



# Compost Hawai'i

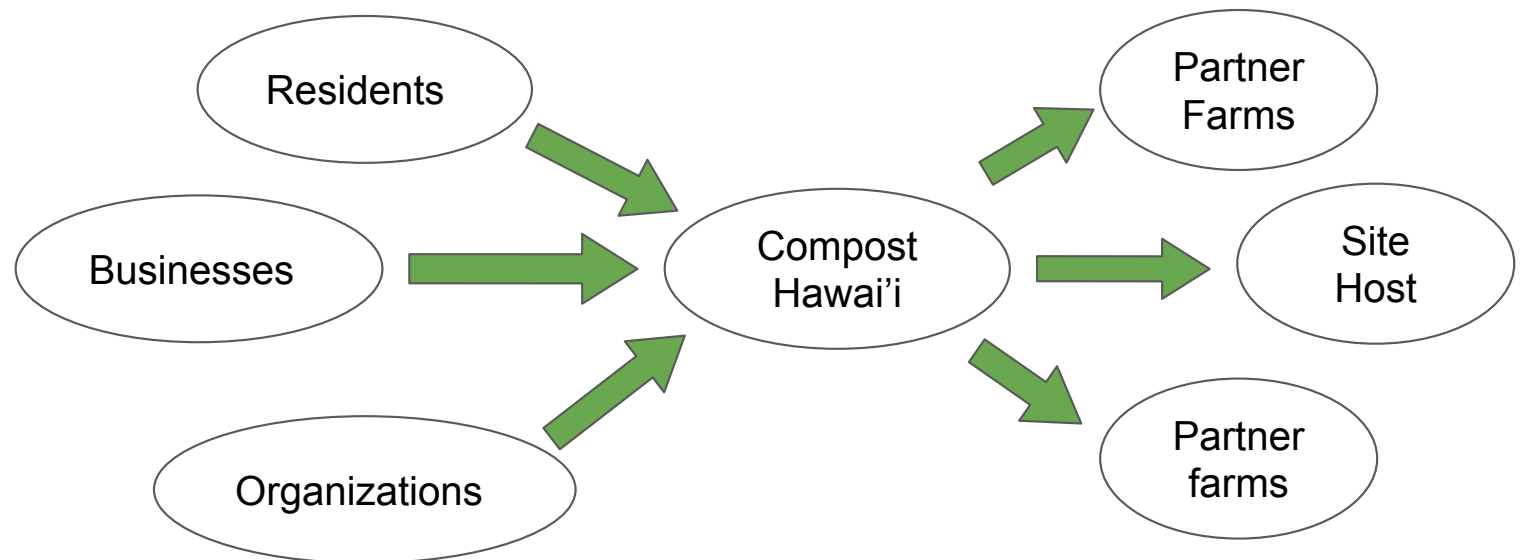
And the Big Island Compost Network:  
Exploring Strategies for Decentralized Composting

# Background

- 2010 Moved to Hilo to attend UH-Hilo, College of Agriculture
- 2012-2014 Coordinator for Let's Grow Hilo
  - Americorps VISTA program executed by the Hilo Downtown Improvement Association
  - Led educational program and volunteer efforts to beautify public spaces
- 2015 Bachelor of Science degree in Agriculture: Tropical Horticulture
- 2016 Started Hilo UrbFarm at the East Hawaii Cultural Center
  - Volunteer-run urban community garden education center, plant nursery, and compost site
  - Partnered with downtown businesses to develop compost collection model
  - Experimented with decomposing bioplastics using static windrows, vermicomposting
- 2018 Started Compost Hawai'i

# Compost Hawai'i: How it works today

- Weekly collection service
- Focused on residential waste streams
- Equipment and educational materials provided
- Material is transported to partners to be utilized



# Compost Hawai'i Partner Farms and Site Hosts

- Originally operated at Hilo UrbFarm, downtown Hilo
  - Processed for finished compost
  - vermicompost
- Kulaimano Farm, Pepe'ekeo
  - Processed for finished compost, fed to chickens
- Pana'ewa Peacocks
  - Developed technique for clearing and fertilizing overgrown pasture using compost and fowl
- Hawai'i Green Earth, Wainaku
  - Mixed animal feed, pasture enrichment
- Kawainui Elementals, Onomea
  - Processed for finished compost
  - Data collection



# Compost Hawaii - Current usage in Hilo 2020

40 members: 37 homes, 3 businesses

- Food waste collected ~2600lbs/month
- Cardboard and paper ~100lbs/month
- Mulch/greenwaste ~3000lbs/month

