endev

Energising change

Locking in on the potential for solar-powered irrigation: A case of Hello Solar in Ethiopia

Summary

Hello Solar, a company that provides sustainable irrigation solutions through solar water pumps (SWPs) in Ethiopia, received an Innovation Fund grant from SEFFA to support their business. Hello Solar's business strategy entails engaging farmers through a field office, using technology for customer engagement, local assembly where possible, and providing ongoing support and training to ensure long-term sustainability.

This case study highlights the technical viability of the company's approach in line with the growing demand for sustainable irrigation solutions in areas with limited access to traditional power sources. The integration of a mobile app into the company's operations showcases a forward-looking approach to business viability.

Despite overcoming challenges such as accessing foreign currency and importing equipment, the lack of regulatory support and obstacles related to inflation and increased project costs have disrupted progress. Overall, the case study underlines the necessity of regulatory support and measures for the long-term sustainability and growth of Hello Solar and the renewable energy sector in Ethiopia.

Quick Facts

Ethiopia, Butajira

EUR 22,500

Ministry of Water and Energy, Ministry of Agriculture, Ethiopian Solar Energy Development Association

SNV, Hello Solar

Improving access to SWPs in Ethiopia by using PAYGO technology and local assembly

- Nine out of 12 SHF targeted bought and installed SWP
- Farmers showed willingness to finalise the payment in 3-4 months

- 500 – 1000 M2 irrigated
- 12 SWP sold
- 30% Productivity increase from irrigation

Crops: Avocado as a main crop with vegetables and forage under the tree

Problem statement

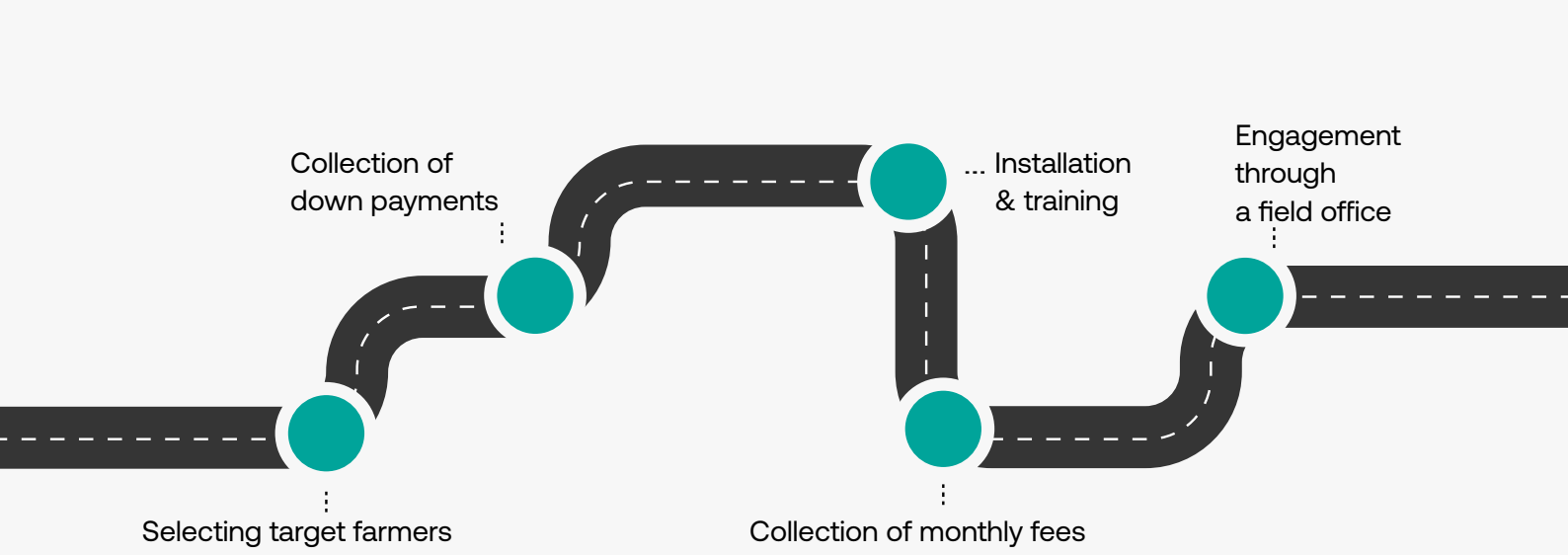
In Ethiopia, restrictions and difficulties in obtaining foreign currency pose a significant challenge for companies that require foreign currency to import essential equipment. The inability to access forex for equipment importation affects the overall development and growth of the renewable energy sector in Ethiopia. It restricts the implementation of innovative ideas and technologies that can contribute to sustainability and economic advancement.

