From the Ground Up:
Diminishing Food Security Issues through Sustainable Soil Practices

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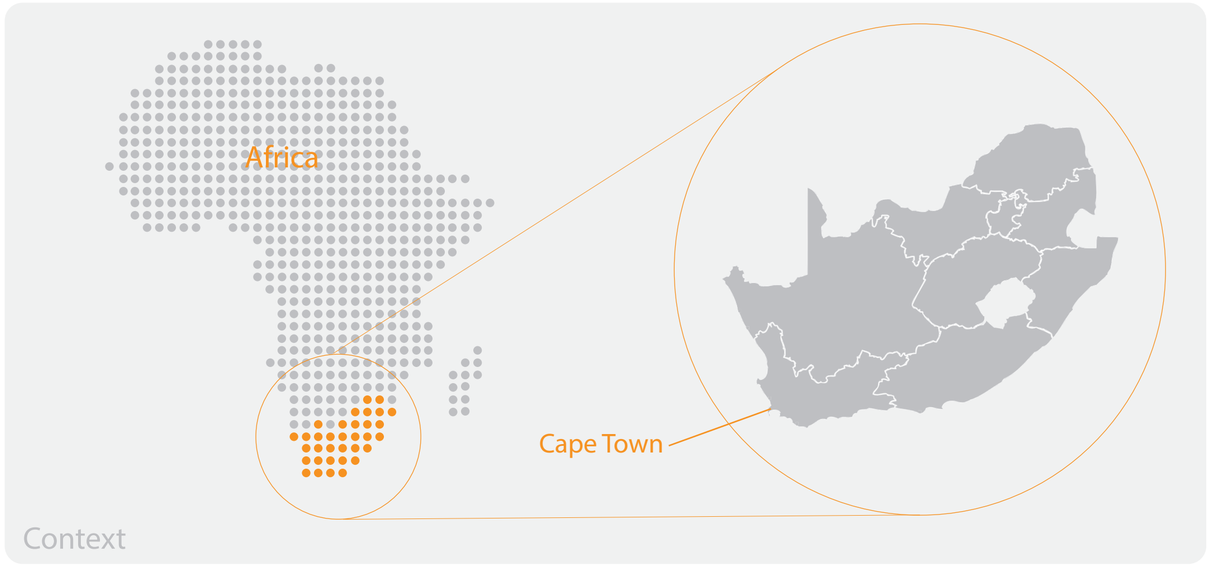


Context

Background

Food security is among one of the largest issues that needs to be addressed to accomplish one Millennium Development Goal proposed by the United Nations to end extreme poverty and hunger. The lowest income portions of South Africa, known as "informal settlements" (also known as "townships"), are battling problems of food security every single day. Many South Africans lack access to sustainable food sources or proper sanitation to provide healthy lifestyles for themselves and their families. Along with these restrictions, there is insufficient space and soils with very low quality for gardening.

Soil For Life (SFL) is a Cape Town-based Non Governmental Organization with a goal of diminishing hunger and malnutrition through educating people how to sustainably garden and live healthy lifestyles. SFL's Home Gardening Program reaches out to interested individuals within townships to teach them sustainable gardening practices. Individuals that shine within the Home Gardening Program are then invited to be assistant trainers. Further down the road, assistant trainers can be invited to be trainers, earning their own income. This domino effect has proved successful over the past few years and continues to change the lives of many.

