



PRODUCT DESIGN & CONSIDERATIONS

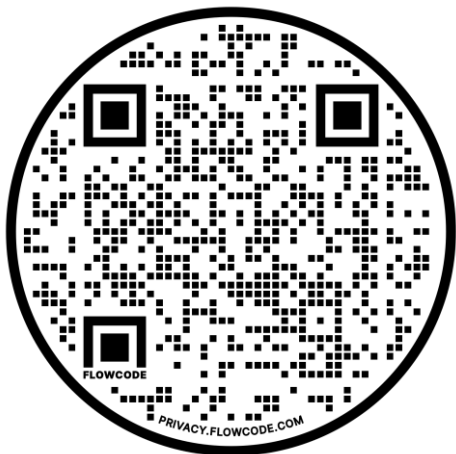
May 29, 2024



Join UNFI in Climate Action

Climate Action Hub Highlights

- Online hub for suppliers to join us in climate action
- Inside look at UNFI’s own climate targets and initiatives
- Access to resources and tools to help on the journey, including a new 38-page [Climate Action Guide for Business](#)
- Supplier recognition for best practices and climate impact



Meet your Presenters



Courtney Pineau
Executive Director
Climate Collaborative



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The Hain Celestial Group



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Ellen MacArthur
Foundation

pure|STRATEGIES

SOLUTIONS FOR A SUSTAINABLE FUTURE

Certified



Corporation

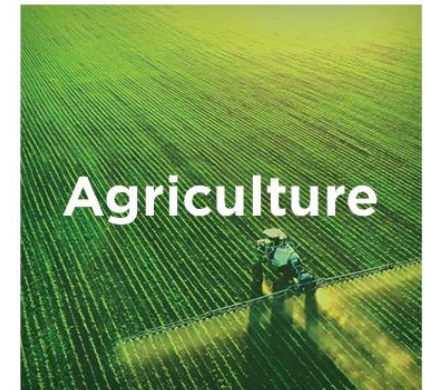
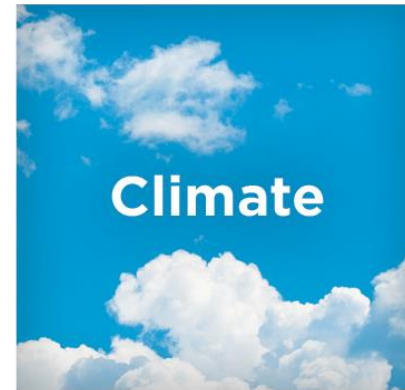
Operationalizing Your Roadmap: Product Design & Considerations

May 29, 2024

Operationalizing Your Roadmap: Product Design & Considerations






Topics for this portion of the discussion:

- How do products and packaging fit into decarbonization plans
- Is decarbonization enough; building the connection to nature












Nestle's net zero roadmap illustrates how products and packaging fit into the carbon footprint baseline and decarbonization plan

In million tonnes of CO₂e

	Baseline (2018)* (a)	Planned GHG emissions by 2030 (b)	Estimated growth of GHG (2018–2030) without reductions and Scope 3 removals (c)	Estimated GHG in 2030 according to business-as-usual scenario (d)=(a)+(c)
 Sourcing our ingredients	65.6	44.3	31.5	97.1
Dairy and livestock	34.2	29.3	16.4	50.6
Soil and forests	25.0	14.0	12.0	37.0
Others	6.4	1.0	3.1	9.5
 Manufacturing our products	7.0	3.8	2.7	9.7
 Packaging our products	11.0	10.1	5.2	16.2
 Managing logistics	7.5	6.5	2.5	10.0
 Travel and employee commuting	0.8	0.5	0.0	0.8
Portfolio transformation		-6.0		
Scope 3 removals		-13.0		
Total	91.9	46.2	41.9	133.8

Nestle's net zero roadmap illustrates how products and packaging fit into the carbon footprint baseline and decarbonization plan

~83% of baseline &
~90% of plan

In million tonnes of CO ₂ e		Baseline (2018)* (a)	Planned GHG emissions by 2030 (b)	Estimated growth of GHG (2018–2030) without reductions and Scope 3 removals (c)	Estimated GHG in 2030 according to business-as-usual scenario (d)=(a)+(c)
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How do products and packaging fit into decarbonization plans

Sourcing – Deforestation	Sourcing that protects forests from deforestation and degradation
Sourcing – Ag practices	Sourcing that ensures soil health and biodiversity
Packaging	Packaging with efficient design, circular solutions, and responsible sources
Portfolio	Design with lower carbon ingredients, products, and use phase
Supplier engagement	Helping improve supplier actions

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Sourcing our ingredients sustainably
Working with farmers, suppliers and communities to source ways that protect ecosystems, reduce emissions and enhance livelihoods.

- ➡ Dairy and livestock Page 10
- ➡ Soil and forests Page 15

Source: [Nestlé](#)

How do products and packaging fit into decarbonization plans

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Evolving our packaging
Packaging helps keep our food safe but causes waste. Investments in packaging innovations and new business models help keep waste out of landfill.

➔ Page 24

An illustration showing various food packaging items including a water bottle, a coffee cup, a carton, a bag of snacks, and a chocolate bar.

Source: [Nestlé](#)

How do products and packaging fit into decarbonization plans

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Transforming our product portfolio
Creating new, low-carbon products, and reformulating existing ones using ingredients and processes that are good for both consumers and planet.

➔ Page 20

Source: [Nestlé](#)

More information can be found in the Pure Strategies new report:



PLANET-FORWARD Strategies

Connecting Climate and Nature
to Advance Corporate Sustainability
Action and Performance



Planet-forward strategies integrate climate and nature for a more effective approach

Climate and nature are inherently interconnected

Relying on sustainable/regenerative management is not enough

A mitigation and resilience strategy with protection, restoration, and sustainable management is needed



The relationship between climate and nature impacts/opportunities



Nature is the natural carbon emissions pool/storage/sponge

- Terrestrial and marine ecosystems currently absorb half of human-made carbon emissions
- Nature-based climate solutions can contribute up to 30% of emissions mitigation needed

Nature helps buffer climate change impacts

- Ecosystems absorb heavy precipitation and stores the moisture for lower precipitation times, protects from land/soil erosion, and manages temperature extremes and air quality

Nature loss leads to GHG emissions, e.g., forests, marine disruptions, soil

- Impacts to nature drive 25% of global greenhouse gas (GHG) emissions

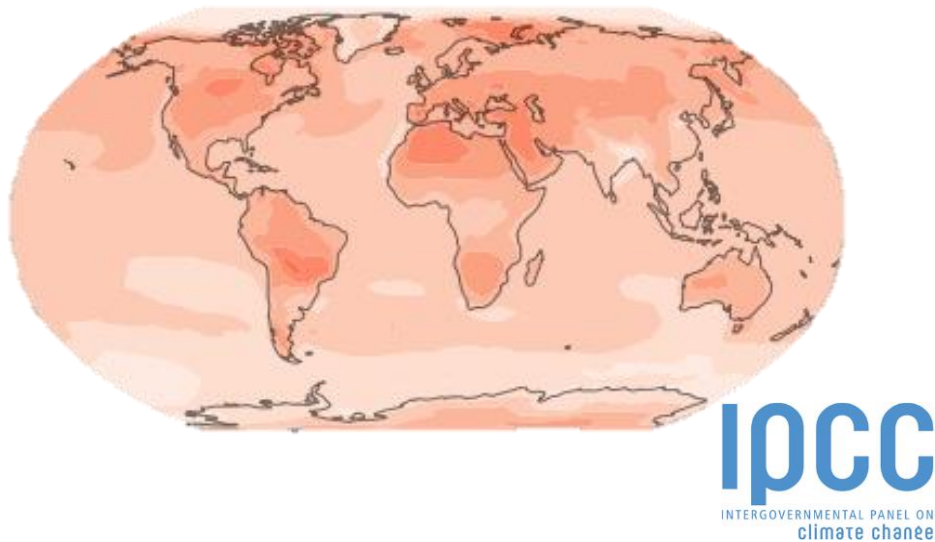
Warming and climate-related impacts drive nature loss and damage

- Increased mean temperatures, altered precipitation, increased extreme weather, oxygen depletion, and acidification lead to nature loss
- Climate change is likely to become the dominant cause of biodiversity loss in the coming decades

Science points to the need for climate and nature aims to advance at the same time

CLIMATE:

- Cut carbon dioxide emissions by 48% by 2030, from 2019 levels
- Reach net-zero emissions by 2050



NATURE:

- Increase the amount of the world's land and ocean protection to at least 30% each by 2030
- Restore 30% of degraded ecosystems by 2030
- To achieve full recovery by 2050 for a habitable climate, quality of life, and self-sustaining biodiversity

Planet-forward strategies have mitigation and resilience plans



PROTECT nature for long-term conservation of ecosystem services and cultural values

AIM: Increase the amount of the world's land and ocean protection to at least 30% each by 2030

ACTIONS

- Avoid deforestation
- Avoid coastal wetland conversion
- Avoid species overexploitation
- Prevent invasive species
- Support existing and the establishment of new conservation efforts, especially in areas critical for biodiversity
- Support frontline communities who are protecting nature



RESTORE areas to enhance biodiversity and ecosystem functions, including ecological integrity and connectivity

AIM: Restore 30% of degraded ecosystems by 2030

ACTIONS

- Reforestation
- Grassland restoration
- Peatland and coastal wetland restoration
- Marine environment and fishery restoration
- Riparian zone restoration
- Restoration and conservation of agricultural margins (e.g., low production areas)
- More advanced regenerative and soil health agricultural practices with biodiversity/ecosystem aims
- Agroforestry

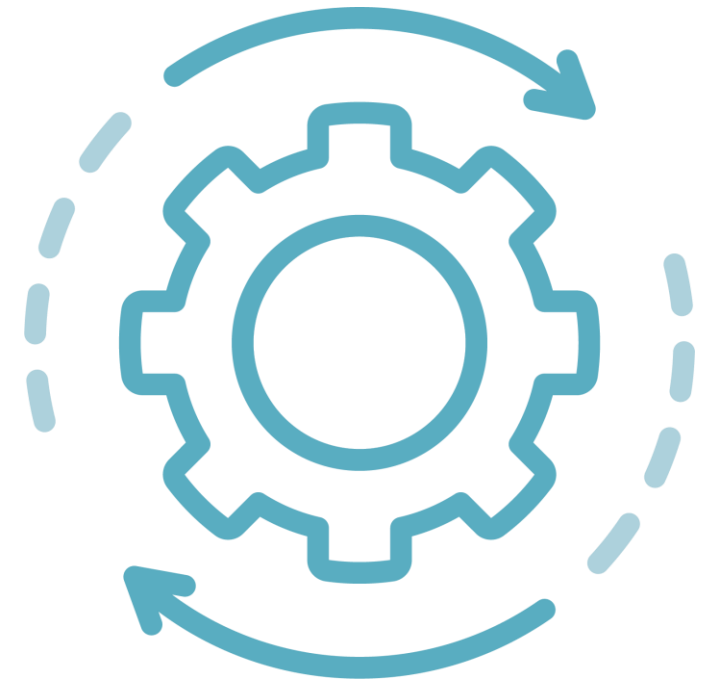


SUSTAINABLY MANAGE to ensure no further nature losses and support more effective systems

AIM: Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry

ACTIONS

- Efficiency improvements in agriculture and forestry (yield, nutrients, inputs)
- Sustainably managed forestry
- Regenerative and soil health agricultural practices with limited biodiversity/ecosystem aims
- Climate smart energy and fuels (efficiency and renewable sources)
- Pollution prevention (soil, chemicals, plastics)
- Circularity, waste prevention



Let's look at the connection points to products and packaging decarbonization and nature resilience

Sourcing – Deforestation	Sourcing that protects forests from deforestation and degradation
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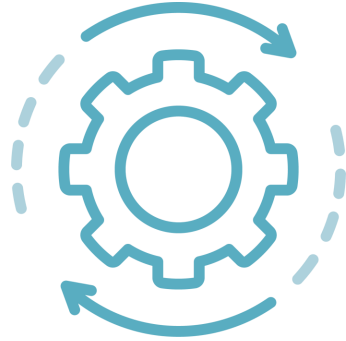
Let's look at the connection points to products and packaging decarbonization and nature resilience (*example from a food company*)



PROTECT



RESTORE



SUSTAINABLY MANAGE

Today's Company

- Deforestation-free targets (partial)

- Decarbonization plan (e.g., portfolio, suppliers)
- Sustainable ag and sourcing targets
- Plastic reduction and recycling targets

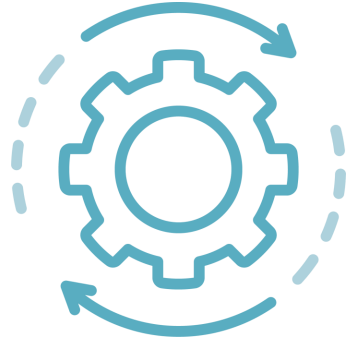
Let's look at the connection points to products and packaging decarbonization and nature resilience (*example from a food company*)



PROTECT



RESTORE



SUSTAINABLY MANAGE

Today's Company

- Deforestation-free targets (partial)

- Decarbonization plan (e.g., portfolio, suppliers)
- Sustainable sourcing targets
- Plastic reduction and recycling targets

Planet-forward Company

- Deforestation-free targets (partial)
- Support and projects to protect area (within/beyond value chain)
- Conservation projects in high-value regions

- Regenerative agriculture sourcing or projects
- Landscape-level regenerative agriculture projects, including non-production areas
- Support and projects to restore area (within/beyond value chain)

- Decarbonization plan with land use targets
- Sustainable sourcing targets
- Plastic reduction and recycling targets

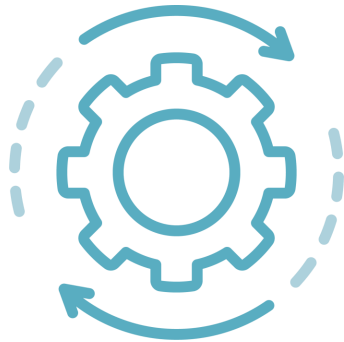
How to connect climate and nature, planet-forward strategies



PROTECT



RESTORE



SUSTAINABLY MANAGE

AIMS

Protect an area equivalent to 30% of the business nature footprint, within or beyond the value chain (allows for nature-critical location work vs just value chain)

Restore an area equivalent to 30% of the business nature footprint, within or beyond the value chain (allows for nature-critical location work vs just value chain)

Science-based targets and sustainable management for nature-based sourcing and operations (e.g., no overexploitation, no deforestation, and sustainable/regenerative practices)

ACTIONS

- Deforestation-free targets
- Support and projects to protect area (within/beyond value chain)
- Conservation projects in high-value regions

- Regenerative agriculture sourcing or projects with restoration
- Landscape-level regenerative agriculture projects, including non-production areas
- Support and projects to restore area (within/beyond value chain)

- Decarbonization plan
- Sustainable/regenerative sourcing targets
- Plastic reduction and recycling targets

More information can be found in the Pure Strategies new report:



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Ellen MacArthur Foundation

**An introduction to the
circular economy and
circular design for food**

Presented by
Michelle Tulac



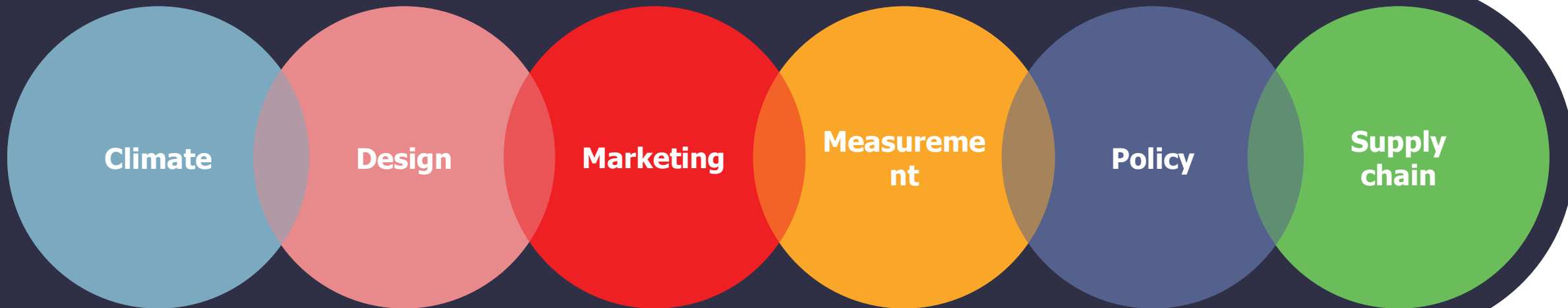
**The Ellen
MacArthur
Foundation was
launched in 2010
with the mission
to accelerate the
transition to a
circular economy**

We have expertise and programs on key topics

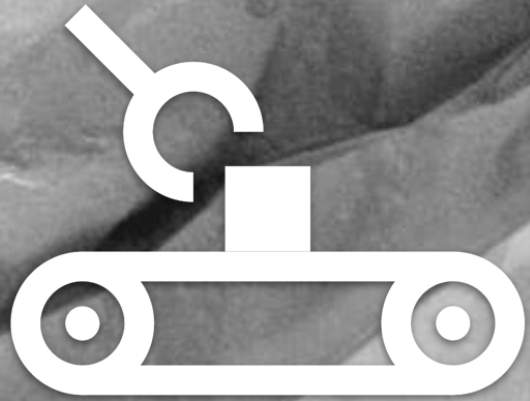
Sectors



Topics



The linear economy



We need a new economic system that delivers better outcomes for people and the environment

To deliver the Sustainable Development Goals and solve big problems like climate change, biodiversity loss, waste and pollution, we need to change every aspect of our linear take-make-waste system.

Our solution: [the circular economy](#)

A systems change framework designed to eliminate waste and pollution, circulate products and materials and regenerate nature. An economic model that creates value without depleting finite resources.



The circular economy is based on three principles, driven by design:



Eliminate
waste and
pollution

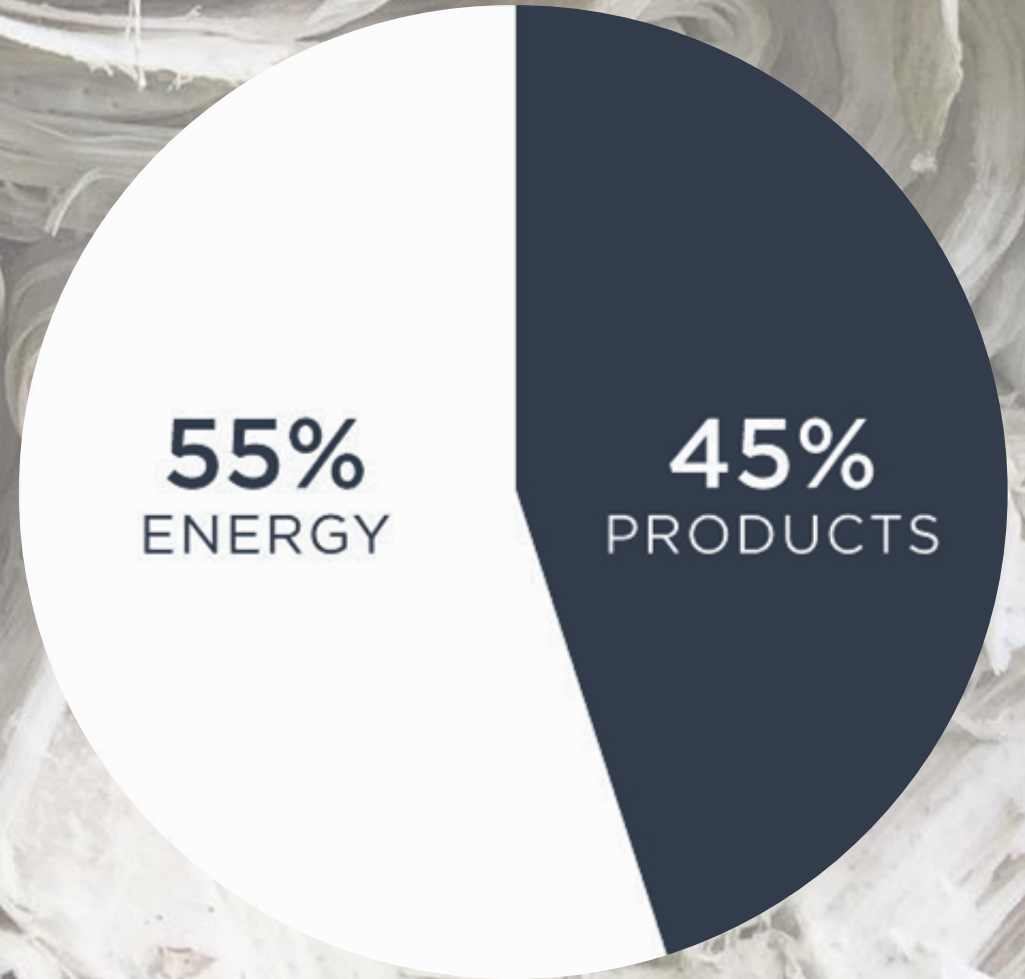


Circulate
products and
materials



Regenerate
nature

Why is the circular economy relevant to the climate crisis?



TOTAL CURRENT EMISSIONS

The circular economy is based on three principles, driven by design:



Eliminate
waste and
pollution



Circulate
products and
materials



Regenerate
nature

Why do we work in food?

The background of the entire slide is a dense, close-up photograph of numerous pumpkins in various shades of orange and brown, creating a textured, autumnal pattern.

The food system globally is responsible for $\frac{1}{3}$ of **greenhouse gases** and $\frac{1}{2}$ of **human-induced pressures of biodiversity**

Therefore we can't fix the climate and biodiversity crises without **fixing the food system**



The food system globally is responsible for **~30% of greenhouse gases**

The food system is responsible for **~50% of biodiversity loss**

~30% of all food produced is **wasted**

35

Food, Climate and Biodiversity

45% of GHG emissions and 90% of biodiversity loss come from how we make and use things, including food.

Reports:

Completing the Picture: How the circular economy tackles climate change

The Nature Imperative: How the circular economy can tackle biodiversity loss

Analysis from the **Big Food Redesign Study** shows that circular design for food has the potential to:

- Reduce on farm GHGs by 70%
- Reduce biodiversity loss by 50%
- Whilst increasing yields and farmer profitability

[across wheat, dairy, potatoes in the EU and UK]

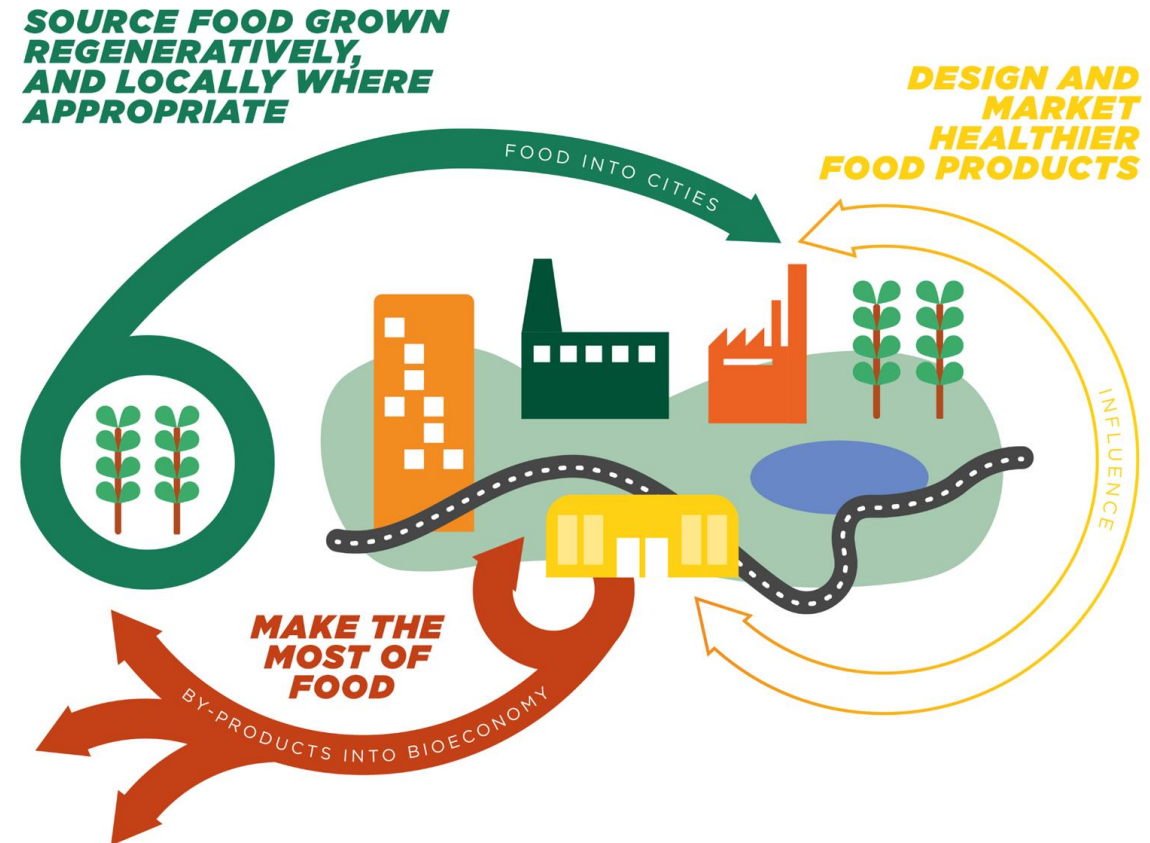


What is a circular economy for food?

