Environmental Labelling for the UK Food Industry

A summary of evidence and recommendations to date

December 2023

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from IGD

We influence change; we are a force for good.

At IGD we are the catalyst for collective action. Working collaboratively with the food and consumer goods industry to share learnings and best practice, enabling people and businesses, large and small, to adapt and progress.

from IGD

Contents

Executive summary

IGD has been working with stakeholders across the food industry to develop a consistent approach to environmental labelling for the UK. This report outlines a summary of our progress so far.

Complex landscape

There has been a proliferation of environmental labelling schemes in the UK and globally to inform consumers about the impact of food.

Without a coordinated approach to environmental food labelling from the whole UK food sector, we risk confusing consumers and adding complexity and cost for businesses and supply chains.

Examples of existing environmental labelling schemes

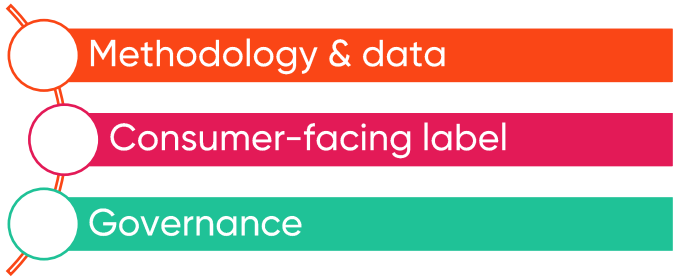
What we set out to do

IGD was approached by industry in 2021 and asked to help mobilise UK food businesses to develop a harmonised solution to environmental labelling. We have two objectives:

- Help consumers make more sustainable purchasing decisions by providing more transparent information about the environmental impact of products.
- Enable business decisions around supply chain efficiencies and sourcing by providing more transparent information about the environmental impact of supply chains.

How we did it

We convened a Steering Group to provide strategic direction, consulted extensively with wider stakeholders and worked with experts to inform our work. This report sets out our latest evidence, recommendations and key considerations across three areas:



Our learnings will inform the UK Government's planned consultation on ecolabelling in 2024, and IGD will continue the ongoing programme of work to enable consistent operation of environmental labelling in the UK.

Methodology and data summary

We set out to develop a consistent methodology and approach to data to reduce cost of implementation and enable businesses and consumers to make better informed decisions.

What we did

- We have worked with independent technical experts and consulted with other relevant stakeholders to develop a draft methodology for environmental labelling in the UK.
- The draft methodology covers 4 key steps:
  - Calculating the environmental impact of products
  - Converting products' environmental impact into a score
  - Presenting scores to consumers on a label
  - Using supporting data to generate scores
- We tested the draft methodology end-to-end to inform our recommendations and next steps

Recommendations so far

1. Use a Life Cycle Assessment based approach covering climate change, water use, water quality and land use impact categories
2. Develop an open access UK database of representative environmental impacts
3. Develop a consistent methodology to generate supply chain specific impacts and continually improve the representative database
4. Score products against planetary boundaries
5. Undertake further scientific research on RAG bandings

Next steps

We will continually improve our recommendations and align with the external landscape around environmental reporting to develop an agreed methodology and approach to data that is consistent, impartial and available to all.

  For more information on methodology & data see full section here.

Consumer-facing label summary

We set out to develop an effective consumer-facing label to encourage positive change and help nudge behaviour.

What we did

- We have worked with expert consumer research agencies and consulted extensively with industry to explore consumer attitudes, understanding and preferences relating to environmental labelling to identify what an effective solution could look like.
- We used research methodologies to inform our recommendations including:
  - Shopper interviews, surveys, online communities and focus groups
  - Behavioural science and semiotics analysis
  - Reaction time testing
  - Virtual reality shops
  - Conjoint analysis

Recommendations so far

1. Introduce an environmental label on food and drink products to encourage positive change and help nudge behaviour
2. The label design should include an A-E display, using a red, amber and green 5-point scale, with a globe symbol
3. Implementation will require a communications campaign to provide more information about the label to consumers, to answer key questions and address areas of ambiguity
4. Provide further information in-store to consumers to increase awareness and understanding. This should include point-of sale.

