

EVAPORATIVE COOLING

IPRO 325 SHELTER SUBGROUP

Problem

792 million people world-wide are malnourished
5 million children die each year due to malnourishment.
Many of the rural poor buy in bulk and stockpile since they typically are not near markets
Food stored from the market or their own produce typically spoils before they can eat or sell it
20% of fruits and vegetables are lost due to rotting during storage



Objective

Design a cooling system that will help combat malnutrition by enabling the storage of fruits and vegetables for longer periods of time before decaying.

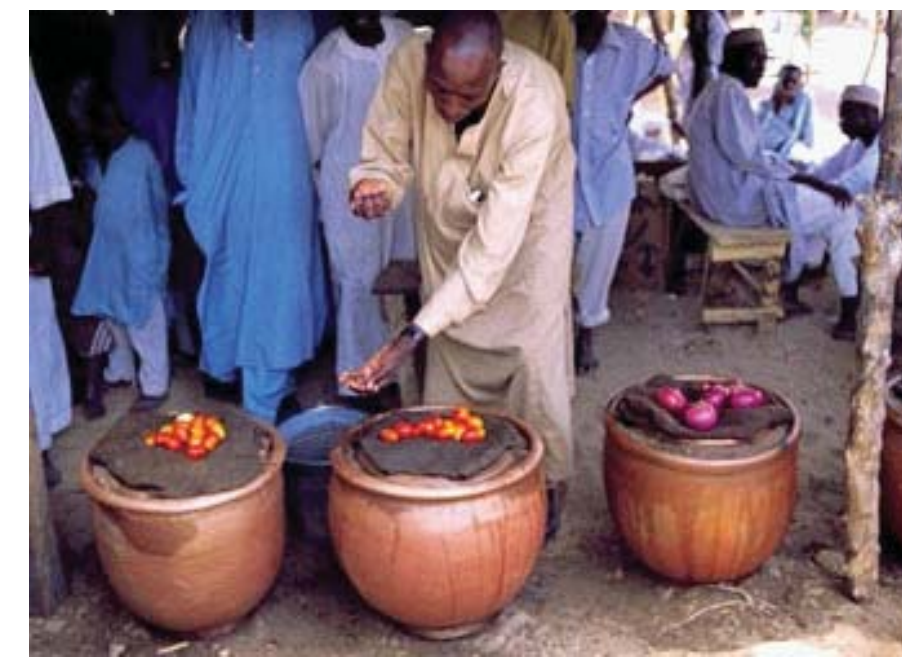
- Expand on Research from Previous Semesters
- Test In-Ground System vs. Existing Precedents
- Test Lid Designs
- Test Fruit Preservation in System vs. Out of System
- Make Recommendation on Most Efficient System
- Modify & Translate Construction & Use Manual
- Find Implementation Location, Connections, & Funding

