

Establishing a Sustainable Composting Program to Reduce Pre-Consumer Food Waste on UCSD Campus

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Introduction

Food waste is a growing problem in American society that not only impacts community members but is also harming our environment. In 2014, more than 38 million tons of food waste was generated with 94% ending up in landfills¹. The outcome is the production of methane gas, a green house gas that contributes to global warming along with carbon dioxide. UC San Diego has committed to be a zero-food waste campus and to reach carbon neutrality by 2020. Composting has been shown to be an effective way to reduce food waste and recover food environmentally². In order to attain our goals, an effort to reduce pre-consumer food waste through a composting program is sustainable solution to the food waste problem that is present on the university campus.

As opposed to post-consumer food waste, pre-consumer food waste can be collected and easily separated in to the proper components needed for effective composting and is chosen as the focus of this project. Pre-consumer food waste generated from food manufacture and distribution processes of the campus restaurants will be sourced to and recycled at Roger's Community Garden (RCG) on campus. RCG is a garden space for students to grow their own food as well as learn about organic agricultural practices and conduct research. The composting program will be able to reduce methane emissions and harness the nutrients in the food waste to return it back to the soil and improve its structure and composition. A sustainable loop can be created where the food waste generated by the university will be recycled and reused as a source of food production³. Previous efforts have been made to set up a similar program, but this project aims to expand upon it by increasing its reliability, efficiency, and broadening its impact by engaging more vendors and working through a private-public collaboration. This system once set up can be used as a blueprint for other UC campuses to also directly engage in reducing campus food waste in collaboration with community gardens.



Project Goals

Initiating a reliable and sustainable composting system between university restaurants at Price Center and Roger's Community Garden:

- Establish communication with individual restaurant vendors on campus and confirm interest.
- Ensuring a stable system through creating a student position or subcontracting an outside enterprise with composting system.
- Obtain a transportation vehicle and other required materials.
- Make necessary infrastructure changes within the garden in order to ready it for efficient compost.



Materials and Methods

Planning and Communication:

Through discussion and planning with the sustainability coordinator at University Centers, a connection was established with the Price Center vendors and RCG. The composting program was introduced to various restaurants and their interest in participating in the program was confirmed. An attempt was made at creating a student position, but it was challenging to find financial support.

Collaboration:

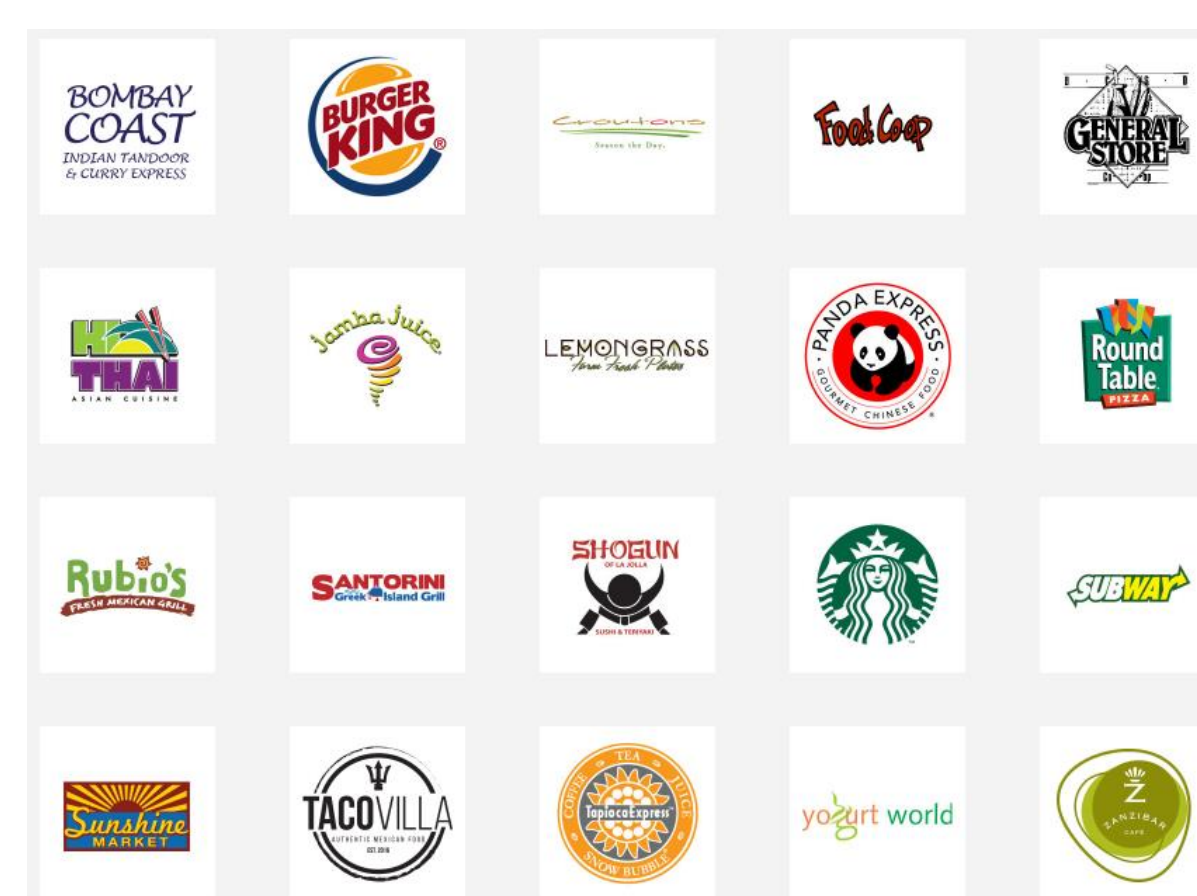
The private social enterprise Food2Soil aims to recycle pre-consumer food scraps by collaborating with local community gardens. This program not only diverts food waste from landfills to nourish soil and sequester carbon dioxide from the atmosphere but also strengthens the local economy through providing jobs for the community. This project's focus was to work with the company's director to take this streamlined set up apply it on campus.