Next steps

IGD's work will continue, building on our current recommendations for the consumer facing label. For example, IGD will determine an effective consumer communications campaign around the label and agree rules and guidance to ensure the label and communications are operationalised in a consistent way.

  For more information on the consumer-facing label see full section here.

Governance summary

We set out to develop robust governance for environmental labelling to ensure it is consistently operated, maintained and continually improved.

What we did

- We have learnt from existing labelling schemes and consulted extensively with industry to explore how robust governance could be implemented whilst avoiding unnecessary burden for businesses and confusion for consumers.
- Our work so far has covered two key areas:
  - We developed a governance structure to manage the operation of environmental labelling
  - We identified the scope of operational rules and guidance that should be developed to enable environmental labelling to be operated in a consistent way.

Recommendations so far

1. Introduce robust governance to operationalise environmental labelling within agreed standards and drive continuous improvements over time
2. Convene a Steering Group and agree Terms of Reference for a governance framework
3. Convene relevant stakeholders to develop initial standards and operational rules for environmental labelling
4. Consider the feedback and recommendations for further work (pages 132 - 139) when developing operational rules

Next steps

Going forwards, IGD will build on the current recommendations for governance, and we will develop initial rules, guidance and an agreed governance structure that will enable consistent implementation, operation and continual improvement of environmental labelling over time.

  For more information on governance see full section here.

Environmental labelling:

The case for a harmonised approach for the UK food industry

Complex landscape

There has been a proliferation of environmental labelling schemes in the UK and globally to inform consumers about the impact of food. Without a coordinated approach from the whole UK food sector, we risk confusing consumers and adding complexity and cost for businesses and supply chains.

These environmental labelling schemes all take different approaches and are at different stages of development.

Harmonised approach

Against this complex landscape, IGD was approached by industry in 2021 and asked to help mobilise UK food businesses to develop a harmonised solution to environmental food labelling. We have two objectives:

Objective 1

Help consumers make more sustainable purchasing decisions by providing transparent information about the environmental impact of products.

Objective 2

Enable business decisions around supply chain efficiencies and sourcing by providing more transparent information about the environmental impact of supply chains.

UK policy context

The UK Government has since stated its intent to develop a mandatory methodology for those who want to make claims about the sustainability of their products or produce eco-labels.

> *We will develop a mandatory methodology that must be used by those who want to produce eco labels or make claims about the sustainability of their products.*
>
> Government Food Strategy, 2022[1]

Our work will inform Government's consultation on ecolabelling planned to take place in 2024 as part of the Food Data Transparency Partnership.

[1]Source: Department for Environment Food & Rural Affairs (2022) *Government food strategy, GOV.UK.* Available here.

Steering Group

IGD convened a Steering Group of leading retailers, brands and manufacturers, Defra and WRAP to inform our direction of travel and recommended approach to environmental labelling.

2 sisters Food Group – Every Meal Occasion

ASDA

Co-op

defra (Including Food Data Transparency Partnership team)