IPRO 325

Affordable Solutions for the World's Poor

Prof. Ken Schug

zeer pot system



static cooling system

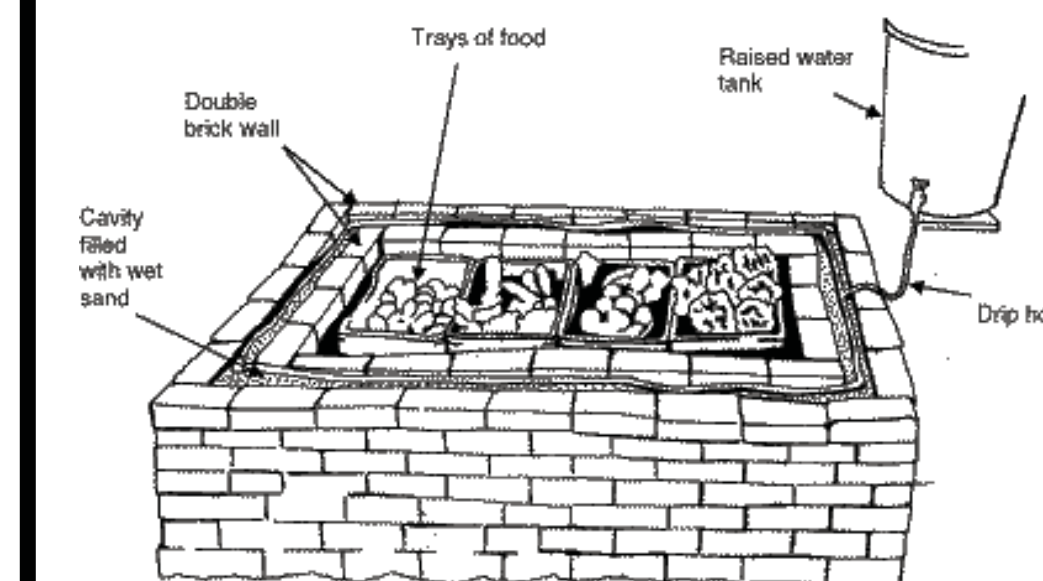
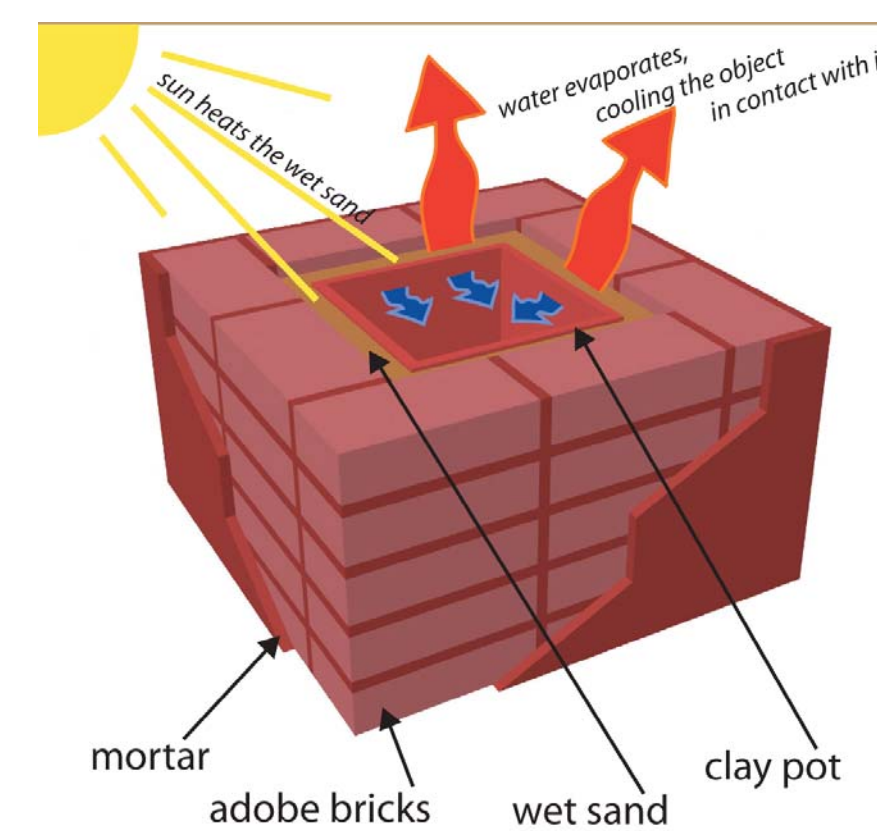


