Intro

Hello, we are group 5 for the creation of the hydroponics system. After meeting with a former Syrian refugee, we discovered that Syrian refugees live in camps where they receive water rations that are inadequate or almost inadequate, have limited access to food, and live in a harsh desert environment. From this, we determined that Syrian refugees are in need of a cost-effective, water-efficient and reliable way to produce more food in the camps they are living in.

Main points

With design criteria in mind, we designed a hydroponics system that will be:

* Reliable
* Cost-effective
* Water efficient

Reliability

The design incorporates a minimal number of moving parts and is composed of materials that can withstand the temperature fluctuations of a desert environment.

Having a small number of moving parts means that there will be little to no need for oil to be applied to any part of the hydroponics system to reduce wear. It also means that there is no place for sand to block the mechanisms that make the system work.

Cost effective

Given that the system is composed of a common 55 gallon (209 L) metal drum, valves, plywood and 2x4s, the system is going to be inexpensive.

Water efficient

Because the system is designed to have the same water cycled throughout its entire operation, there will be little to no water wasted during operation.

Summary

Due to this design being Reliable, Cost effective, and water efficient, compared to other existing designs, it is a viable way for refugees to produce more food in the camps they live in.