



ADAPTATION FUND  
**Climate  
Innovation  
Accelerator**  
SMALL GRANTS. BIG IMPACT.



**Technical Assistance:** Solar based “pay as you irrigate” business model

**Location:** Moamba, Maputo Province, Mozambique

**Solution:** Solar-Powered Irrigation Systems (SPIS) designed with the participation of famers, integrated with a “pay as you irrigate” financial model targeting smallholder farmers, particularly women.

**UNEP CTCN grant:** USD 224,450



Training on solar powered irrigations systems in Mubobo. © UNEP-CTCN

Smallholder farmers, particularly women, face challenges due to water scarcity and the high cost of irrigation, exacerbated by climate change. This project designs a Solar Powered Irrigation Systems (SPIS) backed by a “pay as you irrigate” business model. The initiative aims to close the gap between solar irrigation technologies and smallholder farmers, by providing affordable and sustainable irrigation solutions which empower women, improve water management, and enhance food security.



## Objectives

- The primary objective is to enhance water management and food security by designing SPIS tailored to smallholder farmers.
- The project aims to empower women, who are among the most vulnerable to climate change, by providing them with the tools, knowledge, and a financing system necessary to manage irrigation efficiently and sustainably.



## Social Impact

- When replicated on a national scale, this technical assistance could reach up to 32,000,000 smallholder farmers. It directly supported 40 beneficiaries.
- Among the direct beneficiaries, 50% are women, and 25% are youth.



## Adaptation Impact

- **Enhanced Agricultural Productivity and Water Security:** The project increases agricultural productivity by providing reliable, predictable and efficient model for irrigation through SPIS, which reduces dependence on erratic rainfall and increases crop yields. This contributes to greater food security and economic stability in the region.
- **Sustainable Water Management:** By promoting the use of solar-powered irrigation, the project ensures sustainable water use and protects water resources from over-extraction and pollution, thereby enhancing resilience to climate change.
- **Empowered Communities:** The project empowers local communities, particularly women, by providing them with a pathway to access modern irrigation technologies. The financial model is adapted to their cashflow, allowing them to manage expenses.



### Other Co-Benefits

- Reduction in greenhouse gas emissions through the use of renewable energy.
- Improved financial inclusion for smallholder farmers.
- Promotion of sustainable agricultural practices that contribute to environmental conservation and resilience.



### Innovation & Technology

- Tailored Solar-Powered Irrigation Systems (SPIS): Model for use of solar energy to power irrigation systems, ensuring sustainable and efficient water use, and lower GHG emissions.
- “Pay as You Irrigate” Financial Model: A financial model that enables smallholder farmers to access irrigation technology without the need for large upfront payments, making the technology more accessible and sustainable.
- Capacity Building and Training: Training programs for farmers and other stakeholders on the financial model, ensuring long-term adoption and success.



### Replication Potential

- Following this TA, the solar irrigation system with the ‘pay as you irrigate’ model will be piloted. A robust enabling environment needs to be established that considers the financial market, policy and legal factors. For example, by developing supply chain capacity and M&E frameworks that improve installation quality. A holistic approach will support the strengthening of the local market in a sustainable way.
- The project shows significant replication potential in areas where water is available for irrigation, while ensuring the use of renewable energy for irrigation, and an innovative financial model adapted for use by smallholder farmers.

### Key Figures

- USD 224,450 project budget
- 32,000,040 people benefited in total
- 3 government ministries are engaged in the project oversight
- The project relates to 3 relevant national climate adaptation strategies and regulation
- The project contributed to the following SDGs:

