

2:45 pm Pacific Time
October 2, 2024



Plenary #4

Unique Approaches to Achieving a Circular Economy

Speakers:
Megan Hernandez
Kellie Dalton
Lara Ramdin, Ph.D.

Moderator: Stephanie Barger

Day 1 • Zero Waste Businesses & Institutions

Hosted by:



**2:45 pm Pacific Time
October 2, 2024**



Stephanie Barger

Director - TRUE Zero Waste Program

**U.S. Green Building Council
(Moderator)**

Plenary #4 – Unique Approaches to Achieving a Circular Economy



National Zero Waste Conference 2024

Day 1 • Zero Waste Businesses & Institutions

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Megan Hernandez

Co-chair

Bayard Fox Selections

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Kellie Dalton

**Director of Sustainability &
Client Relations**

Golden Bear Recycling

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Lara Ramdin, Ph.D.
Chief Innovation & Science Officer
Upcycled Foods Inc

**Plenary #4 – Unique Approaches to
Achieving a Circular Economy**



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Supplier Responsibility in Sustainable Business Practices

A Napa Zero Waste Collective Perspective

Bayard Fox Selections

Barrel and Fermentation Product Suppliers



Bayard Fox Selections has been the sole North American Representative for Tonnellerie Orion since 2010. As a partner in the coöperage, Bayard Fox has been able to set the tone for sustainability within the barrel industry, both on the production and customer sides of the business, bringing awareness to the connection between resources, stringent QA, ethical sourcing, and employee commitments. Tonnellerie Orion is based in Canals, France.



In 2013, Bayard Fox Selections began importing and supplying 2B FermControl products to the United States. 2B FermControl was the first yeast company to achieve EU certified organic status on its yeast products, starting from its inception in 2003. Based in Breisach, Germany, 2B FermControl is a leader in sustainable yeast production and supplier to wineries around the world, both organic and conventional.

Q: Why Am I Here? A: Supplier Responsibility



Tonnellerie Orion and 2B FermControl are leaders in sustainability in their respective industries. Through our investigations into our environmental impacts, we found that at our production facilities and in our production stream, we have very little waste.

This doesn't mean there is no waste associated with our products. We pass almost all of it along to our customers in the form of:

- Galvanized steel hoops from our barrels
- Poly-laminate bags holding our yeast products

We don't have solutions for these components...
YET!

But that doesn't mean we are in the clear. It shouldn't be just on our clients to solve the problem that arises in their garbage bins. We all need to be a part of the conversations and the solutions!



Waste passed on to customers:

- *Galvanized steel hoops
- *Plastic stretch film (60 gm)
- *Large rubber bands

- ▶ 2010 - 1st cooerage to TCA test completed barrels- protecting our product integrity to protect our clients'
- ▶ 2021- ISO 26000
- ▶ 2022- Carbon Footprint calculated (Scopes 1-3)
- ▶ 2022 - Awarded AFNOR RSE Engage status
- ▶ 2023 - 1st Coopérage with the “Committed to CSR” label from AFNOR
- ▶ 2023- 1st coopérage awarded the “Vingnerons Engages” label.
- ▶ 2023- Joined the Napa Zero Waste Collective
- ▶ 2024- Enterprise Zero Dechet
- ▶ Reduced plastic wrap weights by half
- ▶ Replaced tape with rubber bands to aid in plastic wrap recycling
- ▶ Promoting 6 hoops on barrels instead of 8
- ▶ Machine modifications to decrease waste and noise while increasing employee safety and efficiency.



Waste passed on to customers:
*Poly-laminate pouches

- ▶ 2003- 1st EU certified organic inactivated yeast produced
 - ▶ 2004- 1st EU certified organic active yeast
 - ▶ 2012- 1st EU certified organic cell wall product
 - ▶ 2020- 1st spray dried *Pichia kluyveri* yeast strain produced. EU certified organic.
 - ▶ 2022- 1st CCOF certified organic yeast products registered
-
- ▶ FermControl BIO replaces Diammonium Phosphate additions
 - ▶ Clear Up BIO replaces microplastic (PVPP) additions
 - ▶ Carbon neutral production methods
 - ▶ Less volume and fewer products needed

Napa Valley Zero Waste Collective

Mission

Harnessing the power of the wine community in Napa Valley to create more closed-loop, circular, zero-waste solutions that all wineries and local companies can benefit from.

Connecting the Community

Power of a collective group

Implementing Projects

consolidating volumes

Starting Conversations

Hard to recycle items

Wash-off labels

Circular resources- cardboard/glass

Domestic Recycling Options

Timeline- Napa Zero Waste Collective

***May 2022** - Napa Thrives (now Napa RISE) holds its inaugural event. “Going True Zero Waste” is a breakout session focusing on recognizing and lowering waste streams within the process of winemaking.

***June 21, 2023** - 1st Napa Zero Waste Collective meeting on materials management is held.

***July 6, 2023** - Plastic stretch film recycling initiative is launched with the Wine Service Co-op

***April 2024** - PET Label Release Liner initiative is launched with UPM Raflatac

***June 2024** - Collaboration with Golden Bear Recycling begins trial run

***August 2024** - Discussion to collaborate with Conservation Corps begins



Recycling, Waste Management, and Circular Economy in Wine Country

Most wine producing regions are in relatively small, connected areas, and while the wines vary in a myriad of ways, the “product” is largely the same... bottles of wine, sealed with corks, labeled with paper, packed in cardboard. What goes into the waste bins looks remarkably similar to what is purchased for production and what goes into the landfill is the same as our neighbors.

