



IDEATE. ANALYZE. MITIGATE:  
LESSONS FROM PACKAGING LIFE  
CYCLE ASSESSMENTS

27.February.2020



**TRAYAK**

# How many companies have committed?

Justin's



gaia  
HERBS

470

Companies  
Committing to Action

1799

Commitments



Community  
FOOD CO OP



Veritable  
Vegetable

NUMI  
ORGANIC TEA

REBBL

seventh  
generation



MegaFood  
Fresh From Farm To Tablet™

nutiva  
NURTURE VITALITY™





## COMMITMENT: REDUCE THE CLIMATE IMPACT OF PACKAGING

BEFORE

AFTER

### Why Commit To Reducing the Climate Impact of Packaging?

On average, packaging accounts for about 5% of the energy used in the life cycle of a food product making it a significant source of greenhouse gas emissions.

Learn more about how to reduce your packaging's impact at:

<https://www.climatecollaborative.com/packaging>

309

# of Companies that  
have made a packaging  
commitment!

#### Climate Collaborative Webinar Resources Include:

- [Right Side Up](#): The Lowdown on Packaging Lifecycle Climate Impacts and Opportunities
- [A Delicate Balance](#): The Science, Art, and Business of Sustainable Plastic Packaging Design
- [Yin and Yang](#): Understanding and Conveying Advantages of your Sustainable Product Packaging

See more at: [https://www.climatecollaborative.com/packaging\\_resources](https://www.climatecollaborative.com/packaging_resources)

# THANK YOU TO OUR ALL OF OUR DONORS!

Alter Eco  
Annie's  
Associated Labels and  
Packaging  
Aurora Organic Dairy  
Clif Bar & Company  
Danone North America  
Decker and Jessica  
Rolph  
Dr. Bronner's  
Eatsie.us  
Gaia Herbs  
General Mills  
gimMe Snacks  
Griffith Foods  
Grove Collaborative  
Guayaki<sup>4</sup>

Happy Family Organics  
Harmless Harvest  
Harvest Market  
INFRA  
Jimbo's Naturally!  
Justin's  
KeHE  
Lotus Foods  
Lundberg Family Farms  
MegaFood  
MOM's Organic Market  
Mountain Rose Herbs  
National Co+op  
Grocers  
Natural Habitats  
Nature's Path  
New Hope Network

New Morning Market  
Numi Organic Tea  
Nutiva  
Oregon's Wild Harvest  
Organic India  
Organic Valley  
Outpost Natural Foods  
Patagonia  
Plum Organics  
Pluot Consulting  
Presence Marketing  
REBBL  
Rogue Creamery  
Safe Sterilization USA  
West  
Sambazon  
Stonyfield

Strategic Rise Partners  
Straus Family Creamery  
Studio Fab  
Sweet Additions  
Tiger Cool Express  
Traditional Medicinals  
Trayak  
Whole Foods Market





# Our Speakers



MODERATOR

Lisa Spicka  
Strategic Partnerships Director  
Sustainable Food Trade Association  
(SFTA)



Prashant Jagtap  
CEO  
Trayak



Jen-ai Stokesbary  
Director of Sustainability  
Boulder Organic Foods



Katy Radtke  
Product Development  
Manager  
Theo Chocolate



Arpit Bhopalkar  
Co-Founder & CEO  
Bhoomi

# IDEATE. ANALYZE. MITIGATE: LESSONS FROM PACKAGING LIFE CYCLE ASSESSMENTS



# Agenda

- Introductions
- Life Cycle Thinking
- Packaging Assessment Project Overview
- Packaging Sustainability Improvements
  - Boulder Organic Foods
  - Theo Chocolate
  - Bhoomi Cane Water
- Call to Action



Vision: “Enable all companies to design & manufacture their entire product portfolio using sustainable strategies.”

## ———— Mainstreaming Sustainability ————

EcolImpact



COMPASS



SCORE



# Life Cycle Thinking

Life Cycle Assessments calculate environmental impact of a product/package from sourcing, manufacturing, distribution, use, and disposal.

## LCA Data Flow

### Life Cycle Inventory (LCI)

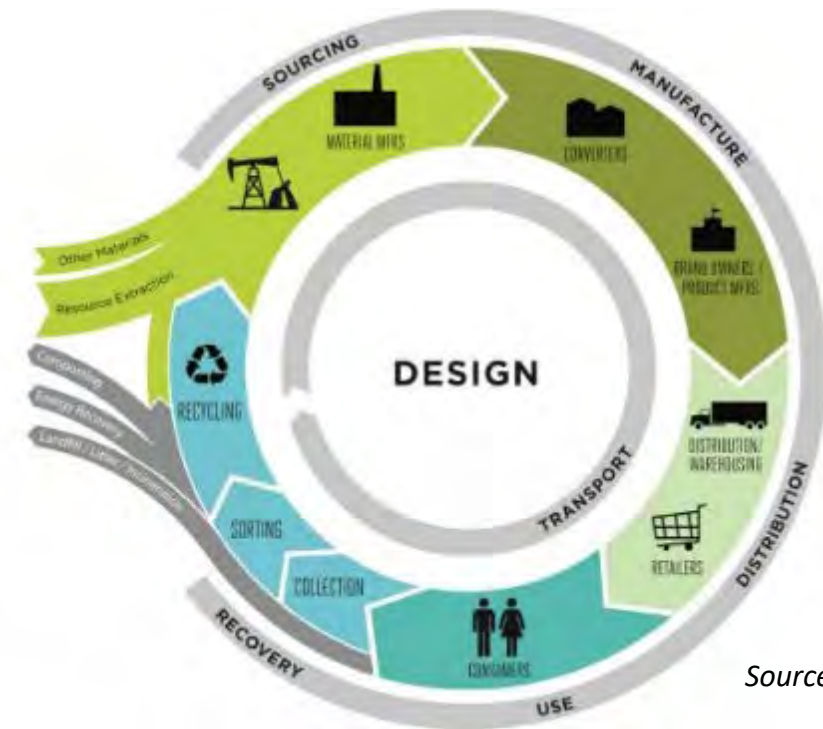
Collection of data to model the entire product/package

### Life Cycle Impact Assessment (LCIA)

Calculation of environmental impact with various indicators (ex. COMPASS®)

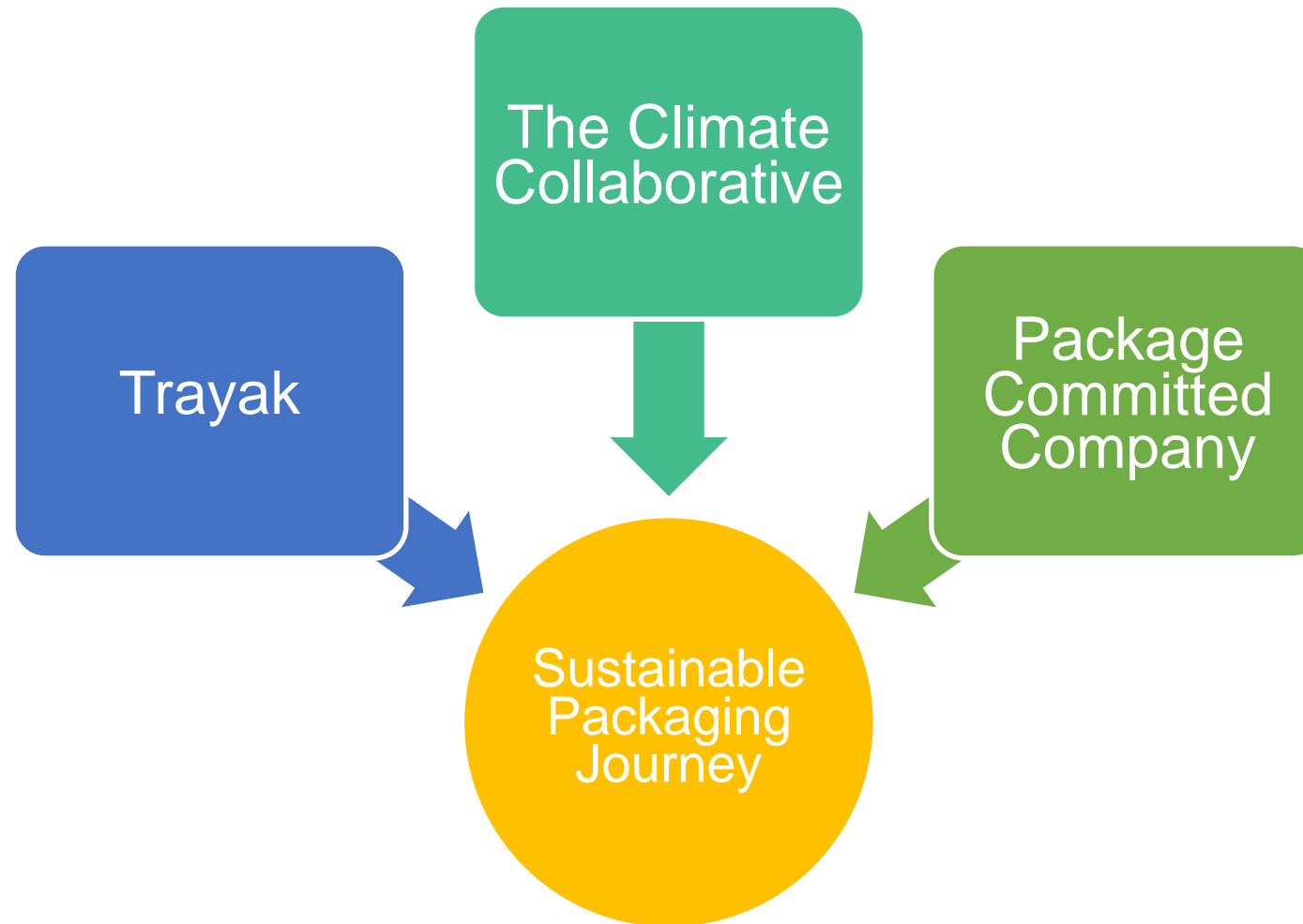
### Life Cycle Assessment (LCA)

Holistic approach and methodology to determine hotspots and tradeoffs



Source: GreenBlue®

# Packaging Assessment Project



# Packaging Assessment Project Steps



Define  
Packaging  
Change



Respond  
to Call to  
Action



Selection  
Process



Data  
Collection



Modeling



Analyzing  
New vs  
Old



Create  
Case  
Study





Switch secondary packaging to pad with shrink



Switch to a plant based film for their chocolate/candy packaging

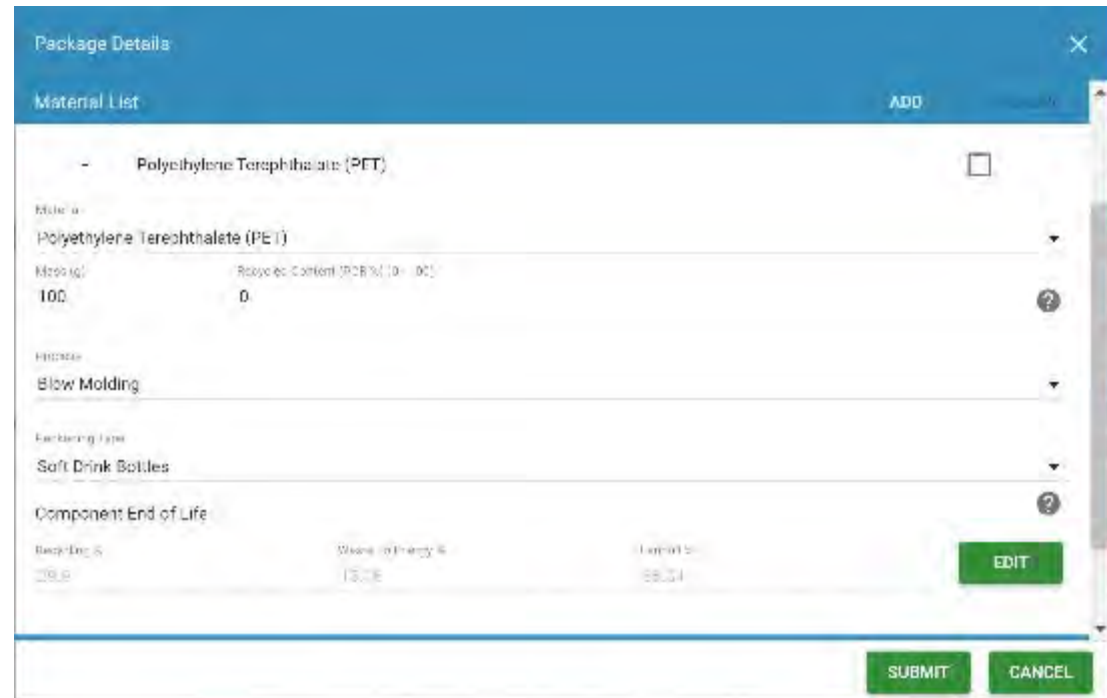


Switch to a sugarcane-based bio HDPE bottle



# Data Collection and Modeling

- Packaging System Data Request sent to companies
- Packaging Information Needed for Baseline and New Design
  - Materials
  - Mass of Materials
  - Conversion Processes
  - Packaging Type



The screenshot shows a web form titled "Package Details" with a close button (X) in the top right corner. Below the title is a "Material List" section with an "ADD" button. The form contains the following fields:

- Material:** A dropdown menu currently showing "Polyethylene Terephthalate (PET)".
- Mass (kg):** A text input field containing the value "100".
- Recycled Content (PCR%) (0-100):** A text input field containing the value "0".
- Process:** A dropdown menu currently showing "Blow Molding".
- Packaging Type:** A dropdown menu currently showing "Soft Drink Bottles".
- Component End of Life:** A section with three text input fields:
  - Recycled:** Contains "100.0".
  - Waste to Energy %:** Contains "15.00".
  - Landfill %:** Contains "85.00".

At the bottom right of the form is an "EDIT" button. At the very bottom of the page are "SUBMIT" and "CANCEL" buttons.



# Measuring Package Environmental Impact

## COMPASS LCA Indicators



FOSSIL FUEL  
CONSUMPTION



GREENHOUSE  
GAS  
EMISSIONS



WATER  
CONSUMPTION

## Additional Packaging Attributes



SCORE®  
Track Sustainability Goals



REUSED OR  
RECYCLED  
CONTENT



CUBE  
UTILIZATION



MANUFACTURING  
COST



Switch secondary packaging  
to pad with shrink





Jen-ai Stokesbary  
27 February 2020







In 2006 I was searching for a fresh, pre-made soup in my local grocery store. As I read the ingredient lists, I felt a chill: preservatives, flavor enhancers, emulsifiers and artificial ingredients. I was shocked.

*How did we get so far away from simple, nourishing, homemade soup? How hard could it be to make soup with all organic ingredients?*

I started cooking soups for family and friends to recreate the recipes we remembered and in 2008 my efforts became Boulder Organic Foods. Since then, our scratch-made organic and gluten-free recipes have put real soup on the table for families nationwide.

Kate Brown







# OUR SECONDARY PACKAGING

RSC “Regular  
Slotted Container”





# LOOKING FOR AIR

## Retail Pack Pallets





# PROPOSED SECONDARY PACKAGING

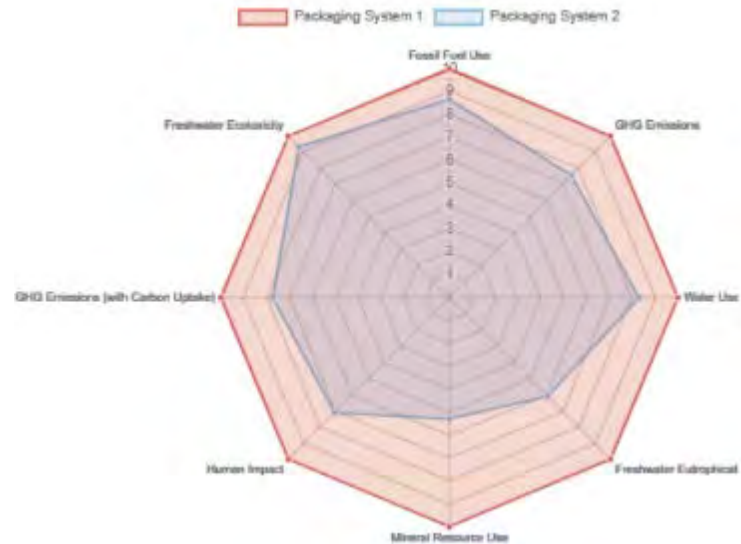
Corrugated Pads with  
Shrink Wrap





# Analyzing New vs Old – Boulder Organic Foods

*Measuring environmental impact of baseline and new package design*



## GHG Emissions (kg CO2 eq.)



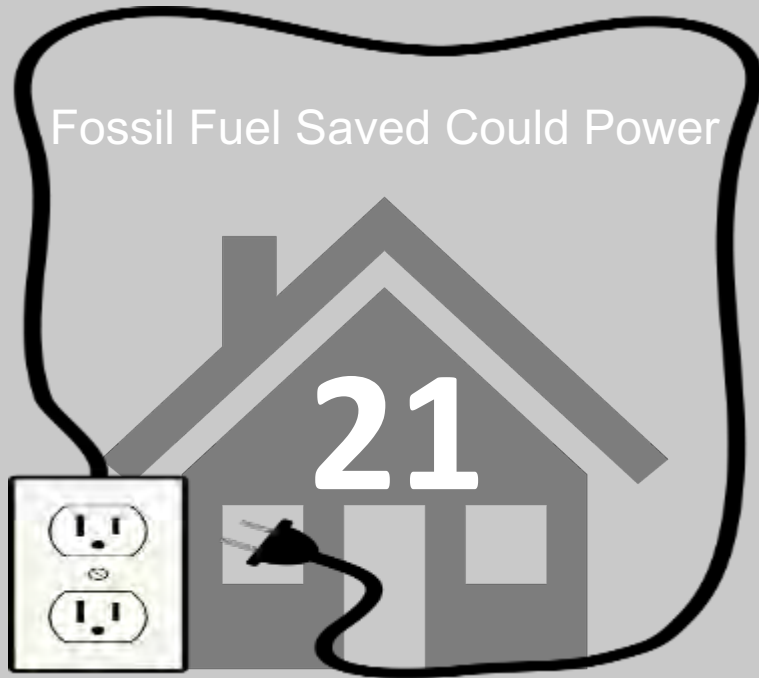
## Water Use (liters)



## Fossil Fuel Use (MJ deprived)



# Simple LCA Indicator Results



Average U.S. homes for an entire year!

Greenhouse Gas Emissions Reduction eq. to

**Planting  
1899 tree  
seedlings!**



New Design Saves  
Amount of Water to Fill



Olympic sized pools

\*Savings Calculated Based on annual volume.



# TRADEOFF

“Waiting” to solve for primary packaging



# TAKEAWAYS

- Just start
  - Made commitments via Climate collaborative
- *Don't ship air.* Look at the whole system
  - We're modifying our foodservice secondary pack
- Find & Highlight ROI





# ROI

- 25% more product / truckload
- Over 16 fewer truckloads / season

Cases per truckload





# THANK YOU



**Jen-ai Stokesbary**

[jenai@boulderorganicfoods.com](mailto:jenai@boulderorganicfoods.com)

303.530.0470 x112







Switch to a plant based film for  
their chocolate/candy packaging



# Theo Chocolate Packaging Case Study

Climate Collaborative Webinar

2/27/2020



# Theo Chocolate – Organic & Fair Trade Chocolate Maker in Seattle, WA

**Close relationships with  
cocoa suppliers**



**Living wage prices as well as  
Fair Trade & quality premiums**

**Positive impact at origin  
from fair trade premiums**



**Fair trade premiums are used for  
community initiatives in the DRC**

**Direct relationships with  
consumers**



**Over 50,000 people toured the  
Theo factory in 2018**

**Organic, owned  
manufacturing**



**Chocolate made from scratch in  
Seattle, WA**

**Theo Purchases Support the Lives of 34,000 people in the Democratic Republic of Congo**



# Theo Chocolate Products Create Cocoa-Filled Joy Nationwide

- Theo Chocolate manufactures 100+ chocolate-based products, including well-known & loved 3oz Classic bars, chocolate candy and handmade confections.
- #1 selling Organic chocolate bar in both grocery & natural channels
- All products are created with mindful recipes and intentional ingredients.
  - Organic, Kosher & Fair Trade Certified
  - Soy-free & Palm-free
- Theo invites consumers to be part of our mission through Factory Experiences and employee-led chocolate classes like Hand-Rolled Ganache Making and Chocolate & Cheese Pairing



# Reducing Theo's Environmental Impact in 2020 & Beyond

- At Theo, we take steps to reduce the negative impact on the environment, in order to care for both people and planet
  - Utility Usage Monitoring & Plan for Increased Efficiency in 2020
  - Employee Transportation Subsidies
  - Ongoing Education on Sustainable Cacao Growing Practices
  - **Ongoing Exploration of Sustainable Packaging Options**



# Packaging Initiative

- Insight: Existing (Recyclable #5) flow-wrap packaging not being recycled, ending up in the landfill
- Action: Invigorate search for sustainable, flow-wrap options, focusing on bio-based
  - Partnered with industry experts to identify the best alternative for current packaging structure & investigate net climate impact of the potential transition
  - New Structure: Bio-based PLA film

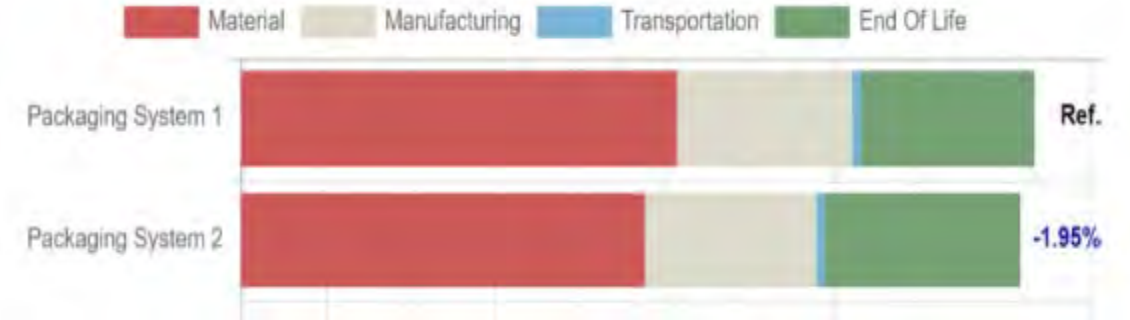


# Analyzing New vs Old – Theo Chocolate

*Measuring environmental impact of baseline and new package design*



## GHG Emissions (kg CO2 eq.)



## Water Use (liters)

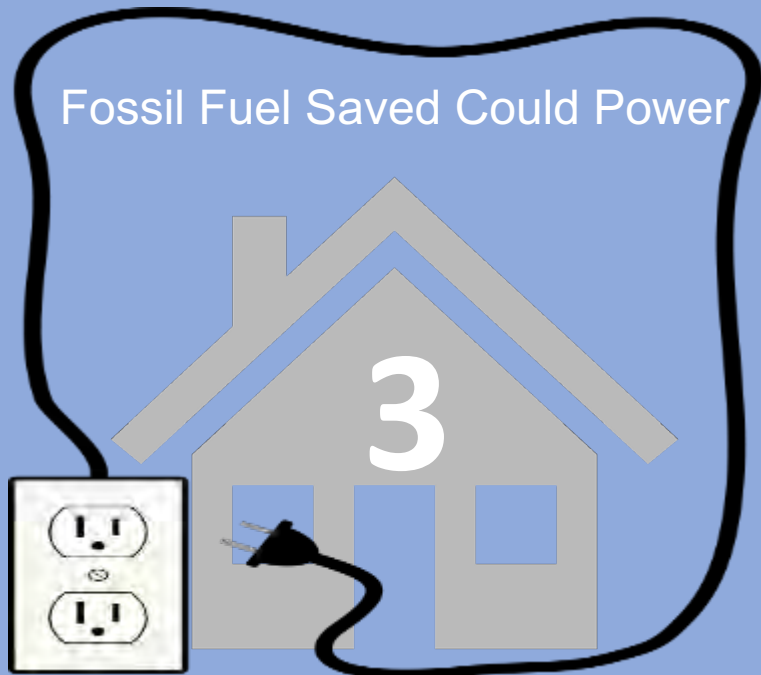


## Fossil Fuel Use (MJ deprived)





# Simple LCA Indicator Results



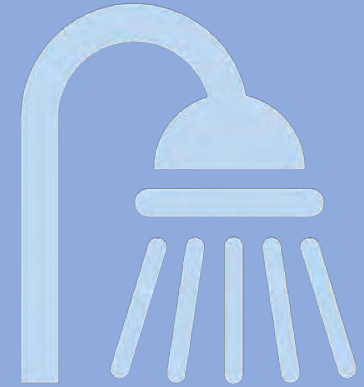
Fossil Fuel Saved Could Power

3

Average U.S. homes for an  
entire year!

Greenhouse Gas Emissions  
Reduction eq. to

**Planting 23  
tree  
seedlings!**



Water *USED* Enough for

**13 people**

to shower every day for an  
entire year.

\*Savings Calculated Based on annual volume.

# Key Takeaways

## Packaging Tradeoffs

- » Packaging shifts come with trade-offs and it is important to evaluate those tradeoffs and determine what is best for your company & consumers
- » Don't expect an easy answer!

## Time Investment

- » Vetting new packaging structures takes significant time and resources
- » Start research early, ask for help and test, test, test!
- » Schedule yearly packaging reviews

## Clear Success Parameters

- » Discuss, debate and define what success looks like for your company
- » Clear goals from the start will guide tough decisions down the line





## Path to Implementation – Next Steps

### More Production Testing

- » Second round of testing for in-house products
- » Large-scale test at co-manufacturing partner
- » Packaging equipment supplier vetting

### Shelf-Life Confirmation

- » 4 Months into shelf-life testing (12-month shelf life product)
- » Comparing current structure vs. new structure over time in various storage environments

### Qualification

- » ATM D6400 & Certification (6-month lead time)