Assumptions

- Ability to negotiate adjustments with financial institutions to adjust for inflation and increased project costs.
- Ability to access loans for working capital from financial institutions.

Business Case Details

Hello Solar's ambitions of providing more affordable SWPs for smallholder farmers in Ethiopia were hampered due to difficulties in accessing foreign currency. Their dream to be the first company to assemble SWPs locally required forex to import products and parts from abroad and forex is not easily available. Hello Solar planned to target farmers and engage in behaviour change through the implementation of their pilot project. The strategies involved in this process included:



Highlights from the Hello Solar strategy include identifying specific farmers who would benefit from their solar water pump solution, collecting a down payment of 30-50% from farmers for a PAYGO system, installing the SWP and providing training to the farmers on how to use and maintain them, then collecting PAYGO monthly fees of 36-49 USD and setting up a field office that would travel to the project site for engagement and ongoing support.

PAYGO customers typically have an 18 to 24 months repayment period, and the down payment encourages commitment. Additionally, local assembly of the SWPs was intended as part of their plan to reduce costs of the pumps for the target farmers. However, they first needed to find a way to get the currency to import the parts to get their business off the ground. Hello Solar wished to provide farmers with Sunculture's Rainmaker 2 submersible pump. A grant from SEFFA's Innovation Fund allowed them to overcome the challenge of limited or no access to forex for equipment importation.

As well as grappling with a lack of access to forex, Hello Solar's business struggled with the lack of clear and consistent regulation at customs: imports are tax-free if the direct customers are SHFs but not if the product is sold to traders/distributors. Dismantled solar products are not considered as solar devices and may be subject to tax, while importing assembled products facilitates negotiation with the customs office but increases purchasing and transport costs and removes the option to shop around for components across different countries.

The Government of Ethiopia did launch a task force for tax review to streamline import regulations – productive use of energy (PUE) equipment that was not specified in the old tax book is specified in the new one, and imports are now tax-exempt. However, the general awareness of regulation and the changes applied seems to be limited within the PUE sector and continues to cause confusion for private sector companies. Despite these challenges, Hello Solar has managed to sell 12 SWPs in rural areas of Ethiopia and has proven the feasibility of their approach.

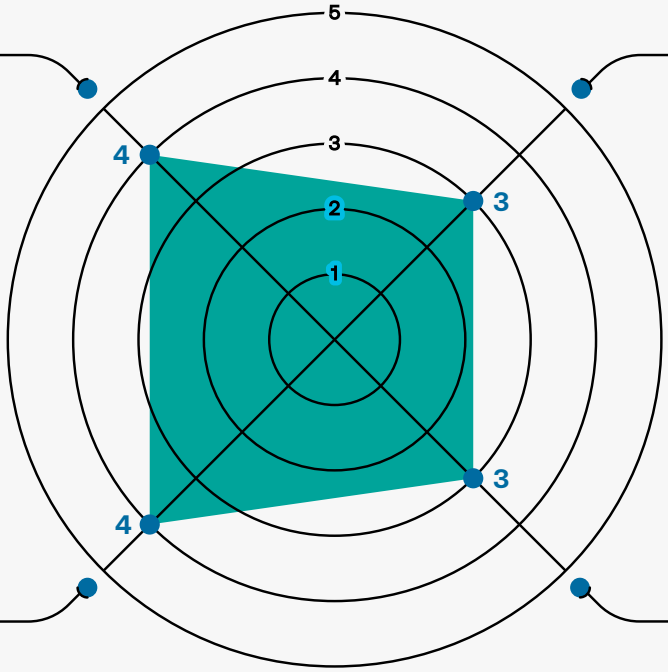
Business Case Attractiveness

Long-term outlook

The planned local assembly and plan to train farmers and provide ongoing support through a field office indicates a commitment to long-term customer relationships and solution sustainability. However, challenges such as inflation-related cost variations and import regulations will require proactive financial planning to ensure long-term sustainability

Business viability

The emphasis on engaging target farmers, collecting down payments, and implementing a PAYGO system reflects a strategic and customer-centric business approach. The integration of a mobile app into their operations also showcases a forward-looking approach to business viability.



Financial viability

The utilisation of the Innovation Fund to access foreign currency for the importation of SWP equipment helped the viability of this approach. PAYGO makes SWPs affordable for SHFs and future local assembly should increase affordability. Increased yields showed that farmers have a return on their investment in SWPs.

Technical feasibility

Feasibility of the SWP and of the PAYGO approach was proven by the uptake from farmers.

