

Quality Assurance for Solar Water Pumps

Why quality matters in scaling up solar irrigation



Efficient Appliances for People & the Planet

About CLASP & Programs



CLASP focuses on appliance & equipment energy performance and quality, to mitigate and adapt to climate change and expand access to clean energy.



- R&D grants
- Market, technology, consumer, and impact research
- Consumer campaign



- Test method and quality standard development
- Laboratory & field testing
- Certification



- Awards competitions
- Results-based financing

Solar Water Pumping: The Opportunity

- The **current addressable market** in sub-Saharan Africa is estimated at approximately USD 0.5 billion, **comprising 700K households**
- In the next decade, the sub-Saharan African addressable market could be **2.8 million households and a value of USD 1.6 billion**. Driven primarily by income growth and falling prices
- Market contraction in India is anticipated when subsidies are removed
- Despite the market potential, the solar water pump market in Sub-Saharan Africa for smallholder farmers is nascent with low penetration

Figure 1: Market potential in sub-Saharan Africa

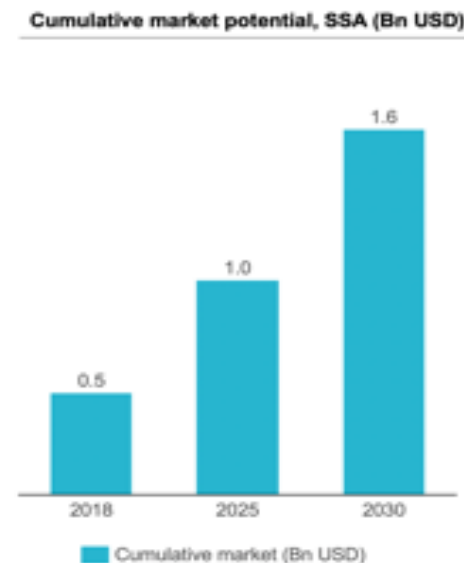
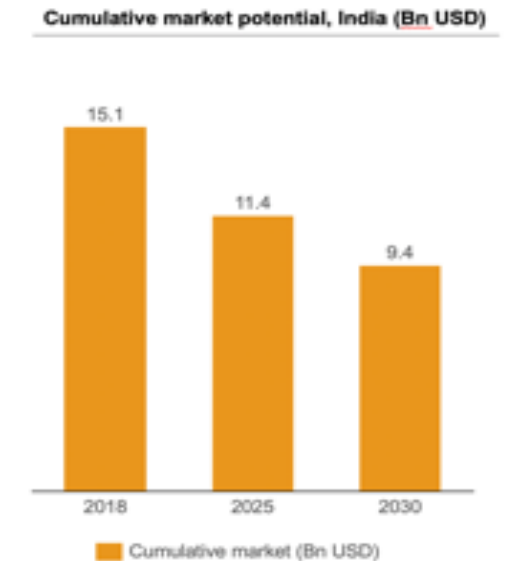


