

EFFICIENCY FOR ACCESS RESEARCH AND DEVELOPMENT FUND: INNOVATOR SERIES

CULTIVATING SOLAR-POWERED IRRIGATION FOR SMALLHOLDER FARMERS IN MALAWI



In Malawi, land is often the only main resource of economic value that rural households have. Over 80% of the population live in rural areas and depend on subsistence agriculture for their livelihoods.

Irrigation, which can be energy-intensive, compensates for the scarcity of water available in Malawi for agricultural purposes. However, current energy access rates show that only 12% of the population has access to electricity.

Irrigation has the potential to transform the agricultural landscape in Malawi. Access to irrigation technologies provides farmers with access to water for agriculture outside of rainy season, enabling them to increase their agricultural productivity across the year. When farmers increase their harvest they need to know they will either be able to access markets and sell their produce, or benefit from value addition activities such as agricultural processing.

Smallholder farmers, small businesses and cooperatives who are able to embrace solar-powered irrigation have the opportunity to boost income, and

add value to crops and play a crucial role in food processing, food preservation and overall food security.

WALA'S HOLISTIC APPROACH

Wala is a social enterprise that focuses on solar-powered technologies for irrigation and agricultural processing in Malawi. They provide farmers with a holistic support solution, including;

- Selling solar technology for agriculture on a Pay-as-you-Grow (irrigation) & Pay-as-you-Go (processing) basis
- Connecting farmers to financing options for Wala technology
- Engaging off-takers, and facilitating contract farming for farmers to ensure access to market
- Training farmers in how to use and maintain solar technology, good agricultural practices and business skills, increasing their chances of success with Wala equipment

DID YOU KNOW?

Accessible and cost-effective modern irrigation could shield nearly 500 million smallholder farmers worldwide from poverty, food insecurity and exposure to climate risk.¹



Farmers using Wala’s solar water pump system.

What did Wala create and how

Through this project, Wala were able to increase the distribution of renewable energy in Malawi through the sale of high-performing solar water pumps to smallholder farmers on credit via farmer groups. Wala’s long-term payment terms helped increase access by otherwise excluded groups, and the sale of the equipment on credit helped alleviate the financial pressure from farmers, and in turn increasing affordability of the solar solutions for agriculture.

Through the increased seasonal cycles from irrigation, the farmers have been able to generate additional income beyond one rainy season, improving their livelihoods.



Local farmers using the solar water pumps to water crops.

Through the project Wala delivered training to all of the 150 farmers in how to use and maintain solar-powered water pumps, good agribusiness practice and basic business skills. As a result, it has built the capacity of farmers to use solar equipment more effectively and to further improve their agricultural activities.

Wala has also engaged off-takers and where feasible, facilitated contract farming between the off-takers and their farmers. This has helped the farmers secure markets before they grow anything, ensuring stable and consistent revenue as farmers can grow high-value crops to pre-sell at the best possible prices.

WALA

The support provided by Efficiency for Access, alongside EEP Africa, enabled us to test different business models in selling high-quality solar irrigation equipment to low-income smallholder farmers on credit. The pilot would not have been possible without this support.

Priscilla Sani-Chimwele - Chief Executive at Wala Ltd

1. Solar Water Pump Tehcnology Roadmap, May 2019, <https://assets.publishing.service.gov.uk/media/5d31c9e4ed915d2fef0bdea/Solar-Water-Pump-Technology-Roadmap.pdf>

KEY OUTCOMES

Over 150 solar water pumps were sold to farmer groups, enabling 3,000 low-income smallholder farmers to use modern, solar-powered irrigation systems.

56% of the farmers reached were women, and 19% were under the age of 35. Part of Wala's target beneficiaries are disabled people, who were included in farming activities due to the portable nature of the solar water pumps that they sell.

These farmer groups are currently using the solar water pumps to irrigate and are growing crops outside of the rainy season, thereby increasing the productivity of arable land that has otherwise been dormant during dry seasons.

Wala conducted an end-of-project survey with 194 of the smallholder farmers who purchased the pump. Farmers increased their income by 447,922 Malawian Kwacha (equivalent to £213) from the sale of crops they have grown using Wala's solar water pumps. The same end line survey also indicates that up to 2500 casual labourer jobs have been created through this project in just one irrigation cycle.

Wala has connected over 40 farmer groups, totalling 1,669 farmers, to off-takers in the soya bean value chain. Through the Farmer Business School (FBS), Wala has provided training for 172 farmers on how to farm for business, including aspects of Good Agricultural Practice (GAP).

Lessons learnt:

During the implementation of the project, Wala experienced COVID-19-related challenges which negatively affected their supply chain and delivery.

A six-month delay in distributing solar irrigation equipment to farmers impacted on their ability to prepare for the dry season.

Wala discovered that while smallholder low-income farmers have restricted incomes, they were able to save and make repayments on time under the right enabling conditions. Further support to the sector is needed to enable access to more smallholder farmer groups, underpinned by long-term capital that aims to achieve societal outcomes. It will require continuous business model testing that incorporates feedback loops to capture the learnings from future pilots.

The project highlighted the importance of offering technical support alongside equipment sales to smallholder farmers. Wala's commitment to after-sale care and training exemplifies best practices, and establishes a blueprint for the success of future innovations in the energy access sector. This approach enhances the overall impact of initiatives on the lives and livelihoods of smallholder farmers, and their communities.

NEXT STEPS

Wala is currently mobilising additional funding to replicate the pilot, in order to complete testing of various parameters and to scale the business.

GET IN TOUCH

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