

## Developing Affordable Technology for Medium, Small, and Micro Food (MSMEs) Processors in Uganda

**Research Question:** How might we better meet the needs of **food processors** working at medium, small and micro enterprises across Uganda?

**Research Innovator:**  
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Dr. Julia Kigozi worked with engineers and engineering students to investigate the context and needs of the Food processing MSMEs, taking time in and outside of the processing facilities to observe the operations of the food processors. One processor in particular, Charles Isaac, showed Dr. Kigozi that while he could operate new equipment despite being blind, the equipment's power source was not well-adapted to the fluctuating energy grid across rural Uganda and cost of day to day operation, creating inconsistency in the quality of the final product.



### **EMPATHIZING + DEFINING** Understand the Problem

With end-users, Dr. Kigozi identified the need for equipment that can be accessed, are safe, easy to use & maintain, are affordable and meet the capacity and quality of product for the consumer.



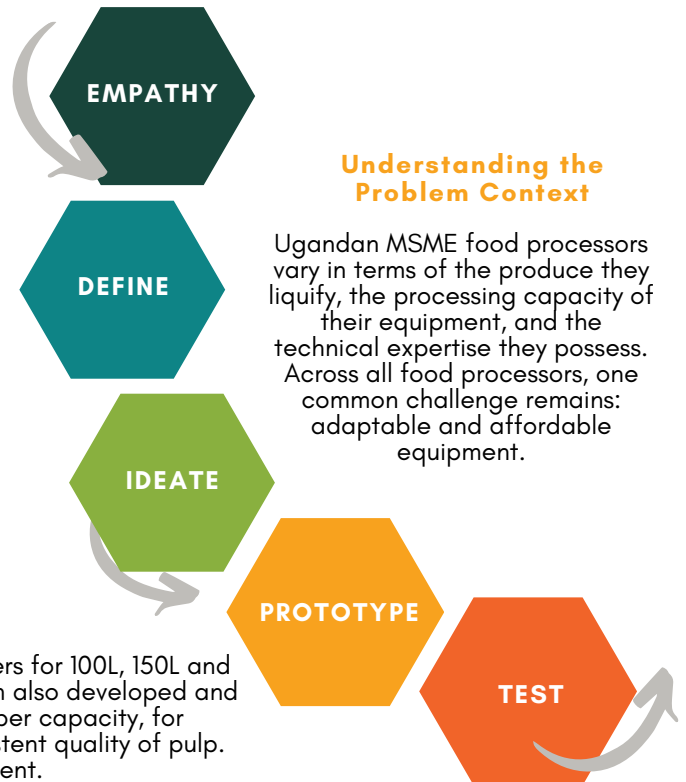
### **IDEATION + PROTOTYPING** Collaborate with Partners

In the process of designing a more usable product, Dr. Kigozi identified the need for a manual with more imagery than text so operators with limited literacy skills could follow and learn the equipment.



### **TESTING + ADAPTING** Re-engage the End-User

Dr. Kigozi's team developed and tested batch pasteurizers for 100L, 150L and 200L powered by electrical or biomass energy. The team also developed and tested a fruit pulper for 25L, 75L and 100L pulping chamber capacity, for application to various fruits ensuring required and consistent quality of pulp. This provided the MSME's with a wider choice of equipment.



### **Understanding the Problem Context**

Ugandan MSME food processors vary in terms of the produce they liquify, the processing capacity of their equipment, and the technical expertise they possess. Across all food processors, one common challenge remains: adaptable and affordable equipment.

### **What's Next?**

While the prototypes Dr. Kigozi and her team developed are quite affordable, the purchasing power of the processors is still low and she is calling for financial support from financial institutions or investment partners in terms of affordable financial packages that can be afforded by the processors.