Why shouldn't we be able to recycle and repurpose better?!

Similar Products with Similar Streams- An Ideal Pilot Project

The wine industry is fueled by unique vineyards, but getting wine to the consumer is anything but...

Most wine production includes:

- ▶ Bottles
- ▶ Labels
- ▶ Corks
- ▶ Cardboard
- ▶ Fermentation Products
- ▶ Shipping
- ▶ And EVERYTHING is wrapped in plastic!



Similar
Supplies
=
Similar
Commodities

Waste Management is Not Just About the Bins Outside



Local municipal waste management groups do recycle... but not everything is recyclable through that stream



Supplier knowledge and participation is essential- we are closer to the direct source.



Collective efforts, communication, and facilitation can make HUGE impacts with small actions. Volume is KEY!



The snowball effect- once you start, it's hard to stop! Saving and making money off of “waste” is fun, and it feels great!



Changing the Definition of Waste

***With a little help from your friendly suppliers!

PET Label Release Liner

UPM Raflatac

***Community**- *Collection & communication*

***UPM Rafcycle**- *Pickups & reprocessing (outdoor/ automotive carpeting)*

****Special thanks to Golden Bear Recycling for sourcing the gaylords for us and Infinity Bottling for receiving them!**





Plastic Stretch Film Trex & Wine Service Co-op

- ▶ Wine Service Co-op- *receiving, baling, & storing*
- ▶ Community- *communication, collection, & delivery to WSC*
- ▶ Trex- *pickups, reprocessing, & repayment (~\$0.14/lb)*

Impact Potential Quick & Dirty Numbers



2023 Napa County Harvest

170,814 tons
10,760,000 cases



53' Truckload Capacity

40 bales plastic film
20 gaylords PET label Liner



Waste Diversion- Bins

20 lbs plastic film/ 1,000 cases
24 lbs PET liner/ 1,000 cases



Waste Diversion- Landfill

Plastic stretch film= 5.4 trucks
PET Label Liner = 5.98 trucks

Supplier Responsibility

- Protect the integrity of your product- so you can protect those of your clients'. Don't waste resources on either end.
- Do a deep dive- if you don't know your own sustainability impacts, how can you help your clients in theirs? CO2 footprints, recyclability, upstream impacts all are important!
- Be Curious- it's OK not to know, but not OK not to care.
- Listen- Know what your clients are looking for in sustainability. Where can you meet them?
- Be Part of the Solution- "Yet" is a small word, but a big concept... we don't have a solution YET! But that doesn't mean we won't.

Customer Responsibility

- **Think outside the box-** Can you use different resources? Do you need to use all the materials you are using?
- **Do a deep dive-** know what you are throwing away or recycling. What does that mean monetarily and space-wise? Source separate, even if all the materials don't have a destination... YET
- **Educate your consumers-** Explain why you are making packaging changes. Tell the story of your sustainability and why it matters to them.
- **Ask Questions-** Talk to your suppliers and waste management services. We need to know what is important to you
- **Be Part of the Solution-** Some solutions may require more effort. Find where you can put that in. Talk to your co-workers and colleagues.

On-going Work for Suppliers & NZWC

Redefining Waste Streams

Reprocessing and Circular Economies

What recycling programs exist?

What recycling programs can we create/ support?

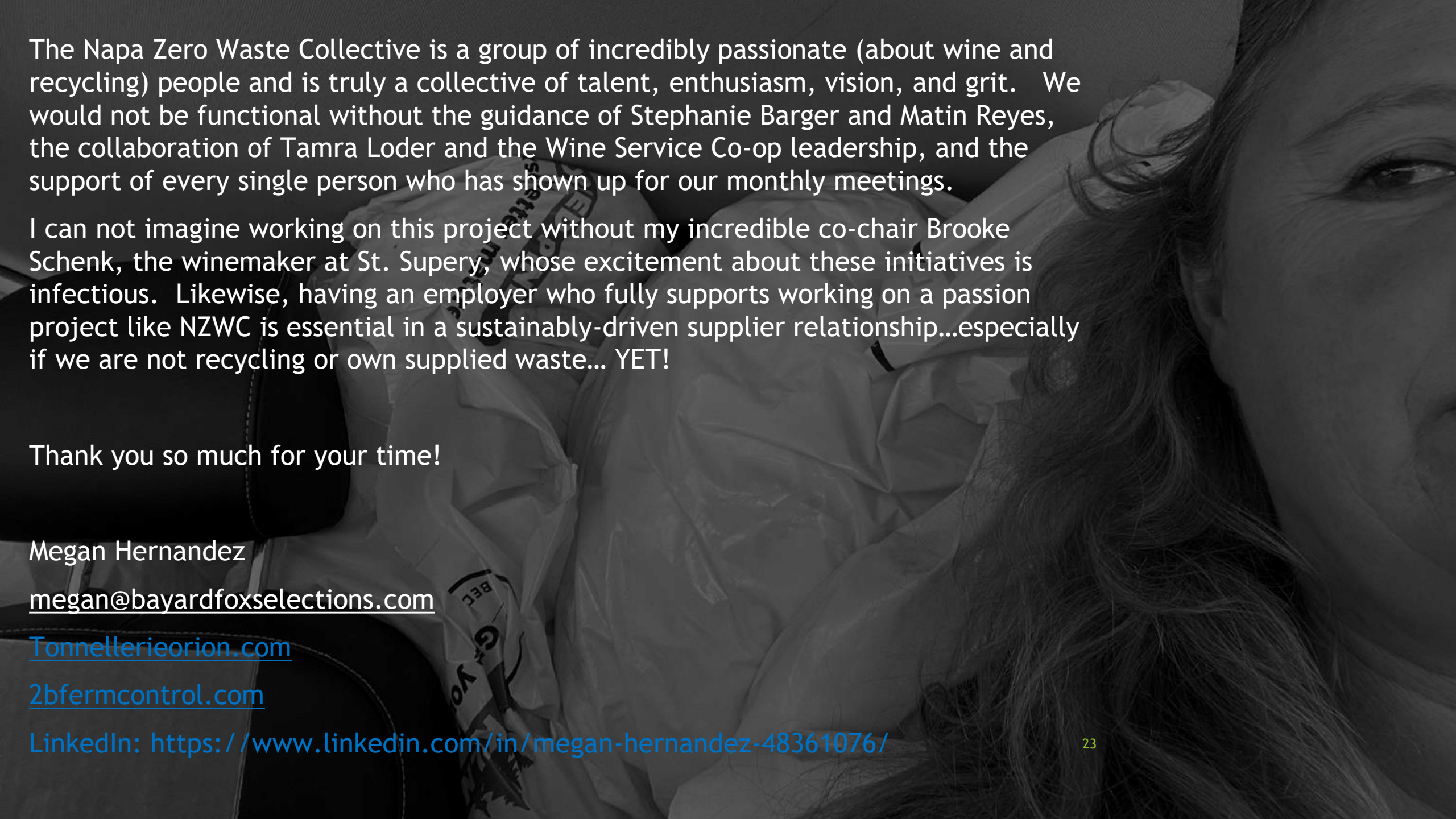
Changing the narrative of waste

Making and saving money with “garbage”

Inclusion of other community businesses

Keeping up the message and education

Expansion into other wine regions



The Napa Zero Waste Collective is a group of incredibly passionate (about wine and recycling) people and is truly a collective of talent, enthusiasm, vision, and grit. We would not be functional without the guidance of Stephanie Barger and Matin Reyes, the collaboration of Tamra Loder and the Wine Service Co-op leadership, and the support of every single person who has shown up for our monthly meetings.

I can not imagine working on this project without my incredible co-chair Brooke Schenk, the winemaker at St. Supery, whose excitement about these initiatives is infectious. Likewise, having an employer who fully supports working on a passion project like NZWC is essential in a sustainably-driven supplier relationship...especially if we are not recycling or own supplied waste... YET!

Thank you so much for your time!

