



Solar Water Pumping (SWP) Systems in Nepal

Making Solar Water Pumping Systems Affordable to Smallholder Farmers

Most of the rain-fed and smallholder farmers in Nepal struggle to secure sustainable irrigation. They depend on laborious, time consuming and expensive methods of irrigation and livestock watering. Rain, hand pumps, diesel pump sets and carrying water limit them to subsistence farming.

A reliable and sustainable water supply bolsters agricultural productivity, improves livestock farming

Fast Facts

FUNDER: WUPPERTAL INSTITUTE FOR CLIMATE, ENVIRONMENT AND ENERGY (WISONS)

PARTNER: NEPAL AGRICULTURAL COOPERATIVE CENTRAL FEDERATION LIMITED

LOCATION: KAPILVASTU, RUPANDEHI, NAWALPUR



and ensures food security. Solar water pumping (SWP) systems are a proven technology in Nepal that have helped farmers move to commercial farming and improve their livelihoods. However, this technology has not been adopted widely due to lack of knowledge about the agricultural value chain and high upfront costs.

Project Approach

Under the USAID-funded Accelerated Commercialization Solar Photovoltaic Water Pumping (AC-PVWP) project, Winrock has successfully installed 76 SWP systems in different parts of Nepal for irrigation and livestock watering (fish farming, poultry, cow and pig farming) with affordable business models including lease-to-own, credit financing and water entrepreneurship.

The lessons from AC-PVWP are applied in the Knowledge Exchange for Solar Water Pumping project to provide reliable water solutions and scale-up SWP installation through knowledge exchange workshops, capacity-building and small farmer agricultural cooperatives. It also works with policymakers of rural municipalities on innovative and appropriate business models, creating linkages of farmers and cooperatives with SWP suppliers, field visits to SWP sites and technology demonstrations for farmers.

Project Objectives

- To expand the knowledge of board members of small farmer agricultural cooperatives to make the SWP system affordable to their members.
- To establish a platform for knowledge exchange between small farmers to share best practices and encourage them to upgrade to commercial farming.
- To increase financial access to promote SWP.
- To undertake policy advocacy for up-scaling of the SWP technology and business model.

Project Activities

- *Assessment Phase:* Selection of eight small farmer agricultural cooperatives and 240 farmers for project intervention.
- *Stakeholder Engagement Phase:* Assess knowledge gap and capacity-building needs assessment of selected cooperatives and their potential farmers. Develop standard training package for knowledge exchange workshop and awareness raising activities on SWP system.
- *Capacity Building Phase:* Organize orientation and knowledge exchange workshop for 10 policy makers, 40 board members of the selected cooperatives and 240 small farmers. Establish network among local representatives, municipal officials, cooperatives, farmers and SWP supplier companies.
- *Monitoring and Reporting Phase:* Monitor project progress and outputs regularly.

Partnerships

Winrock has developed partnership with NACCFL to implement the project. Winrock is designing and conducting orientation and knowledge exchange workshops for officials of cooperatives and municipalities, raising awareness of potential small farmers, creating linkages between municipalities, cooperatives, farmers and SWP supplier companies,

and carrying out periodic monitoring. NACCFL is responsible for supporting Winrock in identifying potential small farmer agricultural cooperatives and farmers, selecting and coordinating with participants for orientation/ demonstration and knowledge exchange workshops, and continuously encouraging cooperatives and farmers to adopt SWP technology.

Results

- Developed standard capacity-building package on SWP systems and affordable business models.
- Developed and disseminated information, education and communication materials on SWP technology.
- Capacitated 11 policy makers, 49 board members of small farmer agricultural cooperatives and 347 small farmers through knowledge exchange workshop and eight orientation and demonstration programs on the SWP system.
- Developed network among five rural municipalities, eight small farmer agricultural cooperatives, six SWP supplier companies and 347 small farmers to promote SWP technology for irrigation and livestock watering.