Internship

For six weeks over the course of May and June 2014, an internship was performed at Soil For Life. Objectives of the internship included:

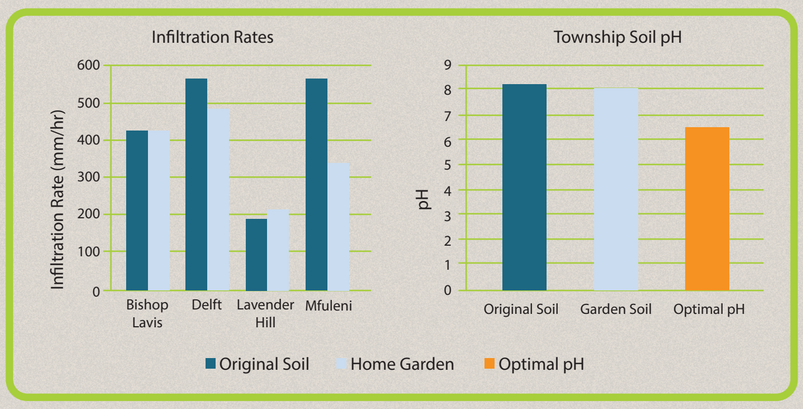
- Conducting overall soil analysis of Soil For Life headquarters
- Creating an electronic, internet accessible map representing all communities SFL works with, including Home Gardening Program statistics
- Developing educational soil guides for home gardeners
- Assisting trainers in townships and helping with grant writing

Soil was tested for pH, nutrient levels, and infiltration. Compost generated by Soil For Life was also tested for pH and different nutrient levels. These tests gave Soil For Life an idea of how healthy their headquarter gardens are after several years of gardening and working the soil, as well as how effective their gardening techniques are within the townships.

Levels of sodium, phosphorous, potassium, and magnesium were either too high or too low throughout different areas of the Soil For Life property, while levels of calcium maintained acceptable levels throughout the headquarters.

Research

In addition to the internship, previous research regarding infiltration characteristics and pH of soils was continued. Infiltration rates and pH levels were taken for soils both post and prior to alteration from the Home Gardening Program. The objective of this research was to see if there was a difference in the quality and characteristics of soil in respect to optimal conditions for plant growth. Ten soil samples were taken for pH analysis from four townships: Bishop Lavis, Delft, Lavender Hill, and Mfuleni. Infiltration tests were conducted using a Mini Disk Infiltrometer.



Overall, there was a decrease in infiltration rates of soils after the soil was altered through the Home Gardening Program. Soils were very sandy initially, retaining little water. After alteration of soil, infiltration rates were lowered, but water retention was increased. Soil pH was slightly decreased after alteration, but was still more basic than the optimal gardening pH. Water retention is a large concern and should be looked into further because of the naturally sandy soil makeup and lack of rain in the summer season. It can be inferred that high infiltration rates may result from performing soil tests directly after long periods of drought.

Education

Along with SFL's Home Gardening Program, supplemental workshops in areas such as nutrition, composting, craft making, preserve making, and business skills are offered. The educational piece that Soil For Life exemplifies is key in sustaining positive livelihoods and decreasing food security issues. An educational soil guide developed from the six week internship is now used in the Home Gardening Program to give participants a better understanding of why plants have trouble growing where they live and in the current growing conditions. As people become more aware of their surroundings, they are more motivated to change their lifestyles.

Soil For Life also organizes several events within townships to raise awareness to the issues of food security and hunger in the Cape Town area. Globally recognized events such as World Environment Day are used to bring together Capetonians within townships for a community meal. This informal event known as "Eat for the Earth" is used to stress the importance of sustainability and healthy living in the simplest of ways. Other events involve incentives for having the most creative home garden or the largest home garden. Winners of these competitions receive household appliances such as washing machines and refrigerators.

Importance

The idea that soils can sustain life is one that is shown every day in the lives of those who have partaken in Soil For Life programs. Soil For Life is addressing the global issue of poverty and hunger at the ground level through simple educational and motivational gardening practices. The connections made with people and their environments through the Home Gardening Program are those that cannot be found anywhere else. While the efforts of Soil For Life are whole hearted, the impact that these individuals can make are only able to reach so many people. The need for larger voices to make this concern heard and take action is the next necessary step.

Acknowledgements

ESF State University of New York
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SOIL FOR LIFE
Build the soil, grow the plants, feed the people, heal the planet.

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