





ANDREW HURLEY, PHD

PROFESSOR | FOUNDER | CONSULTANT



Department of
**FOOD, NUTRITION, AND
PACKAGING SCIENCES**
Clemson University



Package  InSight
by Quad

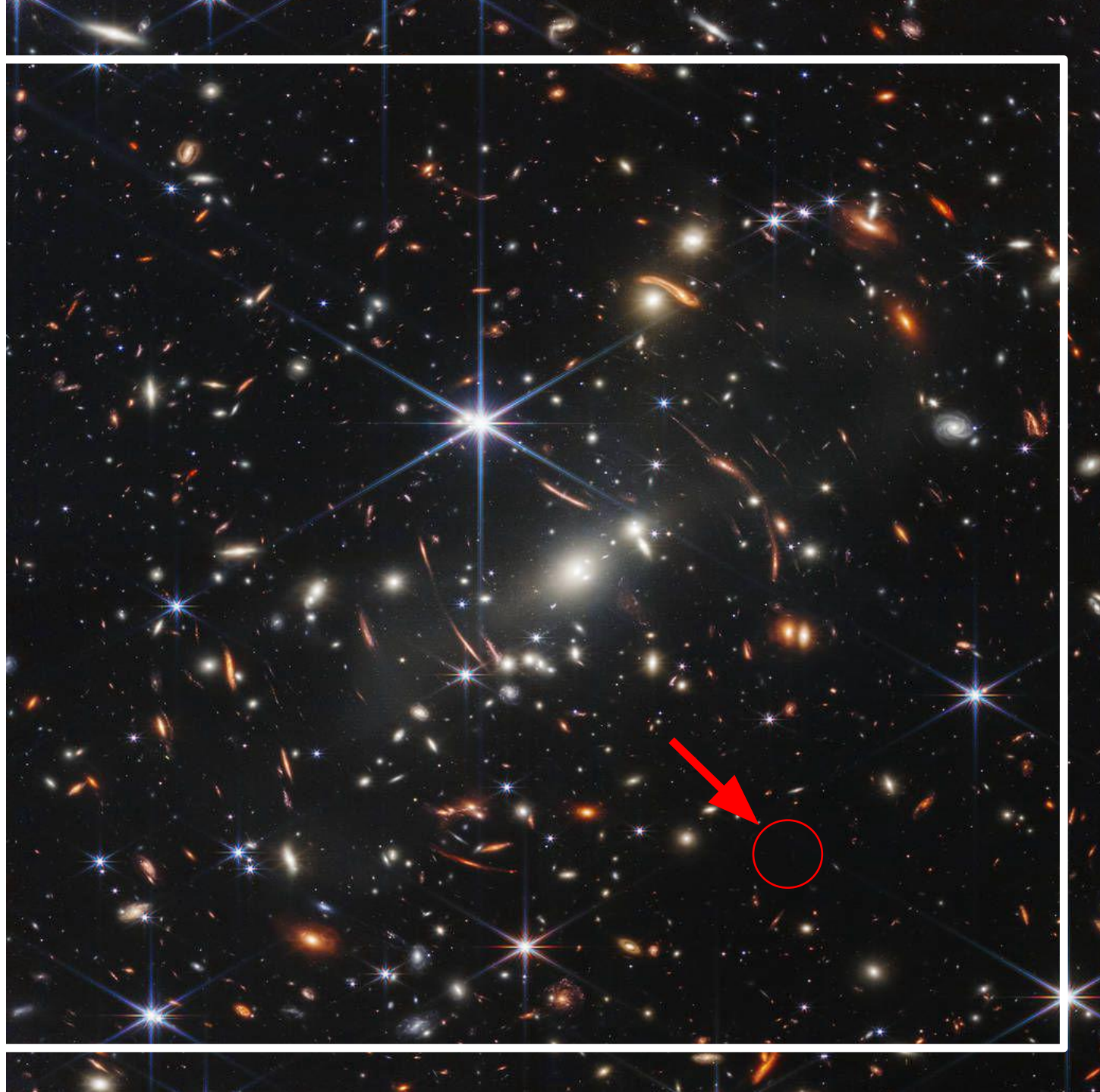
**What is your
sustainability goal?**

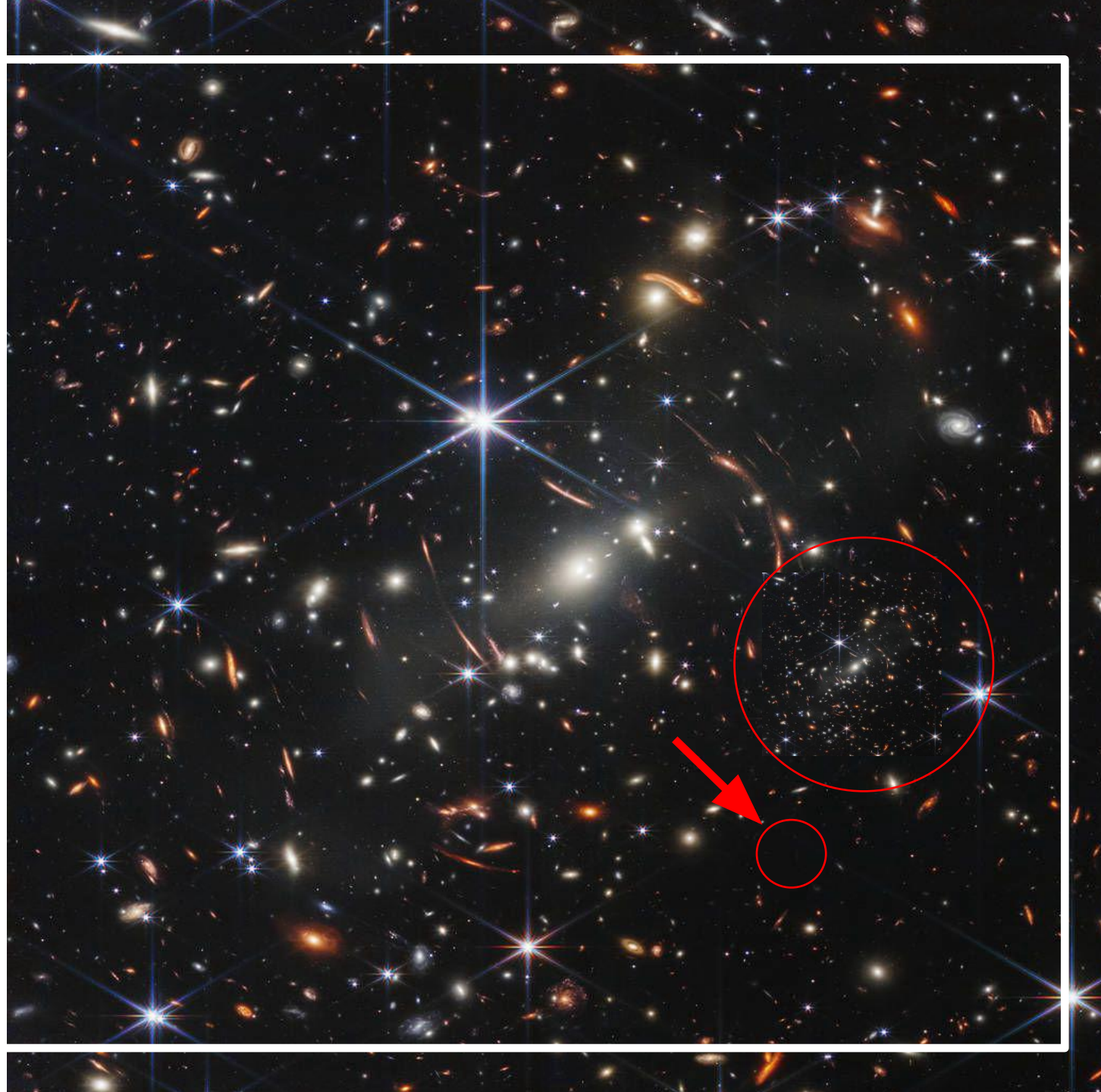


**How do you
measure your goal?**











0.0000000001 DATA

Table 4. LCA data for each of the 26 packages and their components across 8 different environmental impact metrics. Definitions of the environmental impact factors can be found in Appendix F.