Greencore

LIDL

M&S EST. 1884

Morrisons

Nestlé

PEPSICO

Sainsbury's

Samworth Brothers QUALITY FOODS

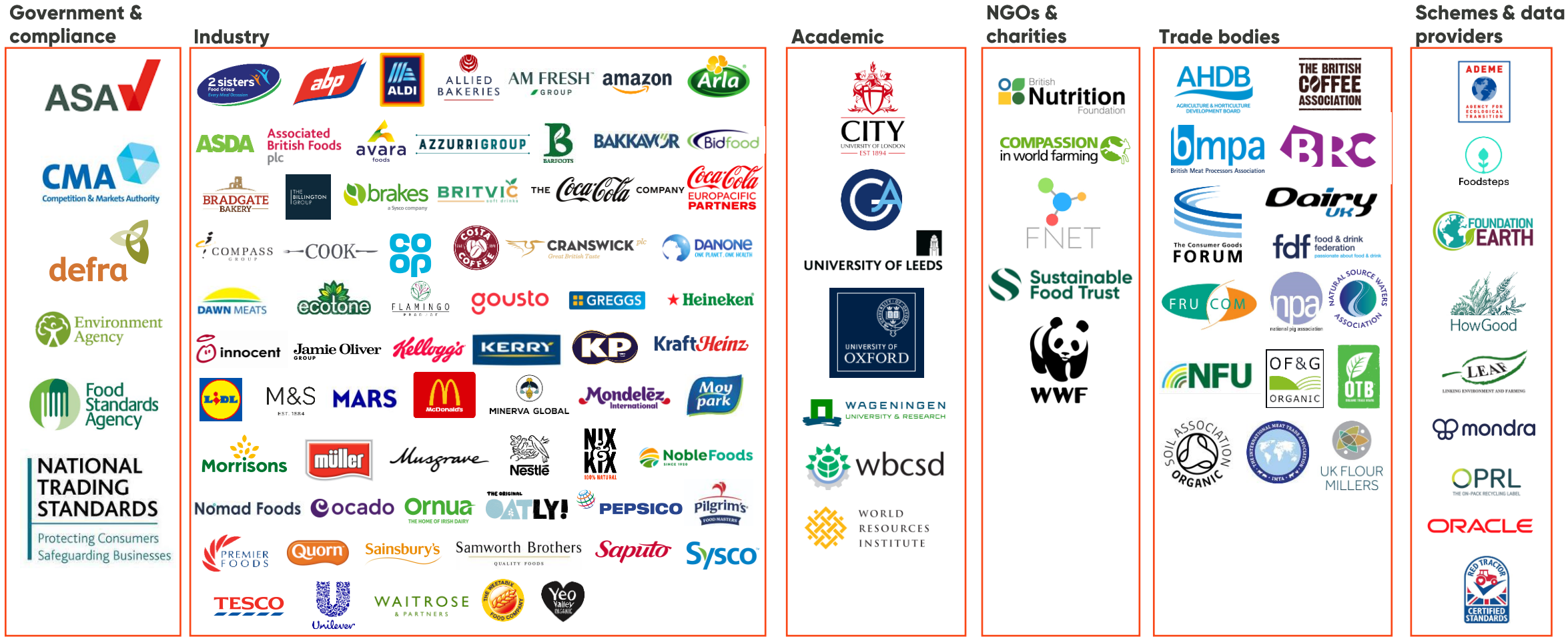
TESCO

wrap

The Steering Group has met monthly since 2021 and are the key decision makers for the environmental labelling programme. As of October 2023, representatives from the organisations listed above sit on the Steering Group.

Wider engagement

We have also engaged extensively with wider industry and other key stakeholders to review and seek feedback on the programme.



Representatives from these organisations have been consulted with via email, workshops and calls. Their feedback is reflected transparently throughout this document.

Guiding principles

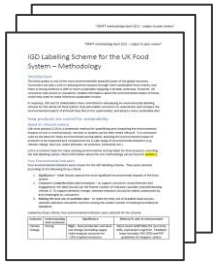
With the Steering Group, we agreed 8 principles to guide the development of an environmental labelling programme that is robust and credible.

- Led by science, informed by consumers
- Good but not perfect
- Inclusive, scalable and pragmatic
- Representative of the UK market
- Works for raw and complex products
- Allows for future product-specific labelling
- Provides a level of international harmonisation
- Incentivise and reflect supply chain efficiencies and sourcing decisions

Scope of our work

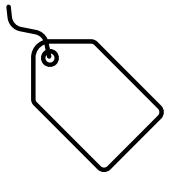
Working to our guiding principles, in this report we set out the evidence, stakeholder feedback and recommendations across the areas below. We also highlight outstanding considerations and how they can be managed.