Supplies:

A transportation device was needed for the composting program in order food waste to be delivered to the garden. Other supplies also include a trolley and composting pick up buckets to aid the composter at the garden.

Infrastructure:

Infrastructure changes to the composting bin was required in order to increase efficiency and is currently in progress. Specifically, two additional bins, better separation borders, and netting were needed.

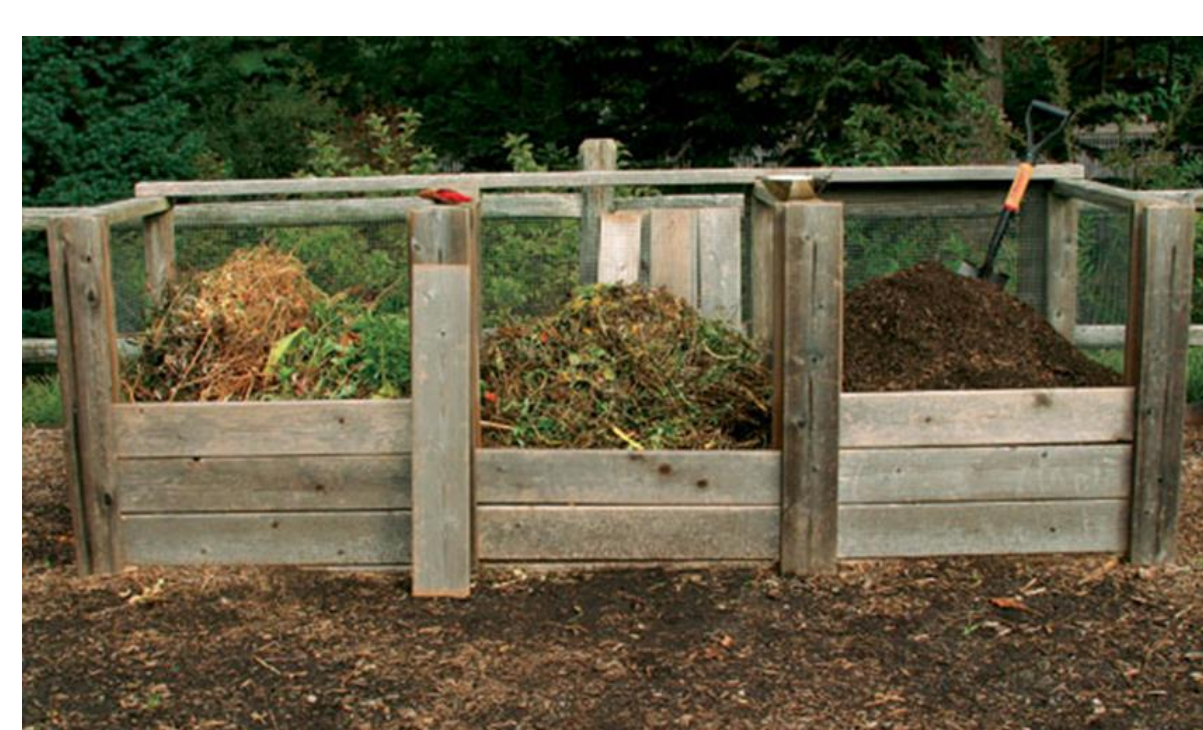


Results and Outcomes

The feasibility of this project and vendor attitudes were confirmed since 18 restaurants expressed interest in the pre-consumer food waste composting program.