A circular economy for food will help people and nature thrive. Changing our food system to one based on the principles of the circular economy is one of the most powerful things we can do to **tackle climate change, restore biodiversity, and build long term resilience – while providing healthy and nutritious food for all.**

In a circular economy:

- Food losses are reduced to improve food security and livelihoods
- By-products and waste are valorised to create new economic opportunities
- Farming practices have regenerative and better societal and environmental outcomes



The Big Food Redesign

In 2021 The Food Initiative at the Ellen MacArthur Foundation launched [The big food redesign: Regenerating nature with the circular economy](#) study

The report introduced the [Circular Design for Food Framework](#), and gave examples of how this could be introduced to create food products that support nature to thrive

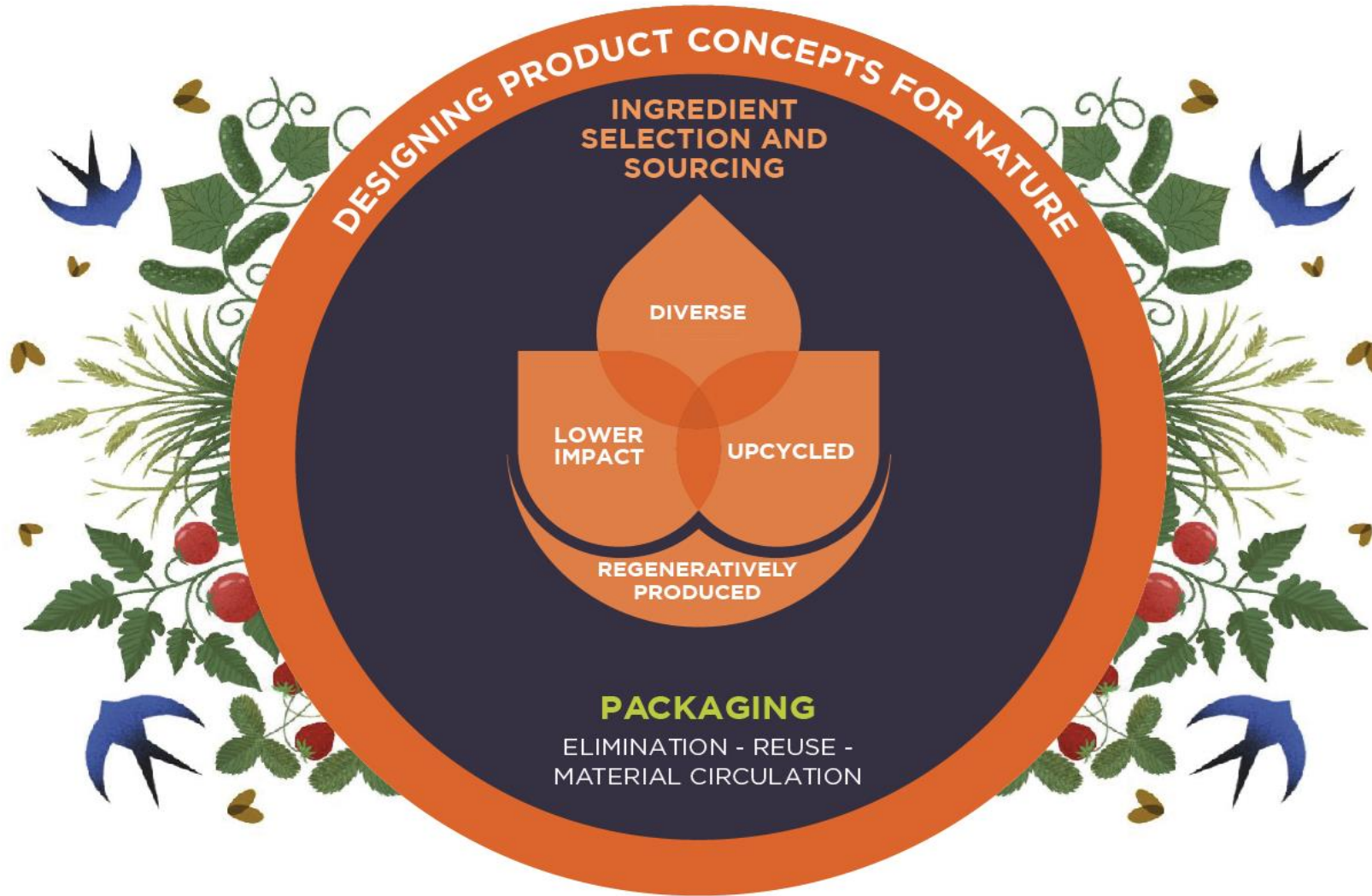


The Circular Design for Food Framework

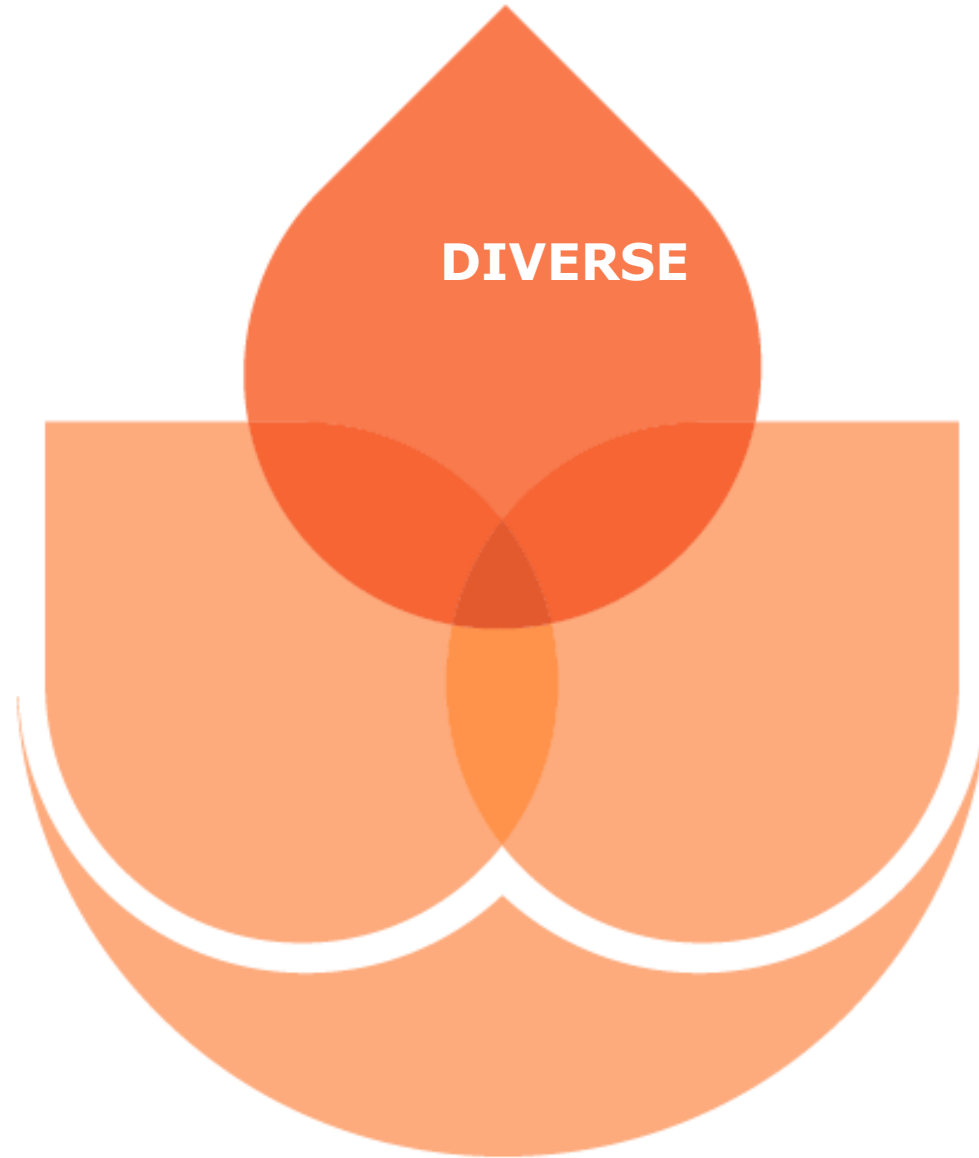
The Big Food Redesign study explored how food brands and retailers can apply circular design for food to regenerate nature.

- **Food brands and supermarkets have the power to make nature-positive food the norm.** The top 10 FMCGs and Retailers influence 40% of agricultural land in the UK and EU
- **They design what we eat** — how it looks and tastes, and how good it is for us and for nature
- **By rethinking the ingredients they use and how they're produced,** they can provide choices that are better for customers, better for farmers, and better for the climate





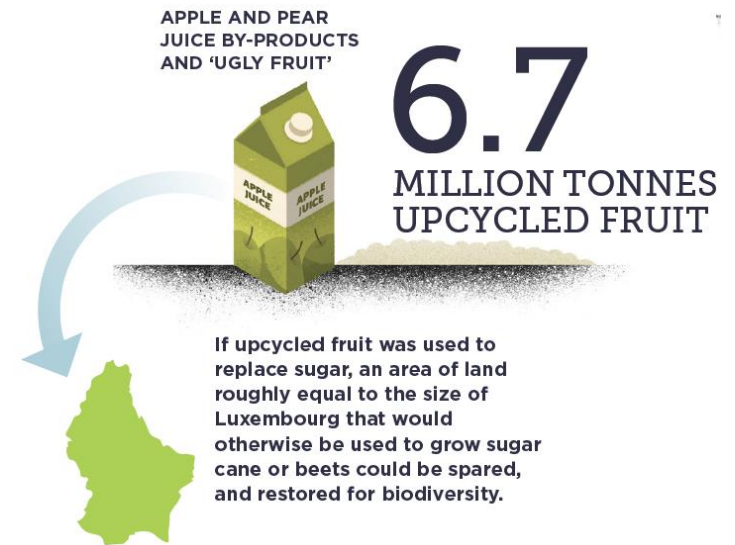
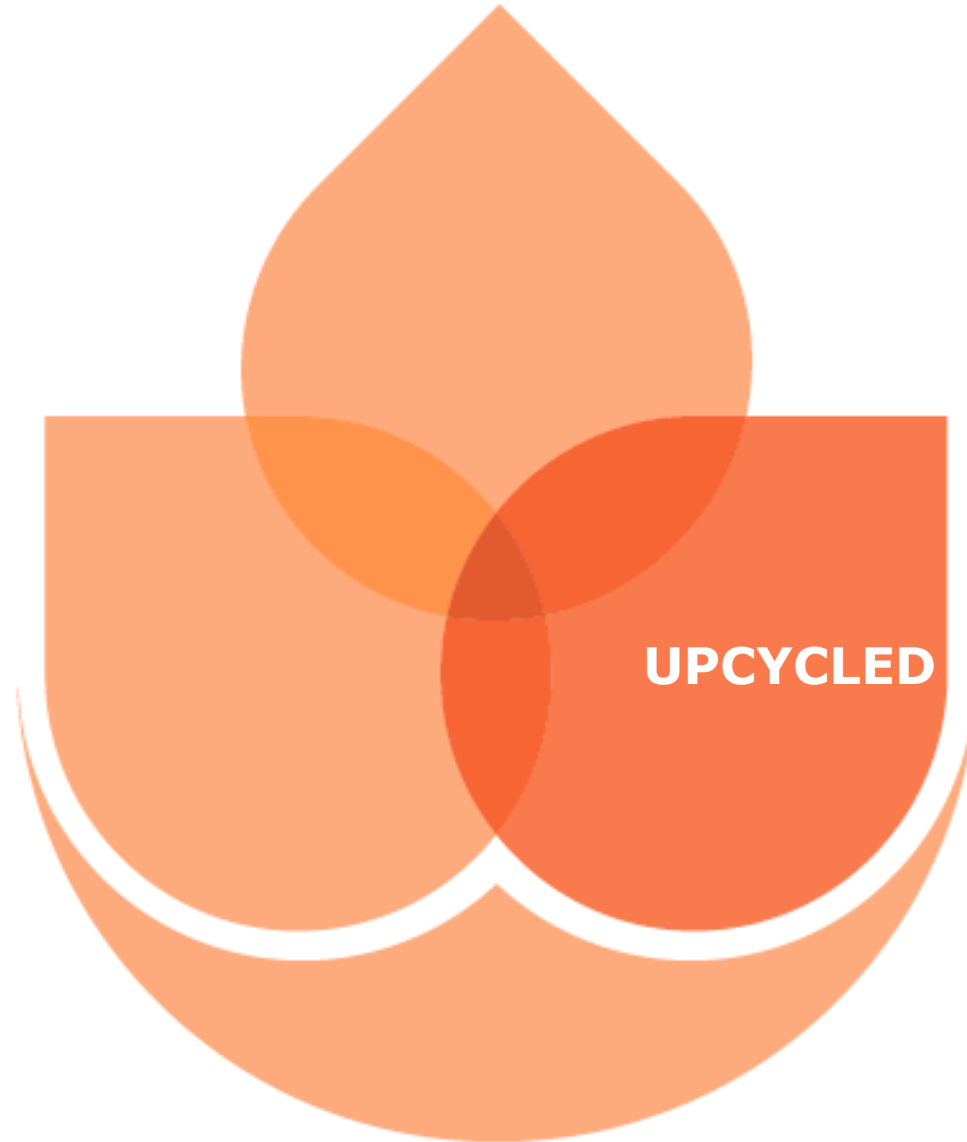
We can use
more diverse
plant and
animal species,
and varieties



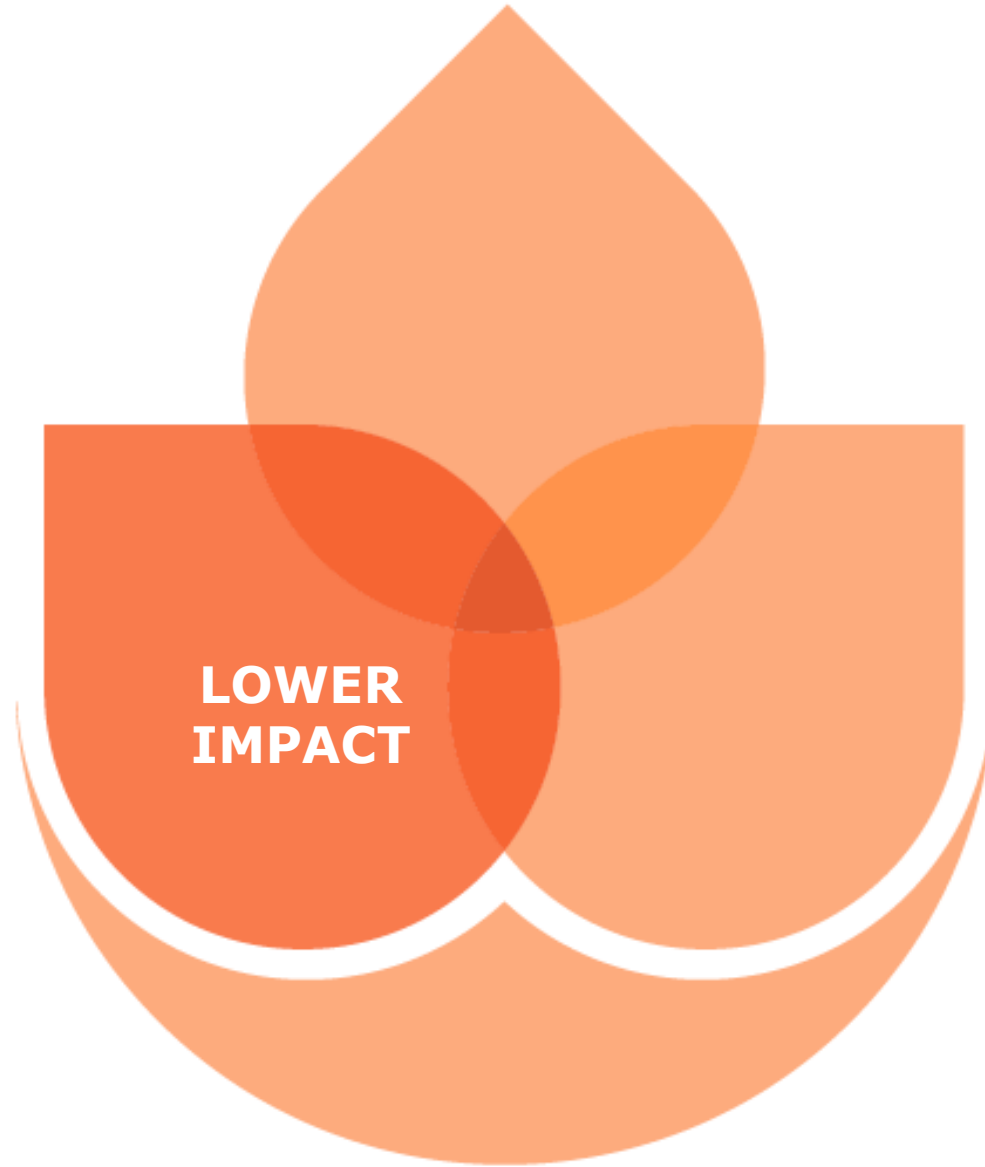
For example, there are
over 4,500 diverse
varieties of potatoes



