KIWASH Approach to Solar Pump Financing for Smallholders
OUTLINE

- Introduction
- Pump Testing and Characteristics
- Financing
- Recommendations
**Goal:** Significantly impact the supply of water and sanitation services, and nutrition among poor urban and rural households in the 9 target counties

**Duration:** October 2015 – September 2020
Kenya Integrated Water, Sanitation and Hygiene Project (KIWASH)

Geographic areas

**Eastern Kenya**
- Kitui
- Makueni
- Nairobi

**Western Kenya**
- Busia
- Kakamega
- Kisumu
- Migori
- Nyamira
- Siaya
Integration with Feed the Future

Focus on improved **technologies** to boost commercial production and increase household production/consumption of nutrient dense, diverse foods

50,000 FTF-supported households with improved irrigation and kitchen garden technologies

Key factors to addressing smallholder irrigation:

- **Water Source** – shallow and deep wells, farm ponds/water pans, dams/lakes, boreholes
- **Water Lifting** – solar and electric pumps, motorized pumps, hydram, treadle pumps
- **Water Conveyancing and Distribution** – open/closed systems
- **Water Application method** – furrow, basin, drip, sprinkler
Solar pump characteristics

Solar pump advantages:

- Easy to install
- Uses renewable energy
- Operates autonomously
- Generally “good” water source sustainability

KIWASH carried out tests on two solar pump brands:

- Maji Pump (Chloride Exide) – Kitui and Kisumu
- Sunflower Pump (Future Pump) – Kisumu

### Depth vs. Flow Rate

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### Depth vs. L/Hr SFI-150

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Solar pump financing

Major Challenges affecting smallholder farmers:

- **Access to finance/credit** – banks and MFIs perceive smallholders to be high risk

- **Climate change** – crop failure mainly attributed to unreliable/inadequate rainfall

- **Low profit margins** – dryland farmers have limited capacity to enter into more lucrative value chains (dependent on staples, low prices)

- **Technology gap** – irrigation infrastructure development requires high capital investment

- **Solar pumps alone do not amount to efficient irrigated agriculture** – both water lifting and drip irrigation are required
KIWASH approach to irrigation financing

Recoverable Grants program:

- **Partner with agribusinesses** that contract smallholders and provide extension services for high value crop production
- **Identify suppliers** to that offer relevant technologies in KIWASH counties
- **Facilitate in-kind, “soft” loans** to smallholders for irrigation technologies
- **Recover funds via the agribusiness partners** through deductions on farmers’ sales
- **Demonstrate successes** of these arrangements to the financial market
- Support banks/MFIs to develop **appropriate loan products** for smallholders
Conclusion and Recommendations

- Increased income/benefits from solar pumps require efficient water distribution (pipes) and applications (drip, overhead systems)

- Low cost of maintenance and operations for solar pumps entails a substantial savings to farmers over the long term

- Repayment by farmers depends on their relationship to partner agribusinesses and the services received

- Successful grant recovery demonstrates to banks and MFIs the business opportunity established by these arrangements – i.e. KIWASH pays the cost of market entry
THANK YOU