



Problem Statement

Uganda is stricken by hunger despite being a primarily agricultural nation. This results not from a lack of arable soil but from inefficient production due to poor soil nutrients. Uganda's agricultural production is currently around one third of its potential and has led to poor health for children and adults.

Background

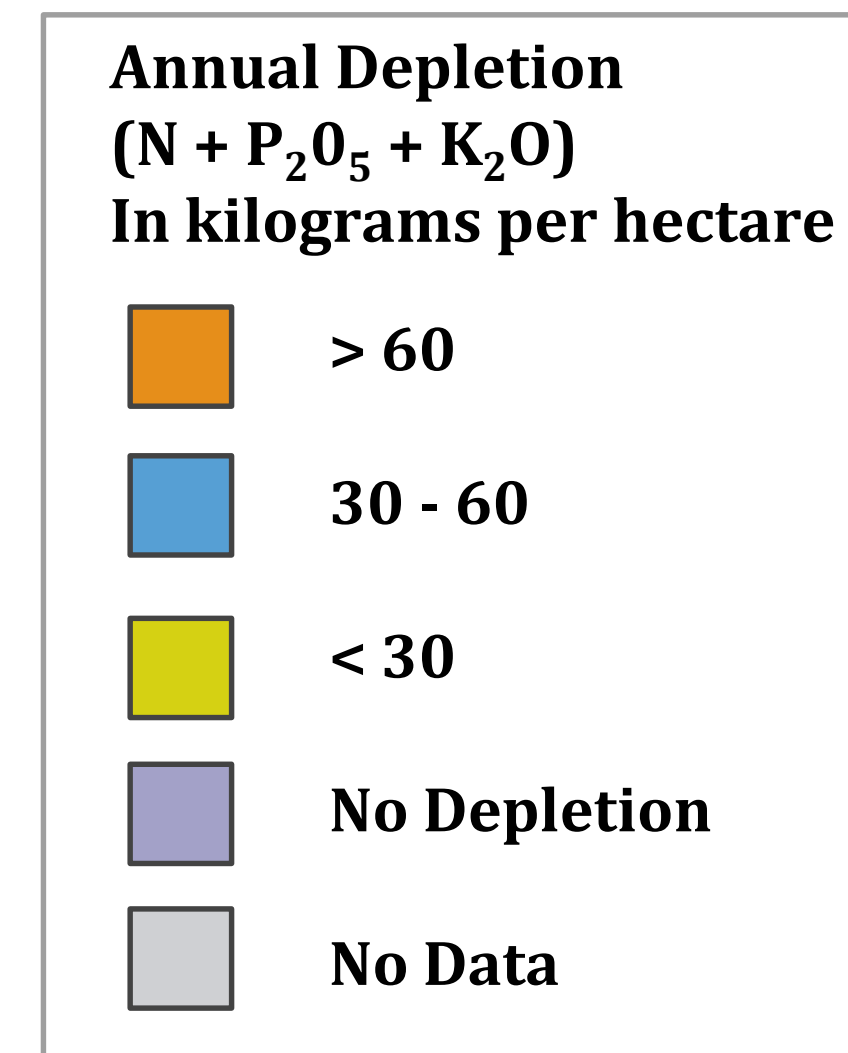
- 26% of Ugandans are malnourished⁶
- 2 million Ugandan children are malnourished¹
- 20% of the population in Uganda live below the poverty line²
- Average depletion rates: 22kg nitrogen, 2.5 kg phosphorous, 15 kg potassium per hectare of land over the past 30 years³

Project Objective

The goal of this project is to provide the village of Kamuli with a sustainable and easily maintained system for increasing soil fertility, resultingly reducing food insecurity.



Average Annual Nutrient Depletion (NPK) in Africa 1993-1995



The annual depletion rate of the soil in Uganda is greater than 60 % per year. ⁴

Assessment Plan

- Amount of farmers actually using this fertilization system on their farms
- Opinions of farmers and community members on the success of the system
- Assessments on how the people accept this system
- Soil tests will yield results on the order of low, medium, optimal, and above optimal soil nutrient levels (preliminary tests necessary)
- Amount increase in crop production (preliminary tests necessary)

Method

Involve Farmers

- Request farmers to volunteer their land
- Ask for assistance in building the system
- Train farmers how to operate and repair the system

Educate

- Explain the food insecurity problem
- Describe how the wastewater irrigation system will ameliorate the problem
- Collect input on the proposed solution

Implement System

- Collect wastewater in a community bathroom
- Treat in a stabilization pond
- Irrigate the fields through drip irrigation

Conclusions/Recommendations

- Potential to help provide large amounts of relief to a food stressed area through recycling wastewater.
- Overall success will be achieved when Kamuli is producing enough crops to feed every person in their village at a reasonable cost.
- It is imperative that there is both an acceptance of the new technology and an increased production in crop yield.

Acknowledgments & References

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 5. Mwangi Mumeru. (2015). *Farmers Turn to Drip Irrigation* [Photograph], Retrieved from <http://www.hortinews.co.ke/article?id=219>
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- * Kurtzion. (2014). *God Has A Dream For Every Seed* [Graphic]. Hands holding plant and soil. Retrieved from, <https://kurtzion.wordpress.com/2014/07/22/god-has-a-dream-for-every-seed>