Outcomes

The access to SWPs was increased among the target population of farmers through the following ways:

Access to Foreign Currency and Equipment Importation: Hello Solar successfully accessed the Innovation Fund, allowing it to obtain forex and import the necessary SWP equipment. This outcome was particularly significant as it addressed the challenge posed by limited or no access to forex in the current country situation.

Support for Financial and Cost Challenges for the supply company: SEFFA supported Hello Solar to face barriers in securing working capital from financial institutions to address the effects of inflation and rising costs.

Investment in a PAYGO solution opened access to SWPs among the farmers by addressing the affordability gap.

Key Takeaways

Project Design

- Consider including initiatives on regulations supporting the importation of PUE equipment by collaborating with relevant government entities.
- Risk management plans should include mitigations related to inflation, to ensure project costs remain within budget constraints.
- Initiatives with financial institutions should include addressing inflation and rising costs for private sector project implementation.

Overcoming Financial Barriers

- Financial constraints affect the supply chain of PUEs, commercial bank's weakness may affect access to PUEs.
- PAYGO with down payment proved effective for SWPs in Ethiopia.

Overcoming Logistical Barriers

- Working with government ministries and customs may be necessary to overcome challenges related to the importation of PUE for agriculture.

Overcoming Farmers' Barriers

- Training programmes for target farmers on the use and maintenance of SWPs were important for success.
- Establishing clear communication channels to inform farmers about the impact of SWPs is important. Fostering their involvement and commitment lays the foundation for sustainable user participation.

Overcoming Technology Specific Barriers

- Mobile apps for PAYGO SWPs can enhance customer engagement and support the efficient collection of monthly fees.
- Investment in robust infrastructure to support the assembly, installation, and maintenance of SWP systems is important in ensuring the long-term reliability and effectiveness of SWPs.

Overcoming Value Chain Specific Barriers

- Collaborate with the agricultural value chain stakeholders to ensure the seamless integration of the SWP systems into existing agricultural practices.
- Develop agronomy training and support programmes tailored to the specific needs of farmers within the agricultural value chain along with SWPs training.

Understanding the context of SEFFA: Farmers' Experience

Several layers of barriers to the adoption of PUE technologies

Iconography

Financial Instruments

Result-Based Financing

Innovation Fund

Fee-for-Service

Consumer Credit

Lease-to-Own

Types of Barriers

Farmer

Logistics

Technology Related

Financial

Value Chain Related

Agriculture Chain

Dairy

Horticulture

Technologies

Irrigation

Cooling

Drying

Other

Total Budget

Farm Size

Location

Ethiopia

Kenya

Uganda

About SEFFA

The Sustainable Energy for Smallholder Farmers (SEFFA) in Ethiopia, Kenya and Uganda project was designed by leveraging over 15 years of practical experience of EnDev. The strategic partnership identified lack of modern energy access as one of the critical development barriers in rural areas since it undermines agricultural productivity, exacerbates pre- and post-harvest loss, and makes it challenging to store and process produce. The IKEA Foundation has provided an €8 million grant to support EnDev's efforts. Learn more about the project here.

About the IKEA Foundation

The IKEA Foundation is a strategic philanthropy that focuses its grant making efforts on tackling the two biggest threats to children's futures: poverty and climate change. It currently grants more than €200 million per year to help improve family incomes and quality of life while protecting the planet from climate change. Since 2009, the IKEA Foundation has granted €2 billion to create a better future for children and their families. In 2021 the Board of the IKEA Foundation decided to make an additional €1 billion available over the next five years to accelerate the reduction of Greenhouse Gas emissions.

Learn more at: www.ikeafoundation.org or by following them on LinkedIn or Twitter.

About EnDev

The Energising Development (EnDev) programme is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), the Netherlands Ministry of Foreign Affairs (DGIS), the Norwegian Ministry of Foreign Affairs and the Norwegian Agency for Development Cooperation (NORAD) and the Swiss Agency for Development and Cooperation (SDC). The programme is implemented in 20 countries across Africa and Asia in close cooperation with leading international organisations and key local stakeholders.

EnDev is jointly coordinated by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Netherlands Enterprise Agency (RVO.nl) with strategic partnership is with the SNV being one of the most prominent partners. Learn more at www.endev.info

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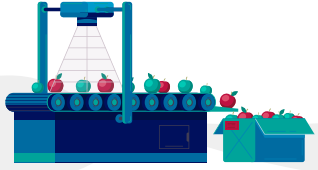
SNV

Multi Crop Farmers



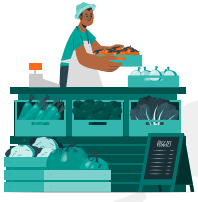
Pre-Processor

Market Traders

Consumers

Aggregators and Agri SMEs

Wholesalers



Retail / Urban Vendor

Processing

Regional / International Exports