

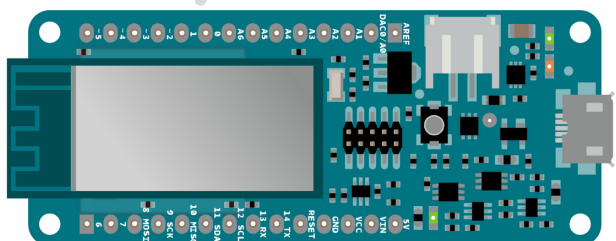
CLEANER & SAFER
COOKING

IMPROVED COOK STOVES



**Surface
temperature
sensor**

**Thermocouple
sensor that is put
directly in open fire
to measure the
temperature**



Arduino MKR



**Humanitarian Engineering and
Energy for Displacement**

HEED PROJECT



Idea

Despite evidence that improved cook stoves reduce fossil fuel usage and improve air quality the traditional three stone method of cooking is still being widely used by refugees and internally displaced people (IDPs) due to issues of cost and cooking preferences. Through sensor-based monitoring the HEED project will compare the cooking temperatures associated with current cooking methods to inform discussions about the benefits of ICSs for refugee and IDP communities.



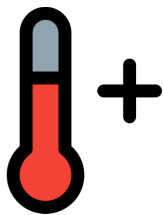
Aim

The HEED project will compare improved cookstoves to traditional cook stoves by:

- Measuring the cooking profile temperature
- Measuring the usage of cook stoves
- Measuring the fueling patterns of cook stoves

This will enable us to measure the performance and utility of the cook stoves, and the role of ICSs in refugee and IDP settings.

STOVE USE MONITOR



The HEED project has developed Stove Use Monitors to compare the energy performance of ICSs compared to traditional methods.

A surface mounted temperature sensor is placed on the side of the cook stove to measure when the stove is in use, and the cooking profile of the stove. It will also record when additional fuel is added.

Furthermore, the addition of the sensor to the cook stove does not in any way affect the performance of the stove or the quality of the food



Summary



A sensor-based monitoring system based on temperature measurements will provide information that can potentially improve the production and use of ICSs by providing better understanding of existing usage patterns and needs. That can make future cook stove usage rather affordable and efficient in terms of fuel consumption.