Scientific methodology & data



- Methodology
- Results from stress-tests
- Review of existing schemes
- Stakeholder feedback & IGD response

Consumer-facing label



- Consumer research findings (phases 1-4)
- Label design

Governance

- Governance structure
- Scope of operational rules, assurance and compliance

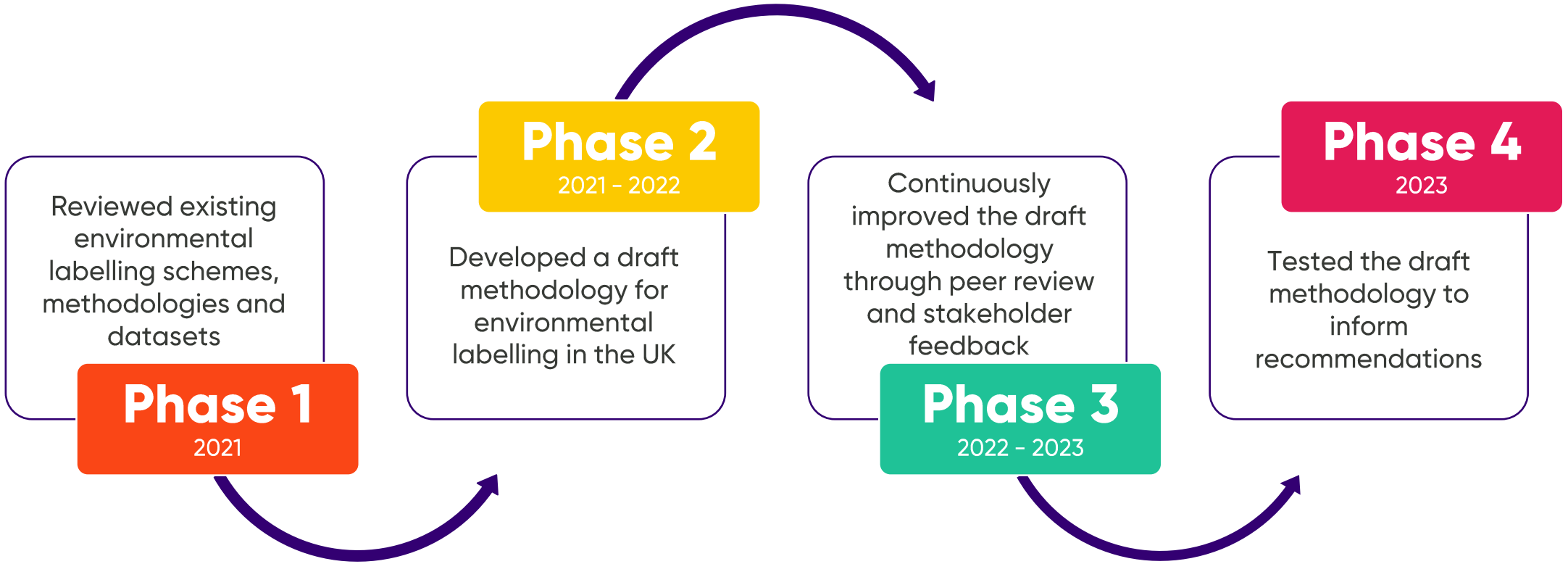
Led by science

Introduction to methodology & data

from IGD

Developing recommendations for the methodology & data

We completed four phases of work to inform our recommended approach to the methodology and data for environmental labelling:



Key contributors to the methodology

Our draft methodology was developed with sustainability consultancy Anthesis and was peer reviewed by World Resources Institute. Feedback from stakeholders also informed the development of our recommendations.

Anthesis is a sustainability consultancy who supported with the research and development of the methodology across Phases 1-4.

Anthesis

World Resources Institute is a global research organisation who peer reviewed the draft methodology in Phase 3.

WORLD RESOURCES INSTITUTE

A summary of the feedback we received by industry stakeholders can be found on pages 73 - 75.

Scope of draft methodology

With these organisations, we developed a draft methodology that covers four key parts. The following pages will cover each in more detail.

