KENYA SMALLHOLDER SOLAR IRRIGATION PROJECT (KSSI)

SOLAR WATER PUMPS FOR SMALLHOLDERS

Are solar water pumps affordable to small farmers in Kenya?

Solar water pumps (SWPs), developed in the 1980s, have proven to provide 20 years or more of reliable service. They are ideal for off-grid irrigation and livestock water supply.

Today in Kenya, the installed cost of an SWP starts at approximately US $350, and may be higher depending on the lift (Total Dynamic Head) and daily water volume needed (see back).

Where can I buy a solar water pump?

SWPs for small farmers are available from several retailers. The table below lists retailers and pump prices, current as of September 2016.

What size solar water pump do I need?

Step 1: Measure your Total Dynamic Head (TDH), in meters (see back).

Step 2: Calculate the daily water volume needed, in litres per day.

Step 3: Find your approximate SWP cost in the table below.

Where can I get more information?

Please call Winrock's Nairobi office, +254 7310 95176.

SOLAR WATER PUMP COSTS VS LIFT AND VOLUME/DAY

Retailer	Pump Type	Solar Water Pump Model	Low Head / High flow (m / litres per day)	High Head / Low Flow (m / litres per day)	Installed Cost (KES)
Chloride Exide	Submersible Centrifugal	MajiPump MP 400	3 / 16,500	17 / 4,000	35,000
Futurepump	Surface Piston	SF1	4 / 13,000	10 / 5,400	65,000
Davis & Shirtliff	Submersible Helical Rotor	D3 Solar	10 / 6,500	30 / 2,600	150,000
SunCulture	Submersible Helical Rotor	SP-300	10 / 11,000	50 / 3,900	174,000

The Norololo Womens' Group of Baringo County receives training on using the solar pump.


The group used onion seeds donated by KSSI partner DuPont/ Starke Ayers.

HOW TO ESTIMATE TOTAL DYNAMIC HEAD

Example 1: Borehole and water tank

(Depth from ground surface to water in borehole)
+
(Vertical distance from ground at borehole to where pipe enters water tank)
+
(Horizontal length of water pipes between borehole and tank x 0.05)

= TDH

Horizontal distance, borehole to tank

Vertical distance from ground to water entering tank

Depth to Groundwater
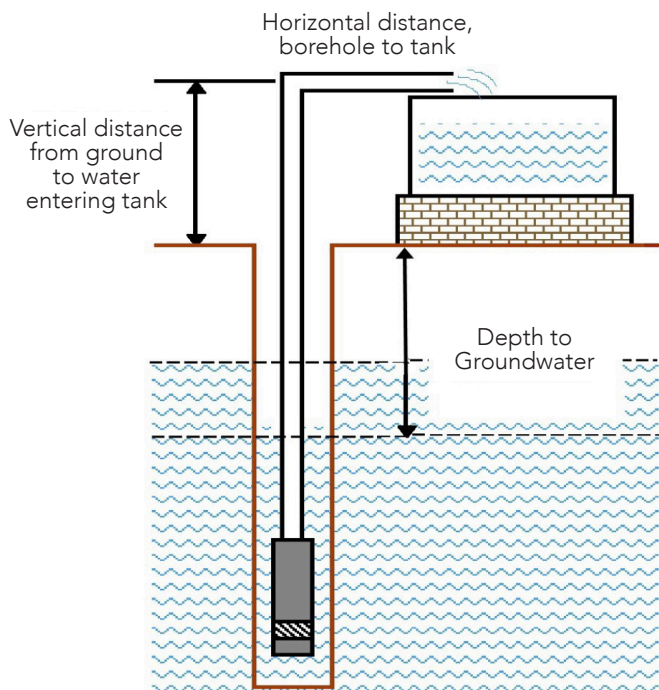
Example 2: Shallow water source

(Vertical distance from the water source to the highest point the water needs to reach before arriving at the crop)
+
(Horizontal length of water pipe x 0.05)

= TDH

Horizontal length of water pipe

Vertical distance, water source to highest point before reaching crop