Package a	Fossil Fuel Use b	GHG Emissions c	Water Use d	Freshwater Eutrophication e	Mineral Resource Use f	Human Impact g	GHG Emissions (with Carbon Uptake) h	Freshwater Ecotoxicity i (CTUe)
C1	3.76×10^{-2}	3.2×10^{-3}	1.55	3.17×10^{-6}	2.54×10^{-5}	2.52×10^{-9}	2.4×10^{-3}	4.14×10^{-2}
C3	4.82×10^{-2}	2.3×10^{-3}	1.03	1.91×10^{-6}	2.22×10^{-5}	1.4×10^{-9}	2.2×10^{-3}	5.24×10^{-2}
D1	6.868×10^{-1}	5.22×10^{-2}	10.97	3.01×10^{-5}	1.2×10^{-3}	5.34×10^{-8}	5.02×10^{-2}	5.302×10^{-1}
D2	4.014×10^{-1}	2.09×10^{-2}	11.42	2.33×10^{-5}	2.33×10^{-4}	1.4×10^{-8}	2.06×10^{-2}	3.849×10^{-1}
D3	1.946×10^{-1}	1.03×10^{-2}	6.01	1.23×10^{-5}	1.12×10^{-4}	7.13×10^{-9}	1.01×10^{-2}	1.906×10^{-1}
D4	3.55×10^{-2}	1.7×10^{-3}	6.94×10^{-1}	1.49×10^{-6}	1.61×10^{-5}	9.83×10^{-10}	1.6×10^{-3}	3.7×10^{-2}
K1	6.451×10^{-1}	2.99×10^{-2}	14.93	2.94×10^{-5}	2.62×10^{-4}	1.9×10^{-8}	2.92×10^{-2}	6.772×10^{-1}
K2	1.45	7.65×10^{-2}	26.37	7.89×10^{-5}	8.61×10^{-4}	5.44×10^{-8}	7.62×10^{-2}	1.51
L1	2.31	1.251×10^{-1}	42.43	1.23×10^{-4}	1.5×10^{-3}	8.61×10^{-8}	1.241×10^{-1}	2.37
L3	1.5610×10^{-1}	6.7×10^{-3}	2.69	4.7×10^{-6}	5.44×10^{-5}	3.58×10^{-9}	6.7×10^{-3}	1.716×10^{-1}
L4	1.061×10^{-1}	4.6×10^{-3}	1.83	3.2×10^{-6}	3.68×10^{-5}	2.43×10^{-9}	4.6×10^{-3}	1.167×10^{-1}
L5	8.5×10^{-3}	1.0×10^{-3}	5.831×10^{-1}	5.51×10^{-7}	1.3×10^{-4}	8.34×10^{-10}	8.45×10^{-4}	3.1×10^{-2}
L6	1.6	8.21×10^{-2}	30.95	8.29×10^{-5}	9.0×10^{-4}	5.42×10^{-8}	8.19×10^{-2}	1.69
L7	2.752×10^{-1}	1.27×10^{-2}	6.27	1.28×10^{-5}	1.13×10^{-4}	8.19×10^{-9}	1.24×10^{-2}	2.812×10^{-1}
P2	3.69×10^{-2}	1.8×10^{-3}	1.05	1.64×10^{-6}	1.4×10^{-5}	1.04×10^{-9}	1.7×10^{-3}	4.17×10^{-2}
P3	4.01×10^{-2}	2.4×10^{-3}	9.526×10^{-1}	1.570×10^{-6}	1.23×10^{-5}	1.29×10^{-9}	2.3×10^{-3}	3.66×10^{-2}
P4	5.81×10^{-2}	2.9×10^{-3}	1.05	2.78×10^{-6}	3.19×10^{-5}	1.86×10^{-9}	2.9×10^{-3}	6.03×10^{-2}

Measurements

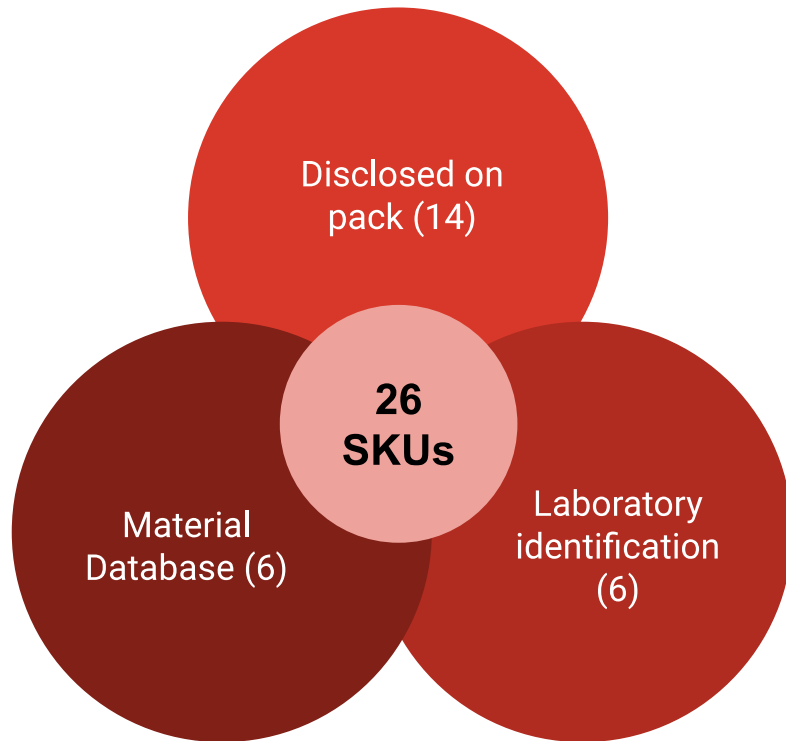


Figure 1: DSC



Figure 2: Compound Microscope



Figure 3: FTIR

PRISMA
Review

Retail Audit

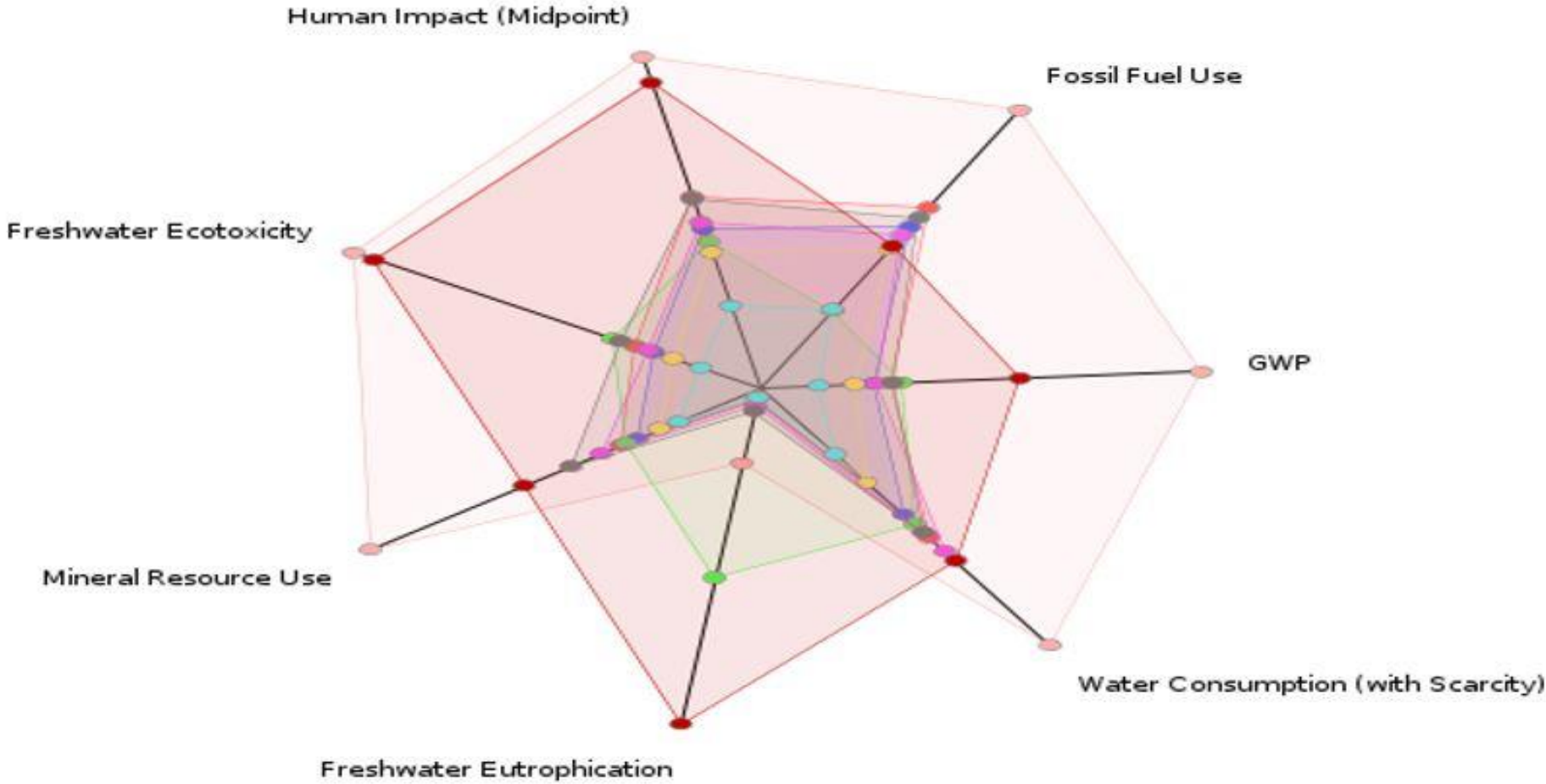
Material ID

LCA

National
Survey

Innovations

Current State of Comparative Analysis



- Nature Valley (SDO)
- Nature Valley (Standard)
- Get Back to Human
- RXBar
- Kate's
- Bobo's
- Bar U Eat
- Kind
- Get Back to Human (Wrapper and Paper Sleeve)

A.
compostable
plastic
wrapper



B.
compostable paper
and **aluminum**
coated film
wrapper



C.
store drop-off
recyclable plastic
wrapper



D.
non-recyclable
plastic
wrapper



Given
compostable and
store drop-off
recyclable
wrappers have a
larger impact...

A.
**compostable
plastic
wrapper**



7.8 times more
carbon dioxide
emissions

B.
**compostable paper
and aluminum
coated film
wrapper**



2.5 times more
carbon dioxide
emissions

C.
**store drop-off
recyclable plastic
wrapper**



2.2 times more
carbon dioxide
emissions

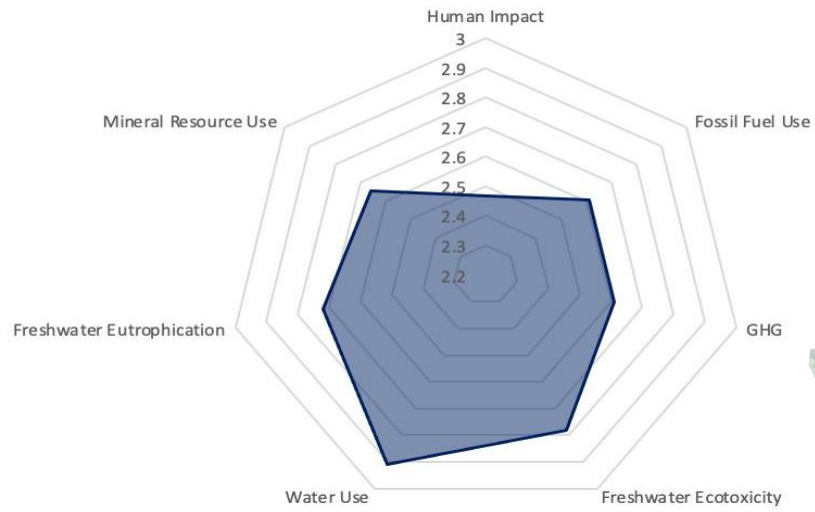
D.
**non-recyclable
plastic
wrapper**



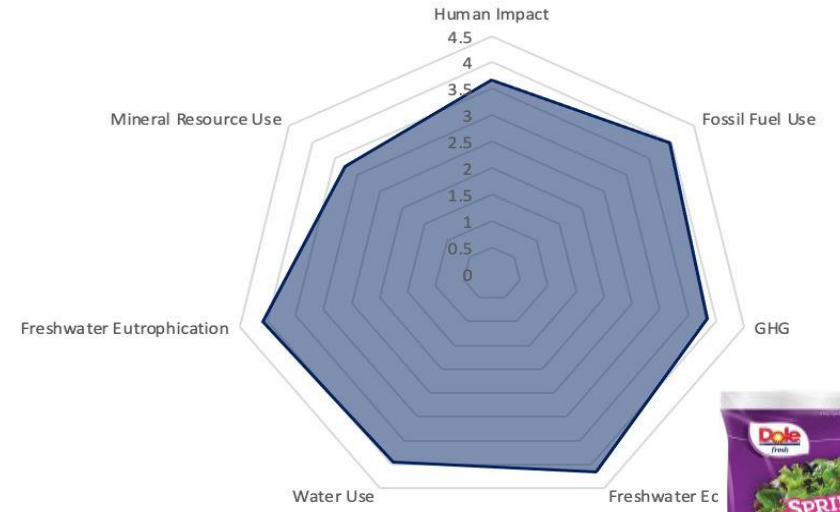
lowest
carbon dioxide
emissions

Given
compostable and
store drop-off
recyclable
wrappers have a
larger impact...