Megan Hernandez

megan@bayardfoxselections.com

Tonnellerieorion.com

2bfermcontrol.com

LinkedIn: <https://www.linkedin.com/in/megan-hernandez-48361076/>



GOLDEN BEAR
COMPANIES



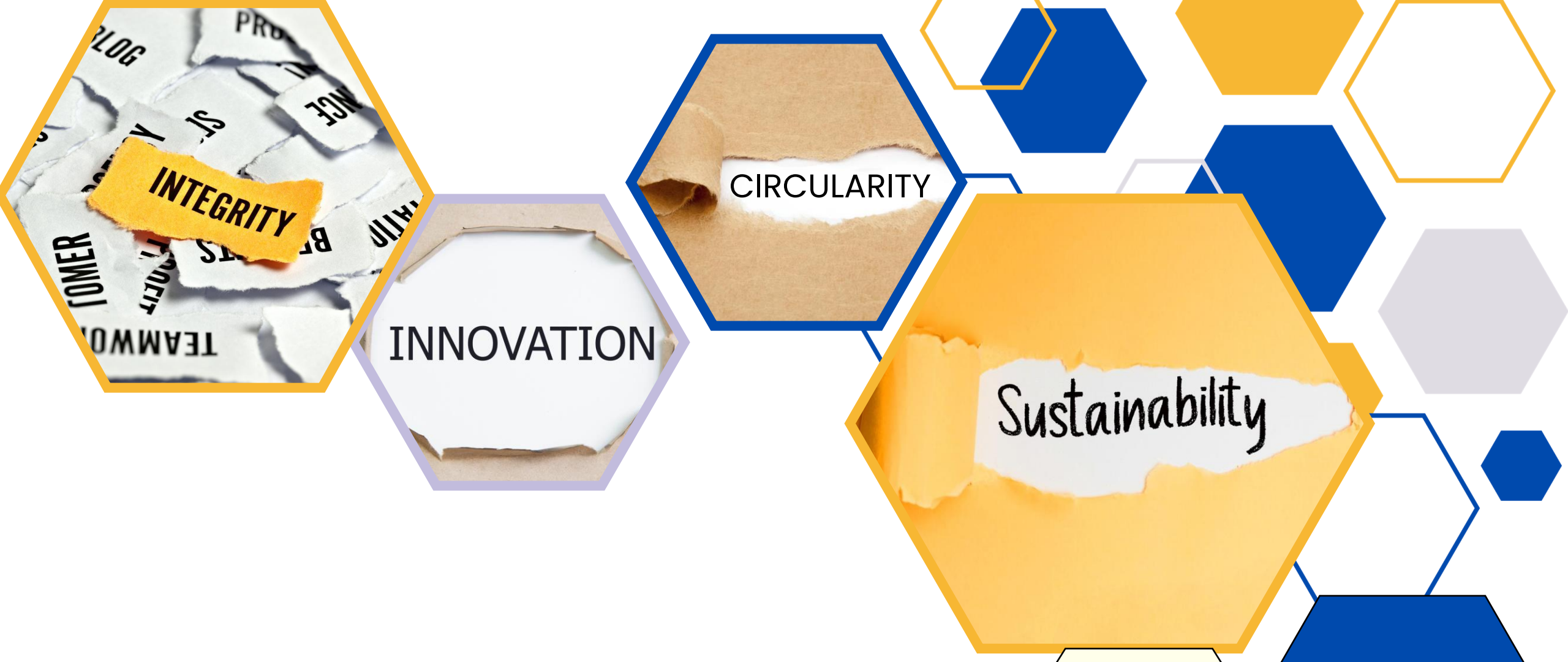
Welcome to Our Company

We create products that **accelerate** the shift from single-use plastics to more **sustainable, circular products**.

Golden Bear Companies, through its family of companies including Golden Bear Recycling, Golden Bear Industries and Golden Bear International, finds its motivation from seeking a better way and then pushing the limits to create it.



GOLDEN BEAR
COMPANIES



FOUR KEY VALUES

COMPANY VISION & MISSION



OUR ORIGIN STORY A LEGACY



Some of our Key Customers



MANUFACTURING FACILITIES

MPC Mill Group



Maryland Paper Company

Williamsport, MD
Corporate Headquarters
Est. 1989

Alabama Paper Products

Tuscaloosa, AL

California Paper Products

Shafter, CA

GMC Roofing

Shafter, CA

GB Industries - SAS1

Shafter, CA



GOLDEN BEAR
COMPANIES

GOLDEN BEAR COMPANIES

SUSTAINABILITY & DIVERSITY



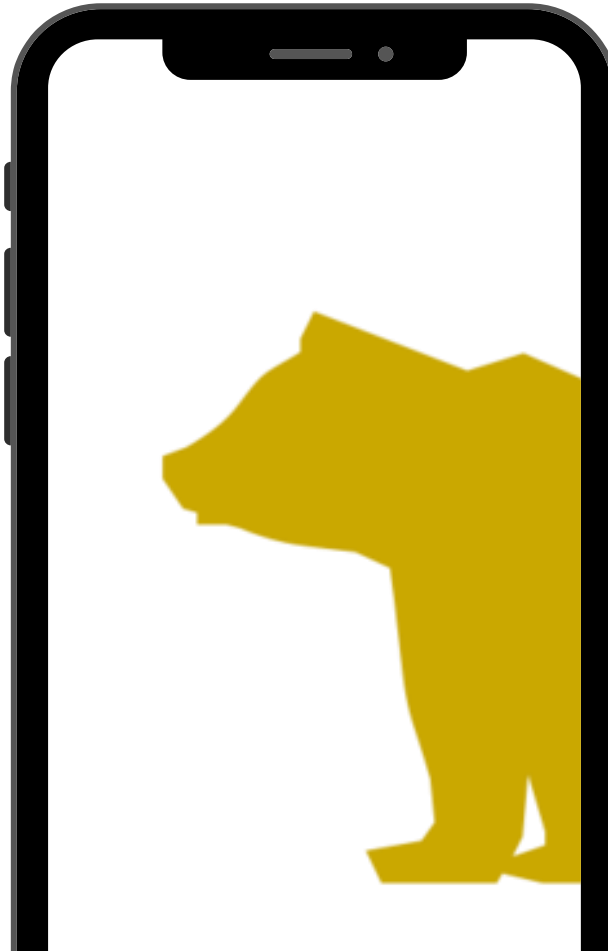
PEOPLE

- Diverse Staff
- Minority Owned Certified
- Women in Leadership



SUSTAINABILITY

- Eco-packaging
- Circularity Options
- TRUE Zero Waste Certification Services



PRODUCT INNOVATION

- Clean Chemicals
- Roofing products (25 year life span)



GLOBAL RECYCLING

- Program Optimization
- Audits & Reporting
- Best Practices





5901

CALIFORNIA PAPER
PRODUCTS

FIRST PAPER MILL TO BECOME TRUE ZERO WASTE CERTIFIED

In 2024, Golden Bear will accomplish the massive task of becoming TRUE zero waste certified at our own paper mill site in Shafter, California.



This will be a first, worldwide.



GOLDEN BEAR
COMPANIES

**ROOFING
MATERIALS =
EXTENDED OCC
LIFE**



**GOLDEN BEAR
COMPANIES**



**30 Year life span vs
5-7 time recyclable lifecycle**



GOLDEN BEAR COMPANIES



Our Team has hundreds of years of recycling experience combined.

Responsible for recycling **over 500,000 tons** per year of various materials annually that would otherwise be sent to the landfill, from paper, plastics to various metals.

We ensure our customers achieve their best waste diversion possible and offer TRUE Zero Waste certification as well as various circularity projects in collaboration with Golden Bear Industries.



GOLDEN BEAR COMPANIES



Golden Bear International is our export division that delivers another dimension of market creation and leverage. We service our customer base to and from every major port or second tier port globally.

GB International leverages Golden Bear Recycling's Subsidiaries/Sales Offices in Mexico City, Mexico and Kerala, India. The Indian Office also houses our back office team for delivering world-class 24 hours-a-day service.



Domestic & Abroad!



GOLDEN BEAR COMPANIES



Golden Bear Industries is the **sustainable paper manufacturing/converting arm** of Golden Bear Companies. Our portfolio of paper manufacturing, converting, coating and sheeting machines produce paper products specifically designed to meet the needs of our customers. Many of the products we make today are replacing plastic options and offer our partners closed loop opportunities.

Golden Bear Industries is currently providing the largest North American Ecommerce company with paper Void Fill to help accelerate their shift from single-use plastics to 100% recyclable paper packaging.





Our 100 % Recyclable Packaging Products

All products repurposed from cardboard.



Paper Void Fill



Box Partitions



Paper Bags



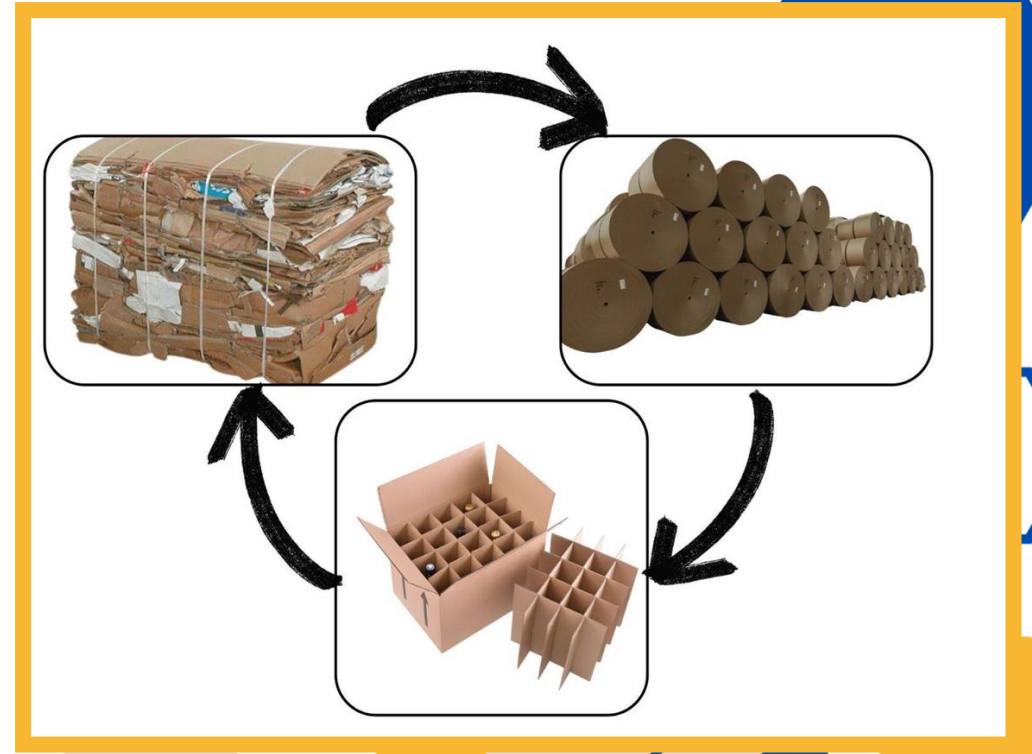
CLOSED LOOP SAVINGS



Transitioning to a circular economy can unlock substantial economic value.

It is estimated to potentially unlock **\$4.5 trillion in economic benefits by 2030.**

By minimizing the need for new materials and emphasizing the reuse and recycling of existing resources, the circular economy can address up to **45% of emissions** that are not covered by transitioning to renewable energy alone.





