



Singapore Healthcare Management 2025



Converting Horticultural Waste to Organic Compost Onsite

Hu Xiuming, Dennis Tan
Environmental Services
Woodlands Health



1. Introduction & Objective

Background: Woodlands Health (WH) has a vast area of greenery, which generates a significant amount of horticultural waste, estimated to be 100kg per day. These are transported off-site for recycling into compost by our landscaping maintenance vendor.

Problem Statement: Off-site transportation of horticultural waste incur carbon footprint.

Objective: To study the feasibility of on-site composting of horticultural waste, to reduce carbon footprint generated due off-site transportation of horticultural waste.

2. Methodology

[A] Current process to compost horticultural waste offsite incurs about 1.16 tonCO₂e a year, or equivalent to 6,800km travelled on a car.

1. Waste generation



2. Waste collection



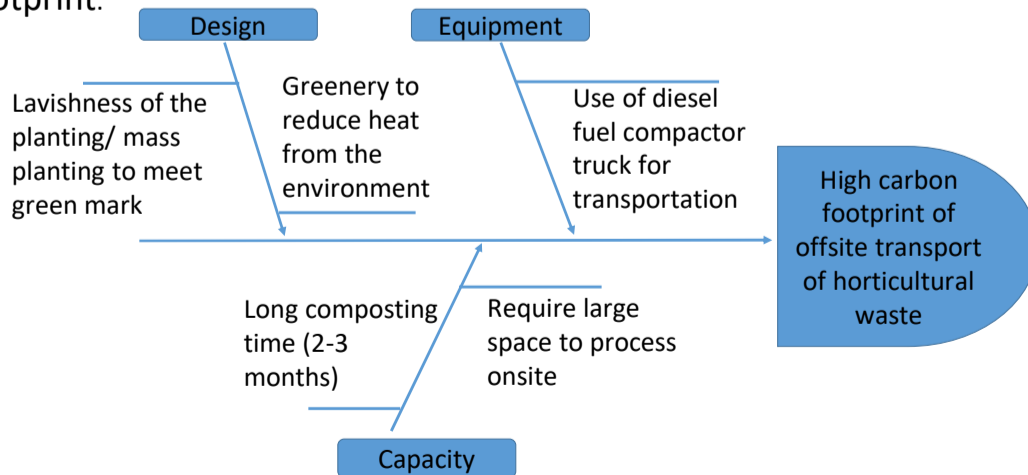
3. Transport offsite for composting



Current	Impact
Annual horticultural waste	38.4 ton [100kg per bin x 8 bins per collection x 4 collections per month x 12 months]
Annual off-site transportation	48 trips [4 collections per month x 12 months]
Annual carbon footprint (transportation)	1.16 ton CO₂e (= 6,800km travelled on an internal combustion engine car, based on 0.17kgCO ₂ per pax-km) [*57gCO ₂ e/ton-km x 17km a trip x 25ton truck x 48 trips]

*Source: ICCT, 2021
^Source: netzerohub.sg

[B] **Analysis of the problem:** The need for off-site recycling of horticultural waste is due to high volume of horticultural waste, long composting time and large space required onsite at WH. Vendor's use of diesel fuel truck for off-site recycling contributed to the carbon footprint.



3. Result

For a trial, 2 x 200L compost bins are deployed onsite at WH to convert the horticultural waste generated from daily landscape maintenance activities since Sep 2024.



1. Horticultural waste generated from landscape maintenance work



2. Deposit collected horticultural waste into the compost bins



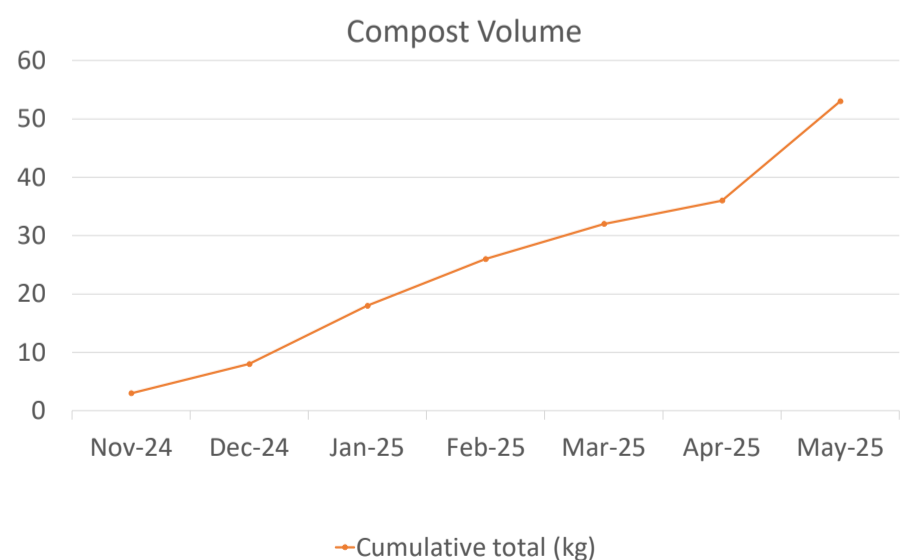
4. Apply compost at landscape areas



3. Remove ready to use compost from compost bins



Till May 25, 53 kg of compost in total has been generated and applied as mulch around trees and shrubs.



4. Conclusion

After 6-months of assessment, WH had decided to up-scale the sustainability effort with the purchase of 4 more compost bins. The compost bins can help to reduce some of the off-site transportation. For better results, only leaves, small twigs should be deposited into the compost bins only. Branches will slow down the decompose process.