



MONEYMAKER DEEP LIFT PUMP FOR KICKSTART

A HUMAN-POWERED IRRIGATION PUMP

Project Date: 2003



KickStart (formerly ApproTEC) is a nonprofit organization based in Kenya that develops and markets new technologies, enabling local entrepreneurs to establish new small businesses. Their range of human-powered water pumps allow African farmers to continue to grow vegetables into the dry season, and sell the excess to pay for food, water, medicine, and school fees for their family.

IDEO worked with KickStart to develop a pump for wells up to eighteen meters deep that can lift water up to seven meters above the pump, enough to irrigate a half-acre farm. The design team addressed several constraints in the design, manufacture, and use of the Deep Lift Pump, creating a final product with significant benefits:

- Uses human power, and accommodates barefoot users
- Costs less than \$150.
- Is small and light enough to carry on a bicycle or public transportation, but withstands harsh environments, wear and tear.
- Uses materials and manufacturing techniques common to Kenya, such as arc welding, inconsistent sizes of mild and galvanized steel, and plastic pipe
- Installs and runs without special knowledge or tools, and requires little to no maintenance
- Pumps efficiently despite loose tolerances

The pump works with a leg-operated treadle, using a motion similar to exercising on a stair-stepping machine. This drives a piston at the bottom of the well, which lifts the water up through the cylinder and pressurizes it through a hose. The pump's key innovation is its long, loose-fitting piston, which doesn't require the tight, sliding seals that would be nearly impossible to fabricate in Kenya. This brings a useful tool to a wider group of African farmers to significantly improve their lives.

AWARDS

- 2005 INDEX Award
- 2004 IDEA Gold, Research