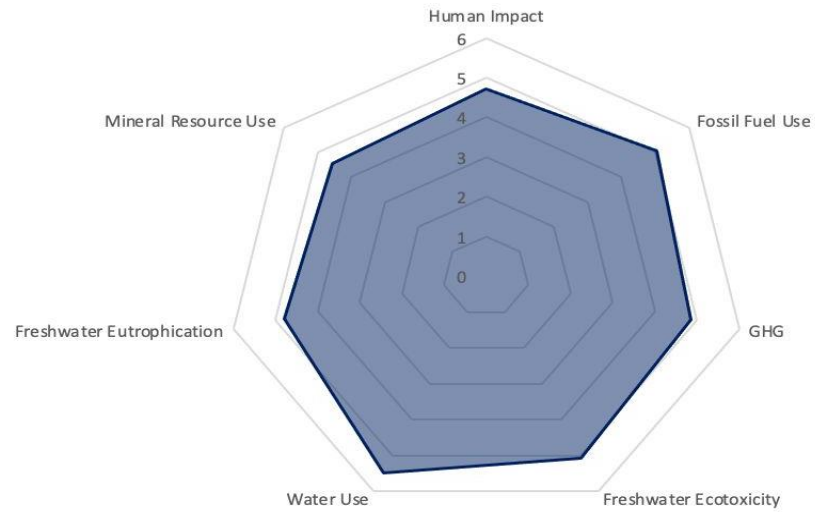
Whole Vegetables/Ingredients LCA



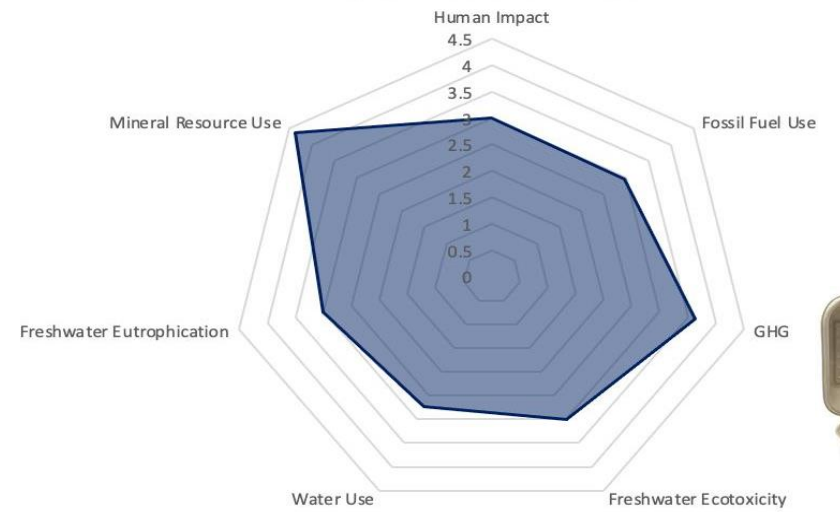
Prepared Ingredients LCA

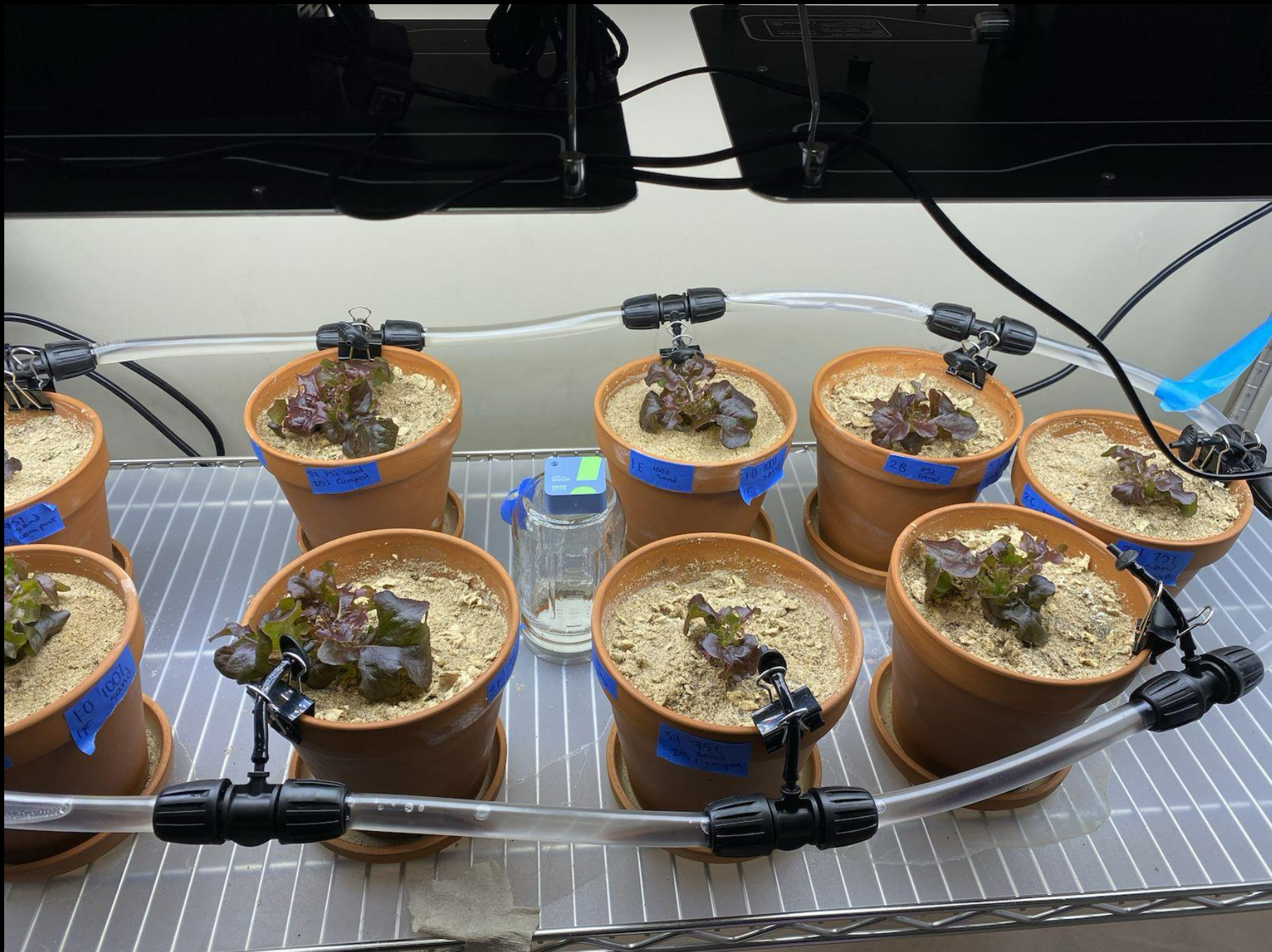


Salad Bowl/Kit LCA



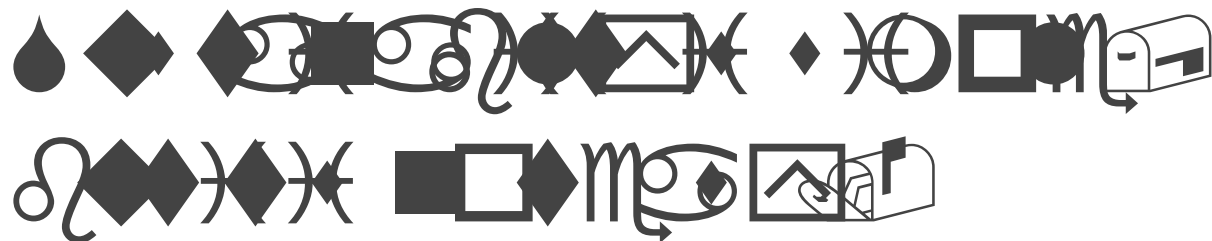
Salad Bar Container LCA





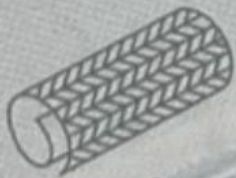


ACHIEVABLE?