1. Calculating the environmental impact of products
2. Converting products' environmental impact into a score
3. Presenting scores to consumers on a label
4. Supporting data to generate scores

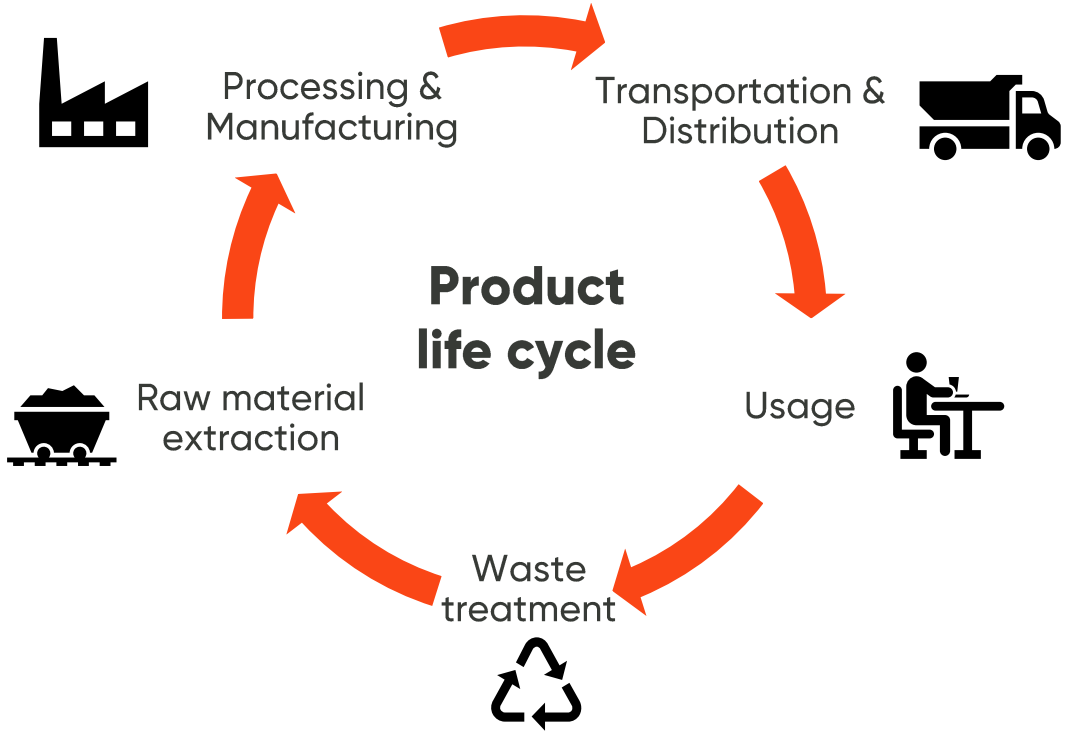
Full draft methodology available on IGD's website

1 Calculating the environmental impact of products

This section explains the draft method used to calculate the environmental impact of products as well as how the environmental impacts were selected.

Life Cycle Assessment

Life Cycle Assessment (LCA) considers the environmental performance of a product or service over its entire life cycle. In the food sector, product LCA can be used for corporate accounting, for supporting businesses to identify impact 'hotspots' and for environmental labelling[1].



  [1]Source: WRAP (2023), Banbury, Analysis of challenges for environmental reporting at product and organisation level, Prepared by H. Forbes, E. Trotman and M. Barker. Available here.

Key challenges

There are many approaches to LCA and our research found that multiple food environmental labelling schemes are each supported by different standards and methodologies. A consistent approach is necessary for the UK food industry to enable consumers and businesses to make informed decisions.

Product-level standards

- PAS 2050
- EU Product Environmental Footprint (PEF)
- GHG Protocol Product standard
- ISO 14067

Challenges

- Lack of consistency between and within standards
- Differences in impact results
- Lack of product comparability

Implications

- Inconsistent information for consumers and businesses to make informed decisions
- Confusion and inertia

Source: WRAP (2023), Banbury, Analysis of challenges for environmental reporting at product and organisation level, Prepared by H. Forbes, E. Trotman and M. Barker. Available here.

Life cycle impact categories

Many environmental impacts can be used in LCA to measure outcomes on the environment and health. The Product Environmental Footprint[1] (PEF) methodology identified 16 major environmental impact categories that measure five groups of outcomes:

Ecosystems

- Acidification
- Terrestrial eutrophication
- Freshwater eutrophication
- Marine eutrophication
- Freshwater ecotoxicity

Human Health

- Ozone depletion
- Human toxicity – non cancer effects
- Human toxicity – cancer effects
- Particulate matter
- Ionising radiation
- Photochemical ozone formation

Climate change

- Global warming

Natural resources

- Mineral resource depletion
- Non-renewable energy resource depletion
- Land use

Water

- Water scarcity footprint

[1]PEF (Product Environmental Footprint) is a methodology developed by the EU designed to standardise the measurement of environmental performance using LCA. Available here.

Selecting life cycle impact categories

Of these 16 PEF impacts, we recommend selecting the fewest environmental impact categories that accurately reflect the greatest impacts of the food system. For environmental labelling to be credible, the selection of indicators was guided by three criteria:

Significance

Do the indicators account for the most significant environmental impacts of the food system?

Resonance with consumers

Do the indicators resonate with consumers to support the goal of engaging them to make more sustainable decisions?

Availability and quality of lifecycle data

Are the indicators backed by strong, well-established methodologies and data?

Journey to better measurement of environmental outcomes

Based on these three criteria, we recommend as a starting point that five[1] environmental impact categories are included in the LCA. These impact categories should be continually improved in line with the latest science and availability of data.

Climate Change

Land Use

Water Use

Water Quality[1]

These impact categories collectively represent the food system's greatest environmental impacts

  [1]Note the marine and freshwater eutrophication impact categories were combined into one indicator

Journey to better measurement of environmental outcomes – biodiversity

The food system is the leading driver of biodiversity loss and it should be accounted for in the environmental impact of food products. However, there is currently no comprehensive method to account for this impact.

Key challenges with measuring biodiversity loss:

- Biodiversity is highly location-dependent and requires a high-level of location specific primary data.
- Biodiversity is a complex, multi-dimensional indicator that interrelates with all the other environmental impacts and so risks double counting impacts.
- We understand that current methods for measuring biodiversity omit genetic and ecosystem diversity or consider only a subset of species groups and/or relevant environmental impacts.

Proposed solution:

- Land use, climate change, water quality and water use are recognised as leading direct drivers of biodiversity loss. Scored against planetary boundaries, they can provide practical and reliable proxies as a starting point.
- The development of alternative biodiversity metrics should be continuously monitored. Should a solution emerge, we recommend its integration into the draft methodology.

Selecting indicators for each impact

To measure the environmental impacts, we recommend using the following indicators[1]. These indicators should be continually improved in line with the latest science and standards.

Climate Change

Most recent IPCC GWP 100a characterisation factors (currently AR6), expressed in kgCO2e. Feedback loops included; PEF/EPD guidelines for biogenic carbon.

Land Use

Land Use, expressed as m2, as is by far the greatest cause of biodiversity loss.

Water Use

Water consumption, in m3 measured using 'Water, Selected LCI, addnl V1.04' method.

Water Quality

Freshwater and marine eutrophication (as measured by ReCiPe 2016 midpoint (H)) in single weighted score (g P eq).

These impacts and measurement approaches are **not perfect but good enough** to provide an assessment of the environmental impact of the food system.

They do not capture acute impacts unique to specific products (e.g., sustainable fisheries, palm oil, pesticide use, animal welfare). Existing certification schemes like RSPO, MSC, Rainforest Alliance, Fairtrade continue to have value in these cases.

We recommend the latest science is reviewed periodically and indicators updated as appropriate, see page 135.

[1]One of the deciding factors in the selection of these indicators was that they support a planetary boundaries scoring system, outlined in the following pages.

