

Rainwater management in the Ethiopian highlands: Mapping, targeting and scaling out interventions

Water scarcity and land degradation strongly affect the livelihoods of millions of households in Sub-Saharan Africa. Water for agriculture - used to grow the food and feed that people and animals need - consumes 70 to 90% of the all water used in the region. To meet the needs of growing populations, we need to reverse land degradation and improve water productivity. We need to produce more food with less water.

One promising way to raise productivity and incomes and enhance resilience in the Ethiopian highlands is to better target or 'match' promising technologies (or whole strategies) with particular environments. This helps to overcome the limited success and impact of many past agricultural development efforts that often adopted 'blanket' approaches without sufficient understanding of local landscapes.

The need ...

This decision to focus on improved targeting and scaling out of agricultural interventions in highland Ethiopia is driven by several important developments:

First, government, donors and civil society increasingly emphasize that money spent in R&D must bring a lasting impact to the lives of the rural poor and minimize land and water degradation.

Second, many relevant rain-fed technologies and approaches are not achieving their full potential impact, mainly because of low levels of adoption.

Third, improving rainwater productivity is coming to be recognized as a very important dimension that influences if and how small-holders can participate in new markets.

Fourth, there is a lack of coordination among the many initiatives and projects generating technologies and good practices for farmers in the Blue Nile Basin. The impacts of all these development interventions, in terms of improving the lives of the rural population and modes of farming and productivity are very low.

As these interventions are typically technology-oriented and are not supported by effective policies and institutions, the anticipated goal of reaching poor communities and improving their livelihoods has not been yet achieved.

Fifth, there is a gap in linking research and development and in addressing landscape challenges through integrated approaches.



Courtesy A Notenbaert

The project ...

Part of the Nile Basin Development Challenge, this project is about matching technologies (or whole strategies) with environments. It has been shown that 'blanket' rainwater management systems are often inappropriate.

One size does not fit all. Strategies for upper slopes are likely to be different than those for lower slopes.

The suitability of technologies may be influenced by altitude, rainfall patterns, landscape position, soil type, access to input and product markets, crop-livestock interactions, the extent of community integration, the attitudes of local authorities, the presence of NGOs and other development organizations – and many other factors.

This project will identify the conditions – biophysical and institutional – that favor the use of particular sets of practices and it will scan the landscape to find out where else these conditions prevail. That is, the project will help identify the ‘conditionality’ under which different recommendations are successful.

“The project will undertake baseline assessment of bio-physical and socio-economic conditions in the Blue Nile Basin. Factors such as topography, soil types, cultivated area and crop yield, water access, availability and productivity will be taken into account alongside farming systems, livelihood zones, and other socio-economic characteristics. We will identify and characterize promising rainwater management interventions – from in situ water management to small scale irrigation and drainage systems – that currently exist in the area, matching them to conditions on the ground and identifying ‘best-bet’ interventions and scenarios. Suitability maps of higher impact interventions will be produced and spatial recommendation domains defined. We expect to be able to identify, prioritize and select interventions that have higher potential impact with respect to agricultural productivity.”

The project deliverables include:

- A methodology to identify which rainwater management systems work best in which parts of the Nile basin, and which can be applied to other African river basins to improve livelihoods;
- Maps that identify what rainwater management systems work best, and where in the basin, in terms of biophysical and institutional parameters;
- An analysis of the best land use systems for different parts of the basin, in terms of water productivity, livelihoods and economic benefits.



Courtesy A.Notenbaert



Courtesy L.Rebelo

The Nile Basin Development Challenge (NBDC) is funded by the CGIAR Challenge Program on Water and Food (CPWF). It aims to improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management. It comprises five linked projects examining: 1) Learning from the past; 2) developing integrated rainwater management strategies; 3) targeting and scaling out of rainwater management innovations; 4) assessing and anticipating the consequences of innovation in rainwater management systems; and 5) catalyzing platforms for learning, communication and coordination across the projects.

The NBDC is implemented by a consortium comprising the International Livestock Research Institute, International Water Management Institute, World Agroforestry Centre, Overseas Development Institute, Nile Basin Initiative, Stockholm Environment Institute, Ethiopian Economic Policy Research Institute, Catholic Relief Services – Ethiopia, Oromia Regional Research Institute, Amhara Agricultural Research Institute, Bahir Dar University, Ambo University, Wollega University, the Ministry of Agriculture and the Ministry of Water and Energy.

More information: Tilahun Amede (t.amede@cgiar.org)
<http://www.nilebdc.org>

