

Developing A School Garden Map and Crop Rotation Plan for Namasagali Primary School in Kamuli District, Uganda

Shannon Rauter¹, Kate Stewart¹, Job Owachgiu², Dr. Richard Schultz³

¹Agronomy and Global Resource Systems, Iowa State University, Ames, Iowa, USA ²Agriculture, Makerere University, Kampala, Uganda, ³Professor, Global Resource Systems and Natural Resource Ecology and Management, Iowa State University, Ames, Iowa, USA

Introduction

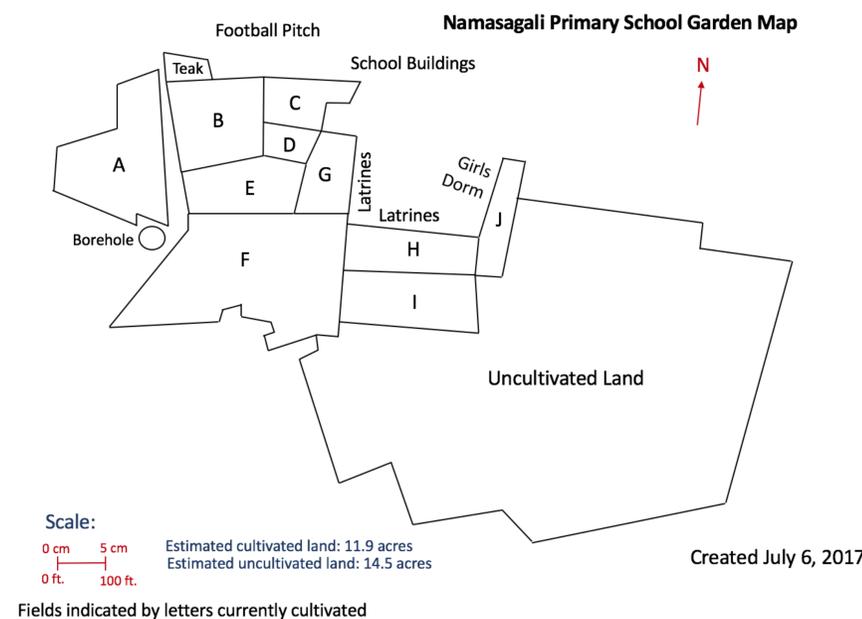
School gardens at Namasagali Primary support a school feeding program that aims to provide necessary calories and nutrients for students from impoverished households. Garden output has been limited by squatters encroaching on land and multiple yield-limiting agronomic factors.

The objectives of this project were:

1. To better delineate the borders of the school's property
2. To evaluate its current land use and develop a crop rotation plan

This project contributed to efforts to ensure enough food for the feeding program, positively contributing to nutritional food security.

Figure 1: Map of garden at Namasagali Primary School



Results

- Map illustrating school grounds constructed (Figure 1).
- Determined garden area: 11.9 cultivated acres, 14.5 uncultivated acres.
- Developed report on pest and disease problems and recommended solutions.
- Developed crop rotation plan (Table 1) based on history, pest/disease observations and incorporation of legumes.

Methodology

- Individual fields measured by pacing and perimeters of fields measured with tape measure and compass.
- Fields surveyed for pests and diseases.
- Agriculture teachers interviewed about garden history.

Figure 2: Students in the school garden at Namasagali Primary School



Table 1: Namasagali Primary School Crop Rotation

Field	Current (July 2017)	Season 2 '17	Season 1 '18
A	Sweet potatoes	Cowpeas	Eggplant
B	Collards, cowpeas	Sweet potatoes	Amaranth, onions
C	Bananas, collards	Bananas, collards, pumpkins	Bananas, cowpeas
D	Eggplant, collards, onions	Watermelon, onions	Sweet potatoes
E	Eggplant, amaranth	Eggplant, amaranth	Sweet potatoes
F	Sweet potatoes	Collards	Cassava, pumpkins
G	Bananas, collards	Bananas, collards	Bananas, tomatoes, green peppers
H	Eggplant, papaya	Papaya, amaranth	Papaya, cowpeas, watermelon
I	Pumpkins	Green peppers	Sweet potatoes
J	Sweet potatoes	Sweet potatoes	Collards

Conclusions and Recommendations

- Because accurate maps are difficult to construct using a tape measure and compass, we recommend that future efforts utilize a GPS to update the current maps.
- Crop yields and pest issues should be monitored during the next year to evaluate the effectiveness of the rotation plan.
- A more quantitative analysis of the school garden program, including yield estimates, would help quantify what would be needed to expand Namasagali's school lunch program if student enrollment increases.

Acknowledgements: List organizations College of Agriculture and Life Sciences, Center for Sustainable Rural Livelihoods and Iowa State University – Uganda Program and donors, including: Jerry and Karen Kolschowsky and the Kolschowsky Family and Foundation; Rose Boughton; Tom and Terri Miller