

# 2025

Day 2

1:45 PM

Oct 23

Track B

Concurrent PM

## Grassroots Pathways to Zero Waste

**Moderator:** Kevin Drew

**Speakers:** Beatriz Martins Arruda  
Larissa Wright-Elson  
Neil Seldman  
Dan Knapp

NATIONAL  
**ZERO  
WASTE**  
CONFERENCE





# NATIONAL ZERO WASTE CONFERENCE

October 22 - 23, 2025

[www.zwconference.org](http://www.zwconference.org)

#nzwconference2025



## Zero Waste in Ecovillages: Experiences from Daily Life and Gatherings

Beatriz Martins Arruda, M.Sc.



# Research Context and Supervision

**ARRUDA,  
Beatriz Martins**

**M.Sc., Regenerative Researcher**  
**Ph.D. student in Civil Engineering**  
Infrastructure & Environment  
*FECFAU UNICAMP, Campinas, Brazil*

**Visiting researcher**  
*CEI ISCTE, Lisbon, Portugal*



**RUTKOWSKI,  
Emília Wanda**

**Ph.D., Full Professor**  
**Advisor**

FLUXUS research group  
*FECFAU UNICAMP, Campinas, Brazil*



**ESTEVES,  
Ana Margarida**

**Ph.D., Associate Professor**  
**Co-advisor**

Sustainable Societies  
research group  
*CEI ISCTE, Lisbon, Portugal*

# Introduction

**Our planet is overwhelmed by waste!**





**Too great amount of solid waste  
+  
Irresponsible disposal in cities**

# Degradation of ecosystems and biodiversity







GLOBAL  
ECOVILLAGE  
NETWORK

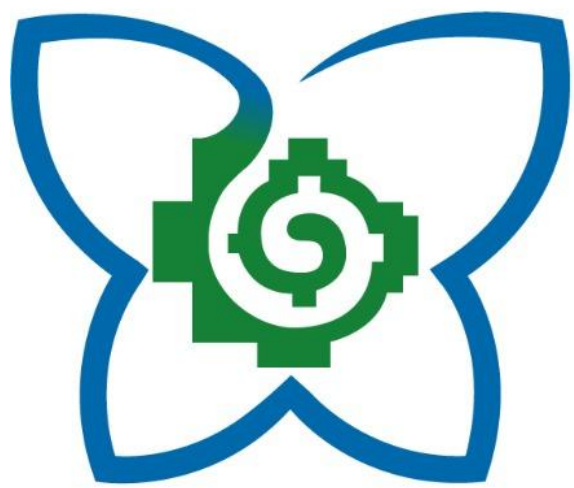
1237



137

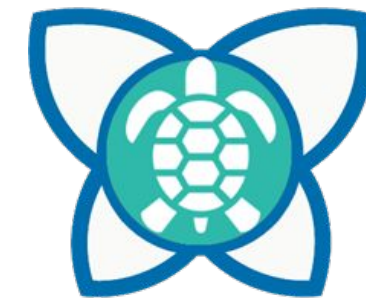
GEN-US

<https://www.gen-us.net/>



45

