

## RESEARCH AND DEVELOPMENT FUND PROJECT SPOTLIGHT

# SMART VILLAGES RESEARCH GROUP LTD

## EFFICIENT LOW-COST COLD STORAGE FOR RURAL COMMUNITIES

**This project will develop affordable, low-tech cold storage for off- and weak-grid rural communities in East Africa. This project aims to improve agricultural productivity and achieve greater food security.**

Small Villages Research Group Ltd intends to develop and test improvements to EcoLife Foods' innovative, low-cost, cold storage solution. Through this project, the partnership will create an appropriate cold storage solution for widespread adoption. I will do this by focusing on improving cooling technology, locally sourced insulation and building materials and construction techniques. It will also use an innovative pre-cooling phase. The project will create productivity gains for local users including innovative uses of the waste heat generated by the hub (e.g. for drying produce and providing hot water) and the excess solar PV generated.

Smart Villages Research Group Ltd plans to:

- 1) Test manufacturing feasibility and thermal performance of insulation material from local waste.
- 2) Test the performance of stabilised earth blocks as an alternative to concrete or clay bricks, and optimise design for the walls, roof and sand foundations of the cold storage facility.
- 3) Research internal partitioning of the cold storage facility to produce zones of different temperatures, which will optimise the preservation of a range of products.
- 4) Research the design of a passive pre-cooling chamber that will reduce the energy and thermal demand on the cold store itself.
- 5) Research optimum productive uses of the heat waste generated from the system and excess PV.



## AT A GLANCE

### R&D Partner

Smart Villages Research Group Ltd

### Efficiency for Access Funding

£88,000

### R&D Funding Unlocked from Smart Villages Research Group Ltd

£10,940

### Project Location

Uganda