THANK

YOU

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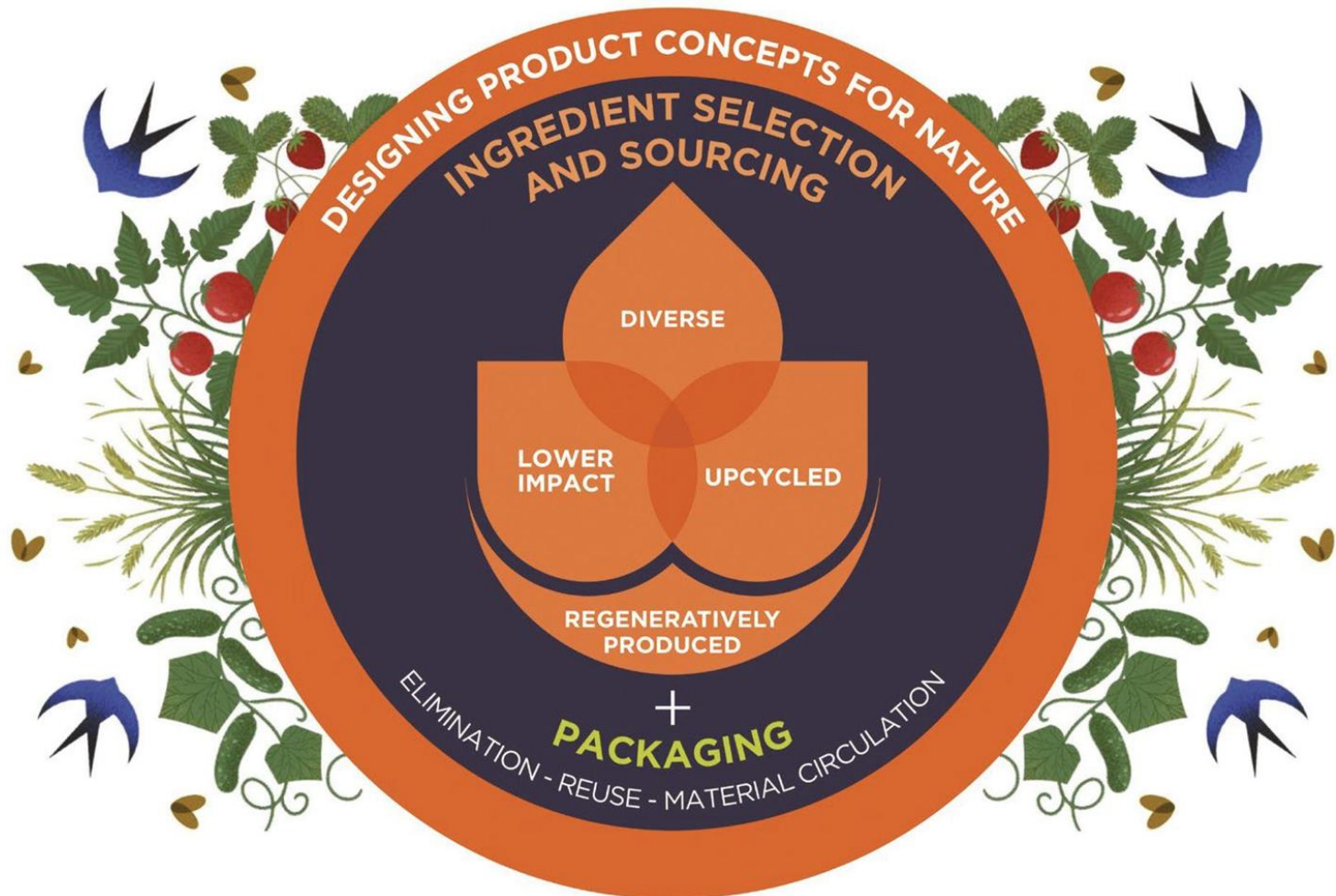
Building a circular economy to create more accessible nutrition –through upcycling

Dr Lara Ramdin
Chief Innovation & Science Officer



Circular Bioeconomy in Food Systems

Ellen McArthur Foundation Circular Food System



- Specific definitions and considerations exist for circular bioeconomy in food systems
- Food Loss and Waste is a major sustainability issue (SDG goals 12.3 and 12.5)
- Consumer acceptance and sustainable behaviors (upcycled food consumption, organic recycling behaviors, etc.) remain a challenge
- Economies of scale and impact of cost of innovation/technologies also a barrier
- Collaboration across various levels of the food value chain to accelerate against food loss & waste goals

**Launched in 2021,
Upcycled Certified[®]
is the world's first
and only third-party
certification for
upcycled food
products and
ingredients.**



**UPCYCLED
CERTIFIED[®]
STANDARD**



VERSION 2

2022



upcycled food

'əp- , sī-kəld ' fūd

"Upcycled foods use ingredients that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment."

Defined by a team of experts from Harvard Law School, Drexel University, World Wildlife Fund, Natural Resources Defense Council, ReFED, and others

