

Smart-Irrigation-as-a-Service Financing Vehicle

Provides microfinance alongside technical assistance for drip-irrigation systems to improve climate adaption capacities of smallholder farmers



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Background

In Thailand, agriculture is closely interlinked with climate change: the sector consumes 90% of national freshwater reserves while contributing to climate change effects through practices such as deforestation and land degradation. Still, many irrigation systems have low efficiency and the sector remains vulnerable to extreme weather events such as a drought in 2015 that affected over 250,000 farmers, resulting in USD 400 million in government spending. In times of an increasingly unpredictable climate, there is hence a need to introduce more efficient irrigation systems.

Drip-irrigation systems¹ offer the potential to take up climate-smart agriculture (CSA) approaches among Thailand's small and growing agri-enterprises. Yet, agri-enterprises face challenges in accessing finance for drip-irrigation systems as there is a long-time horizon for this climate investment to capitalise. At the same time, conventional microfinance institutions (MFIs) tend to be short-term oriented and lack assessment frameworks for climate-smart technologies.

Solution Overview

The **Smart-Irrigation-as-a-Service Financing Vehicle** directs deal flow for drip-irrigation systems to improve productivity and climate adaptation capacities to small and growing agri-enterprises. This financial instrument offers microfinancing solutions to lower investment risks in agricultural process improvements for both farmers and financial institutions. Investment in irrigation systems reduces the dependency of smallholders on unpredictable and less climate-resilient, rain-fed production or pipe irrigation while significantly increasing crop yields and commercialisation potential.

Key Features

MFIs will leverage funding from a capital market special purpose vehicle (SPV) to provide financing to agri-enterprises through microloans via a pay-as-you-go model. This includes a first loss default guarantee for the MFIs mitigating their investment risks. A first loss default guarantee covers part of the first tranche of losses. For example, 100% of losses up to a value of 10%

¹ Drip-irrigation systems apply water separately to each plant in small, frequent, precise quantities representing currently the most water-efficient irrigation system (FAO, 2018)

Focus:	Climate change adaptation
Ecosystem Impact:	Access to finance; Infrastructure & technology; Available skills & talent
Lab Cycle:	Thailand 2018
Challenge Hosted by:	UNDP & IGES

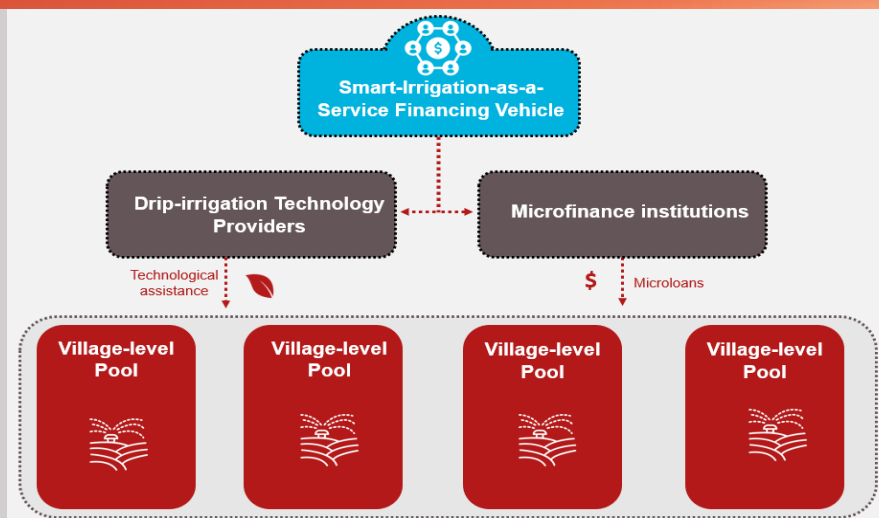
of the portfolio. A 'second loss' guarantee would cover a second tranche of losses. The MFIs cooperate with irrigation technology providers that provide the technology and technical assistance to agri-enterprises.

This will facilitate effective and efficient implementation of smart-irrigation systems and a long-term sustainable impact. Agri-SMEs will be pooled together on a village-level to implement the financing vehicle on a larger scale.

It is estimated that the needs of these individual agri-enterprises are between USD 1000 to USD 5000 in short-term capital to be able to implement drip-irrigation

Innovative Characteristics

- **Bundles climate-smart solution for agri-enterprises:** The partnership between MFIs and irrigation technology providers makes it possible to combine microloans for climate-smart irrigation with technical assistance.
- **Aligns financing with crop cycles and cash flow data:** The finance mechanism allows to combine data analytics with cash flows for drip irrigation via a pay-as-you-go model.
- **Creating partnerships with village cooperatives** not only helps to directly reach out to farmers but to increase the overall value for MFIs.



systems. The pay-as-you-go cost of the smart-irrigation technology would be approximately 50 USD per month per smallholder farmer.

Target Market

- **Small scale agri-enterprises:** organised as village cooperates with a joint minimum of 500 hectares and that are interested in transforming towards CSA. Agri-enterprises across ASEAN countries will be targeted starting with agri-SMEs in Cambodia, Myanmar and Thailand.
- **Microfinance Institutions:** 10 MFIs will be financed by the capital market SPV and incentivises MFIs to focus on more green investments.
- **Irrigation Technology Providers:** will offer climate-smart irrigation technologies and provide technical assistance for MFIs and agri-enterprises to go climate-smart.

Impact Potential

- **Bringing CSA solutions to small scale agri-enterprises** has the potential to increase income and food security in the long-term.
- Promoting the interest of MFIs in **climate-smart and socially inclusive investments** by offering an innovative and financially sustainable option.
- Offering the **opportunity to multiply impacts** by involving village cooperatives and irrigation technology providers.

Product Developers



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SEED Practitioner Labs Climate Finance empower participants during the hands-on and collaborative Labs process to turn major financing challenges into robust prototypes. SEED Practitioner Labs Climate Finance are part of the implementation of "Financing and capacity building for micro and small climate-smart enterprises: Filling the gap of the missing middle", a project supported by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety.