

# Demi-lune technology: Rainwater harvesting method

Catch the Rain, Grow with the Grain!

The Demi-lune (Half-moon) technology is a simple rainwater harvesting method for dry regions. Farmers dig semi-circular pits (2–3 meters wide, 15–30 cm deep) to trap rainwater and enrich the soil with compost. This boosts crop growth, restores degraded land, reduces erosion, and improves soil fertility, making drylands productive again.



ICRISAT

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Commodities

Sorghum/Millet, Maize, Cowpea,  
Common bean

Sustainable Development Goals



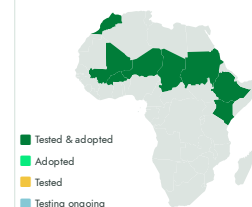
Categories

Production, Practices, Water management,  
Soil fertility

Best used with

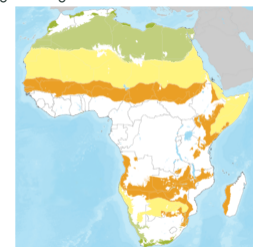
- [Water Harvesting and Soil Improvement >](#)
- [Contour Bunds for Water Harvesting >](#)

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



✓ This technology is **TAAT1 validated**.

9-9



Scaling readiness: idea maturity  
9/9; level of use 9/9

Gender assessment

4

Climate impact

7

## Problem

- Scarce and erratic rainfall limits crop growth and productivity.
- Severe soil degradation and erosion reduce land fertility.
- Low crop yields threaten food security and economic stability.
- Lack of irrigation infrastructure leaves farmers reliant on unpredictable rainfall.
- Nutrient-poor soils hinder healthy plant development.

## Solution

- Captures rainwater to boost water availability during dry spells.
- Prevents soil erosion and restores soil fertility.
- Increases crop yields and farming resilience.
- Low-cost, accessible alternative to irrigation.
- Enhances soil nutrients with organic matter.
- Restores vegetation and supports biodiversity.
- Strengthens food security and farmer livelihoods.
- Promotes sustainable, eco-friendly farming.

## Key points to design your program

The Half-Moon Technology is a transformative approach for land restoration and climate-resilient agriculture in dryland regions. It uses semi-circular pits to capture rainwater, enhance soil fertility, and boost agricultural productivity.

### Impact Data:

- Crop yields in Burkina Faso increased by up to 500% with half-moon pits.
- Water-use efficiency and millet yield increased 3-4 times in Niger.
- Soil fertility improved, with nitrogen uptake increasing by 43-64%.
- 5 million hectares of degraded land were reclaimed in Niger.

By following this framework, development partners can scale up sustainable land management practices, enhancing food security and climate resilience in drylands.



Unknown



## Demi-lune technology

<https://e-catalogs.taatafrica.org/org/technologies/demi-lune-technology-rainwater-harvesting-method>

Last updated on 13 May 2025, printed on 13 May 2025

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