CIRCULAR-KNIT HANDLE

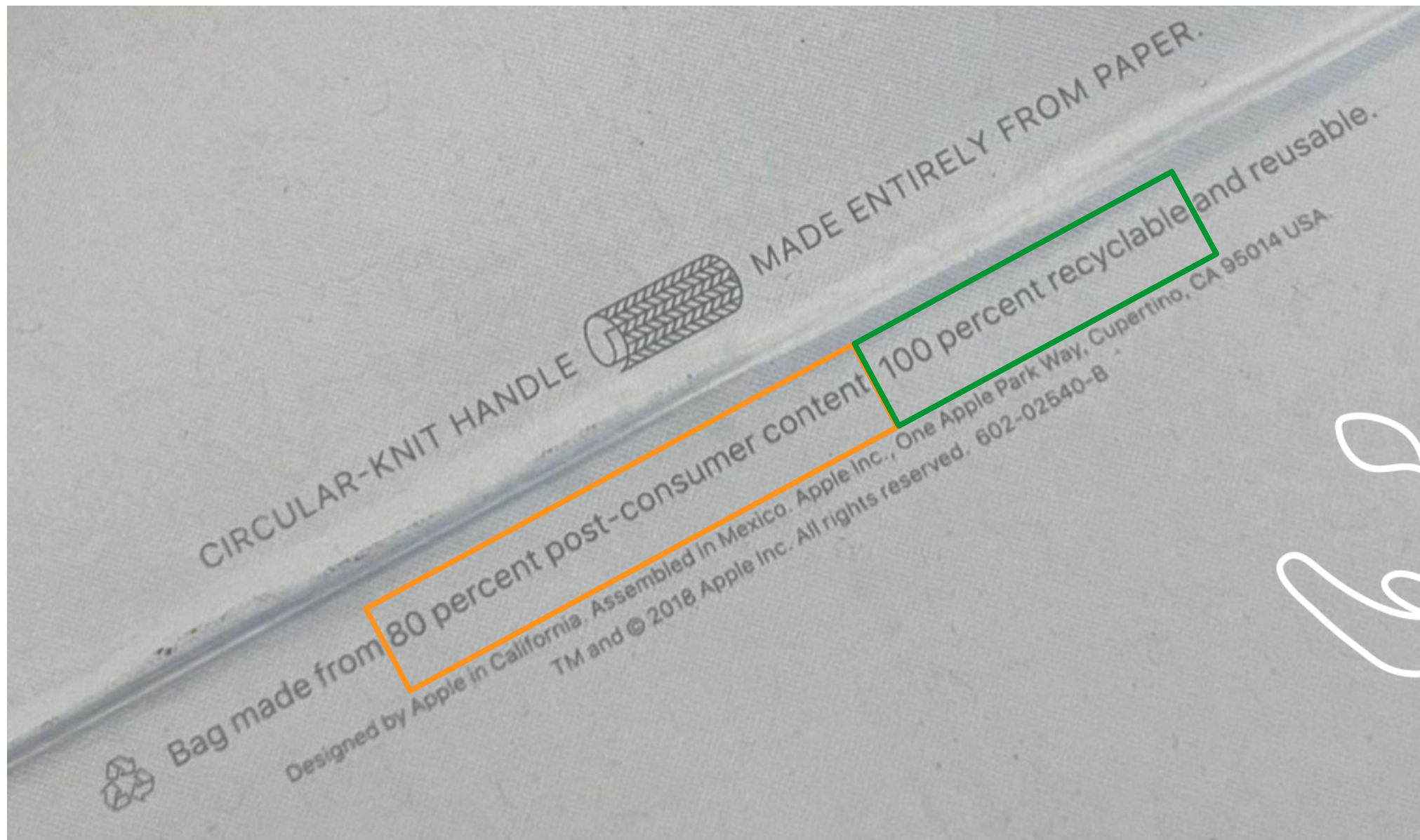


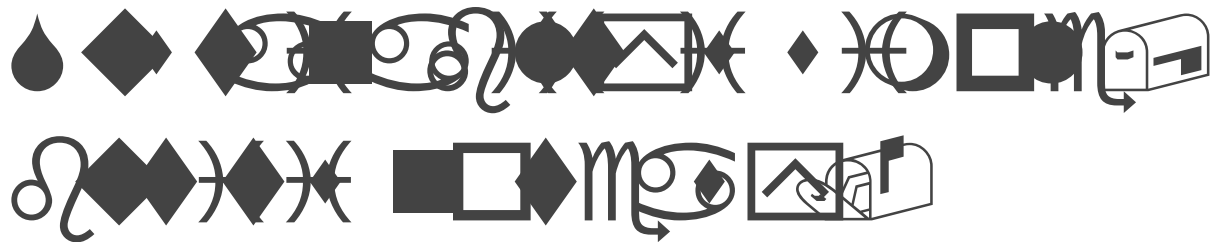
MADE ENTIRELY FROM PAPER.

Bag made from 80 percent post-consumer content. 100 percent recyclable and reusable.

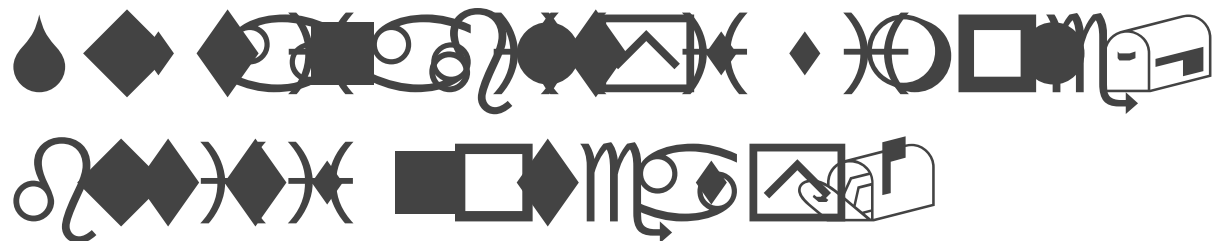
Designed by Apple in California. Assembled in Mexico. Apple Inc., One Apple Park Way, Cupertino, CA 95014 USA.
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IN THE NEWS

What kinds of packaging can be recycled and how to cut back on waste

Published: Aug. 10, 2023 at 11:44 AM EDT



Dr. Andrew Hurley from Clemson's Packaging Science program says some disposable packaging that appears recyclable actually isn't! Plus, he shares ways his department works to develop packaging that's less harmful to the environment.

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YOUR
OPTIONS
WITH
STEPHAN SCHNAITER


HANOVER
mortgage co.

FREE CONSULTATION



Sensible Sustainability Audit



A

2lb 5.5oz

Curbside recyclable
corrugated fiberboard

B

0.6oz

Non-recyclable (shade)
Unlabeled poly film

C

0.5oz

Store Drop-off (parts)
PE (LD) film

D

0.1oz

Unactioned (parts)
Desiccant drying packet

E

3.4oz

Non-recyclable
Polystyrene (EPS)





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OPPORTUNITIES

will be willing to invest little – or nothing at all –

CHARTS & DATA

DIGITAL
COMMERCE 360

The environmental cost of ecommerce deliveries

Mark Brohan, Matt Love May 23, 2023

LET'S GET TO WORK







SUSTAINABLE INNOVATION WORKSHEET

BUDGET (\$ \$£ \$\$\$)	PRIORITIZE AND DETAIL 2 DIFFERENT SOLUTIONS FOR THE IMPROVEMENT	RECOMMENDED TESTING	ENVIRO. IMPACT (√- √ √+)

BRAINSTORM VARIOUS CLAIMS TO EDUCATE CONSUMERS ON THE IMPROVEMENT. WRITE THE CLAIM BELOW IN NO MORE THAN SEVEN WORDS.