**CASA BRASIL**  
CONSELHO DE  
ASSENTAMENTOS  
SUSTENTÁVEIS DA  
AMÉRICA-LATINA



185

GENNA



272

CASA  
LATINA



127

GEN  
AFRICA



438

GEN  
EUROPE

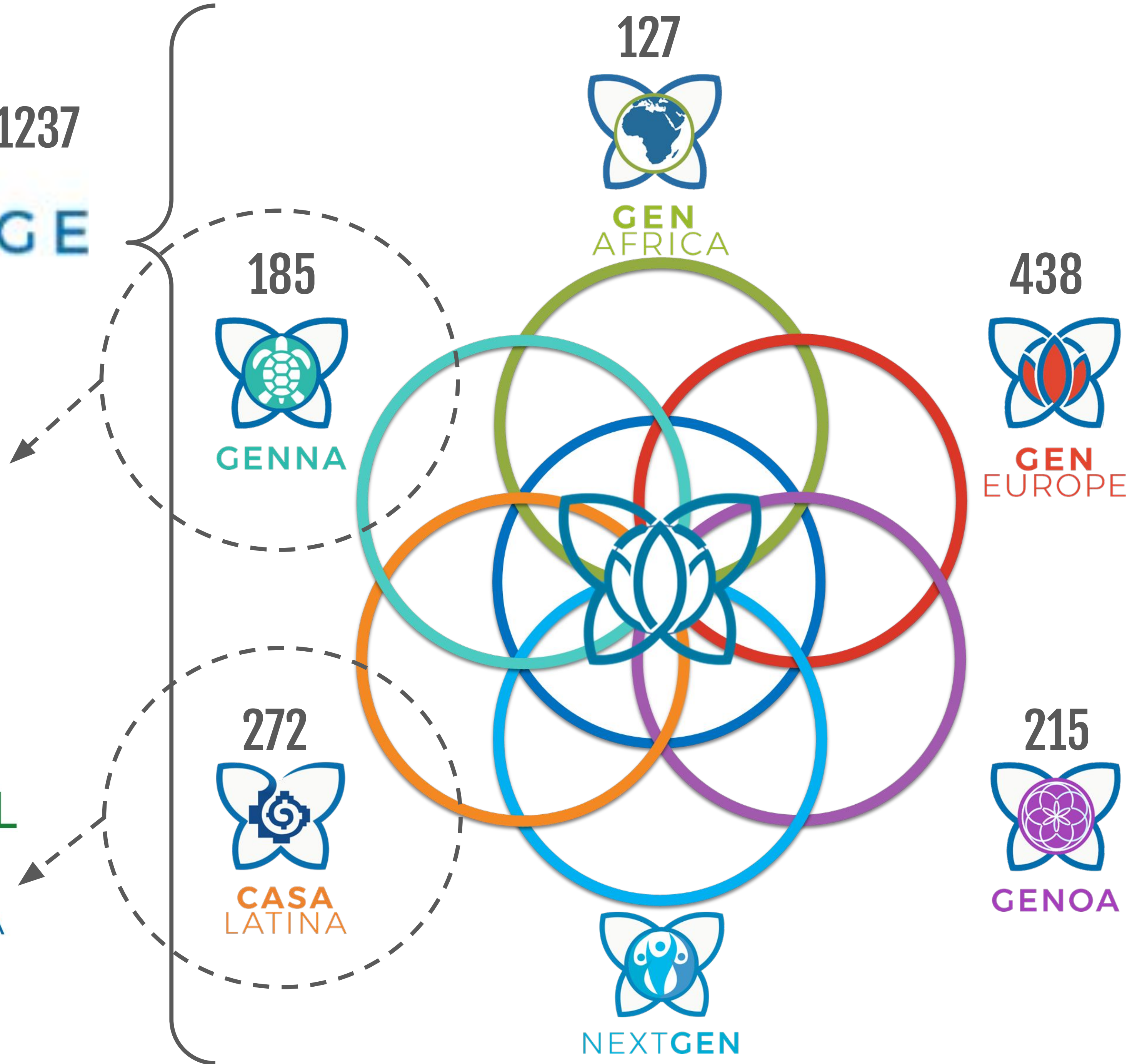


215

GENOA



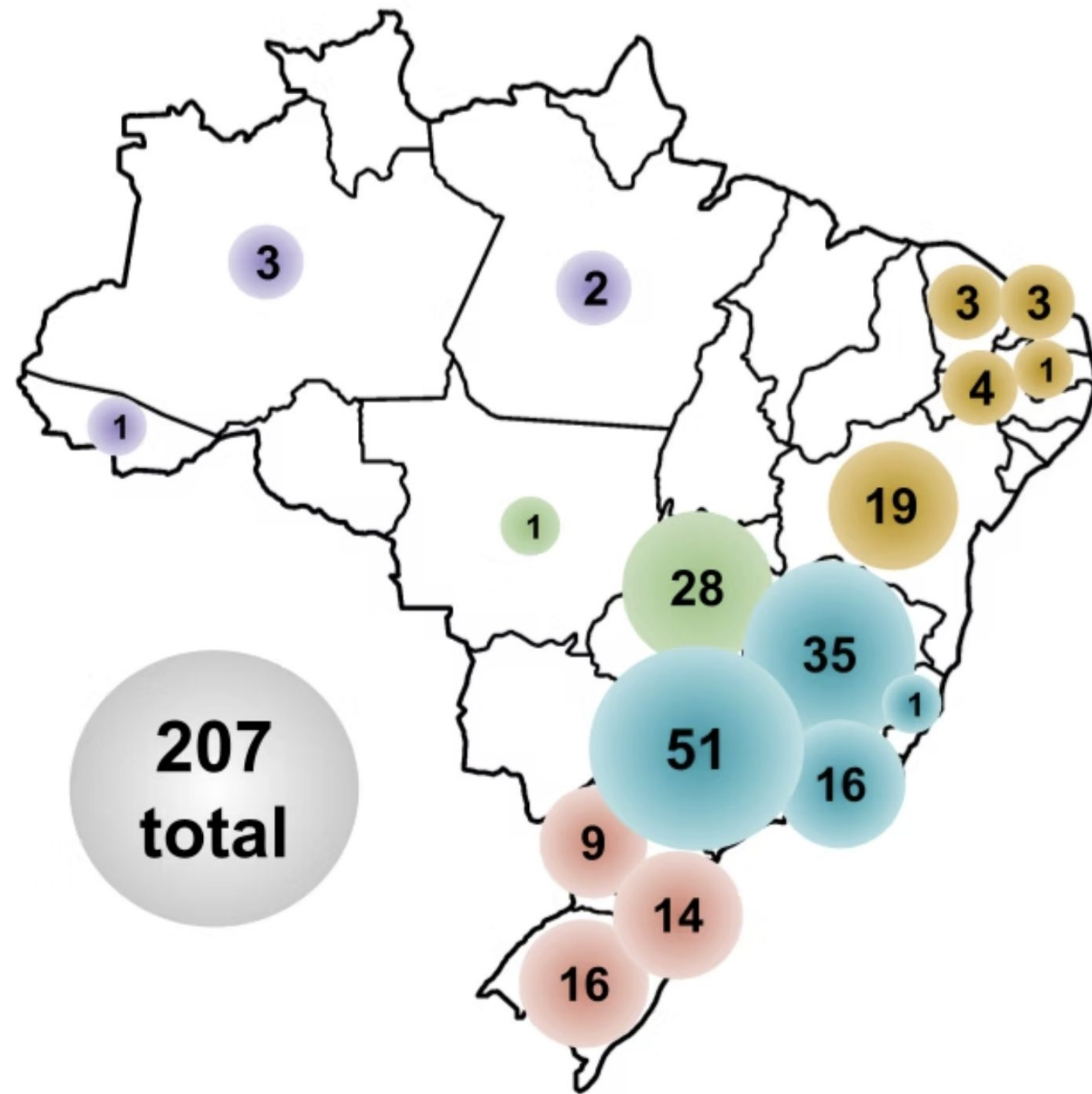
NEXTGEN



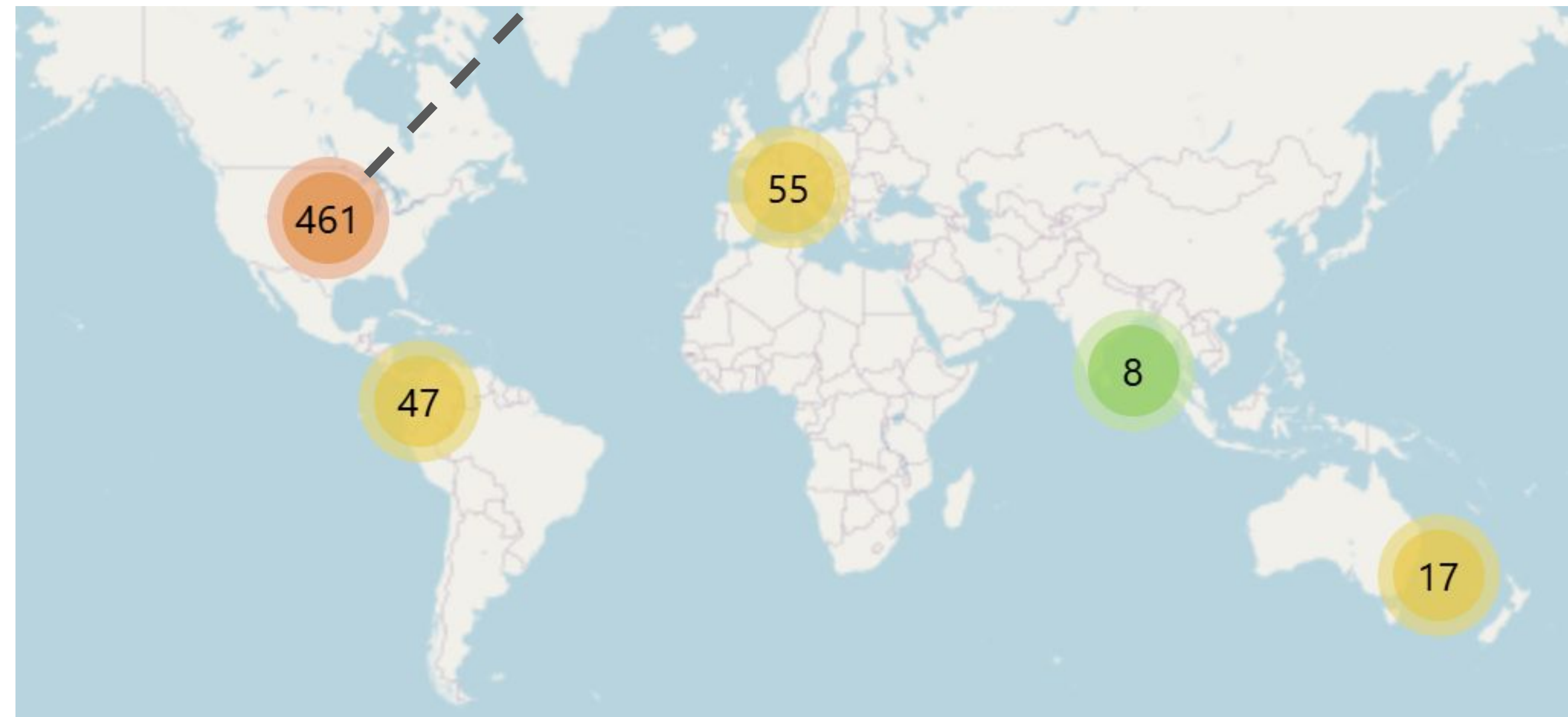
# The Ecovillage Movement



FOUNDATION FOR  
**INTENTIONAL  
COMMUNITY**



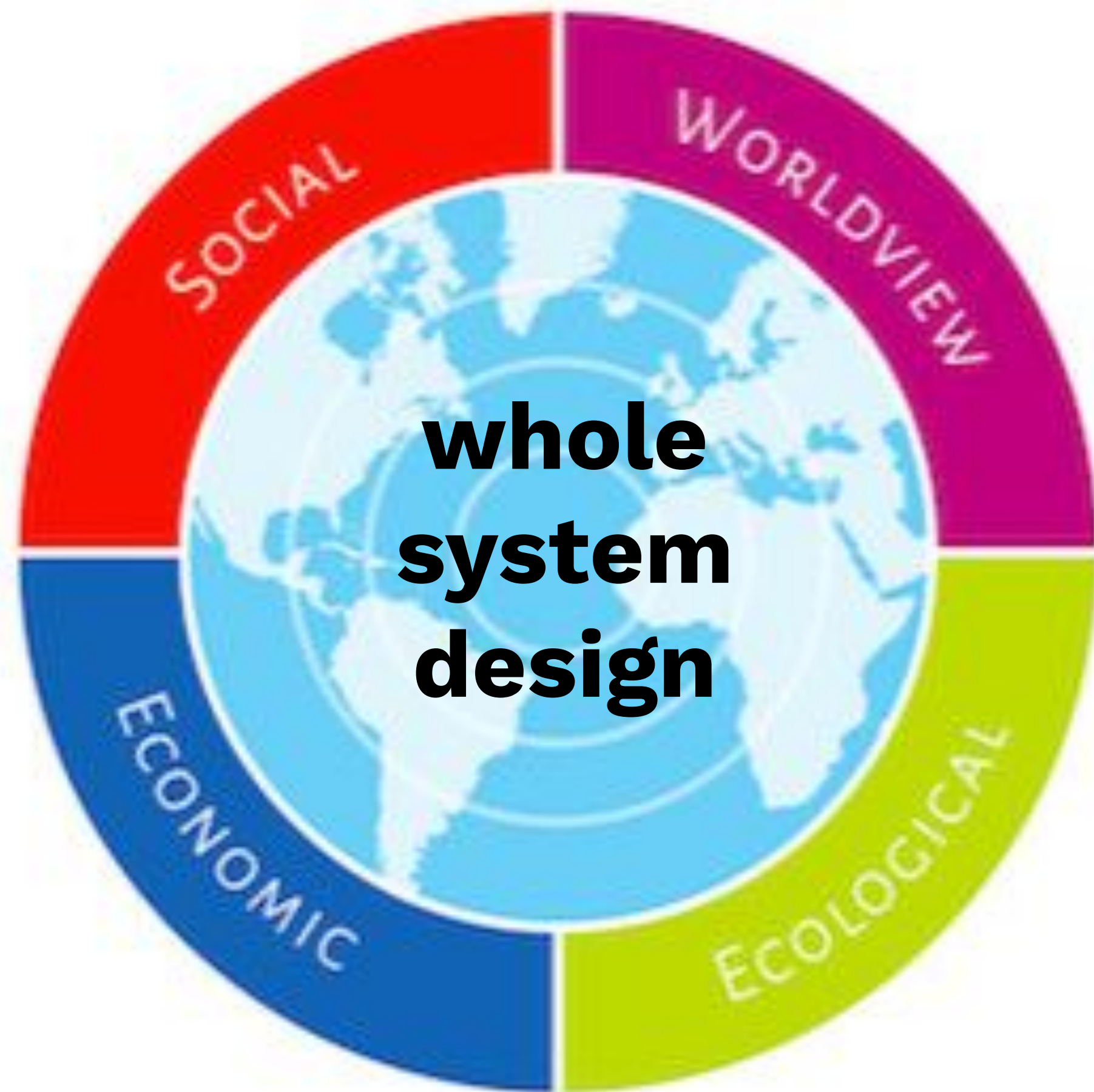
335 self-identified as “ecovillages”



SOURCE: <https://www.redecasabrasil.org/>

SOURCE: <https://www.ic.org/>

# Why ecovillages?



Communal arrangements for actively transitioning to sustainable ways of living

- **Community-led initiatives**
- **Integrated design combining 4 dimensions of sustainability**
- **Experimental spaces for experiential education**

# Zero Waste Practices in Ecovillages

## Separation at the source

Color-coded bins, signs, and participatory education for proper waste sorting at home or during events

## Recycling stations

Designated areas for recyclable materials with community agreements and partnerships for periodic collection

## Composting systems

Decentralized composting for organic waste (food scraps, dry leaves, compostable toilet content), including vermicomposting and biodigesters

map of composting  
practices in  
Brazilian ecovillages



<https://is.gd/BYj3Wc>

# Zero Waste Practices in Ecovillages

## Reusing waste as construction materials

Creative reuse of local and post-consumption materials in ecological buildings, infrastructure and furniture

## Shared infrastructure to reduce consumption

Collective kitchens, laundry rooms, and tool libraries that minimize resource use, food waste, and individual purchases

## Repair and repurpose hubs

Bike repair workshops and lending stations -> foster active mobility

Sewing ateliers and clothing swaps -> reduce textile waste

map of Waste Reuse  
Building Materials in  
Brazilian ecovillages



<https://is.gd/3f87a8>

# **Zero Waste Practices in Ecovillages**

## **Dishwashing stations**

**Elimination of sewage and single-use plastics during events through composting toilets and shared dishwashing setups (bring-your-own-kit or reusable sets provided)**

## **Educational actions**

**Workshops, hands-on trainings and guided tours on topics like composting, biodigesters, ecological sanitation, waste separation and reuse, promoting community learning and skill-building**

# Zero Waste Practices in Ecovillages

## **Community clean-ups and Collective engagement**

Organizing clean-up events in surrounding areas (often ecosystems the ecovillage helps to protect) such as riverbanks, beaches, forest trails

→ ways to care for nearby ecosystems and raise environmental awareness beyond their borders, fostering connections with local communities and promoting shared responsibility

## **Local partnerships**

Collaboration with municipalities and local waste-picker cooperatives to improve collection logistics, enhance recycling chains and promote inclusive circular economy models (especially in Global South)

# Applied Zero Waste Principles

**Reduce**

**Rethink**

**Refuse**

**Repair / Reuse**

**Recycle / Rot**

- **diversion from landfills and incineration**
- **shared responsibility**
- **design for circularity**
- **education and cultural transformation**

**Thank you!**

**biakirei@gmail.com**

# Cultivating Community Connection

ANCHOR GARDENS





# What is Anchor Gardens?

Community networked  
gardens



26 neighborhoods

Across the whole city

288,121 people

Anchorage's population

100%

Total success!

Brings together  
neighborhood communities





# Community Education

Learn. Cultivate. Share.

Host compost and vermi-culture workshops, work parties at community gardens, seed and seedling exchanges, and so much more!

Seedling Exchanges



Seed Exchanges



Supply Depots



Community & Empty Lot Gardens



Serenity Garden - Fairview



# Composting Workshops

Hosted 5 Certified Backyard Composter, 5 Vermi-Composter, and 2 Advance Composter courses.

Education!

**BUILD CLIMATE VICTORY GARDENS**

**CAPTURE AND STORE CARBON**

**STEP ONE: Fertilize**  
The key to locking up carbon is SOIL, and there are several steps to it.

**STEP TWO: No bare soil**  
An airtight lid is a great way to heavily feed your soil with microorganisms carbon-sequestration.

**STEP THREE: Plant Perennials**

**STEP FOUR: Compost Everything**  
Compost is a great way to heavily feed your soil with microorganisms carbon-sequestration.

**STEP FIVE: Reconsider Lawns**  
Reconsider your lawn. Lawns are a great way to heavily feed your soil with microorganisms carbon-sequestration.

**LOCK UP CARBON YOUR GARDEN!**

**AK AgrAbility**  
Serving Alaska's Disabled Agriculture Workers Since 2018  
www.agrability.org

**COOPERATIVE EXTENSION**  
ALASKA

**ATLA**  
Alaska Technology Leadership Agency

**ANCHOR GARDENS**



grow with us

Table with yellow tablecloth containing:

- Laptop
- Stacks of brochures
- Wicker basket with items
- Sign: **FREE \$6.95**