HARVARD
LAW SCHOOL



ReFED

Drexel
UNIVERSITY

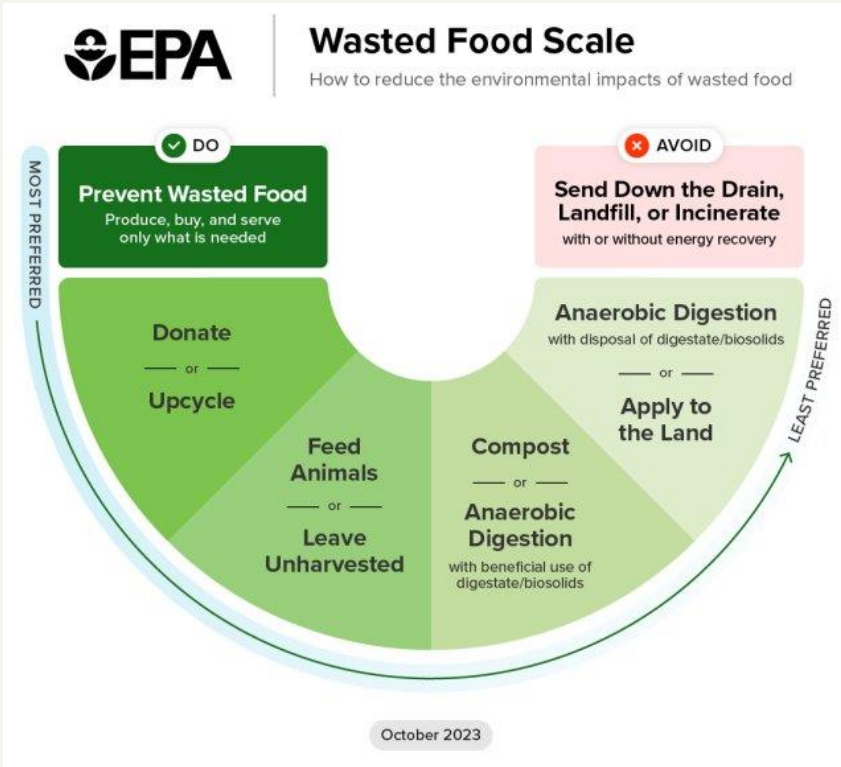


WWF

NRDC
NATURAL RESOURCES
DEFENSE COUNCIL



POLICY CHANGES RECOGNIZING THE ROLE OF FOOD LOSS & WASTE/UPCYCLING IN FUTURE FOOD SYSTEMS



2023 INTRODUCTION NO TIME TO WASTE ACT AS PART OF FARM BILL

Opportunities to Reduce Food Waste in the 2023 Farm Bill
bit.ly/FarmBillFoodWaste

UPCYCLED FOODS INC.

FOOD LAW AND POLICY CLINIC
PHILIPPS LAW SCHOOL

NRDC

ReFED

WWF

The Honorable Debbie Stabenow, Chair
Senate Committee on Agriculture, Nutrition and Forestry
U.S. Senate

The Honorable Gern Thompson, Chair
House Committee on Agriculture
U.S. House of Representatives

The Honorable John Boozman, Ranking Member
Senate Committee on Agriculture, Nutrition and Forestry
U.S. Senate

The Honorable David Scott, Ranking Member
House Committee on Agriculture
U.S. House of Representatives

Dear Chairwoman Stabenow, Chairman Thompson, Ranking Member Boozman, and Ranking Member Scott:

Thank you for your efforts to strengthen the U.S. Food System by working towards the passage of the 2023 US Farm Bill. The Upcycled Food Association (UFA), an industry trade association representing 170+ US-based member businesses, and our partners, seek to reward increased emphasis on preventing food waste within the 2023 Farm Bill through support of the Upcycled Food Industry.

Each year farmers, manufacturers, households, and other businesses in the United States spend \$444 billion to grow, process, transport, and dispose of food that is never eaten.¹ Additionally, according to the EPA, "wasted food accounts for approximately 10% of U.S. agricultural land and enough energy to power more than 65 million U.S. homes."² This 2018 Farm Bill was the first to address this staggering use of our country's resources, a rare bipartisan issue championed by the last three presidential administrations.^{3,4} While these efforts are commendable, more can and should be done.

In 2022, the Harvard Law School Food Law and Policy Clinic, Natural Resources Defense Council, Her IUS, and World Wildlife Fund jointly published "Opportunities to Reduce Food Waste in the 2023 Farm Bill" highlighting upcycled food as one powerful lever in the effort to reduce food waste. "Upcycled Foods use ingredients that otherwise would not have gone to human consumption, are produced and processed using verifiable supply chains, and have a positive impact on the environment."⁵ and the industry producing Upcycled Food products has begun to gain consumer traction.⁶ The UFA, and the Upcycled Food Foundation, a 501(c)(3) not-profit, were formed in 2019 to improve the market for upcycled products. The Members of the UFA, representing farmers, manufacturers, retailers, distributors, and service providers in 30 states, collectively report annual revenues of \$20+ Billion. These companies create jobs in local and regional economies and recover lost economic value from the land, energy, labor, and water used to produce previously-wasted food.

15

NATIONAL STRATEGY FOR REDUCING FOOD LOSS AND WASTE AND RECYCLING ORGANICS

JUNE 2024

THE WHITE HOUSE
WASHINGTON





146
47

ReFED FOOD WASTE GENERATED BY SECTOR

88.7 million Surplus Food Tons

were generated in All Sectors across All States in 2022

Destinations Food Types Causes Sectors

BACK

- Residential**
42.8M Tons - 48.2%
- Farm (Produce Only)**
14.9M Tons - 16.8%
- Manufacturing**
13.1M Tons - 14.7%
- Foodservice**
13M Tons - 14.6%



