

Smallholder farmers in Mozambique embrace solar energy

By Elisabeth Kisakye



“We set up the water pump, we follow the sun, align the panel, the water comes out and we start irrigating,” explains Ines Maria Paulo, a smallholder farmer and President of the Wanga Udje Farmers' Club, as she demonstrates how to use a solar irrigation pump.

Paulo is from Mozambique, a country that is particularly vulnerable to the impacts of climate change. With 90% of the population relying on agriculture for their livelihoods, protecting the country’s smallholder farms is crucial for helping to buffer the country from the worst impacts of climate change and overcoming poverty.

A project implemented by the United Nations Industrial Development Organization (UNIDO), with the financial support of the Global Environment Facility (GEF), is helping smallholder farmers to use renewable energy to increase their harvests and ensure their resilience in the face of climate change.

The UNIDO project, Towards Sustainable Energy For All in Mozambique (TSE4ALLM), is introducing solar-powered water pumping and small irrigation systems as a means to enhance the productive capacity of smallholder farmers.

Since 2018, as part of this project, UNIDO has partnered with the non-governmental organization, Ajuda de Desenvolvimento de Povo para Povo (ADPP, Development Aid From People to People), to implement a community project that uses photovoltaic irrigation systems for agricultural activities in the central provinces of Zambezia, Sofala and Tete. Through its Farmers Club Programme, the ADPP works with small-scale farmers to increase agricultural household income in a sustainable manner. As Abdulahi Chabane, Small Holder Farmers' Project Coordinator, Nhamatanda, Sofala Province explained, “In the demonstration fields, farmers learn about the negative impacts of some of their practices on the environment and about sustainable ways to mitigate the effects of global warming, while ensuring the food security of their families.”



A total of 32,000 small-scale farmers in eight provinces have been trained intensively since the beginning of the Farmers' Club Programme. In the project inception phase, 20 farmers' clubs received SF1 pumps, which are a portable and robust solar irrigation pump specially created for seasonal vegetable farmers. The solar pumps offer an environmentally sustainable alternative to gasoline and diesel-powered pumps, which are expensive and lock farmers into recurring fuel costs.

According to Pedrito Andre Sete, President of the Cheia Farmers Club in the Nhamatanda District of Sofala Province, the SF1 model has the capacity to irrigate 0.25 hectares. “Now we have five bigger systems with the capacity to irrigate one hectare.” Around 1,000 farmers have directly benefitted from the solar pumps, with another 5,000 indirectly benefitting from the technology.

The project is working towards ensuring the sustainability of the pumps through the provision of training to the farmers' clubs, with members of the 20 participating clubs able to independently assemble, start and conduct pump maintenance, as well as ensure proper water use and management.

TSE4ALLM has also worked to increase awareness about renewable energy technologies through numerous capacity-building sessions that emphasized the importance of clean technology adoption, not only for environmental conservation, but also for increased agricultural productivity.



“By using the irrigation system, the income of the farmers has been increasing in comparison to other farmers who are not using a solar irrigation system. Farmers now have the ability to irrigate regularly all year round and are not dependent on rain water,” says Jose Paulo Sara, Smallholder farmer, Beira, Sofala Province.

To date, the project has installed 80 photovoltaic systems irrigating 31 hectares of land cultivated by 4,000 farmers.

Paulo could not hold back her joy as she described how things have changed since they embraced the solar water pumps. She explained that before, farmers used to toil fetching water from a well to irrigate their crops. Now they have experienced increased crop production and income generation with the use of the solar water pumps.

“The quantities of crops we are selling today, like pepper, green beans, lettuce, onions and corn, are surpassing what we used to grow before, when we used watering cans.”

