Kenya Cold Room

Country	**Kenya**
Name of Company / Implementer	**WeTu (in partnership with SelfChill)**
Type of Business Model	**Pay as you store**
Type of Use Case	**Solar powered cold storage**

Summary

The SESA project developed a solar-powered cold room in Mbita market, Homabay County, Kenya, to reduce food waste and improve vendor income. Operated by WeTu and powered by SelfChill technology, the cold room addresses the lack of cooling infrastructure and poor handling practices. It preserves produce quality, reduces spoilage, and enhances food security.

The cold room is powered by SelfChill's innovative DC solar cooling technology using natural refrigerants and optional thermal storage. The initiative targets retail market vendors dealing in perishable produce i.e., vegetables and fruits such as tomatoes, sukuma wiki, and avocados, which suffer significant spoilage due to lack of cooling infrastructure.

The business model is based on a pay-per-crate-per-day pricing structure, tailored to produce type. The pilot has shown promising uptake and willingness to pay, with ongoing efforts to optimize utilization and expand customer segments.

Figure: **Solar-powered Cold Room**

The model

Cooling-as-a-Service (CaaS): Vendors pay per crate/day for cold storage. Pricing varies by produce type (e.g., leafy vegetables at 25 KES/crate, tomatoes at 50 KES/crate, fruits at 75 KES/crate).

Customer Segment: Small-scale market vendors, traders and local businesses.
Technology Partner: SelfChill provides modular solar-powered cold rooms with DC cooling units and low-GWP refrigerants.

Ownership: Cold room owned and operated by WeTu; SelfChill provides technical support and training.
Digital Integration: App under development for real-time monitoring and cashless payments.

Key figures under the SESA project

- 55 cold room customers reached
- Revenue loss due to spoilage reduced by up to 60%
- 56 tons of produce preserved in one year, with 97.7% of users being women vendors.
- 3773 crate storages

Key Lessons Learnt

Flexible Pay as you Use Model along with Tiered Pricing Has Improved Affordability and Adoption

A tiered pricing strategy based on produce type and associated income margins could be more effective than a flat-rate model, potentially improving utilization and financial sustainability. Based on this reflection, the Mbita cold room pricing strategy was revised. In addition, seasonal variations in produce categories might also support dynamic pricing based on continuous gathering of market intelligence.

Low Utilization Despite Affordable Pricing

The introduction of a tiered pricing model has improved cold room utilization in Mbita; however, the current price points are commercially unsustainable. Raising prices to cover costs would risk collapsing utilization, leaving the facility dependent on external support for long-term sustainability.

User Training and Engagement are Critical for Uptake

Vendors often rely on low-cost, informal storage methods—such as leaving produce on stalls or covering it with tarpaulins. Transitioning to cold room-based storage introduces not only a technological learning curve but also a new cost structure. Many vendors focus on the upfront fees, overlooking the potential for increased earnings through reduced spoilage and improved produce quality. Therefore, consistent user engagement, training and awareness-building sessions are crucial for sustained uptake.

Cold Storage Boosts Shelf Life and Vendor Earnings

Cold storage has significantly extended the shelf life of fresh produce—for example, leafy vegetables now last up to four days instead of two. This has led to reduced spoilage and waste and prevented the need to sell produce at discounted prices due to staleness, ultimately increasing vendor income

The next steps include

WeTu has successfully implemented a second cold room using an innovative, low-carbon design that incorporates sustainable construction materials, significantly lowering its greenhouse gas footprint.
In the short term, the focus will be on increasing user engagement and optimizing the performance of the two existing cold rooms to ensure their operational sustainability.
Looking ahead, WeTu aims to expand its network by establishing additional cold rooms across its hub locations and scaling up its ice production business to better support the fish value chain.

Key next steps include:

- Capacity Building: Strengthen user engagement through targeted training and support programs.
- Market Expansion: Replicate the low-carbon cold room model in new regions.
- Customer Diversification: Target business-to-business (B2B) clients to broaden the customer base.
- Technology Enhancement: Improve data analytics capabilities and integrate mobile payment systems.
- Pricing Optimization: Adjust pricing strategies to reflect seasonal demand patterns.

About the company/implementer

WeTu is a social enterprise operating in Western Kenya since 2019, providing sustainable solutions including clean energy, water, and cooling. It operates 16 Water-Energy-Hubs and focuses on sharing economy and circular economy principles. SelfChill is a technology provider offering solar-powered cooling systems with low GHG footprint, operating via a distributor model and supporting installations across Africa.

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