We can upcycle by-products that are wasted today but could be delicious new ingredients



We can swap some ingredients for lower impact ones, like pasta made of peas instead of wheat

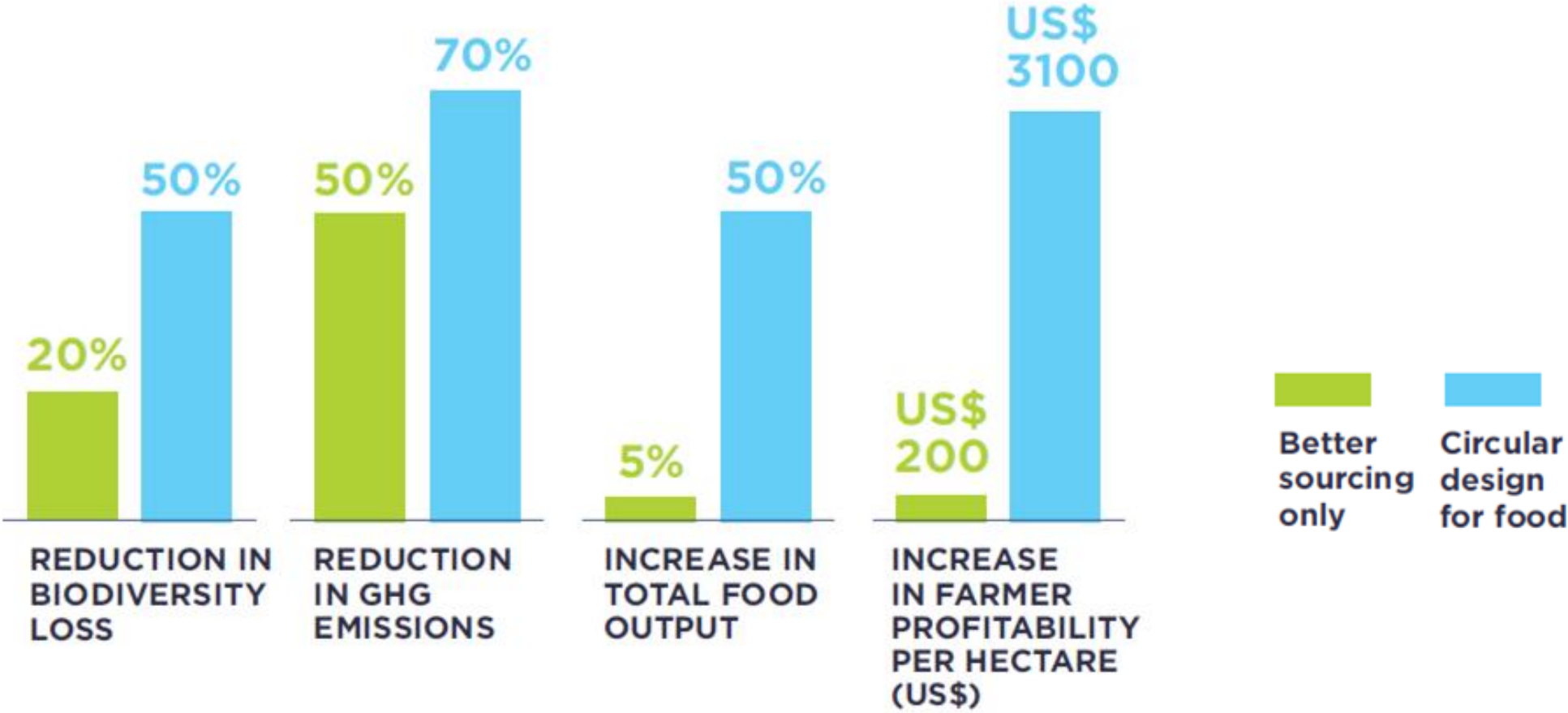


Regenerative outcomes like healthy soils, clean air and water can be achieved. Plus reduced input costs.



The Global Farm Metric enables farmers to monitor their farming system

Circular design for food offers greater benefits than better sourcing* alone



*sourcing the same ingredients as you source today but from regenerative or more sustainable production systems

Rather than bending nature to produce food...

moving from landscapes like this



towards landscapes like this



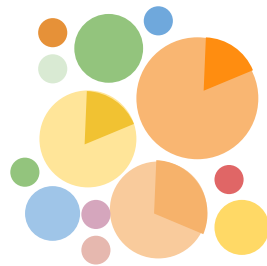
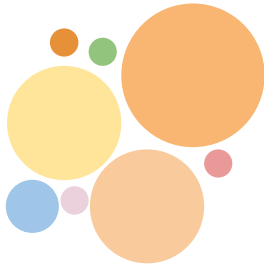
food can be designed for nature to thrive

By rethinking products and the ingredients, changes can take place across landscapes and ecosystems

Products



Ingredients



Landscapes



Today



ELLEN
MACARTHUR
FOUNDATION

The top 10 FMCGs and
retailers influence about
**40% of agricultural
land in the EU and
UK alone**



Five actions to make nature-positive food mainstream



1. Create ambitious and well-resourced action plans to make nature-positive product portfolios a reality



2. Create a new collaborative dynamic with farmers



3. Develop iconic products to showcase the potential of circular design for food



4. Contribute to and use common on-farm metrics and definitions



5. Advocate for policies that support a nature-positive food system





The big
food
redesign
challenge

Two years on from the study, we launched the **Big Food Redesign Challenge** to catalyze the development of food products that are designed for nature to thrive.



The aims of the Big Food Redesign Challenge

The Challenge is working to inspire the food industry to apply the principles of circular design to food.

- The Challenge brings together ambitious producers, retailers, start-ups, and suppliers to accelerate the design of food that aims to regenerate nature.
- By the end of the Challenge, we will have uncovered pathways to enable businesses to embrace circular food design, and have celebrated the innovative products that have progressed within the Challenge.



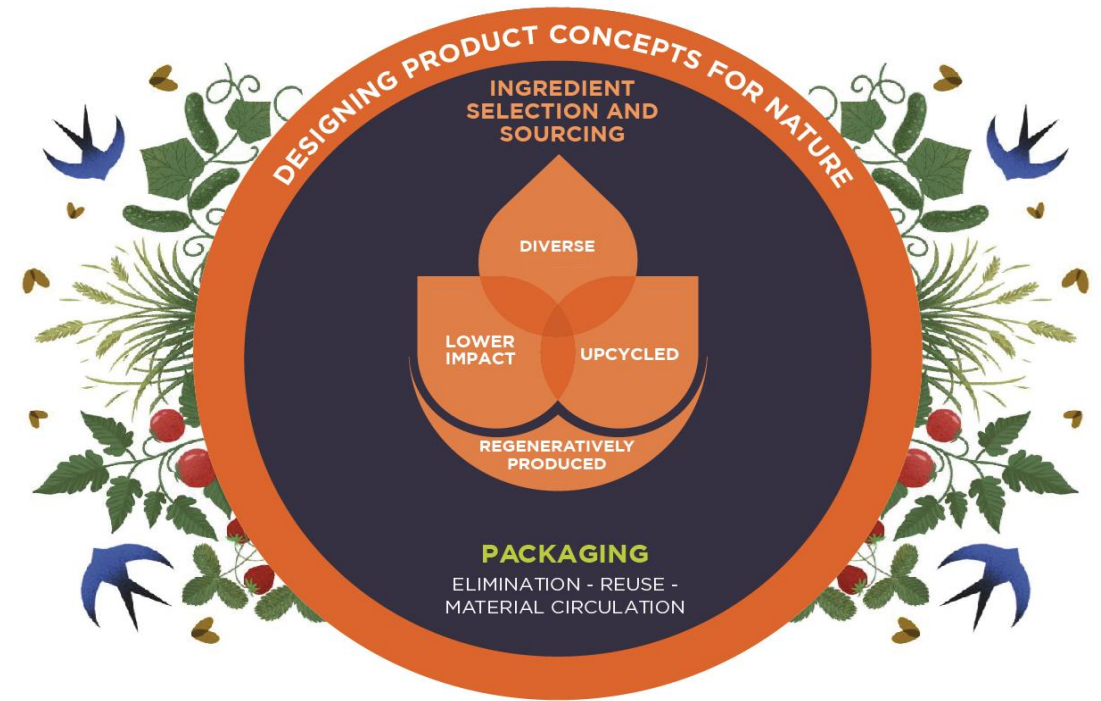
The big
food
redesign
challenge

The Challenge Criteria

A successful Challenge product will demonstrate alignment with the Circular Design for Food Framework.

It will be able to demonstrate that:

- The majority of ingredients are sourced from production systems that are indicative of regenerative outcomes for nature
- It incorporates lower impact, diverse, and/or upcycled ingredients
- The packaging is free from materials that are problematic and is on the path to achieve circular economy goals.