PROTOTYPE SKETCH	EDUCATIONAL CLAIM SKETCH


PACKAGING SCHOOL



GET TO KNOW YOUR PRODUCT

THIS IS YOUR CLIENT



SKETCH / DESCRIBE

 SUSTAINABLE INNOVATION WORKSHEET	
SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED  	PROBLEM STATEMENT
ALIGN WITH (OR ADAPT) A UN SDG 	DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG
DESCRIBE IMPROVEMENT DOMAIN 	LIST SKILLS NEEDED TO MAKE IMPROVEMENT
CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: SUSTAINING DISRUPTIVE BREAKTHROUGH RESEARCH 	
	



PROBLEM STATEMENT



SUSTAINABLE INNOVATION WORKSHEET

SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED	PROBLEM STATEMENT
 <p>Hand-drawn sketches of the product and packaging, including a package of paper straws and individual straws.</p>	<p>Hand-drawn sketches of the problem statement, including a package of paper straws and individual straws.</p>
ALIGN WITH (OR ADAPT) A UN SDG	DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG
DESCRIBE IMPROVEMENT DOMAIN	LIST SKILLS NEEDED TO MAKE IMPROVEMENT
CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: SUSTAINING DISRUPTIVE BREAKTHROUGH RESEARCH	







Nylabone
ESSENTIALS

VETERINARIAN
RECOMMENDED

**POWER
CHEW**

**LONG
LASTING**

Indulges
Instinct
to Chew

•
Engages &
Entertains

•
Flavor
Throughout

**ORIGINAL
FLAVOR**



USA MADE



GENTLE
CHEWING



EXTREME
CHEWING



SUSTAINABLE
DEVELOPMENT
GOALS

UN SDG Goal Setting

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Think of ways in which packaging
 innovations can help an organization
 align with one, or numerous, SDGs.

SUSTAINABLE DEVELOPMENT GOALS





UN SDG ALIGNMENT



SUSTAINABLE INNOVATION WORKSHEET

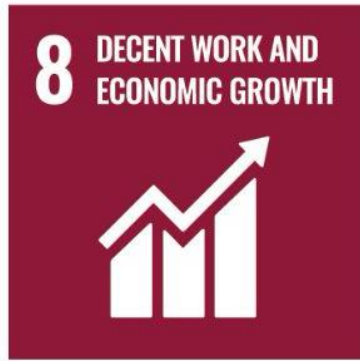
<p>SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED</p> <div> <p>Hand-drawn sketches of the product and packaging, including a straw, a package, and a recycling symbol.</p> </div>	<p>PROBLEM STATEMENT</p> <p>Hand-drawn sketches illustrating the problem statement, such as a broken straw and a recycling symbol.</p>
<p>ALIGN WITH (OR ADAPT) A UN SDG</p> <p>Hand-drawn sketches of the UN SDG icons, with SDG 12 (Responsible Consumption and Production) highlighted in orange.</p>	<p>DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG</p>
<p>DESCRIBE IMPROVEMENT DOMAIN</p>	<p>LIST SKILLS NEEDED TO MAKE IMPROVEMENT</p>
<p>CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: SUSTAINING DISRUPTIVE BREAKTHROUGH RESEARCH</p>	



UN SDG IMPROVEMENT

 SUSTAINABLE INNOVATION WORKSHEET	
SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED	PROBLEM STATEMENT
 <p> 100 count BPA FREE ECO-FRIENDLY PAPER STRAWS 0.5 inches diameter, 9 inches length Perfect for any cup, mug, or mason jar </p>	<p> Problem statement: The current paper straws are not sustainable and are not eco-friendly. They are made from non-recycled paper and are not biodegradable. This is a problem for the environment and for people who care about sustainability. </p>
ALIGN WITH (OR ADAPT) A UN SDG	DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG
<p> 12 Responsible Consumption and Production 13 Climate Action 15 Life on Land 17 Partnerships for the Goals </p>	<p> Improvement: The paper straws should be made from 100% recycled paper and be biodegradable. They should also be made from a sustainable source of paper. </p>
DESCRIBE IMPROVEMENT DOMAIN	LIST SKILLS NEEDED TO MAKE IMPROVEMENT
CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: <input type="checkbox"/> SUSTAINING <input type="checkbox"/> DISRUPTIVE <input type="checkbox"/> BREAKTHROUGH <input type="checkbox"/> RESEARCH	







M
32/34

Goodfellow
& Co.

Classic Woven Boxers

FEATURES

- Comfort fit with soft fabric
- Tag free
- Made with recycled polyester

4
PAIRS



Four Types of Packaging Innovation

“

◆ ማህበራዊ ጥያቄዎችን ማሟላት
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 ማሳደግ ማለት ማሳደግ ማለት
 ማሳደግ ማለት ማሳደግ ማለት

ግልጽ ማለት ማለት

“

◆ ማህበራዊ ጥያቄዎችን ማሟላት
 ማሳደግ ማለት ማሳደግ ማለት

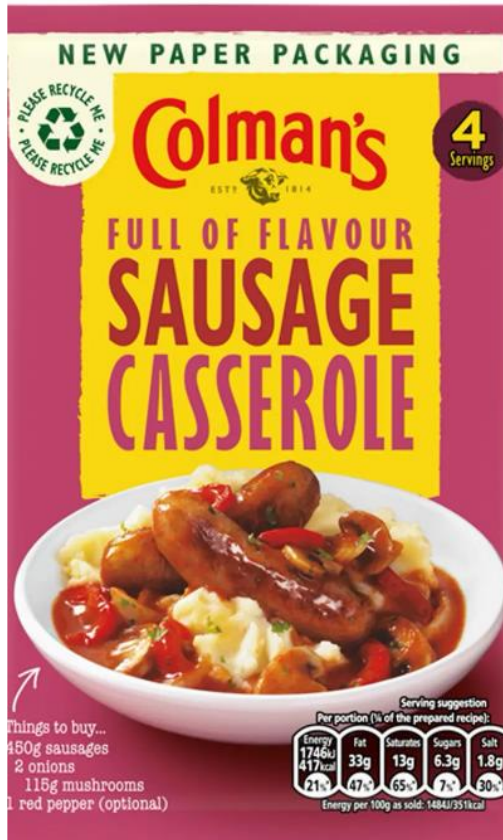
ግልጽ ማለት ማለት



WELL-DEFINED PROBLEM	<p>BREAKTHROUGH PACKAGE DESIGN</p> <p>OPEN INNOVATION DESIGN COMPETITIONS SKUNKWORKS</p> <p>NEW MARKET CREATION</p>	<p>SUSTAINABLE PACKAGE INNOVATION</p> <p>ROADMAPPING (CONTINUOUS IMPROVEMENT) DESIGN THINKING ACQUISITIONS</p> <p>MAINTAIN MARKET POSITION</p>
UNCLEAR PROBLEM	<p>BASIC PACKAGING RESEARCH</p> <p>INTERNAL RESEARCH ACADEMIC PARTNERSHIPS REFERRED JOURNALS & CONFERENCES</p> <p>DIRECTIONS & OPPORTUNITIES</p>	<p>DISRUPTIVE PACKAGE DESIGN</p> <p>20% (15%) RULE INNOVATION / EXPERIENCE CENTER LEAN LAUNCHPAD</p> <p>INCREMENTAL GROWTH</p>
	UNCLEAR DOMAIN	WELL-DEFINED DOMAIN

