
Kenya Smallholder Solar Irrigation (KSSI)

Access to Finance for SWPs

Evgenia Sokolova
Evgenia@AktiveraEnergi.Com

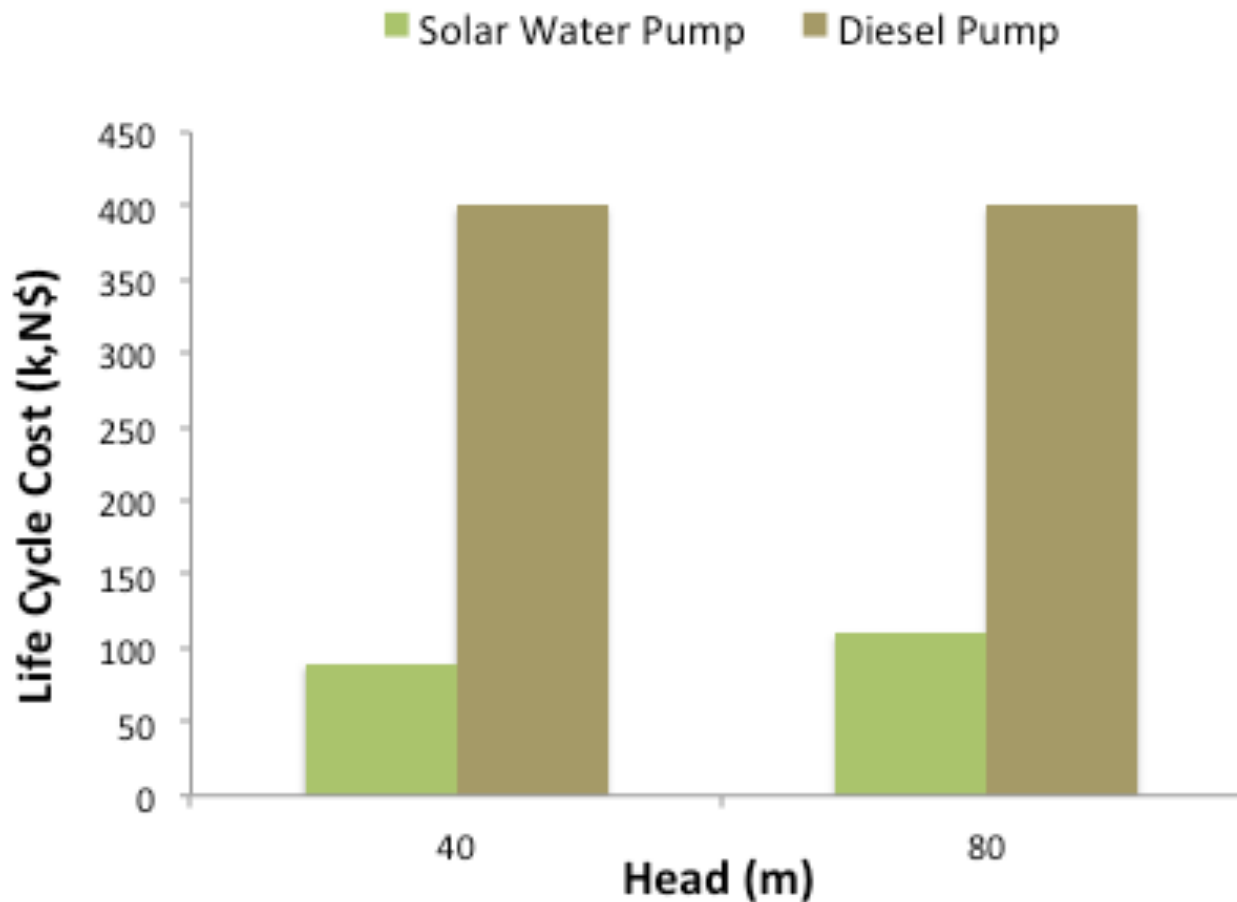
Our initial expectations:

Lending into a new and untested market...



"You don't qualify for a loan or a credit card. We can however, offer you a free bank calendar."

