

Concept Note: Solar Water Initiative (SWI)

1. Project Name:

Solar Water Initiative (SWI): Harnessing Solar Energy for Reliable Water Access in ASAL Regions

2. Problem Statement:

SWI addresses the rising water crisis in Kenya's ASAL regions caused by high temperatures and irregular rainfall. These regions receive only 150–850mm of rain annually, leading to drying up of surface water sources and forcing communities to rely on boreholes. While existing boreholes depend on manual labor, they limit access when water is too deep. Upgrading to solar power will tap untapped underground water, save time, and improve availability.

3. Target Beneficiaries:

SWI focuses on rural communities in Samburu County, starting with Lederu, a village of 180 people, mainly pastoralists with low education levels. With 105 females, cultural norms make them responsible for water collection, exposing girls to violence, and school dropouts.

4. Project Impact:

The introduction of solar-powered water systems creates an impact by increasing the volume of water accessible through existing boreholes. As a result, it reduces manual labor, improves water reliability and promotes sustainable water access, benefiting women and girls.

5. Project Description:

SWI addresses the water crisis in ASAL regions of Kenya by installing solar-powered water systems in existing boreholes. It empowers residents through training on solar operations and maintenance, water conservation, and management to optimize resource use. After technical support and training by expert technicians, trained community members will take over system operations to reduce future maintenance costs. The project also establishes a community-led governance system for local ownership, accountability, and effective management. It also involves a community-funded maintenance model to support in repairs and system upkeep, ensuring long-term functionality, promoting sustainability, and securing reliable access to water.

6. Additional Information:

So far, we have set up a local governance structure with 30 beneficiaries in Ledero covering the majority of households from this community who have suggested a paid model of 300 Kenyan shillings monthly to aid in the maintenance and operations of the systems.

Additionally, before and after the training on water conservation, we will assess the daily water usage for cleaning floors and outdoor areas. For example, if a household uses 15 liters for these tasks, we will track how much can be saved by reusing water from washing vegetables or dishes. This will allow us to measure and quantify the water saved through reuse.

7. Goals and Metrics:

Goal 1: Increase the amount of water pumped through solar-powered systems.

Metric: Liters of water pumped through solar-powered systems.

Target: 450,000 liters

Goal 2: Increase the number of people contributing to the funding model.

Metric: Number of people registered for the contribution model.

Target: 30 people

Goal 3: Reduce water waste through conservation training.

Metric: Liters of water saved.

Target: 10,000 liters

Goal 4: Train community members in solar operation and maintenance.

Metric: Number of community members trained.

Target: 30 members

Goal 5: Increase active contributors to the funding model.

Metric: Number of community members actively contributing.

Target: 50 members