WELL-DEFINED PROBLEM

UNCLEAR PROBLEM



SUSTAINABLE PACKAGE INNOVATION

ROADMAPPING (CONTINUOUS IMPROVEMENT)
DESIGN THINKING
ACQUISITIONS

MAINTAIN MARKET POSITION

UNCLEAR DOMAIN

WELL-DEFINED DOMAIN

WELL-DEFINED PROBLEM

UNCLEAR PROBLEM

BREAKTHROUGH PACKAGE DESIGN

OPEN INNOVATION
DESIGN COMPETITIONS
SKUNKWORKS

NEW MARKET CREATION

UNCLEAR DOMAIN

WELL-DEFINED DOMAIN



WELL-DEFINED PROBLEM

UNCLEAR PROBLEM



DISRUPTIVE PACKAGE DESIGN

20% (15%) RULE
INNOVATION / EXPERIENCE CENTER
LEAN LAUNCHPAD

INCREMENTAL GROWTH

UNCLEAR DOMAIN

WELL-DEFINED DOMAIN

WELL-DEFINED PROBLEM

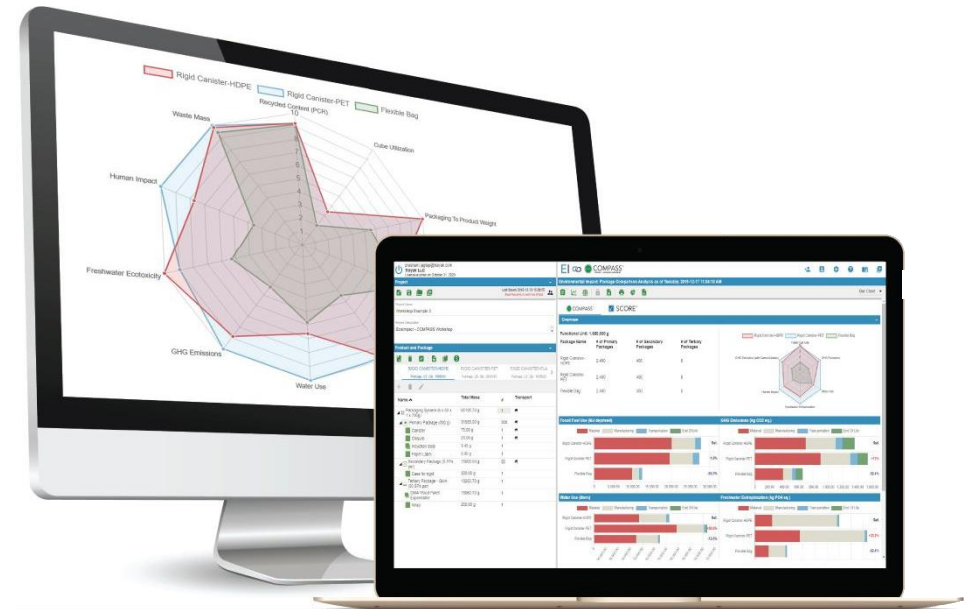
UNCLEAR PROBLEM

BASIC PACKAGING RESEARCH

INTERNAL RESEARCH
ACADEMIC PARTNERSHIPS
REFERRED JOURNALS & CONFERENCES

DIRECTIONS & OPPORTUNITIES

UNCLEAR DOMAIN



WELL-DEFINED DOMAIN

IMPROVEMENT DOMAIN

 SUSTAINABLE INNOVATION WORKSHEET	
SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED	PROBLEM STATEMENT
 <p> පිටුපස පැපර් ඔෆ් පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>	<p> පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>
ALIGN WITH (OR ADAPT) A UN SDG	DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG
<p> පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>	<p> පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>
DESCRIBE IMPROVEMENT DOMAIN	LIST SKILLS NEEDED TO MAKE IMPROVEMENT
<p> පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>	<p> පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් පිටුපස පැපර් </p>
CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: SUSTAINING DISRUPTIVE BREAKTHROUGH RESEARCH	
<div>  </div>	





METHOD OF INNOVATION

SUSTAINABLE INNOVATION WORKSHEET	
SKETCH AND DESCRIBE THE PRODUCT / PACKAGE TO BE IMPROVED	PROBLEM STATEMENT
 <p>100 count Eco-Friendly PAPER STRAWS</p>	<p>100 count Eco-Friendly PAPER STRAWS</p>
ALIGN WITH (OR ADAPT) A UN SDG	DESCRIBE AN IMPROVEMENT THAT ALIGNS WITH UN SDG
12 Responsible Consumption and Production	12 Responsible Consumption and Production
DESCRIBE IMPROVEMENT DOMAIN	LIST SKILLS NEEDED TO MAKE IMPROVEMENT
12 Responsible Consumption and Production	12 Responsible Consumption and Production
CIRCLE AND EXPLAIN INNOVATION METHOD TO BE USED: <u>SUSTAINING</u> DISRUPTIVE BREAKTHROUGH RESEARCH	
<p>100 count Eco-Friendly PAPER STRAWS</p>	



1 FIRST
RESPONSE™
PREGNANCY

OVER
99%
ACCURATE*

>99% accurate on the day
of your expected period*

Test & Confirm
**6 DAYS
SOONER**

THAN YOUR MISSED PERIOD.




2
TESTS

EARLY + DIGITAL







◀ Test first, then confirm
result with digital.

2 WAYS TO TEST

TACTICAL APPROACH




SUSTAINABLE INNOVATION WORKSHEET

BUDGET (\$ \$\$ \$\$\$)	PRIORITIZE AND DETAIL 2 DIFFERENT SOLUTIONS FOR THE IMPROVEMENT	RECOMMENDED TESTING	ENVIRO. IMPACT (✓- ✓ ✓+)
			<input type="checkbox"/>
			<input type="checkbox"/>

BRAINSTORM VARIOUS CLAIMS TO EDUCATE CONSUMERS ON THE IMPROVEMENT. WRITE THE CLAIM BELOW IN NO MORE THAN SEVEN WORDS.

PROTOTYPE SKETCH	EDUCATIONAL CLAIM SKETCH









Greenwashing

SKIMS

I AM NOT PLASTIC

I AM COMPOSTABLE MADE FROM PLANTS.
I WILL BIODEGRADE IN YOUR HOME COMPOST
AND IN AN INDUSTRIAL COMPOST FACILITY.



මෙම ප්ලාස්ටික් පැකේජය
සෑදීමට උපයුරු වූ ප්ලාස්ටික්
පොලිඑතිලීන් (PE) ප්ලාස්ටික්
දැමුණු ප්ලාස්ටික් පැකේජයකි.
මෙම ප්ලාස්ටික් පැකේජය
සෑදීමට උපයුරු වූ ප්ලාස්ටික්
පොලිඑතිලීන් (PE) ප්ලාස්ටික්
දැමුණු ප්ලාස්ටික් පැකේජයකි.
මෙම ප්ලාස්ටික් පැකේජය
සෑදීමට උපයුරු වූ ප්ලාස්ටික්
පොලිඑතිලීන් (PE) ප්ලාස්ටික්
දැමුණු ප්ලාස්ටික් පැකේජයකි.

ප්ලාස්ටික් පැකේජය
සෑදීමට උපයුරු වූ ප්ලාස්ටික්
පොලිඑතිලීන් (PE) ප්ලාස්ටික්
දැමුණු ප්ලාස්ටික් පැකේජයකි.

Generating Claims and the FTC Green Guides



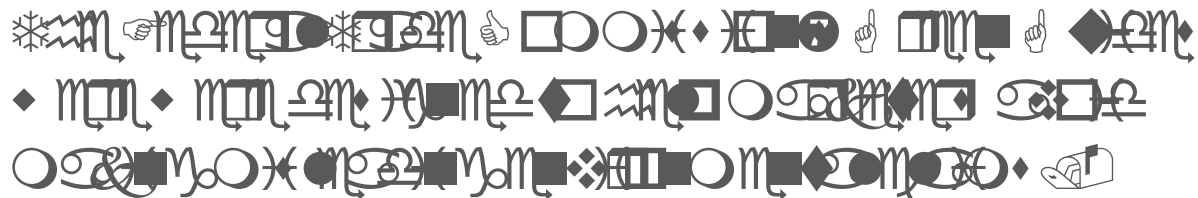
GENERATING PACKAGING CLAIMS RESPONSIBLY

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THE FTC GREEN GUIDES—UNITED STATES



3


PART 260— GUIDES FOR THE USE OF ENVIRONMENTAL MARKETING CLAIMS

Sec.	260.1	Purpose, Scope, and Structure of the Guides.
	260.2	Interpretation and Substantiation of Environmental Marketing Claims.
	260.3	General Principles.
	260.4	General Environmental Benefit Claims.
	260.5	Carbon Offsets.
	260.6	Certifications and Seals of Approval.
	260.7	Compostable Claims.
	260.8	Degradable Claims.
	260.9	Free-Of Claims.
	260.10	Non-Toxic Claims.
	260.11	Ozone-Safe and Ozone-Friendly Claims.
	260.12	Recyclable Claims.
	260.13	Recycled Content Claims.
	260.14	Refillable Claims.
	260.15	Renewable Energy Claims.