The Business Case for SWPs



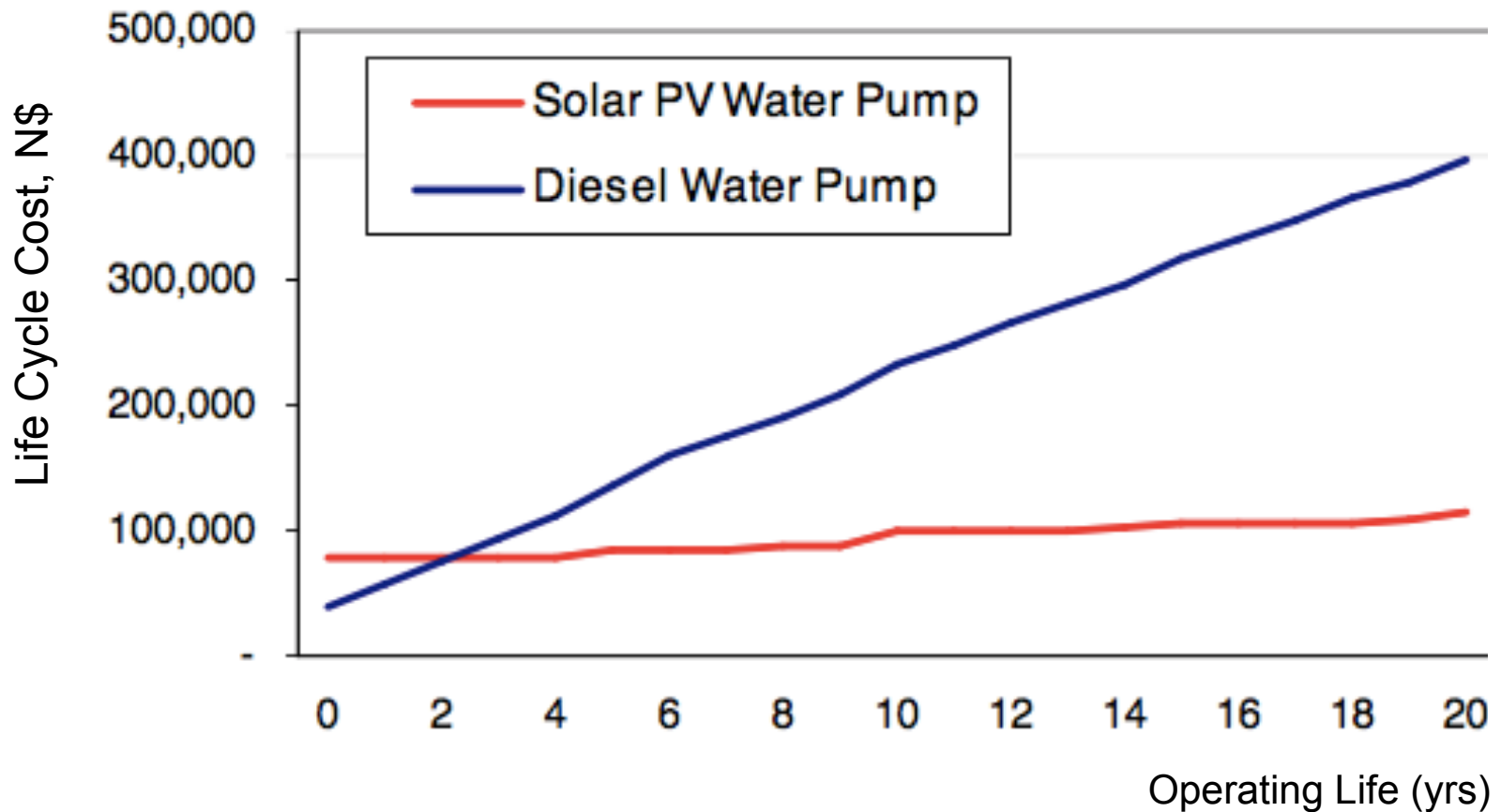
On a life-cycle cost basis (over the product life span, and including operating and maintenance costs)

