

Title of the Challenge

**Temperature-Controlled Packaging Solutions  
for Sustainable Food Supply Chains**

**What is the main issue the challenge addresses?**

The fresh food sector plays a vital role in ensuring food security both domestically and globally. However, many farmers and businesses in this sector face significant challenges when it comes to maintaining the quality and freshness of their produce during transportation. In economies where investment and maintenance of refrigerated vans is costly, there lack of sustainable temperature-controlled packaging solutions. One such economy is Uganda where, 40% of the fresh produce goes to waste due to inefficient logistics. Furthermore, energy that could be invested for value addition is diverted into cooling and preserving the produce upon its arrival to market.

**Call to Action**

There is the a need to design an affordable, sustainable, and environmentally friendly packaging solution that ensures produce can travel over long distances and still be fresh for both consumption and value addition.

**What is the desired impact of the challenge?**

This project addresses multiple layers of inefficiency in the agricultural supply chain. The success of this project would positively impact about 3000 produce farmers in Uganda alone through increments in yield cash-value, opportunities for scaling, and freeing up energy for value addition. It will also reduce the dependence on traditional cooling methods, decrease food waste, and lower the carbon footprint of transportation. Furthermore, this innovation can also be extended to the pharmaceuticals sector to transfer sensitive medical vaccines to remote areas with the region.

**Related SDGs**



**Category for the challenge**

- People
- Nature
- Economy

## **Who is behind this challenge?**

Tuluke Foundation fosters sustainable development through quality education and community empowerment. Their mission is to uplift marginalized communities by addressing key global challenges such as poverty, hunger, and inequality. Tuluke provide practical solutions to ensure lasting change, promoting economic independence and social well-being for all.

TU eMpower Africa e.V. is a non-profit organization, which unites students, researchers, alumni and friends of the Technical University of Munich around the question, how energy transition can foster sustainable development of communities in Africa.