The Challenge launched in May 2023 at three global events:

London



São Paulo



WORLD CIRCULAR ECONOMY FORUM 2023
HELSINKI, FINLAND
30 MAY - 2 JUNE



Successful participants



186
Submitted
products



166
Successful
products



71
Companies



15
Countries

Challenge products are, on average, better than the food industry average



HowGood Impact Score ⓘ

64

Percentage of Products that Qualify for Sustainability Claims ⓘ



Lower-energy processing.
83%



Minimal carbon footprint.
55%



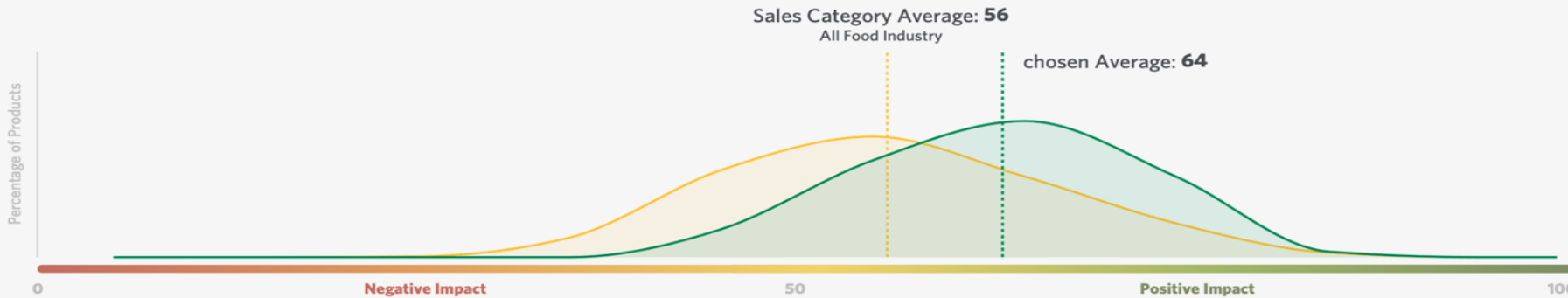
Simple ingredients and minimally processed.
60%



Low blue water footprint.
59%

Industry Benchmarking

See how our products' average HowGood Impact Score compares to the sales category average and portfolio average.



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Latis sustainability intelligence by HowGood

Impact score metrics:

GHG on-farm emissions
Processing emissions

Blue water usage
Land-use

Biodiversity risk
Labour risk

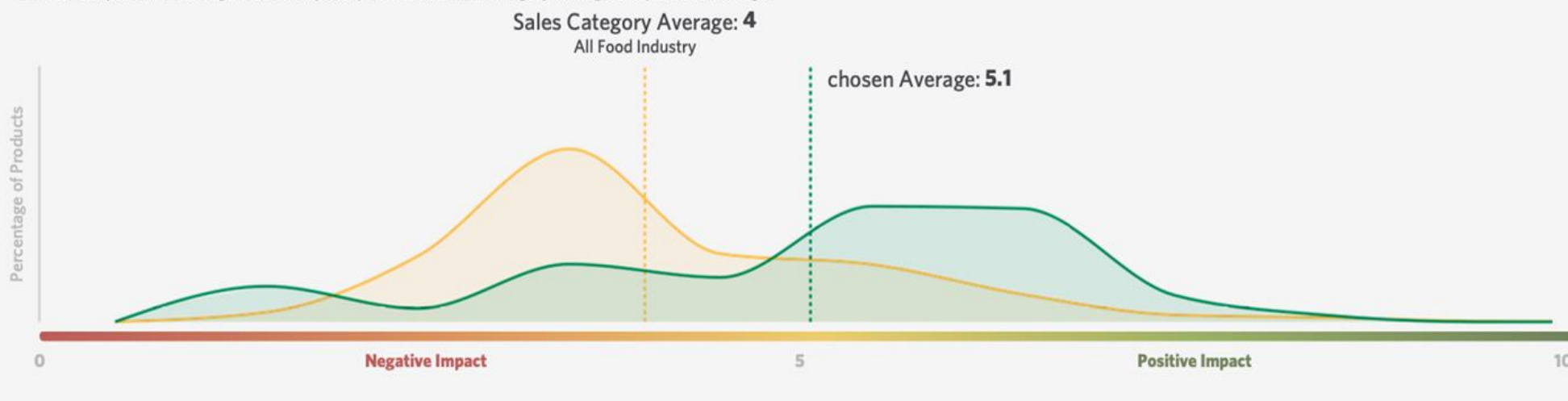
Animal welfare
Soil health

The HowGood dataset indicates that submitted Challenge products are, on average, better for biodiversity than the food industry average



Industry Benchmarking

See how our products' average biodiversity compares to the sales category average and portfolio average.



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Latis sustainability intelligence by **HowGood**
howgood.com

Impact score metrics:

Biodiversity only



The big
food
redesign
challenge

US Products in the Challenge

We are delighted to have welcomed ten US food companies into the Challenge, offering a total of 22 products designed to help nature to thrive.

Across the Challenge as a whole we have 59 products able to distribute to the USA.

USA Example 1: Wildway

Wildway have brought their Planet Friendly Oat range to the Challenge, using **regenerative organic** oats traceable to farm level as the main ingredient.

Wildway works closely with their supply chains to support innovative farmers.

They are **upcycling** ingredients into these products helping to **eliminate food waste**. Wildway also use coconut sugar in this range, which is a more **diverse** source of sweetness than sugar cane.



USA Example 2: Hope and Sesame

Sesame is a great choice as the main ingredient in this plant-based milk. Its carbon sequestration, drought tolerance and pest resistance make it an obvious choice for farmers to grow at scale within **diverse** rotations.

The sesame product used to make the milk is the **upcycled** pulp left over after sesame seeds are pressed for oil, that would otherwise become **waste**.



USA Example 3: 4 Fungi's Regenerative

The All Y'all Mushroom Jerky delivers a **lower impact** plant-based version of the traditional beef jerky, using mushroom as the main ingredient.

The mushrooms are produced in an innovative system that aims to close the loop on energy and waste streams. Other ingredients are sourced from small-scaled farmers committed to ethical, sustainable and **regenerative** practices.



USA Example 4: Matriark Foods

Matriark Foods have three products in the Challenge, all of which take and **upcycle** farm surplus produce to create plant-based meals and sauces.

These products help to prevent **food waste**, by using 'imperfect' produce sourced locally that would otherwise be discarded, supporting small and mid-scale farmers by adding an additional value stream to the farm's output.



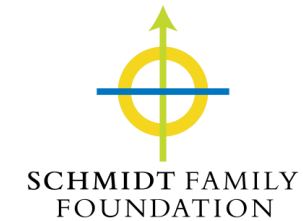
Thank you to all the Challenge Supporters:



Challenge partners



Funders



Retail partners



Supporters



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FOUNDATION

Thank you






Product Design & Considerations

Sustainable Packaging as a Brand Enabler



PURPOSE: TO INSPIRE HEALTHIER LIVING FOR PEOPLE, COMMUNITIES & THE PLANET THROUGH BETTER-FOR-YOU BRANDS

PLANET CLIMATE



1.5°C
Degree Alignment of our Science Based Targets (Global)