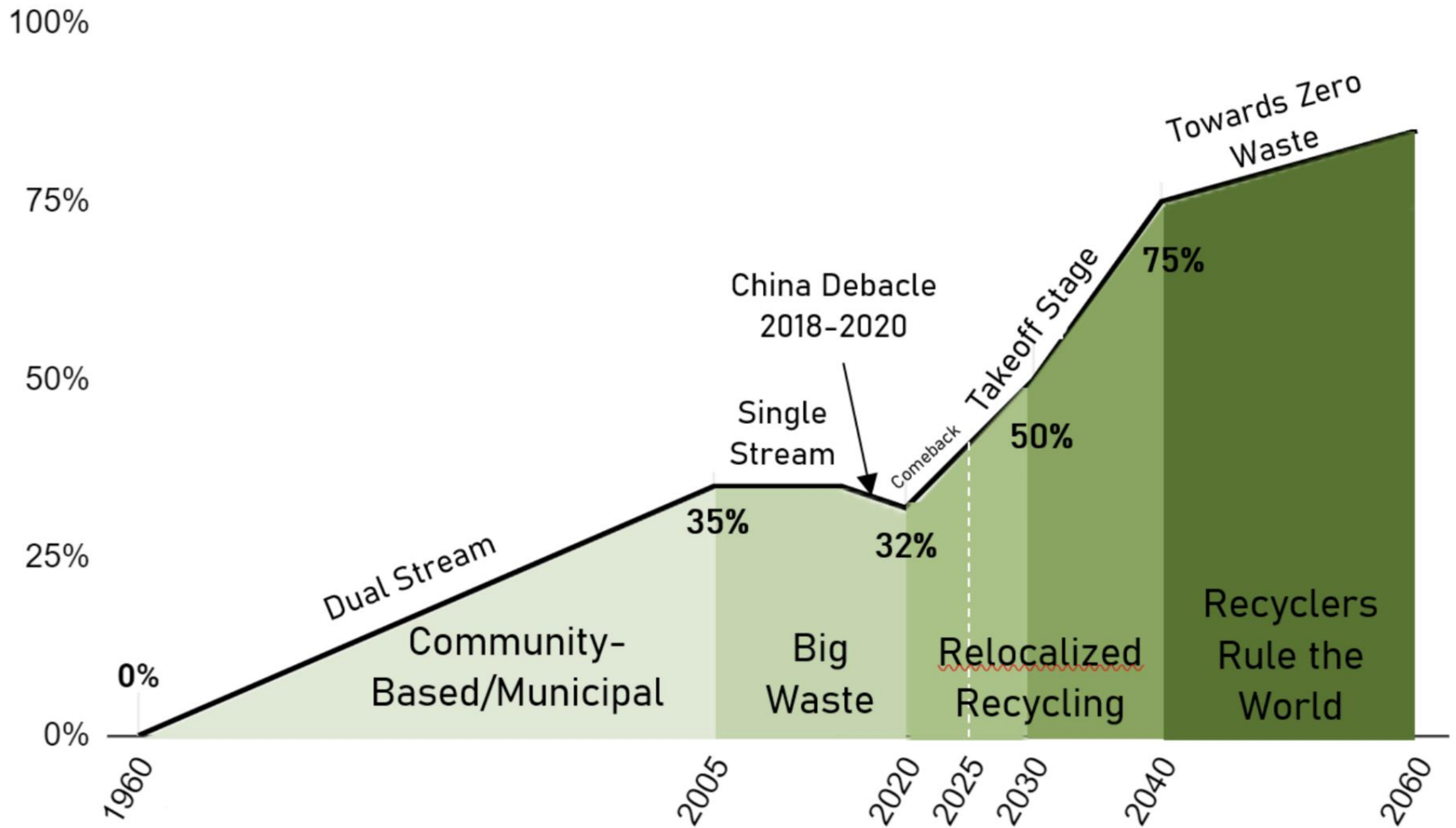
Vertical display board with photos and text:

Want to grow...



