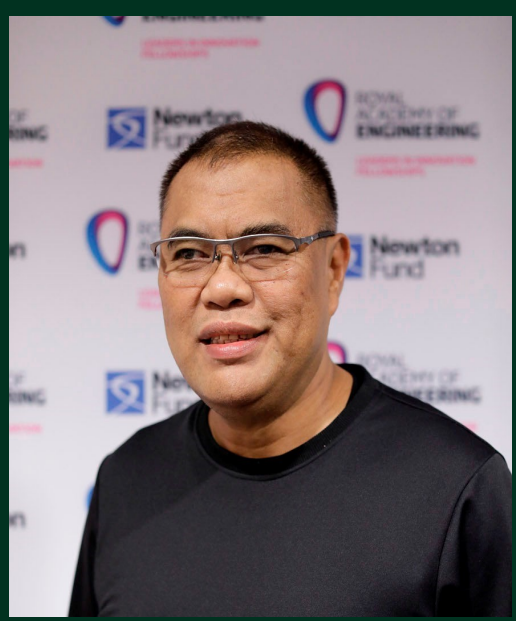




GREENHOUSE SOLAR DRYER

with Biomass Furnace for Coffee Farmer Communities



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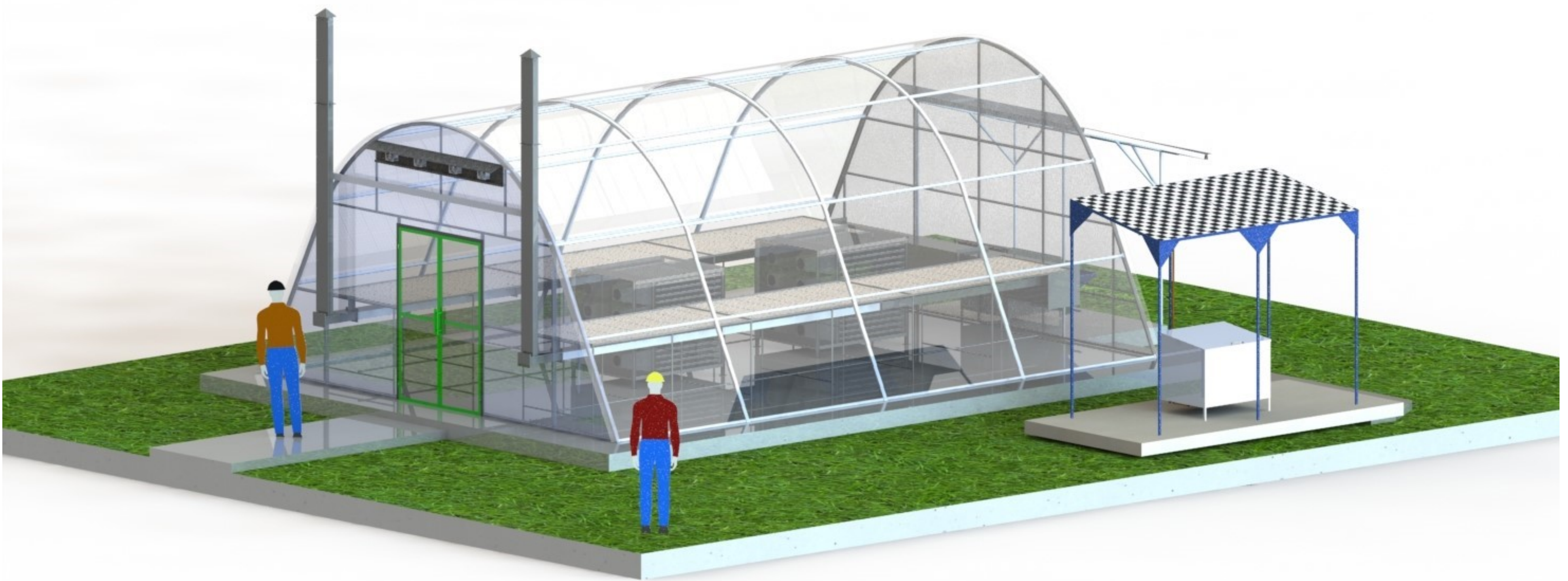
Problem

Coffee farmers have problems drying their crops properly. During harvest season, drying is delayed because it rains 50-80% of the time. It leads to product spoilage, poor quality, low price and market rejection.

Direct sun drying exposes crops to dust, birds and other contaminations. The situation hinders government initiatives to increase income of 275,000 coffee farmers, reduce imports and improve quality to global standards.

Solution

Greenhouse Solar Dryer with Biomass Furnace



Features

- Capacity 180 kg, dimensions 7.2m long by 5.1m wide
- Polycarbonate enclosure retains solar heat inside
- Temperature 10-25°C higher than outside, up to 60°C
- Biomass furnace provides heat during rainy periods
- Fans circulate the hot air inside
- Photovoltaic solar panel powers the furnace and fans

Benefits

- Better quality product, thoroughly and uniformly dried, 15-40% higher price
- Faster drying: coffee cherries in 8 days instead of 14 days, de-pulped coffee in 4 days instead of 7 days
- Avoided delays, contamination and market rejection
- Can be set up in communities off electricity grid

Status

- Three dryer set ups in coffee farmer communities, operated by cooperatives and benefiting members
- Two dryer set up for cassava and cacao crops

Partners Needed

- **Academic** cooperation to optimize dryer design
- **International development** collaboration to explore adoption to other countries
- **Grant fund** to set up more dryers, benefiting farmers

