

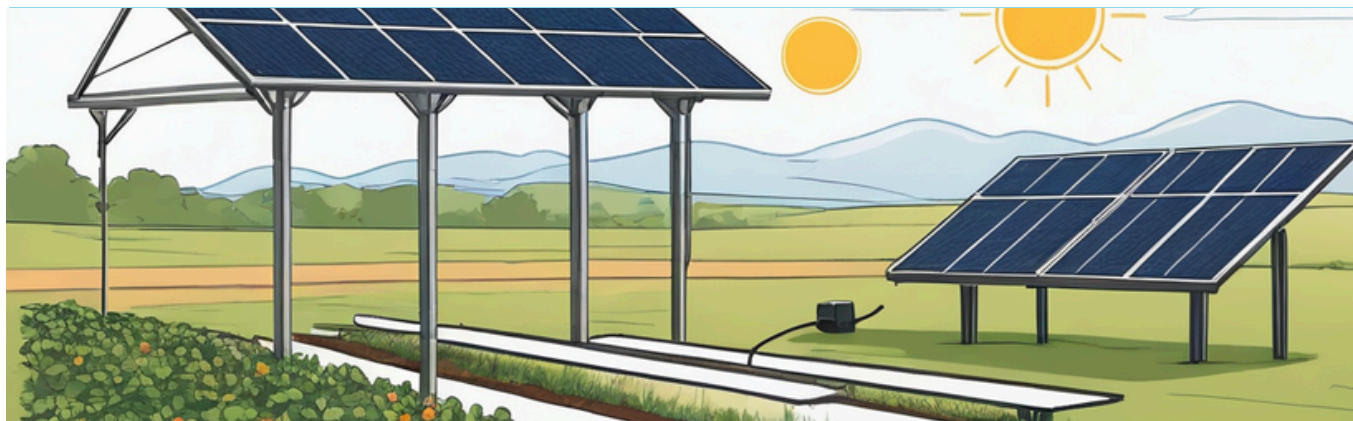


Technical Assistance: Promoting solar-powered irrigation to reduce climate risk

Location: Rabinal and San Miguel Chicaj, Baja Verapaz, Guatemala

Solution: Solar-Powered Irrigation Systems (SPIS) and associated technologies to increase the resilience and sustainability of smallholder farmers in high climate-risk areas of Guatemala's Dry Corridor

UNEP CTCN grant: USD 161,000 - 180,000



A model for a solar powered irrigation system © UNEP-CTCN

Smallholder farmers in Guatemala's Dry Corridor face severe challenges due to prolonged droughts and erratic rainfall caused by climate change. This project is implementing Solar Photovoltaic Irrigation Systems (SPIS) to enhance resilience and sustainability by providing farmers with reliable irrigation technology, supported by robust business models, a policy framework, and training. The project aims to improve water management, increase crop yields, and support food security in vulnerable communities.



Objectives

- The primary objective is to introduce SPIS technologies to smallholder farmers, and provide them with the tools and knowledge needed to improve water and energy efficiency in agriculture.
- The project targets local communities, with a special focus on women and other vulnerable groups, to enhance their resilience to climate-induced water shortages and improve their agricultural productivity.



Social Impact

- The project supported a total of 500,000 beneficiaries, including 200,000 direct beneficiaries and 300,000 indirect beneficiaries.
- Among both direct and indirect beneficiaries, 50% were women, and 15% were youth.



Adaptation Impact

- **Increased Water and Energy Efficiency in Agriculture:** The project improves water and energy efficiency by introducing SPIS, which reduces the reliance on non-renewable energy sources and ensures a more sustainable use of water resources. This contributes to the overall resilience of the agricultural sector in the Dry Corridor, making it less vulnerable to climate variability.
- **Enhanced Agricultural Productivity:** By providing farmers with reliable irrigation systems powered by renewable energy, the project supports increased agricultural productivity, even in the face of prolonged droughts and changing rainfall patterns.
- **Improved Climate Resilience:** The project enhances the resilience of farming communities by ensuring that they have access to the tools and technologies needed to adapt to changing climate conditions, particularly in managing water resources effectively.



Other Co-Benefits

- Enhanced agricultural productivity.
- Improved access to renewable energy.
- Strengthened community involvement in water resource management.



Innovation & Technology

- **Solar-Powered Irrigation Systems (SPIS):** Implementation of SPIS to provide a sustainable and reliable water supply for agricultural use, reducing dependency on fossil fuels.
- **Integrated Water Resource Management (IWRM):** Training modules on IWRM to help farmers manage water resources more effectively, including techniques for water conservation and efficient irrigation practices.
- **Sustainable Agricultural Practices:** Promotion of sustainable agricultural practices, adapted to the specific conditions of the Dry Corridor, ensuring long-term productivity and resilience.



Replication Potential

- The project shows high replication potential in other arid and semi-arid regions where irrigation is needed to ensure sustainability and viability of farming, and where irrigation can be powered through clean and renewable energy sources.

Key Figures

- USD 161,000 - 180,000 project budget
- 500,000 people benefitted in total, of which 200,000 are direct beneficiaries
- 5 different governmental institutions participated or were reached by the project activities
- The project contributed to the following SDGs:

