AFRHINET Research, Technology Transfer and Adoption Centres was widely promoted and disseminated. Also, the transnational AFRHINET network was officially introduced to the participants of the workshop.

The workshop gathered over 50 participants from a cross-sectorial range of areas. The participants represented research communities,

micro-enterprises, non-governmental organizations (NGOs), public agencies, policy makers, development agencies, and local communities including representatives from farmers, women and youth groups. Some of the topics discussed were:

- Potential rainwater harvesting irrigation technologies and soil management practices
- Capacities and training needs in rainwater harvesting irrigation management
- Technology-transfers and market development needs in the field of RWHI management
- Policy and institutional arrangements on rainwater harvesting irrigation management



Group picture of the participants at the International Networking, promotion and dissemination workshop in Nairobi (Kenya). Source: AFRHINET project



Presentation during the dissemination event in Nairobi (Kenya). Source: AFRHINET project

If you would like to have more information or access the presentations of the event, visit the link below:

<http://www.afrhinet.eu/news/46-international-networking-and-dissemination-workshop-25th-february-2015.html>

FOLLOW-UP ACTIVITIES

These types of activities are considered an extension of the network and the research, technology transfer and adoption centres. These are meant to not only strengthen the networking capacity of the AFRHINET project partners, but also to disseminate AFRHINET and RWHI to a wider audience.

1. Second call for papers for a book on “Rainwater Harvesting Irrigation and Resilience: Approaches, Methods, Tools and Projects”

This call for papers is meant to collate and make easily available the most important knowledge on two innovative disciplines: rainwater harvesting and its multi-dimensional impacts on resilience, and rainwater harvesting and its use for supplementary irrigation. The book will provide a state-of-the-art description of approaches, methods, research, and outcomes of projects and actions in these two fields of knowledge. Expressions of interest for papers from researchers and practitioners dealing with one or more of the following issues listed below are welcome to send in their abstracts by email to beids@beids.de

The chapters of the book are expected to revolve around:

- Multi-dimensional links between RWH and resilience: water security, groundwater recharge, WASH, desertification, food security, climate variability, income generation, self-supply, ecosystem services, etc.
- Multi-dimensional links between RWH and small-scale irrigation
- State-of-the-art methods and approaches
- Theoretical and practical working principles and implementation
- Multi-dimensional constraints (biophysical, technical, economic, etc.) and impacts (livelihood, socio-economic, environmental)
- Replication and transferability potential
- Monitoring and evaluation
- Case studies, on-going projects and replicable experiences

The deadline for submissions of the 200-word abstracts is **13th April 2015**. Upon acceptance, 1000-word extended abstracts will be due by **4th May 2015**. Full papers are expected to be submitted by **1st September 2015** and subsequently, the book is expected to be published during **2016**.

2. International Symposium on Rainwater Harvesting and Resilience

The International Symposium on Rainwater Harvesting and Resilience will be held from the 1st to 12th of June 2015 in Addis Ababa and Dire Dawa, Ethiopia. The symposium’s theme is: Unlocking the Potential of Rainwater with Adaptive Strategies and Impacts for Up-scaling the Technology. The symposium is comprised of three segments which include: Two-day High Level Policy Meeting, Two-Day Writeshop and a Five-Day Practical Training. A special focus will be exerted on the link between rainwater harvesting, resilience and small-scale irrigation. More information can be found in the following link: <https://dgroups.org/?8hv1zgz8.sllcnb20>. The Symposium is organised by RAIN Foundation, SEARNET and AFRHINET. For additional information on registration and details of the international symposium, follow this link:

<http://www.rainfoundation.org/news/the-rainwater-harvesting-symposium-2015-in-ethiopia/>

THE RAINWATER HARVESTING SYMPOSIUM 2015

Main Theme: Unlocking the Potential of Rainwater with Adaptive Strategies and Impacts for Upscaling

Programme Highlights

Special Guests:

1. Representative Minister of Agriculture, Ethiopia
2. Representative Minister of Water, Ethiopia

Keynote Speakers:

1. Dennis Garrity, Drylands Ambassador, UNCCD
2. Robson Mutinda, IFAD Country Representative Ethiopia
3. Amede Tilahun, CGIAR, Ethiopia

Dates

- **Policy Conference:** 1st – 2nd June 2015
- **Write-shop Workshop:** 3rd – 4th June 2015
- **Practical Training:** 8th June – 12th June 2015

Venue: Addis Ababa, Ethiopia for the conference and write shop and Dire Dawa, Ethiopia for the practical training

Sub-Themes:

- Rainwater Harvesting and Resilience
- Rainwater Harvesting and small-scale irrigation
- Rainwater Harvesting and Food Security
- Rainwater Harvesting in WASH

Made possible by:

Logos: Rain, IFAD, World Agroforestry Centre, SearNet, AFRHINET

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PARTNERS



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Kenya University of Nairobi
<http://www.uonbi.ac.ke>



Mozambique Eduardo Mondlane University
<http://www.uem.mz>



Zimbabwe University of Zimbabwe
<http://www.uz.ac.zw>

ASSOCIATES



Kenya World Agroforestry Centre
<http://www.worldagroforestry.org/category/countries/kenya>



Ethiopia WaterAid
<http://www.wateraid.org/where-we-work/page/ethiopia>



Zimbabwe International Crops Research Institute for the Semi-Arid Tropics
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PARTNERS

The AFRHINET international team is eager to exchange experiences with other practitioners of RWHI within and beyond the arid and semi-arid regions of Africa. For more information on the project, please visit the AFRHINET website at www.afrhinet.eu

JOIN THE AFRHINET NETWORK!

Join the AFRHINET network at <http://afrhinet.eu/transnational-network.html> to be informed about our project activities and share your experiences on Rainwater Harvesting Irrigation Management.