

# RESEARCH AND DEVELOPMENT FUND PROJECT SPOTLIGHT

## Synnefa Green

Precision Drying for Sustainable Agriculture; Smart Drying Solution

### Project Summary

A smart drying solution for extending the shelf life of food and reducing post-harvest losses, enhancing efficiency for smallholder farmers.

### Project Description

Synnefa Green is developing a smart drying solution that includes proprietary hardware and software components designed to extend the shelf life of food and reduce post-harvest losses. The centrepiece is the greenhouse solar dryer, ensuring efficient and controlled drying for safe, nutritious and hygienic large-scale drying.

The greenhouse solar dryers feature FarmShield, an advanced electrical appliance, and integrated with FarmCloud, Synnefa's record-keeping software platform. FarmShield uses solar-powered sensors to monitor humidity and temperature. It automatically controls the solar-powered heating, ventilation, and air conditioning (HVAC) system to maintain optimal drying conditions inside the greenhouse solar dryers.

FarmShield is equipped with a cellular internet SimCard or a Satellite Internet Module for areas without internet access, sending real-time data to FarmCloud. FarmCloud allows farmers to monitor greenhouse conditions, track inputs, harvest quantities, generate drying reports and connect to markets. It is accessible via a user-friendly web app or Unstructured Supplementary Service Data USSD platform.

The solution will promote co-owned greenhouse solar dryers for smallholder farmers, enhancing affordability and efficiency through a cooperative ownership model. This model reduces individual financial burdens and fosters community collaboration.

The smart drying solution aims to:

- Increase the volume of dried products for smallholder farmers
- Reduce production losses by shortening drying times from 5-7 days to 3-4 days
- Increase market accessibility for farmers to improve incomes

By using solar energy, our project addresses challenges in off-grid and weak grid settings, supporting smallholder farmers in achieving greater productivity, profitability, and food security.



### R&D Partner

Synnefa Green

### Organisation Founded

January 2014

### Technology

Solar dryers

### Project Location

Kenya