Total material collected: ~5700lbs/month

Temperatures achieved: 100F-160F

Estimated operating capacity (2020): ~60%

Projected capacity (2021): ~11,500lbs/month



# What does “decentralized network” mean?

Each sector independently operates in concert with all others

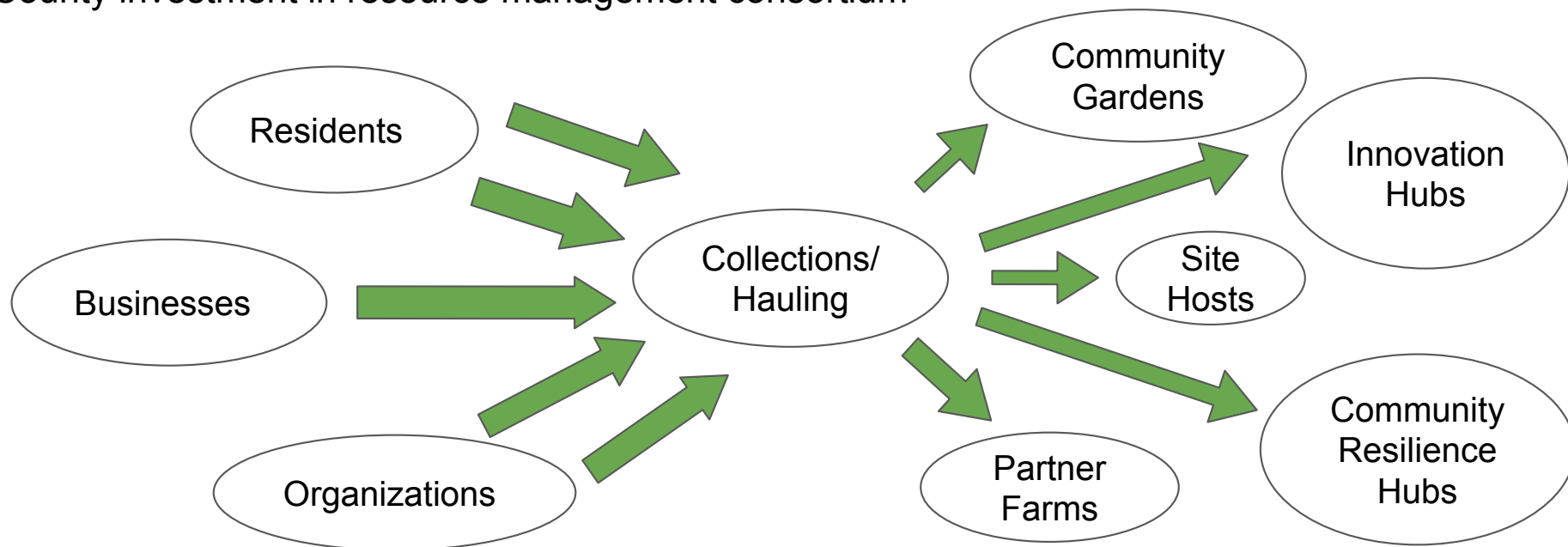
- Community engagement/Stakeholders
  - Public education, training programs
- Collection
  - Localized haulers transport material to processors
- Processing
  - Multiple small-medium processors serving different communities
  - Standardized, scaleable practices
  - Data collection/research
- Financial Support
  - Financial support for public education programs/research
  - Asset mapping

## What scale is feasible?

- Industry's entire infrastructure falls solely on the individual operator: small scale operations are not feasible in conventional terms
  - Public engagement/Education
  - Collections
  - Processing
  - Distribution
  - Data collection/Research
  - Safety protocol
  - Marketing
- Multiple small - medium scale processing facilities with machinery and equipment are necessary for the viability of any collection endeavor
  - Low population density

# What does the strategy look like?

- Separation of roles
- Robust, collaborative network
- Public engagement
- Viable scale
- Data collection
- County and State coordinate regulatory support and clear path for operators
- County investment in resource management consortium