Figure 2: Market potential in India



Solar water pumps transform lives but product quality remains a key challenge

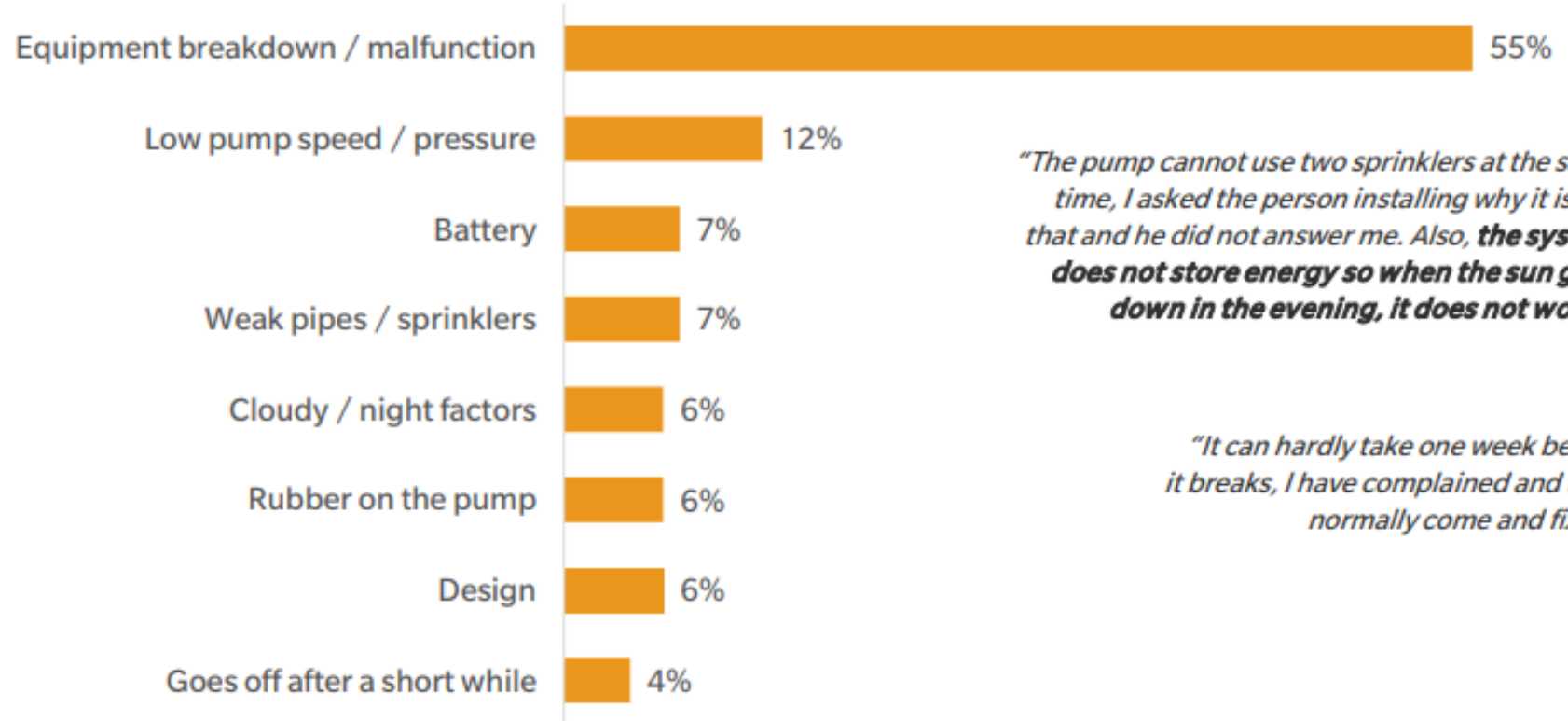
86%

of customers felt their quality of life had improved since SWP purchase

34%

of customers reported having challenges

Most common solar pump challenges



*"The pump cannot use two sprinklers at the same time, I asked the person installing why it is like that and he did not answer me. Also, **the system does not store energy so when the sun goes down in the evening, it does not work.**"*

"It can hardly take one week before it breaks, I have complained and they normally come and fix it."



VeraSol is an evolved quality assurance program that builds upon the rich history of Lighting Global Quality Assurance.



IKEA Foundation



With a quality assurance framework...



Make it possible to identify good-quality products that will meet consumers' needs



De-risk investment and purchasing decisions



Support healthy market growth



Avoid market spoilage



Protect consumers



CERTIFICATION

Evaluate and confirm product meet quality standards

QUALITY STANDARDS

Determine and set baseline level of product quality

TESTING & DATA

Generate product performance and quality data to inform actions

TEST LAB CAPACITY

Identify testing partners to provide testing services

TEST METHODS

Define how product quality and performance is measured

In Progress

What we have achieved so far



VeraSol Product Database & Field Testing
42 unique SWPs tested and listed on the VeraSol database & Currently testing **100 SWPs** in Kenya, Tanzania, Senegal



Testing & Training
Conducting SWP testing and provide technical training to build local testing capacity



Global LEAP SWP Test Method
Defining the testing procedures for measuring pump energy consumption, performance, and quality.

Identify high-quality SWPs

VeraSol Product Database

Lighting Global Quality Assurance and Equip Data are now VeraSol. [LEARN MORE](#) →

Solar Water Pumps

HOME → SOLAR WATER PUMPS Search DOWNLOAD CSV SHARE

RESULTS: 42 OUT OF 42 SOLAR WATER PUMPS TABLE VIEW SORT BY

FILTER BY

- 3 PRODUCT TYPES
- 2 HEAD VALUE
- 1 POWER SUPPLY TYPE
- 2 PV ARRAY SIZE
- 2 VOLUME
- 2 SAMPLE LOCATION
- 21 BRAND

[CLEAR ALL](#) [APPLY FILTER](#)

Product Type	Battery Integrated Pump	Submersible Pump	Submersible Pump
	Solar Water Pumps SunCulture		
Model Number	RainMaker 2C with ClimateSmart Battery	Model Number	RainMaker RM2C Kubwa with ClimateSmart Direct
Power Supply Type	DC	Power Supply Type	DC
Simulated PV Array Size [W]	300	Simulated PV Array Size [W]	600
Simulated Head Value [m]	1	Simulated Head Value [m]	3
High Irradiance Day: Total Volume of Water Moved per Solar Day [m ³ /day]	33.9	High Irradiance Day: Total Volume of Water Moved per Solar Day [m ³ /day]	30.6
COMPARE		COMPARE	

Product Type	Surface Pump
Solar Water Pumps Kickstart	Solar Water Pumps Futurepump
Product Type	Surface Pump
Model Number	TSQR2.0-25-25/20
Power Supply Type	DC

Global LEAP Awards 2019 Buyers Guide for SWPs

Global LEAP Awards
2019 Buyer's Guide for Solar Water Pumps

GLOBAL LEAP AWARDS

Credit: Futurepump

Recent Research



- [Solar Water Pump Durability Research Memo](#)
- [Tanzania Market Snapshot: Horticulture Value Chains and Potential for Solar Water Pump Technology](#)
- [Use and Benefits of Solar Water Pumps](#)
- [Solar Water Pumping: Global Market Development Roundtable Workshop Report May 2018](#)
- [Solar Water Pump Outlook 2019: Global Trends and Market Opportunities](#)
- [The 2019 Global LEAP Awards Solar Water Pump Buyer's Guide](#)
- [Global LEAP Solar Water Pump Test Method](#)
- [Solar Water Pump Technology Roadmap](#)

For more publications on solar irrigation and other off-grid technologies, visit the [Efficiency for Access Publications](#)

Thank you!
Any questions?



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