Solar Water Pumps are >4x **cheaper** than the traditional diesel pumps

Daily flow rate of 10m³/day

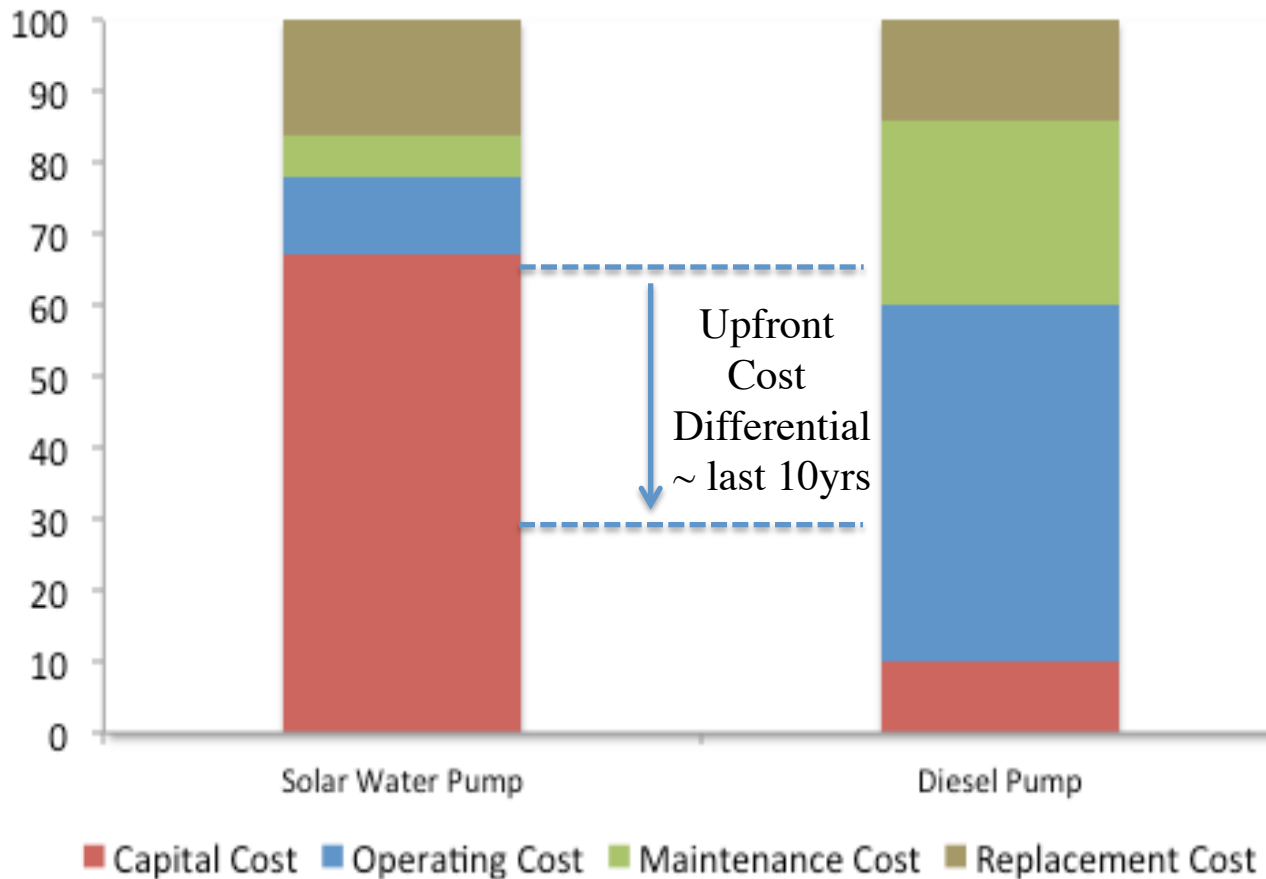
Source: GEF, UNDP Namibia

Cost break-even: 1.5 - 2 years



Source: GEF, UNDP Namibia

Barrier to Technology Switching: High Upfront Costs



While the prices of SWPs have halved in the last 10 yrs, they still cost double that of diesel.

Access to Finance is required to commercialize adoption.

Repayment cash flows from both – higher crop yields and lower costs

Case Studies
from
Winrock's
Demo Sites

Last season before SWP	First season after SWP	Second season after SWP	Projection - First season after 2-year load paid off
Onions, 0.25 acre	Onions (Oct. 2015), 0.25 acre	Onions, 0.25 acre; Passion, 0.5 acre	Onions, 0.25 acre; Passion, 0.5 acre

Total Variable Costs	90,100	144,100	285,600	204,300
Water use - litres/days	2,000	5,000		
Water use - litres/tomato crop season	48,000	120,000		
REVENUE				
Yield (kg)	3,125	3,976		
Price per unit (KES/kg)	100	100		
Total Revenue	312,500	397,600	425,000	620,000
Gross Profit	222,400	253,500	139,400	415,700

5-year Return on Investment (ROI) with two crops per year: 2.53
5-year Internal Rate of Return (IRR) with two crops per year: 26%

Opportunities and Threats of Lending to Solar Irrigation

Benefits

- Viable product with thriving **demand**
- An **income-generating asset**, repayment of cash flows through both diesel savings and greater crop yields
- **Risk reduction** for seed and fertilizer portfolio through irrigation
- Mitigate premiums on weather insurance
- Pump can be taken as **collateral** (asset-based lending → lower interest rate). Once paid, pump can be taken as collateral against other loans.
- 2 year warranty matches to loan tenor

Risks

- **Product quality**; cheaper products entering into the market
- Break-downs outside of **warranty** (mishandling, soil acidity, etc.)
- Lack of secondary resale market (mitigated via buyback clauses with distributors)
- Grid Connections

Winrock FI Channel Pipeline

Investee	FI Channel	Type of Investment Sought	Purpose	\$ Amount	# of Pumps
Existing Pilots	MFIs/Distributors	Loan Capital, Working Capital Finance, Technical Assistance	Consumer Finance, SME Finance	450.000	500
Lender 1	Commercial Bank	Loan Capital/Guarantees/TA	Consumer Finance	200.000	200
Lender 2	SACCO	Loan Capital/Guarantees/TA	Credit to SACCOs for SWPs	150.000	150
Lender 3	MFIs	Loan Capital/Guarantees/TA	Consumer Finance	150.000	150
Lender 4	Table banking	Loan Capital/Guarantees/TA	Consumer Finance	150.000	150
Lender 5	Leasing, SME finance	Loan Capital/Guarantees/TA	SME Finance, Lessee/Credit for Aggregators	250.000	250
TOTAL INVESTMENT POTENTIAL				1.350.000	1.400