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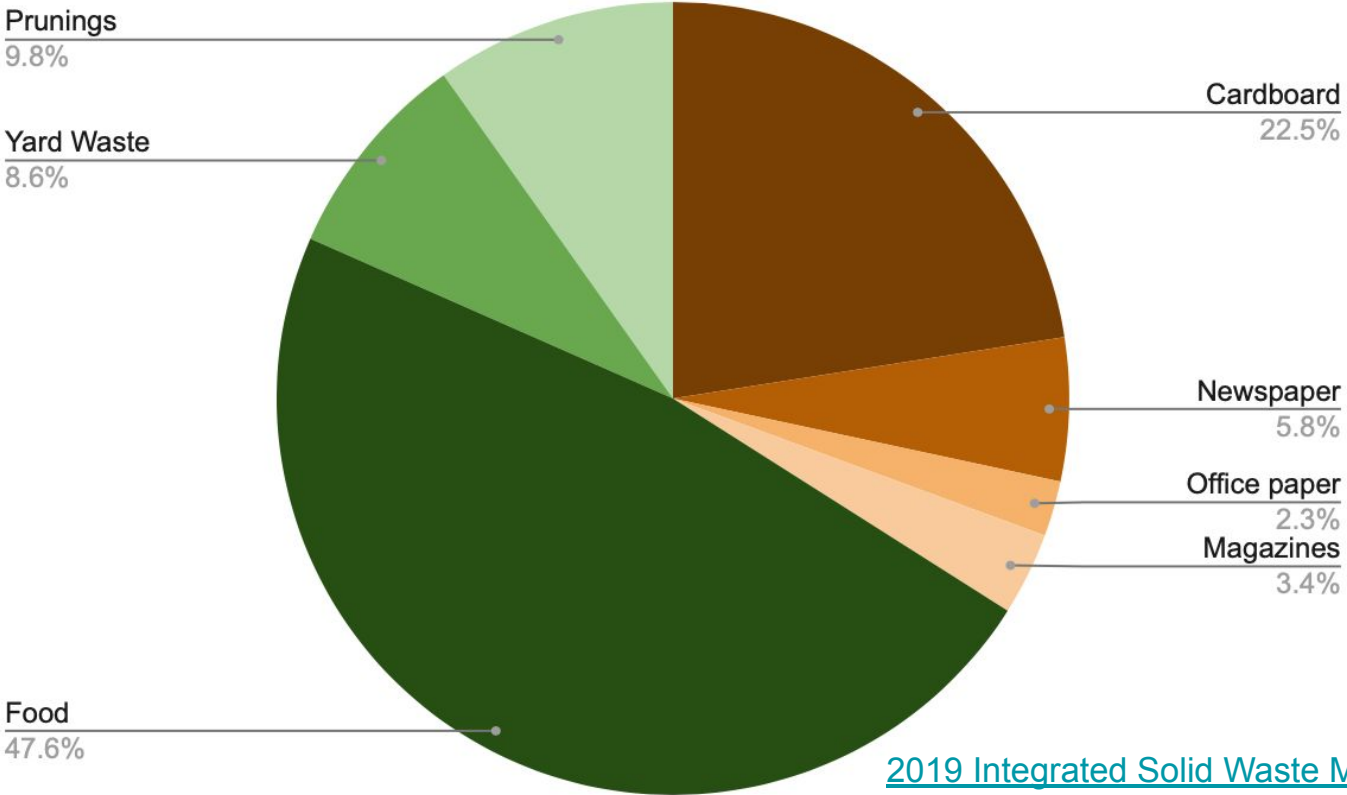
- Community engagement/Stakeholders
  - Public education, training programs
- Collection
  - Localized haulers transport material to processors
- Processing
  - Multiple small-medium processors around the island
- Financial Support
  - Coordination between county/state to support programs

## Can items like paper and foodware compost without an industrial facility?

- Natural materials like paper, cardboard, and bamboo decompose completely
- Lite bioplastic materials like cups and clamshells break down with about 90% success, but require more diligence and monitoring
- Dense materials like bioplastic to-go utensils do not decompose with conventional composting methods
- There are additional concerns about the persistence of PFAS from food packaging materials in compost created from these materials

This illustrates the necessity for a multi-tiered approach, innovation hubs, and rigorous data collection

# Organic Feedstocks Available (2019)



[2019 Integrated Solid Waste Management Plan Update](#)

These figures do not include “green waste”  
There is no shortage of ingredients needed to sustain a robust network of processors around the island



## My recommendations:

### Short term

- Establish a pilot program for processing, data collection
- Develop standardized best practices for technical aspects, safety, data collection
- Develop network between stakeholders, collectors, processors
- Coordinate between County and State to establish a clearly defined regulatory avenue for all sectors
- Conduct needs assessments and asset mapping

### Long term

- Establish Innovation Hubs/Community Resilience Hubs
- Establish multiple processing facilities
- Fund public education



## Closing remarks:

- Large scale commercial facility is not necessary, or appropriate as a solution to our needs
- Individual players in the network are unable to manage the task of organic waste management
- Fostering a network of small operators working together is the most impactful, least intensive strategy for our island
- There are many sources of feedstocks, and most are almost completely untapped, and therefore wasted
- Most cities around the nation and world have developed viable composting programs
- There is a significant demand and willingness from the public to participate and invest in this model
- Hawai'i Island is poised to be a world leader, serving as the empirical model for sustainability