CLAIMS



SUSTAINABLE INNOVATION WORKSHEET

BUDGET (\$ \$\$ \$\$\$)	PRIORITIZE AND DETAIL 2 DIFFERENT SOLUTIONS FOR THE IMPROVEMENT	RECOMMENDED TESTING	ENVIRO. IMPACT (✓- ✓ ✓+)
\$\$\$	1. Reduce the amount of plastic used in the packaging. 2. Use recycled paper for the packaging.	1. Test the strength of the new packaging. 2. Test the cost of the new packaging.	✓
\$\$	1. Use biodegradable materials for the packaging. 2. Use a smaller size for the packaging.	1. Test the strength of the new packaging. 2. Test the cost of the new packaging.	✓

BRAINSTORM VARIOUS CLAIMS TO EDUCATE CONSUMERS ON THE IMPROVEMENT. WRITE THE CLAIM BELOW IN NO MORE THAN SEVEN WORDS.

6. Reduce the amount of plastic used in the packaging.


PROTOTYPE SKETCH	EDUCATIONAL CLAIM SKETCH

PACKAGING SCHOOL .com





SKETCH



SUSTAINABLE INNOVATION WORKSHEET

BUDGET (\$ \$\$ \$\$\$)	PRIORITIZE AND DETAIL 2 DIFFERENT SOLUTIONS FOR THE IMPROVEMENT	RECOMMENDED TESTING	ENVIRO. IMPACT (✓- ✓ ✓+)
\$\$\$	1. Reduce the amount of plastic used in the packaging. 2. Use recycled paper for the packaging.	1. Conduct a cost analysis. 2. Test the durability of the new packaging.	✓
\$\$	1. Use biodegradable materials for the packaging. 2. Implement a recycling program for the packaging.	1. Conduct a cost analysis. 2. Test the durability of the new packaging.	✓

BRAINSTORM VARIOUS CLAIMS TO EDUCATE CONSUMERS ON THE IMPROVEMENT. WRITE THE CLAIM BELOW IN NO MORE THAN SEVEN WORDS.

1. Reduce the amount of plastic used in the packaging.
2. Use recycled paper for the packaging.

PROTOTYPE SKETCH	EDUCATIONAL CLAIM SKETCH

PACKAGING SCHOOL .com



PROTOTYPE SKETCH



EDUCATIONAL CLAIM SKETCH



NEXT STEPS

Sources: 30, 31, 32, 33



10,000 Virgin PET Bottles

CO₂e for 1 bottle
(using calculator)

- PET = 1.5 CO₂e / kg
- Order = 15,000 CO₂e / kg

Project - "Pachama Borneo Peatlands"

- \$14.14 / metric ton of CO₂e
(1 metric ton = 1000 kg)

= \$0.01414 / kg
= \$212.10 / 10,000 bottle
= \$0.02121 / bottle



CERTIFICATE OF SUSTAINABLE PACKAGING



Pachama



SCAN ME

RESOURCES

1. United Nations. (2015). *The 17 goals | sustainable development*. United Nations. <https://sdgs.un.org/goals#history>
2. UN Sustainable Development Goals. (2022). Smurfit Kappa. <https://www.smurfitkappa.com/us/sustainability/approach/un-sdgs>
3. Science Based Targets. (n.d.). *About Us*. <https://sciencebasedtargets.org/about-us>
4. Forest Stewardship Council® – United States. (n.d.). *Chain-of-custody certification*. FSC United States. <https://us.fsc.org/en-us/certification/chain-of-custody-certification>
5. Sustainable Packaging Coalition. (n.d.). *Paul Nowak*. <https://sustainablepackaging.org/people/paul-nowak/>
6. Hudson, Dr. K. (2019, July 12). *What is the best definition of innovation?*. Dr Ken Hudson. <https://drkenhudson.com/best-way-define-innovation/>
7. Satell, G. (2017, June 21). *The 4 Types of Innovation and the Problems They Solve*. Harvard Business Review. <https://hbr.org/2017/06/the-4-types-of-innovation-and-the-problems-they-solve>
8. Unilever PLC. (2023, September 7). *Colman's switches from plastic to recyclable paper pouches*. Unilever. <https://www.unilever.com/news/news-search/2021/colmans-switches-from-plastic-sachets-to-recyclable-paper-pouches/>
9. Reynolds, P. (2018, September 20). *P&G wins Dow's diamond*. Packaging World. <https://www.packworld.com/design/flexible-packaging/article/13375820/pg-wins-dows-diamond>
10. Dairy Foods Authors. (2018, August 27). *Chobani launches savor, a Greek yogurt in a squeezable pouch*. Dairy Foods . <https://www.dairyfoods.com/articles/93085-chobani-launches-savor-a-greek-yogurt-in-a-squeezable-pouch>
11. Trayak. (2023, November 7). *Sustainability Solutions*. <https://trayak.com/sustainability-solutions/>
12. Lindwall, C. (2023, February 9). *What is greenwashing?*. Be a Force for the Future. <https://www.nrdc.org/stories/what-greenwashing>
13. Moran, C. (2024, November 24). *Here are the 7 sins of greenwashing: University College Cork Ireland x Environmental Research Institute*. News & Media | 22-11-24 Here are the 7 sins of greenwashing | UCC ERI. <https://www.ucc.ie/en/eri/news/here-are-the-7-sins-of-greenwashing.html>
14. Finance. (2021). *EU taxonomy for Sustainable Activities*. https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en
15. Ritchie, J. N. & A. (2021, July 16). *Green guides*. Federal Trade Commission. <https://www.ftc.gov/news-events/topics/truth-advertising/green-guides>

RESOURCES

16. Caplan, E. (2023, November 6). *Kim Kardashian's skims shapewear line faces backlash over allegedly deceptive advertising: "it is completely misleading."* The Cool Down. <https://www.thecooldown.com/green-business/skims-kim-kardashian-greenwashing/>
17. Changing Markets Foundation. (2022, June 30). *Brands exposed for 'misleading and mendacious' packaging claims.* changingmarketsfoundation.org. <https://changingmarkets.org/wp-content/uploads/2022/06/Greenwash.com-packaging-press-release.pdf>
18. Ritchie, J. N. & A. (2021, July 16). *Green guides.* Federal Trade Commission. <https://www.ftc.gov/news-events/topics/truth-advertising/green-guides>
19. Trayak. (2023). *Experts in Sustainability. Solution for Success.* [Online image]. <https://trayak.com/>
20. United Nations. (n.d.). *Sustainable Development Goals.* [Online image]. <https://www.un.org/sustainabledevelopment/news/communications-material/>
21. The Association of Plastic Recyclers. (2024). *Who is APR?* [Online image]. <https://plasticsrecycling.org/>
22. Pachama. (2023). *Remove Carbon. Restore Nature.* [Online image]. <https://pachama.com/>
23. Packaging World. (2012, Oct. 9). FTC 'Green Guide' revisions finalized. [Online image]. <https://www.packworld.com/news/sustainability/news/13360891/ftc-green-guide-revisions-finalized>