



Feed the Future Country Fact Sheet

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Solar Power Offers Affordable Solutions for Kenyan Farmers



USAID/Kenya

Farmer Joshua Owuor with his Sunflower solar pump purchased in July 2015. Thanks to the rapidly decreasing price of solar panels in recent years, solar water pumps are now affordable and readily available.

In Kenya, horticulture provides more than seven million metric tons of highly nutritious fruits and vegetables each year. These foods draw a higher price than other crops, but producing them carries risk, partly because of the scarcity of water and the high cost of diesel and petrol, which fuel standard-issue water pumps. This leaves many smallholder farmers with no other irrigation option than to rely on inconsistent rainfall, which can be insufficient for growing produce that's competitive in the marketplace. That means they miss out on income that can help lift their families out of poverty, hunger and malnutrition.

To address this challenge and reduce harmful environmental trends, USAID's Kenya Smallholder Solar Irrigation Project, funded by Feed the Future, has tested, evaluated, and is now commercializing a solar water pump kit. Using the kit's contents, farmers can draw water from a variety of sources including groundwater and lakes. Since its power source is the sun, rather than diesel or petrol, the kit doesn't emit smoke that pollutes the air and is a more cost-effective solution.

Joshua Okundi, a farmer of one acre of land in Homa Bay County, didn't need a lot of convincing to buy a solar water pump after attending a Feed the Future demonstration of the kit. "I bought the pump because I don't want to be poor," said Okundi. Using his pump to keep the land he cultivates well irrigated, the 57-year-old earns \$4,240 annually from the bananas he grows, and he makes additional income from other horticultural crops and plant staples. The income and produce helps him supplement the nutritional needs of his family.

Okundi has made it a personal mission to train others on how to use the solar pumps for agricultural production. "There is an urgent need to improve the livelihoods of people from this area and that's why I voluntarily train them. If you cocoon your knowledge it's an offense. I feel happy when I help people," Okundi said.

Okundi also leads the Buogi Mac Buogi farmers group. Though they still find it difficult to contend with water shortages caused by erratic rainfall, the solar pumps are revolutionizing farming for the group's 70 members and others in their area. By using the pump, more farmers have been able to irrigate more frequently and increase their productivity at a lower cost.

The simplicity and the rapidly decreasing price of solar panels in recent years have made solar pumps affordable for smallholder farmers, at a total cost of \$345 each. Early adopters of solar water pumps in Kenya have already seen a 30 percent increase in production compared to rain-fed crops.

Farmers with this technology have reported a \$39 per acre cost savings in irrigation for a month, and Feed the Future and partners are pioneering the use of solar pumps among even more farmers.

In one partnership, farmers can put a \$147 down payment on the purchase of a solar pump and then pay the balance in \$20 monthly installments. In a similar activity, Feed the Future is collaborating with Sun-Culture Limited and Winrock International to promote the Sunflower Solar Pump in areas with a low water table. Equity Bank, in partnership with Sun-Culture, is offering farmers credit toward its purchase and more than 30 farmers have already adopted this solar pump through the partnership.

Equally encouraging are the benefits the solar pumps have for the environment. The technology reduces greenhouse gas emissions from fossil fuel-powered pumps and, most importantly, provides smallholders with an affordable mitigation strategy against climate change.