PEOPLE COMMUNITY IMPACT

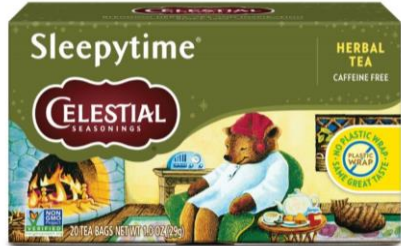


2.7 M
Pounds of Food, Beverages and Personal Care items donated to charity (Global)

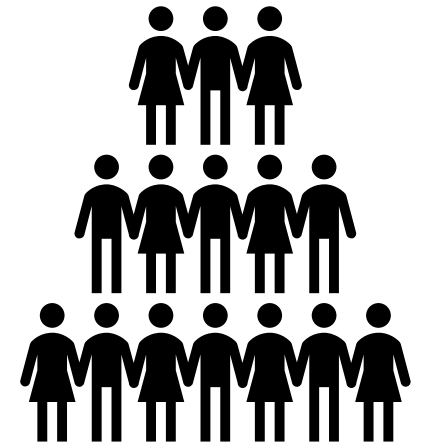
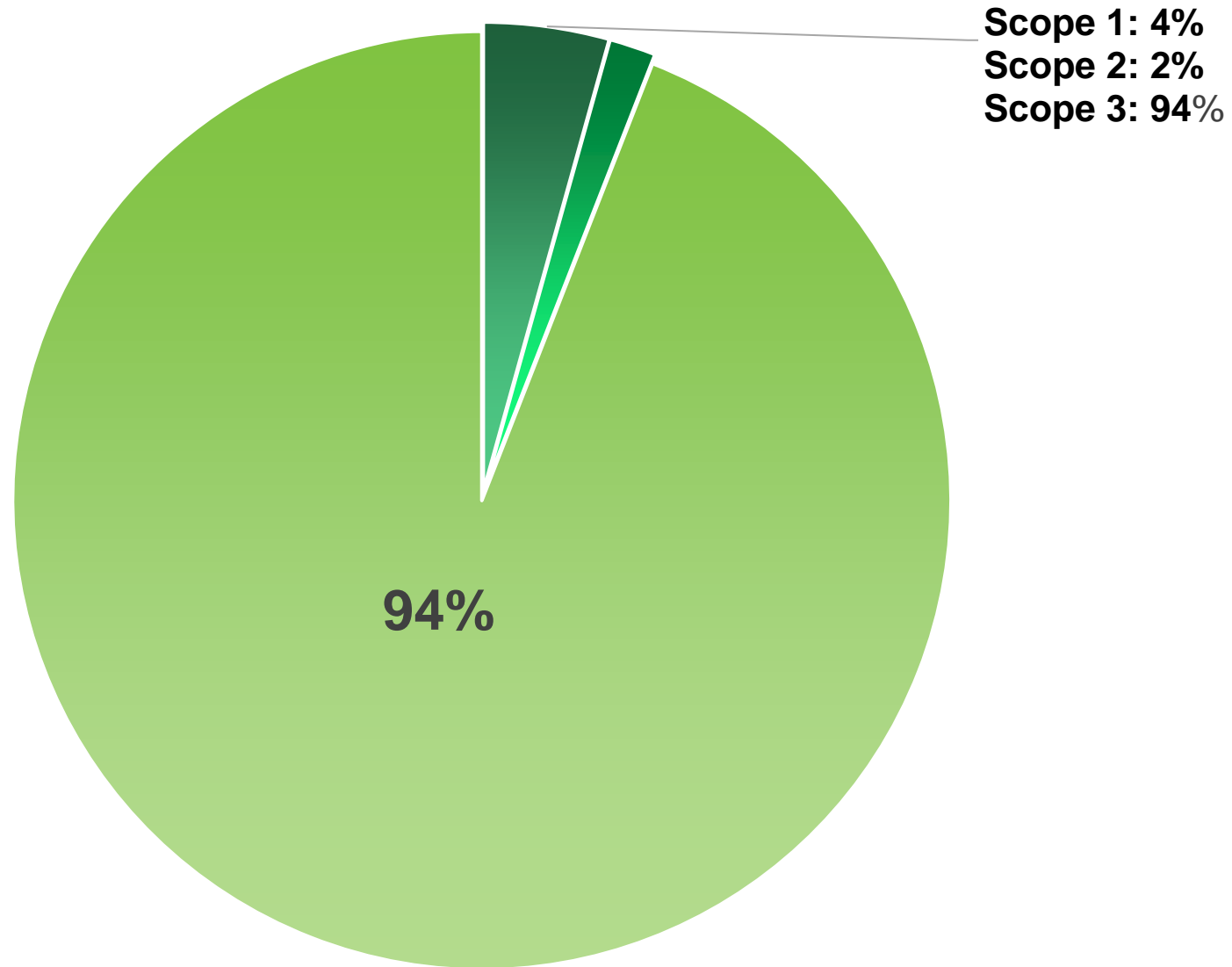
PRODUCTS SUSTAINABLE PACKAGING



100%
of rigid plastics will be designed to be collected and recycled where we operate by 2030 (Global)



Who gets excited about reducing Scope 3?



Packaging Journey

Where we started

- ✓ Science based targets
- ✓ No guardrails
- ✓ Brand requests
- ✓ No tools and limited data



Where we are going

- ✓ Packaging goals
- ✓ Guardrails for every material
- ✓ Brand ambitions
- ✓ Custom tools and data improvements



Brand Impact

flavor
unwrapped!

Plastic wrap is now coming off of your favorite teas, helping us to eliminate an estimated 165,000 lbs of plastic waste annually*. Now that's Magic In Your Mug!

*Based on worldwide shipment volume in calendar year 2023



Sustainable Packaging Campaign

where we are



No String & Tag

To reduce single use materials, we use tea bags without strings, tags, or individual wrap – keeping an estimated 3.2 million pounds of waste from entering landfills annually*



How2Recycle

To empower consumers with disposal information, we participate in the How2Recycle labelling system – maximizing our packaging recyclability potential.



Recycled Content

To minimize the use of new resources in our packaging, our tea boxes are made with paperboard that contains no virgin paper fiber. Today, 35% of that recycled paper fiber is made from recycled consumer products.



Responsible Forestry Certifications

To prioritize responsible forest management, 100% of our corrugate shipping cases are certified by the Sustainable Forestry Initiative (SFI).

*Based on worldwide shipment volume in calendar year 2023

Sustainable Packaging Campaign

where we're going



Recycled Content

To minimize the use of new resources in our packaging, our goal is to increase the recycled content of our corrugate boxes from 35% to 50% in the next 5 years.

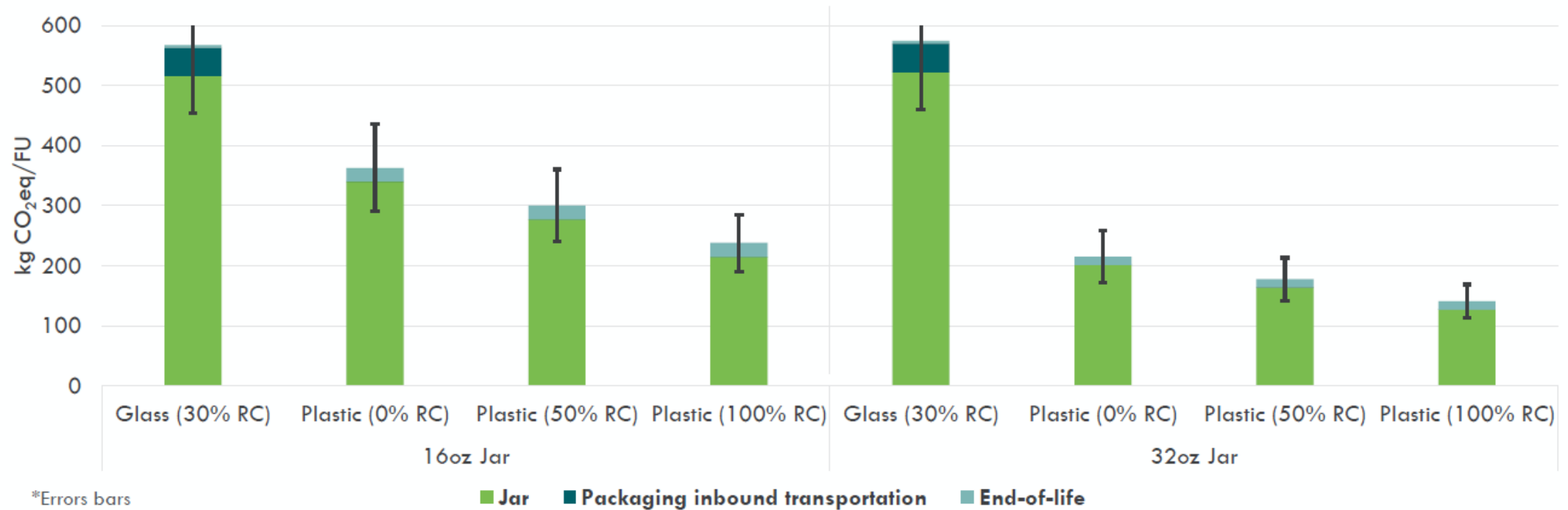


Responsible Forestry Certifications

To prioritize responsible forest management, our goal is to ensure all our paperboard cartons are Sustainable Forest Initiative (SFI) or Forest Stewardship Council (FSC) certified in the next 5 years.

LCA Results: Glass vs. Plastic

Climate Change Comparative Results (kg CO₂eq)
per Functional Unit



*Errors bars represent ±20%

■ Jar ■ Packaging inbound transportation ■ End-of-life



Tools

- ✓ Earthster (LCA)
- ✓ Packaging expertise (internal or external)
- ✓ Legal & Finance as partners (cost)
- ✓ Measure and manage (Sustainability, Procurement, R&D)

Discussion



Courtney Pineau
Executive Director
Climate Collaborative



Michelle Nadboy
Sustainability Director,
The Hain Celestial Group



Cheryl Baldwin
Vice President of
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