



AT A GLANCE

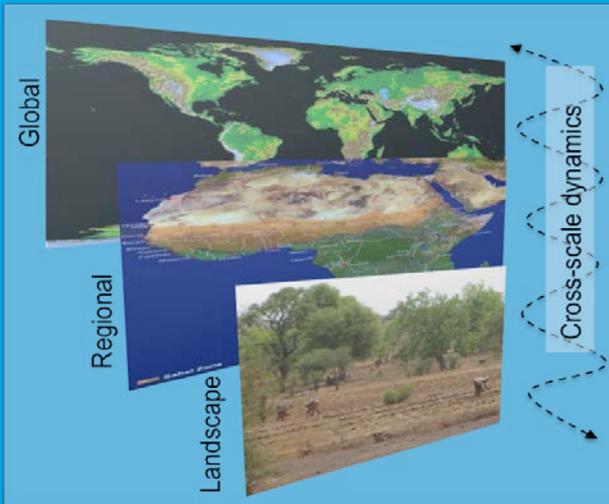


Figure 1: Conceptual illustration of the levels of interaction in WHT uptake and diffusion considered in this study

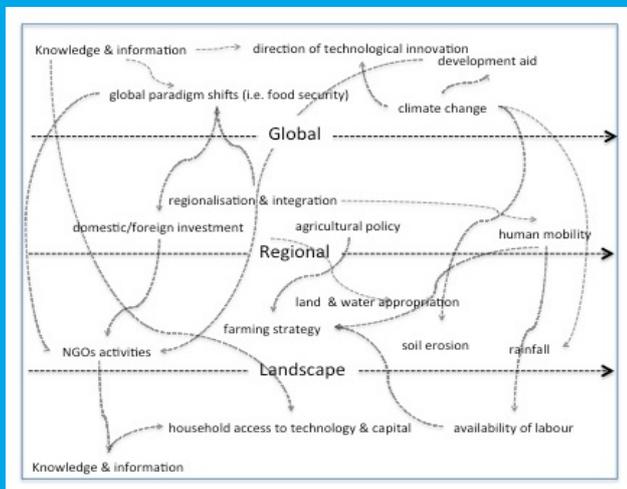


Figure 2: Dynamics of change at the global, regional, and landscape level and their interaction

WATER

WP8: GLOBAL AND REGIONAL IMPACTS

THE CHALLENGE

In the rural regions of dryland Sub-Saharan Africa (SSA), highly variable rainfall, combined with frequent events of extreme drought are important challenges for improving agricultural production and productivity. In the next decades, this challenge will become even greater for small-holder farming systems as new regional and global pressures intensify, such as accelerated climate change and a rising demand for food, foder and fibre by growing population.

Strengthening the adoption of water harvesting technologies (WHTs) is proposed to be an important strategy, which can contribute to address these challenges in smallholder farming systems. The WHTs have demonstrated capacity to improve agricultural production and productivity in persistently low-yielding farming systems of SSA in multiple locations- yet adoption to scale remains a challenge.

The research and policy community still struggles to understand the WHT diffusion pathways and explain how its potential could be scaled-up beyond single farm systems to cover a broader national and sub-continent level, i.e. the entire SSA region.

This is partly because conventional research approaches tend to focus on single farm systems and individual households to the exclusion of regional and global impacts. As a result, we still have limited understanding on the ways in which global and



regional drivers (social, economic and environmental) can enable current and future strategies to scale up WHT in smallholder farming systems of SSA.

OBJECTIVES

The overall objective of WHaTeR's work package on global and regional impacts (WP8) is to explore how the global and regional drivers of change relevant to the up- and outscaling of water harvesting technologies.

This work package (WP 8) specifically focuses on the:

- Identification of the macro-scale drivers of change that impact on strategies for scaling up WHT in SSA
- Evaluation of the type of interactions, feedbacks and trade-offs between the different drivers of change operating at different scales
- Understanding of the role of policy and decision making in up- and outscaling WHTs, in view of global and regional change

METHODOLOGY

WP8 is based on the analysis and collection of qualitative data and trend analyses. The research approach adopted is multi-sited, and draws on methods used within the social sciences:

1. A literature review including peer-reviewed journal articles and policy documentation with a special focus on the identification of macro-scale drivers of change influencing WHT adoption and out-scaling. The study analyses:

