

# Student Compost Initiative in Peru

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## Abstract

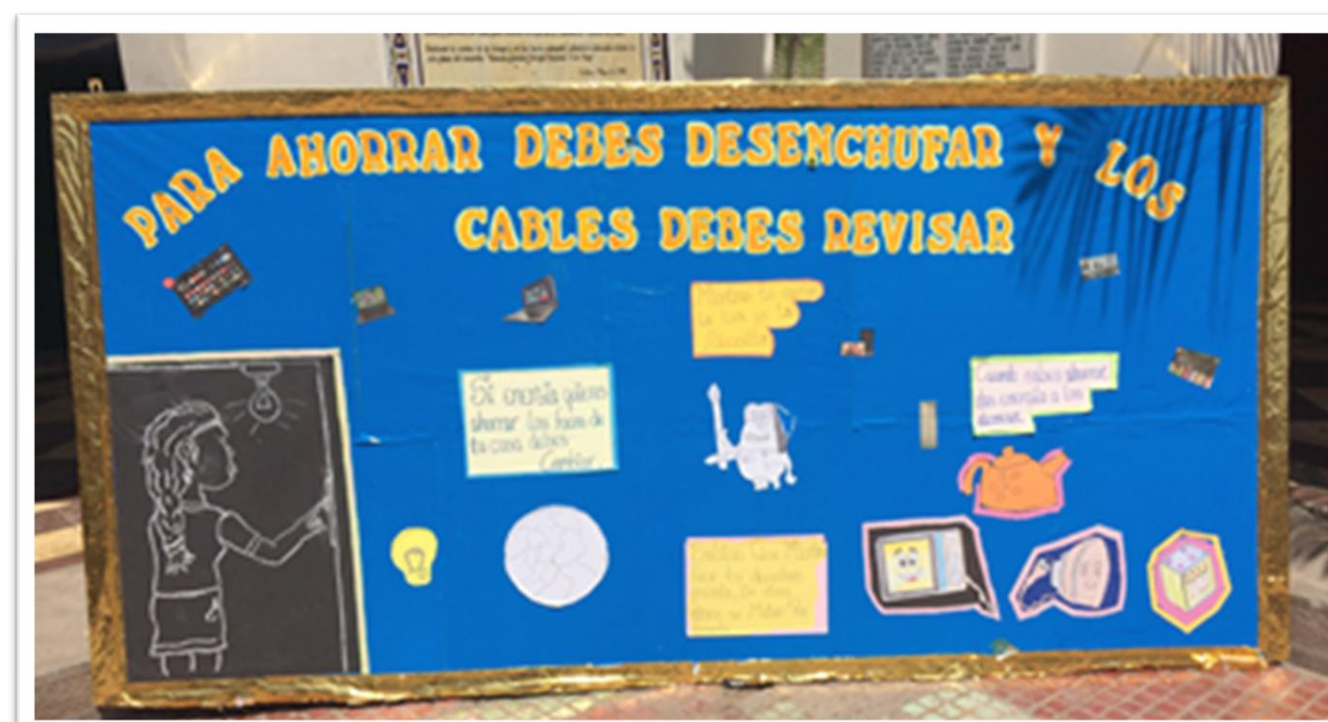
Municipal solid waste (MSW) is a global dilemma that must be managed properly by local governments and residents. Lima, the capital and largest city of Peru, houses 8.8 million people who generate nearly 6,000 tons of MSW per day. Although there is a well-established recycling market for plastics, paper and metals, food waste is often discarded. Most disposal sites consist of unlined open pits that pollute the air and water, and threaten the health of residents. To alleviate these burdens and promote sustainability, a compost initiative is underway at “Dos de Mayo” school in Callao. This involves the construction, organization and implementation of an on-site composter, where food waste will be collected from both kitchen preparations and unfinished meals in the cafeteria. Elementary-age students as well as faculty will better understand the benefits of composting and growing their own organic gardens. Students will learn how to reduce their ecological footprints and will extend this knowledge to their families and local governments, laying the foundation for a more sustainable future for Peru. This project is modeled after the UF-IFAS Student Compost Cooperative (SCC) and inspired by the valuable lessons learned as SCC Coordinator at the Bioenergy and Sustainable Technology Laboratory.

## Introduction



In Peru, the city of Callao, Lima, (population of 808,701) produces approximately 850 tons of municipal solid waste per day. Although recycling markets are well-established for paper, plastic, and metals, food waste is unnecessarily discarded. A compost initiative is underway at “Dos de Mayo” school in Callao to reduce the burden of MSW and promote sustainable practices. This initiative aims to construct, organize, and implement an on-site composter in order to educate students on the benefits of composting and lay the foundation for a more sustainable future for Peru.

Figure 1. Map of Peru showing Callao (inset)



Educational displays that encourage environmental stewardship at Dos de Mayo

## Objectives

- ✓ Educate children in Peru on one of the most sustainable methods to manage food waste
- ✓ Provide students with hands-on experience in composting
- ✓ Introduce students to sustainable gardening and agriculture



Figure 2. Food waste recycling for nutrient recovery

## Data Collection

A visit and interview with the principal of the “Dos de Mayo” school, which houses both elementary and high school students, provided us with information about the eating habits of students, food production, waste production, and waste disposal at the school.

- The school houses about 136 students in elementary sections.
- Currently, there are three metals bins for waste disposal that are emptied once a day by maintenance staff.
- Waste is sorted to separate recyclables and the remainder is sent to an unlined open pit that receives all MSW for the city of Callao, Lima.
- Students bring food from home or purchase it from the food stand located on the school grounds.
- Students produce approximately 700 grams of waste per person per day, including but not limited to plastic, paper, and food waste.
- Leftover food is often shared with other students as an alternative to disposal.
- In addition to an organic garden, there is a potential opportunity to implement green roofs at the school with the compost initiative.



Food stand at Dos de Mayo school



Communal area at Dos de Mayo school

## Future Work

- ✓ Initiate a campaign with the help of teachers to introduce students to environmental issues in Summer 2016, implementing the following activities:
  - Host class discussions on municipal and food waste production in Peru.
  - Take students to visit both sanitary landfills and unlined open pits.
  - Create information display panels for students.
- ✓ Build composters made of recycled wood with students.
- ✓ Provide the school with recycling and composting bins.
- ✓ Design a gardening area for students to use the compost.



Wooden composter design for Dos de Mayo



Existing plants and garden areas at Dos de Mayo that would benefit from compost

## References

1. Student Compost Cooperative. University of Florida, Gainesville, Florida. <http://biogas.ifas.ufl.edu/SCC>
2. Vergara, S.E. and Tchobanoglous, G. (2012). Municipal solid waste and the environment: A global perspective. *Annual Review of Environment and Resources* 37, 277-309. doi:[10.1146/annurev-environ-050511-122532](https://doi.org/10.1146/annurev-environ-050511-122532)

## Acknowledgements

This work in an ongoing effort motivated by the support and direction of Dr. Ann C. Wilkie and modeled on the *UF-IFAS Student Compost Cooperative (SCC)* at the Bioenergy and Sustainable Technology Laboratory.