Figure 3: A static cooling system

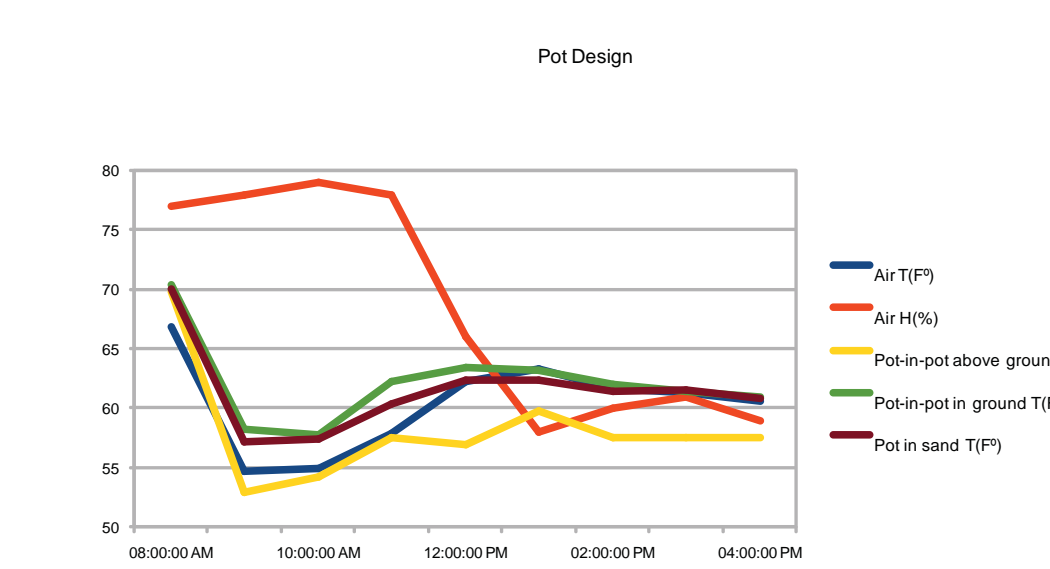
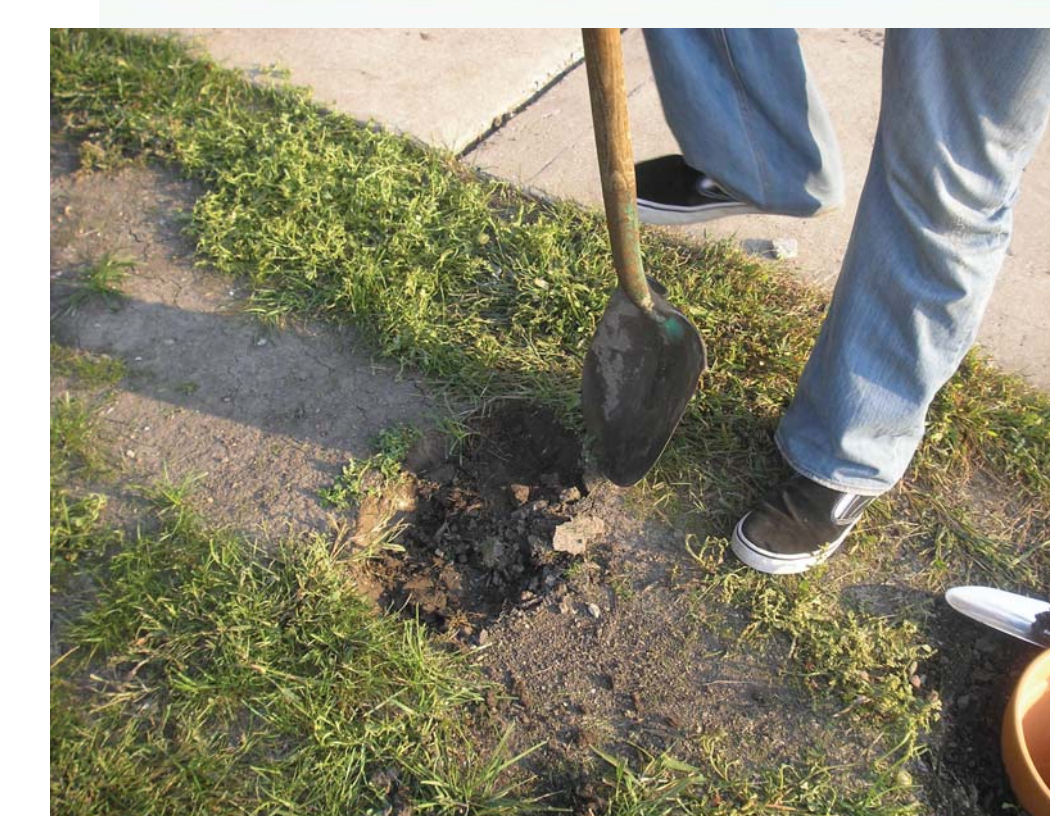
