

SUSTAINABILITY AND FOOD SECURITY AT TECASY RANCH

Environmental

Environmental sustainability in farming uses agricultural practices that maintain or increase the health of the environment; this is the main priority for Tecasy. Tecasy's Garden can be improved by utilizing and improving the following practices:

- **Soil Management:** Creating a specific natural fertilizer plan for the soil's low nutrient levels. Increase compost use.
- **Water Use:** Adding a secondary water source to alleviate stress on watershed. Current water source is an on-site creek.
- **Crop Management:** Fortifying current crop rotation plan can improve soil quality, increase productivity, and save on experimentation costs, providing economic and long-term benefits.
- **Pest Management:** A new Integrated Pest Management (IPM) approach will combine natural and organic methods to target pests like tomato hornworms while maintaining ecosystem and plant integrity. Current physical control methods are effective, there is room for improvement.

Key Questions:

1. What does a sustainable garden consist of?
2. Which elements occur at Tecasy's Garden?
3. How can local organizations improve Tecasy's knowledge system?
4. What are practical recommendations?

Supervisor: Dr. Tom Whillans

Coordinator: Brittany Finigan

Host: Karie McDougall, Tecasy Ranch

Department: Trent School of the Environment

Course: Community Based Resource Management (2023 ERSC 3160H)

Researchers: Maggie Devins-Cann, Jady Shand, Nicole Mwaura, Eve Lockhart

Background: Students were asked to conduct research on the aspects of sustainable gardening and how this research could be put into practice to generate fresh produce for a local food bank. **Methods:** Students visited the garden site, met with other local farmers, agriculture experts, attended online workshops, and explored various literature. A sustainable garden has minimal impact on the ecosystem, requires little intervention, and produces strong produce yields for years to come. **The Results** are broken down into the three pillars of sustainability: Environmental, Social, Economical.

Tecasy Ranch Community Garden Objectives



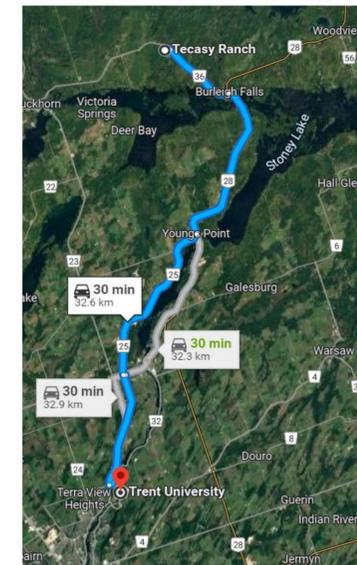
Social

Social sustainability aims to increase :

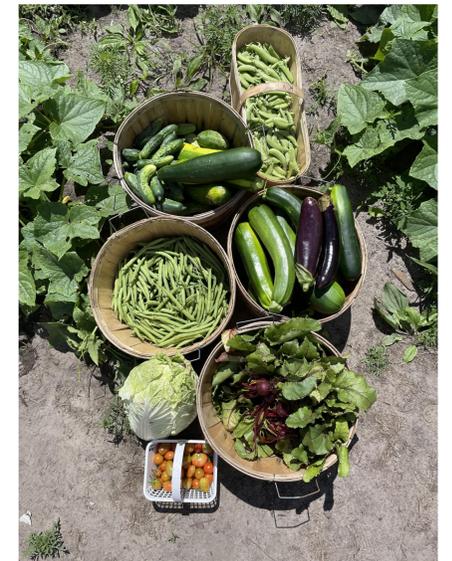
- Local food security
- Nature connections
- A place for education
- Nurturing community

Using these principles to guide the research, Trent Gardens and the Seasoned Spoon were contacted to understand the importance of social sustainability and community connection within food production. It was found that Tecasy Ranch provided fair wages, promoted individual interests, and valued people over profit. **It is recommended** to create relationships with a more geographically localized community and consider alternate ways of contributing to local food security.

Further research will be conducted on methods that encourage long-term relationships, including how to be more involved in the community and how to understand their impacts. Abbey Gardens may be a suitable organization to consult with on the social aspect of sustainability.



Source: Google Maps



Source: Tecasy Ranch

Economic

Economic sustainability involves farming practices that maximize the land's productivity at the lowest possible cost.

Need to know:

- Tecasy funding is by donation
- Produce is not-for-profit, meaning it's a 100% economic loss
- Annual purchase of compost, fertilizers and lime are needed to stabilize the soil

Methods of farming that will cut costs while also naturally improving the soil condition (crop rotation, no-till) are vital. A community composting system that reduces reliance on outsourced fertilizers was researched; this can combat the acidity and sandy characteristics in the soils, while providing more efficient economic sustainability.