Switch to a sugarcane-  
based bio HDPE bottle





Delicious – Healthy – Functional

# The Story of an Athlete



Arpit Bhopalkar  
Founder & CEO



# Ayurvedic Botanicals that Taste Great



Ginger + Amla  
Recovery Support



Moringa + Wheatgrass  
Superfood Support



Turmeric + Ashwagandha  
Immunity Support

# Bhoomi means “Mother Earth”



**Balanced Health**



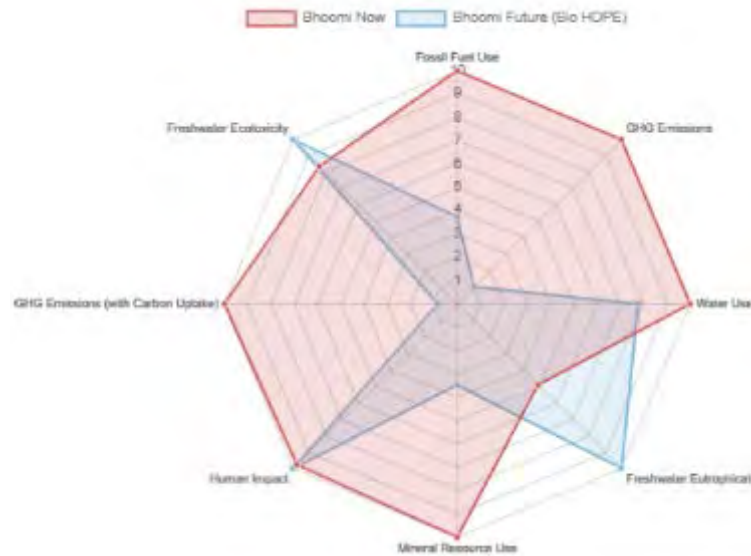
**Equitable  
Economies**



**Regenerative Practices**

# Analyzing New vs Old - Bhoomi

*Measuring environmental impact of baseline and new package design*



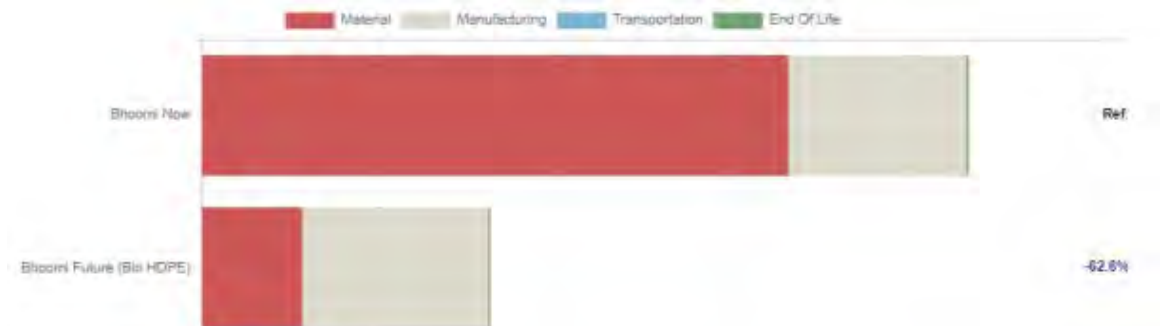
## GHG Emissions (kg CO2 eq.)



## Water Use (liters)

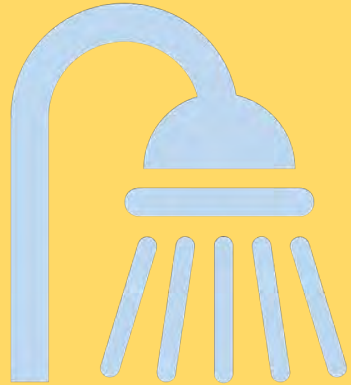


## Fossil Fuel Use (MJ deprived)





# Simple LCA Indicator Results



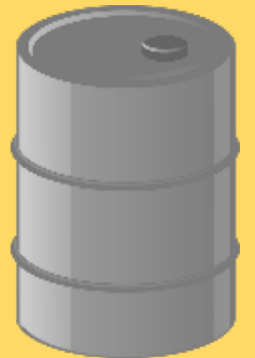
Water Saved Enough for  
**36 people**  
to shower every day for an  
entire year!

Greenhouse Gas Emissions  
Reduction eq. to taking



Off the road for an entire year!

Fossil Fuel  
reduced by  
**22 barrels**  
of oil!



\*Savings Calculated Based on annual volume.

# Packaging Climate Optimization Project



**A partnership between Climate Collaborative and Trayak**

# Where Are We Now?

- Tech. Design Completed > Tooling/Molding Phase
- Sample material to be showcased at Expo West





# Next Steps

- Product testing
- Marketing campaign to build awareness
- Expected launch 2020



BIOPOLYMER  
MADE WITH SUGARCANE



# Takeaways

- Why Recyclable over Compostable
- Consider the Trade-Offs
- Due-Diligence is critical



# Moving Forward

- Continuous improvement with sugarcane bagasse
- Mission to revolutionize Sugarcane via regenerative practices



**Balanced  
Health**



**Equitable  
Economies**



**Regenerative  
Practices**





Thank you! Learn more at [drinkbhoomi.com](https://drinkbhoomi.com)

# Takeaways

- Even small packaging changes when rolled up with annual volumes, can have a big impact at the company level.
- Every change in material has trade-offs

# Questions?

# Thank you!

<https://ecoimpact.trayak.com>

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Alison Younts – [alison.younts@trayak.com](mailto:alison.younts@trayak.com)



# Discussion



MODERATOR

Lisa Spicka  
Strategic Partnerships Director  
Sustainable Food Trade Association  
(SFTA)



Prashant Jagtap  
CEO  
Trayak



Jen-ai Stokesbary  
Director of Sustainability  
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Product Development  
Manager  
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Arpit Bhopalkar  
Co-Founder & CEO  
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