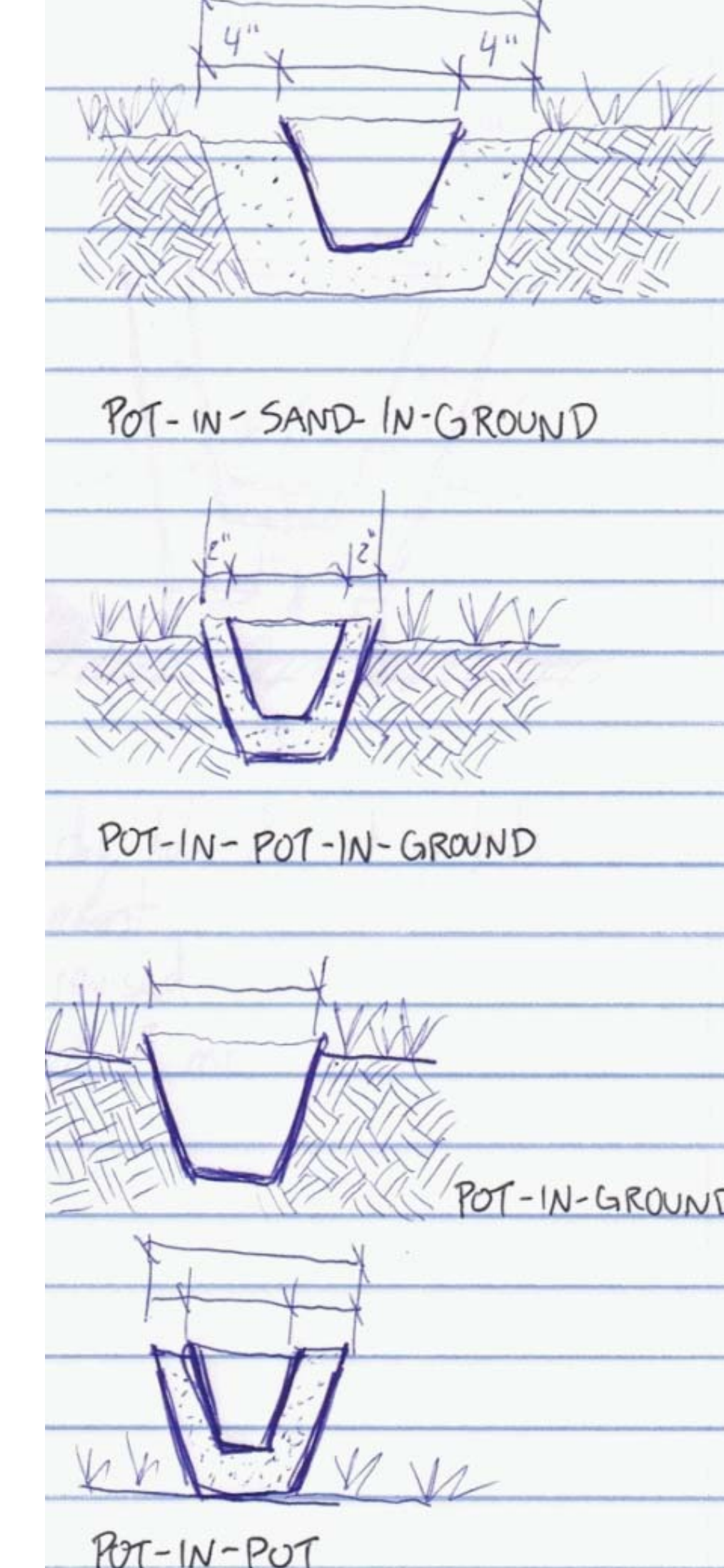
Limitations:
No Running Water, No Electricity

