

Water Harvesting in Libya: A New Approach for Arid Areas

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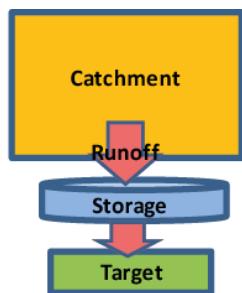
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THE PROBLEM: Declining agricultural productivity in Northern Libya – due to poor farming practices, overgrazing, drought and other factors – is a major threat to national food security. Soil degradation and falling groundwater levels are critical problems.

POTENTIAL SOLUTIONS: Libya is mostly arid, with limited fossil water. But some areas in the Western and Eastern mountain ranges (Tripolitania and Cyrenaica) receive 250-400 mm rainfall. This precipitation could be used more efficiently for agriculture.

PROJECT OVERVIEW: Since 2008, different soil and water conservation techniques have been introduced and adopted. These are envisaged to be part of a long-term strategy to increase productivity, conserve soils and protect the existing infrastructure. The conservation measures are mostly site specific, tailored to local environments, farming systems and customs. They include

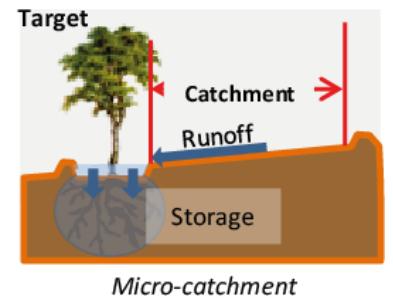
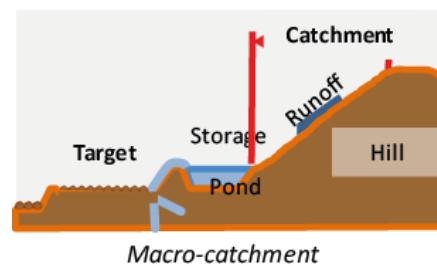
- Direct productivity measures: tree plantation, pastures and range land improvement, crop rotation, mulching, Meskat, contour farming etc
- Indirect productivity measures: contour banks, terraces, stone bunds etc
- Water management interventions : cisterns and ponds, small farm dams etc



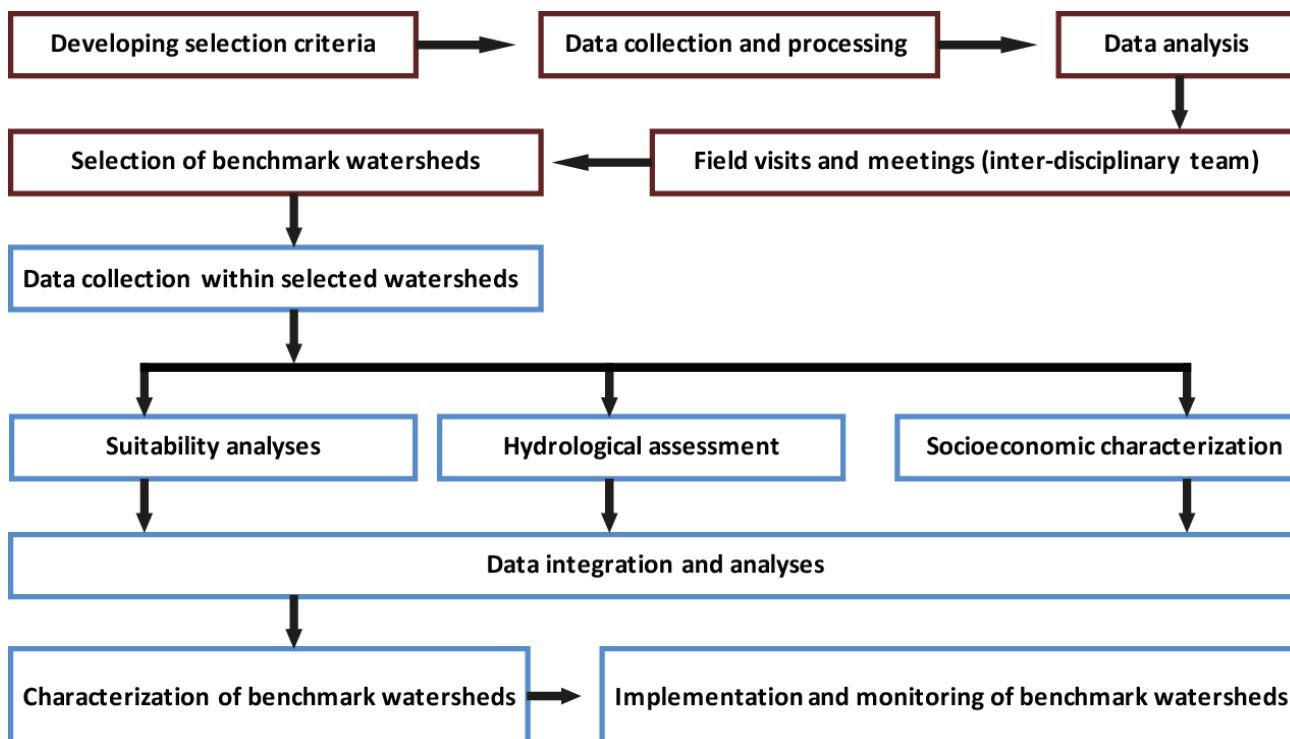
The main elements

Water harvesting for agriculture:

Collection and concentration of rainwater and runoff
Water used for irrigation (crops, pastures, trees), domestic use, livestock and groundwater recharge.



Watersheds were selected and characterized, and a program for sustainable management was developed. Implementation at four pilot sites.



Researchers discuss water harvesting interventions with a community in northwest Libya.



On job training for farmers and technicians: successfully implemented for various water harvesting techniques

APPROACH:

- Multi-criteria participatory approach.
- Activities include planning, research, training, and project implementation and monitoring.
- All activities in close cooperation between ICARDA and ARC-Libya.

IMPLEMENTATION:

In 2009/2010 four pilot watersheds were identified as most suitable. Four pilot sites, one per watershed, were selected in 2010.

Multiple criteria were used to determine priorities: accessibility, acceptability by beneficiaries, expected participation of farmers, climate, soil and topography.



Inter-row water harvesting: project site in north-east Libya, Jan 2011

Project technologies, tested jointly with local communities, will be scaled out nation-wide.