Outreach

# US Recycling History and Future



# URBAN ORE

## By the Numbers

– or –

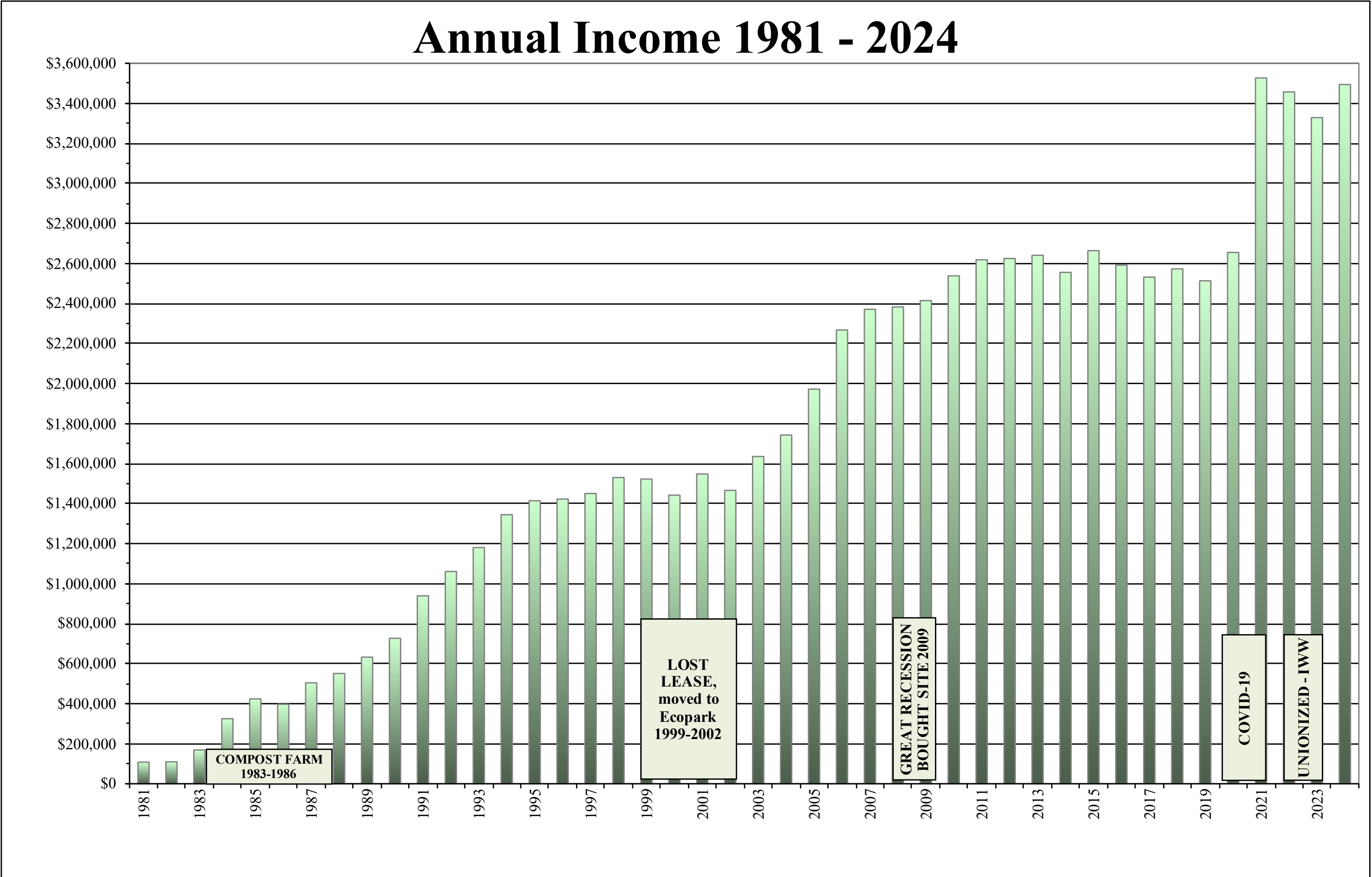
Every Town Needs One<sup>©</sup>

**Daniel Knapp, Ph.D.**

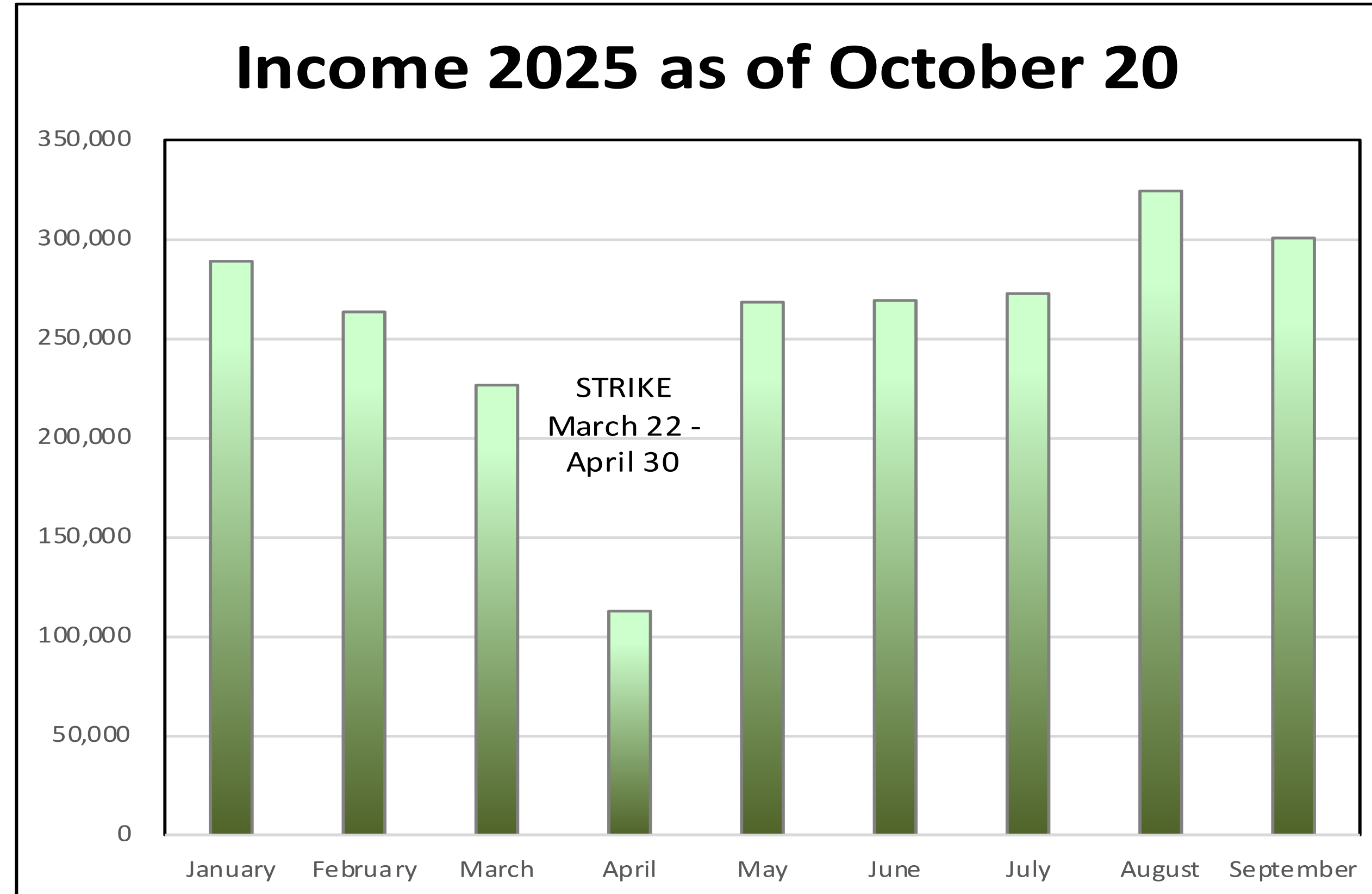
For the National Zero Waste Conference October 23, 2025



# Growing a Business Took Us Time



# It's Never a Sure Thing



**We took a hit to income in March and April and still can't pay all bills timely in October.**

# Where the Money Came From 2024

<b>Retail sales</b>	<b>\$3,277,043</b>	<b>94.7%</b>
<b>Scrap metals, recycling</b>	<b>\$ 107,707</b>	<b>3.0%</b>
<b>City salvage service fee (same per ton as landfill)</b>	<b>\$ 44,535</b>	<b>1.3%</b>
<b>Dropoffs, restocking, space rental (nonprofit)</b>	<b>\$ 32,827</b>	<b>1.0%</b>
<b>Unearned subsidies</b>	<b><u>\$ 0</u></b>	<b><u>0.0%</u></b>
<b>TOTAL</b>	<b>\$3,493,943</b>	<b>100.0%</b>

# Where the Money Went 2024

		<u>% of Income</u>
<b>Staff expenses<sup>1</sup></b>	<b>\$2,526,107</b>	<b>72.3%</b>
<b>Administration<sup>2</sup></b>	<b>\$ 718,094</b>	<b>20.6%</b>
<b>Operations</b>	<b>\$ 541,382</b>	<b>15.3%</b>
<b>Purchases for Resale<sup>3</sup></b>	<b>\$53,925</b>	<b>1.5%</b>
<b>Profit/ (Loss)</b>	<b>(\$ 107,094)</b>	<b>(5.6%)</b>

