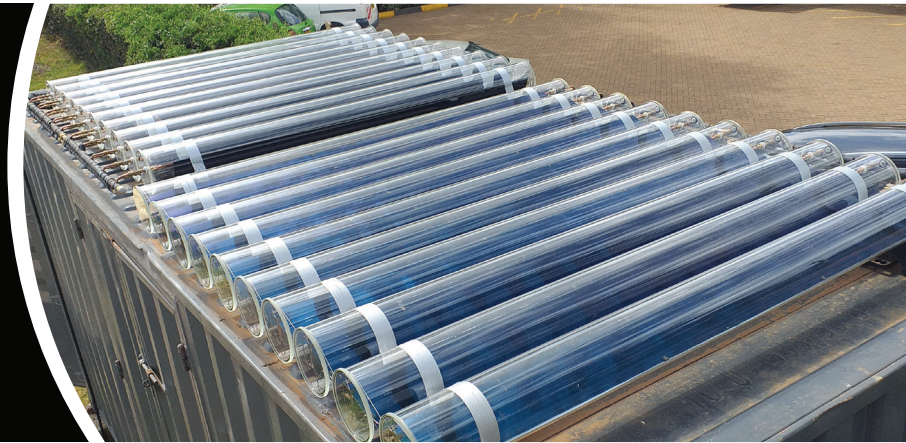


EnSo Impact

Enso Impact provides solar thermal energy technology solutions to increase agricultural productivity and tackle deforestation.



Challenge

Post-harvest loss occurs when crops are spoiled or not properly processed before they reach the market. Ineffective drying restricts possibilities of value-addition and meeting standards for export markets. World Food Programme estimates suggest that annual post-harvest food losses in Sub-Saharan Africa amount to more than \$4 billion. This situation is broadly reflected in Kenya, where the lack of reliable, affordable drying systems that use renewable energy to provide controllable temperature results in large amounts of produce wasted or improperly processed and unable to secure a premium price.

Innovation

The initiative provides farmers and agricultural processors with an affordable, reliable technology to dry a range of produce using renewable solar thermal energy. In 2019, EnSo began working on solar thermal energy as a potential alternative to the use of firewood in Kenya's tea industry, with the support of Innovate UK. EnSo also designed and built containerised drying units at the Kenya Forest Research Institute (KEFRI). These systems speed up the drying process of seeds that are then sold for tree planting and reforestation. The advantages of these systems include autonomous, off-grid operations, high performance and reliability.

We are currently completing a project for drying Moringa, although the same system can be utilized with many agricultural products, including mango, pineapple and chili. Moringa is the primary focus as it is an increasingly important crop for East Africa due to its drought resilience, with strong international markets that require a high-quality product.

Impact

The drying units previously installed by EnSo at KEFRI generate a consistent, manageable temperature of approx. 60 degrees Centigrade, reducing the time needed for drying seeds from 4 weeks to 4 days. By accelerating the drying process, KEFRI can increase the quantity of seeds it provides for tree planting and reforestation activities, leading to increased revenues. The solar thermal unit is also far more economical to operate than alternative systems using electrical heating.

The innovation will deliver a wider impact in several ways. By the end of the current project, Greengold Moringa will have been equipped with a solar thermal drying system to dry increased quantities of Moringa leaf supplied by the 500 farmers they work with, 70% of whom are women.