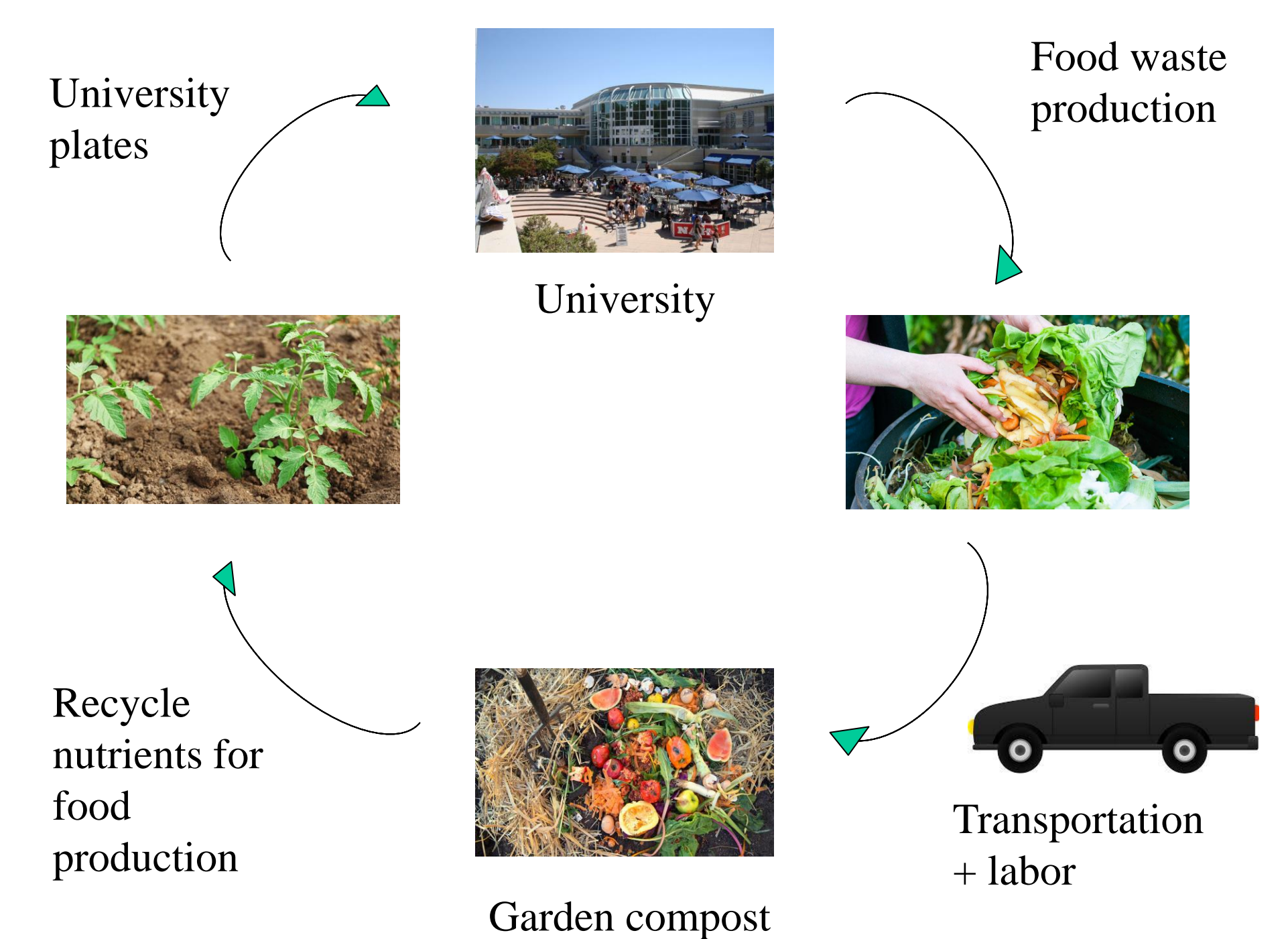
A compost transport vehicle was obtained through coordination with University Centers. A usage scheduling system was also set up. A trolley and new food waste transport bins were ordered for composting purposes at the garden. Infrastructure changes to the composting bin was required in order to increase efficiency and is currently in progress at Roger's Community Garden.

Collaboration with Food2Soil was confirmed and is currently in the logistical planning stages.



Conclusions

This project was able to push for the preparatory steps needed in order to initiate the composting program between the university restaurants and the community garden on campus. The biggest challenge was finding different resources to reach out to in order to gain support and interest for the project as well as coordinating and communicating between different groups such as the garden, University Centers, and Food2Soil. Once the infrastructure changes has taken place, the project will be ready to proceed. The goal is to this composting system to not only work at UC San Diego, but to be applicable in other university campuses as well.



Future Goals

The future goal for this project is to continue in planning and taking the next steps in order to start composting process. In addition, the goal is to be able to collect data to quantify how much food waste is being diverted from landfills through this composting system. In the long term, once this program is well established, the aim is to have this design be one that can be used at various campuses.

Literature Cited

1. "Sustainable Management of Food Basics." EPA. Environmental Protection Agency, 22 May 2017. Web. 05 June 2017
2. T. Garnett, "Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)?" Food Policy, 36 (Suppl 1) (2011), pp. S23-S32.
3. Roger's Community Garden Composting Initiative

Acknowledgements

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