Available Materials:
Dirt/Rock/Sand, Concrete, Wood, Adobe clay, Plastic buckets, Plastic sheets, Corrugated Metal



Research

Out of Ground vs. Inground Testing



Design Testing

Lid Design Testing



cardboard lid



wood lid



plastic lid



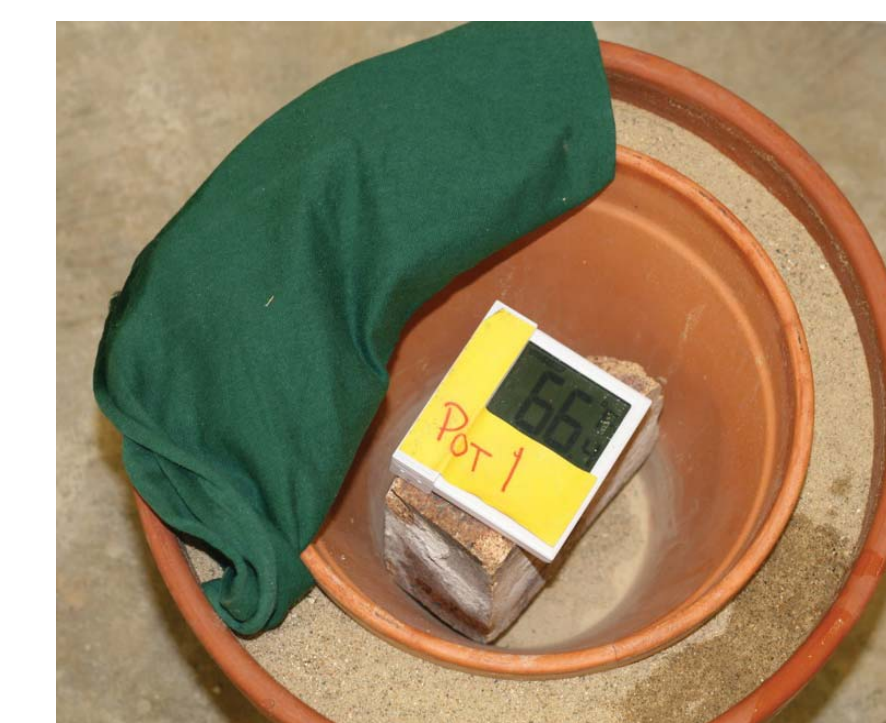
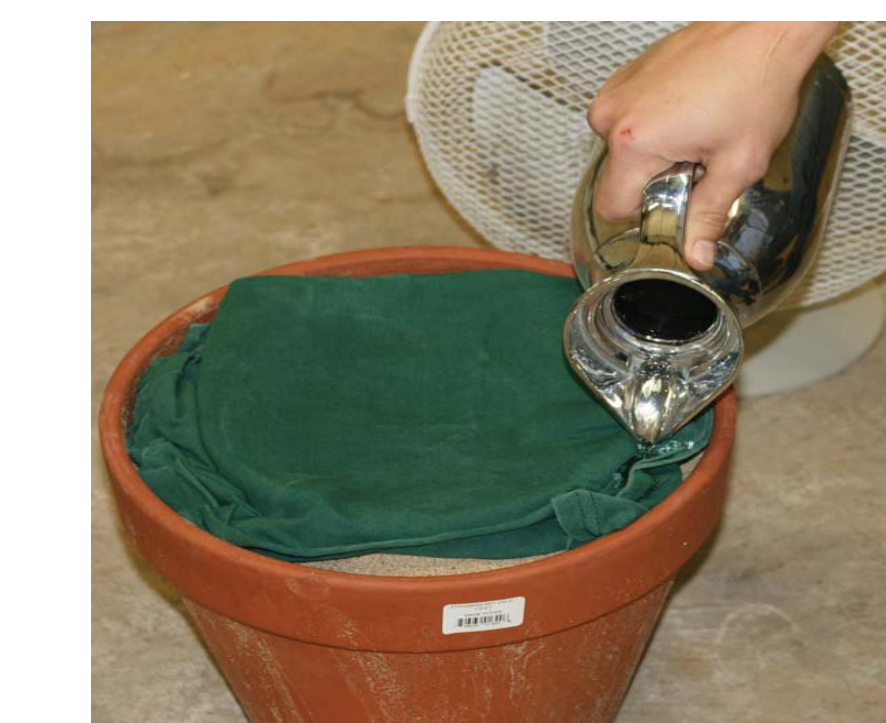
terracotta lid



cloth on inside



cloth covering entire system



Wet pot and cloth vs. Dry pot and cloth