- Past, current and future trends in SSA Africa agriculture and policy.
- Global trends in agriculture development, and future directions,
- National agricultural development strategies in selected countries of SSA
- International and local NGO documentation and activities related to agriculture development and WHT upscaling (i.e. where WHT is included)

2. Engagement with how drivers of change are perceived by international and regional level actors linked to the water and agriculture policy and research system, using case studies, interviews and field level observations in Burkina Faso and Tanzania. This approach serves:

- To explore perceptions and activities of actors knowledgeable of local contexts and interventions related to small-scale farming systems and WHT.
- To capture differences and similarities in experience between two SSA countries.
- To study the role of contextual factors, such as historical commitments to agriculture and development, and the evolution of policy processes specific to small-scale farming systems and WHT.

3. On the basis of **1 & 2** a conceptual framework will be proposed to consider multiple drivers of change in scaling up WHTs that distinguishes multiple entry points for positive transformation in SSA under global, regional, and national dynamics (see also Figure 2).

RESULTS TO DATE

To date, The WP 8 preliminary results from two steps of field data collections in Tanzania and Burkina Faso suggest the following:

1. 30 Interviews with relevant stakeholders in Burkina Faso and Tanzania indicate that macro-scale drivers of change are often not recognised in NGO and state development projects relevant to WHT implementation. The focus on WHT investments on **short-lived micro-level projects** can potentially act as a barrier for decision makers to steer greater financial investments into WHT.

2. A systematic review of NGO documentation and government agricultural policies in Tanzania and Burkina Faso suggests wider recognition of landscape and regional environmental interactions with WHT adoption (i.e. in terms of ecosystem service generation, and increase of surface and groundwater flows). This has led to the consideration of **regional-global environmental** and **landscape change** variables in some projects, e.g. as part of project Environmental Impact Assessment.

3. However, aside from climatic change, WP8 has identified several critical factors that have the potential to strengthen (or weaken) wider WHT adoption in the SSA region but which are often not



easily quantifiable. These include **demographic** and **societal changes** across SSA, the influence of global finance and trade, broader directions in agriculture technology innovation, and the shifting patterns of governance in several SSA countries (see also Figure 2).

Box 1: Emerging insights from Msc Project “Who is setting the agenda? The influence of regional and international NGOs in the up-scaling of WHT in Tanzania”

Methods: 3-month fieldwork using qualitative research methodologies in Tanzania, engaging with public, private and NGO stakeholders operating in WHT development

Preliminary findings:

- **Complex cross-scale interactions** are operational in the activities of NGOs. International NGOs many times influence agenda setting through funding national and sub-national projects. Regional NGOs can influence via umbrella organisations and networks that work more directly with advocacy at national levels. Local NGOs supervise project implementation as well as possess important connections with target beneficiaries on the ground.

- **International NGOs increasing power** through mandated advocacy activities to influence national and sub-national water management priorities and decision-making processes. However, international NGO agendas may not always match with NGOs that work at the grassroots level.

- **Lack of strong evidence** on past successes and failures of WHT implementation projects is an important gap in the activities of Tanzanian NGOs.

- **Networks** of NGOs can strengthen the power of grassroot level NGOs to influence decisions. (Skyllestedt, forthcoming 2013)

EXPECTED OUTCOME

WP 8 team expects to deliver the following scientific contributions to the WHaTeR project:

- A conceptual framework on drivers of change putting WHT adoption and outscaling into a global and regional context.
- Developed understanding of the policy context and critically assess how it enables or disables upscaling of WHT. A special reference is paid to global and regional trends, actors attributes of power, resources, and networks (beyond farmers) that influence WHT adoption and out scaling
- Developed understanding of the role of NGOs in influencing national policies, regional and local level action, related to water and agriculture in Tanzania, with specific reference to WHT for rainfed agriculture.

REFERENCES

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Karpouzoglou. T (forthcoming) “Frame analysis: An investigation of the role of power in shaping WHT adoption in SSA” for the journal of *Ecology & Society*

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PROJECT PARTNERS IN WORK PACKAGE ...

Stockholm Resilience Centre (SRC), Stockholm University

SE

Department of Agricultural Engineering, Sokoine University of Agriculture

(Tanzania) TZ

National Institute for Environment and Agricultural Research (INERA)

(Burkina Faso) BF