Data Quality i

1 2 3 4 5

Low High



UPCYCLED Food & Beverages Market Opportunity

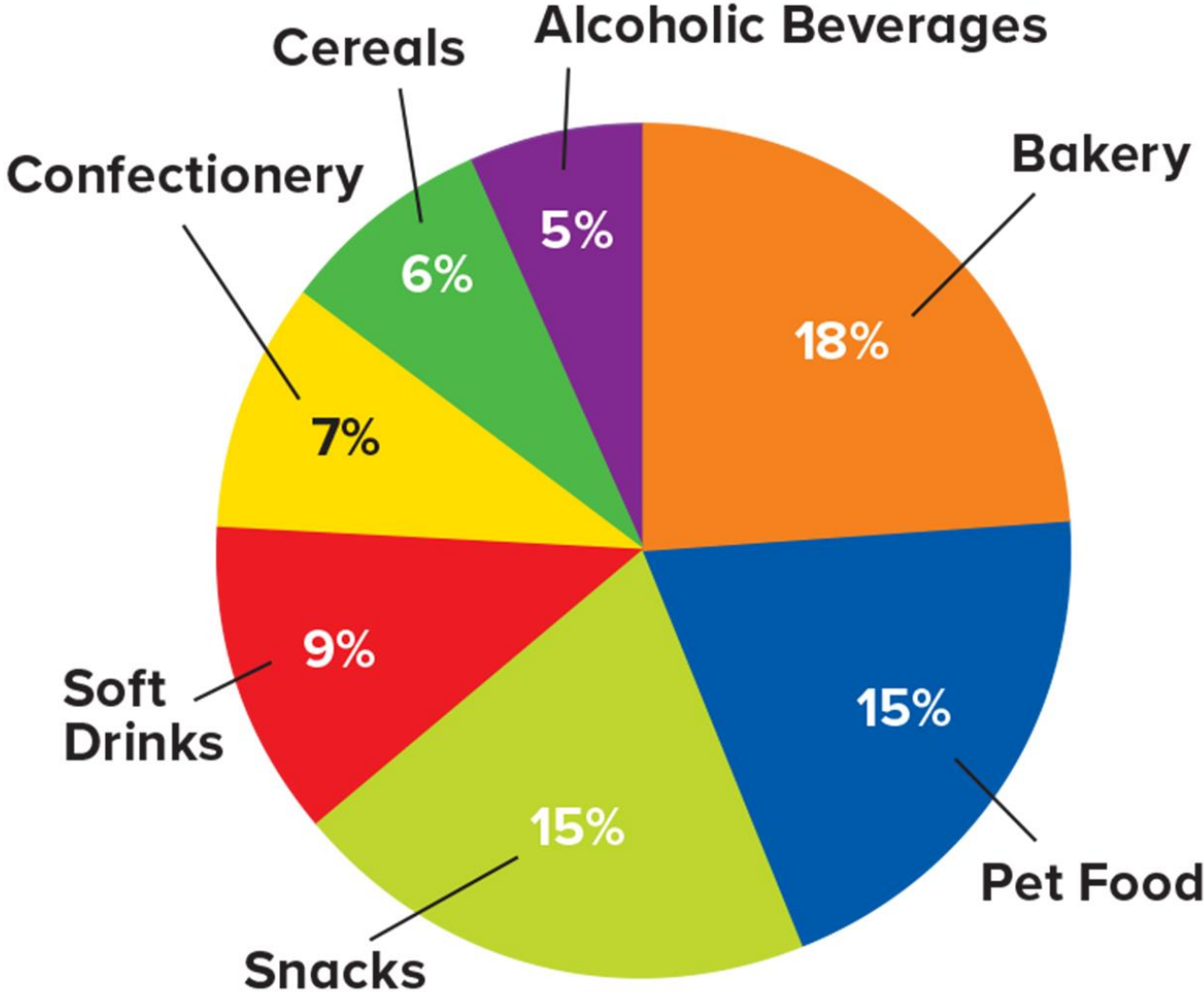
\$53.7B*

Upcycled Food market size in 2021
Expected to reach \$97 billion by
2031

*Allied Market Research



Global Food/Beverage Launches With Upcycled Claims



Source: Innova Market Insights database, 2019–2023



REDUCING FOOD WASTE THROUGH UPCYCLING : CASE STUDIES



THE BREWERY "SAVED" GRAIN OPPORTUNITY



=



2023 Chef Michael Ayoub @ Fornino using upcycled SuperGrain+™ in pizza bases





DeIORIO'S

**16 oz SuperGrain⁺
Upcycled Flour
Dough Ball**



NEW

Pure ingredients, enhanced nutritional value,

UPCYCLED FOODS INC PARTNERSHIPS : ACCESSIBLE NUTRITION





THERE'S A NEW SPIRIT IN TOWN.

CK YOUR BEENS 😊

Pulp Chips: real veggie chips made with ple, sustainable ingredients.

TRY NOW



Want Pulp Cash?



PASSION FRUIT & YUZU

If your happy place is on a beach in the summertime, we just might know a way to transport you. The brightness of Yuzu, balanced by the unmistakable flavor of the tropics is a true taste of bliss - no sun required. Our tonics are a refreshing, chef-crafted way to revitalize your body with key nutrients, protein, and probiotics

**Connect with me, follow me, feel free to
contact me with any questions !**

**[https://www.linkedin.com/in/dr-lara-ramdin-
%F0%9F%87%AC%F0%9F%87%A7-9930a13/](https://www.linkedin.com/in/dr-lara-ramdin-%F0%9F%87%AC%F0%9F%87%A7-9930a13/)**