NOTES: 1- We are proud to create jobs but let ourselves get over-staffed.  
 2- There were \$135,215 in union and legal expenses, mostly for bargaining.  
 3- Purchases for resale equals cash in the community's hands.

# Taxes to Fund Government

<b>Sales taxes collected</b>	<b>\$336,042</b>
(not shown in P/L)	
<b>Payroll taxes (employer's)</b>	<b>\$180,000</b>
<b>Property taxes</b>	<b><u>\$180,577</u></b>
<b>Total taxes</b>	<b>\$696,619</b>

No income tax because it was a loss year.

# Business Ecosystem

## Population

**City of Berkeley**                      **124,321 in 2020**

**9 urban counties**                      **9,220,000**

**Wealth**                                      **\$2.5 trillion GDP**

**Resources and room for many more reuse enterprises. Reuse and thrifting are surging in popularity as virgin resources become scarce.**

# If Every Town Had One

124,000 people in Berkeley

331,450,000 people in USA

**IF**

1 Urban Ore per 124,000

**THEN**

2,673 Urban Ores in USA

x \$3,500,000 /year

**\$9,355,500,000 / year**



**Waste Isn't  
Waste  
Until It's  
Wasted**

**[dr.ore@urbanore.com](mailto:dr.ore@urbanore.com)**

Slide show by Aunty Entropy

