Chad

Funded by the European Union

Technical Assistance: Solar Energy and Water for Climate Resilience Project through the Rehabilitation of Wells in Liwa
Location: Liwa, Chad
Solution: Solar-Powered Water Pumping Systems and Well Rehabilitation
UNEP CTCN grant: USD 187,750

Liwa, a community in Chad, faces severe water scarcity and infrastructure degradation due to climate change and conflict. The existing water infrastructure is inefficient, leaving many communities vulnerable to droughts and waterborne diseases. This project aims to rehabilitate existing wells and introduce solar-powered water pumping systems, providing a sustainable solution for water access. The initiative also addresses water quality concerns and promotes resilience to climate change through renewable energy technologies, benefiting both local populations and livestock.

Objectives

The project aims to improve water access and quality in Liwa by rehabilitating traditional wells and introducing solar-powered pumping systems. This effort will enhance the community's resilience to climate change, reduce the workload for women, and strengthen local capacity for water management.

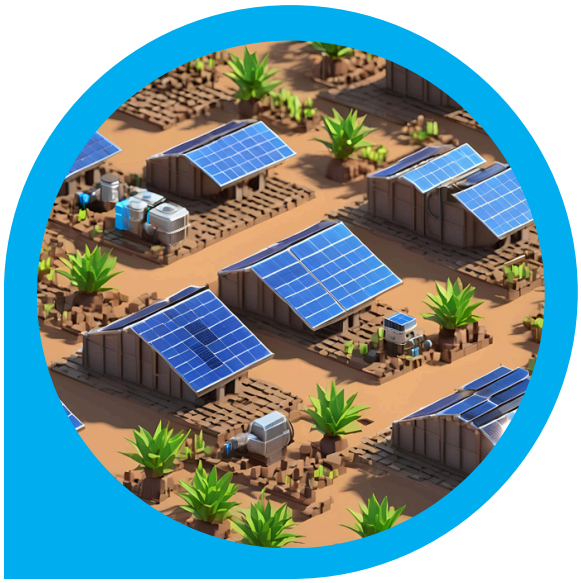
- **Rehabilitation of wells**: Improve access to potable water by rehabilitating existing wells and improving their efficiency with solar-powered pumps.
- **Capacity building**: Train local stakeholders, including community members and officials, in sustainable water management and system maintenance.
- **Reduction of GHG emissions**: Replace diesel-powered pumps with solar energy to reduce greenhouse gas emissions.

Climate Impact

- **Reduced carbon emissions**: Solar-powered pumps eliminate the need for diesel generators, significantly reducing CO2 emissions.
- **Improved water management**: By ensuring efficient water use, the project promotes resilience to drought and water scarcity.
- **Sustainable water supply**: Solar energy ensures that water is available consistently, reducing reliance on traditional, less efficient systems.

Security Benefits

- **Conflict potential reduction**: Mitigating competition over scarce water resources reduces tensions between farmers and pastoralists.
- **Increased stability**: Access to reliable water reduces migration pressures and supports the stabilization of rural communities, otherwise prone to displacement due to water scarcity.
- **Improved safety**: Reducing the need for long-distance travel to collect water decreases the risk of conflict and violence.



Social Impact

- The project will benefit approximately 625 people directly through improved access to clean water.
- This will reduce the time **women and girls** spend collecting water, freeing up time for education and other productive activities.
- The project will also generate local employment through the maintenance and management of the solar-powered water systems.
- Vulnerable populations, including women and youth, will be involved in the governance and decision-making processes, ensuring an inclusive approach.

Food Security

- **Sustained agricultural productivity**: Improved access to water supports agriculture, ensuring consistent food production and increasing the resilience of rural communities to climate variability.
- **Livestock management**: Reliable water sources reduce the risks associated with livestock migration, improving the sustainability of pastoral practices.

CS Climate Technology

- This project introduces solar-powered water pumping systems, replacing diesel pumps and ensuring a sustainable, clean energy source for water management.
- The technology is adapted to local conditions and designed for low maintenance.

Replication Potential

- The solar-powered water management systems can be replicated in other regions of Chad and neighboring countries facing similar challenges.
- The capacity-building components, including training and governance frameworks, ensure that the knowledge is passed on, allowing other communities to adopt and sustain similar solutions.

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