From life cycle impacts to a consumer-facing label

Once the impact of a product has been calculated for climate change, land use, water use and water quality, these impacts need to be converted into a score and presented to consumers on a label. The following pages outline the end-to-end process:

Step 1: Calculate the environmental impact for each indicator (see pages 21 – 28)

E.g. for 100g lettuce, calculate impacts on climate change (kg CO_2e), land use (m^2), water use (m^3), water quality (kg P-eq, kg N-eq)

Step 2: Score each impact against the relevant planetary boundary (see pages 30 – 35)

E.g. for 100g lettuce, climate change (0.03 kg CO2e) represents 1% of daily sustainable carbon impact or a score of 1 out of 100

Step 3: Combine the individual scores for each impact into an overall score (see page 36)

E.g. for 100g of lettuce, combining the scores for climate change, land use, water use, water quality (nitrogen and phosphorus) provides an overall score of 1 out of 100.

Step 4: Translate the overall score into a letter (A-E) (see pages 37 – 44)

E.g. for 100g of lettuce, an overall score of 1 falls into the dark green RAG band of 0-3.

  Note these are illustrative examples only. See following pages for more detail.

2 Converting products environmental impact into a score

This section explains how the chosen environmental impacts can be applied to score food products.

Scoring products against global targets and limits

There are two common approaches to scoring food products. We recommend the methodology is based on an absolute scoring approach in relation to real world targets and biophysical limits.

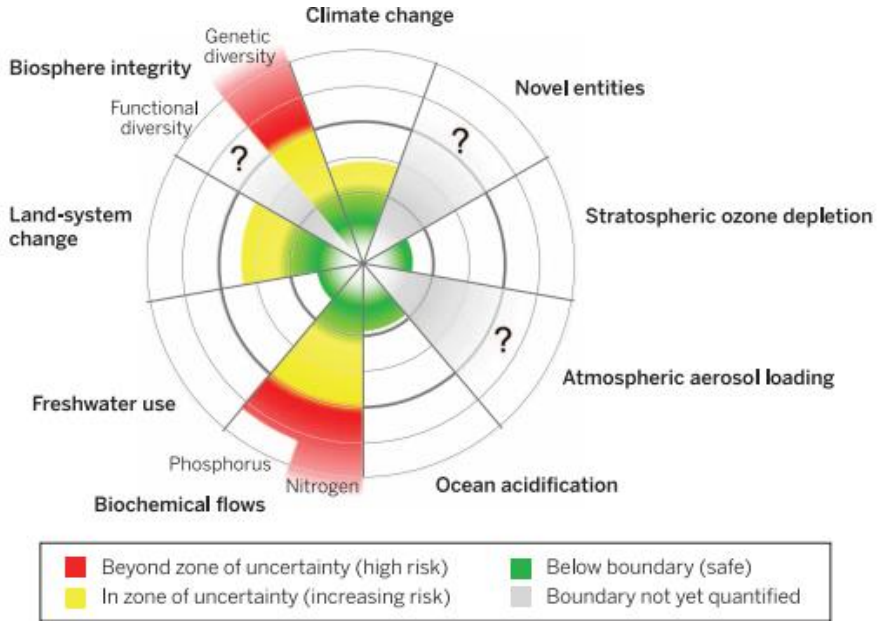
Relative scoring: products are scored according to their impact position within a product catalogue, with no relation to real world sustainability targets.

Absolute scoring: products are scored in relation to real world global targets and biophysical limits.

Enables the labelling system to support global sustainability.

Defining what is 'sustainable'

To define these real-world targets and biophysical limits we recommend using the planetary boundaries framework. The framework defines the extent of a given environmental impact the earth can sustain and the 'safe operating space' for human activity.



> Presently, the planetary boundaries framework is arguably the most robust conceptual lens available in terms of defining food system-specific absolute sustainability thresholds (Bowles et al., 2019)

> If [planetary] boundaries were strictly respected, the present food system could provide a balanced diet for 3.4 billion people only. However [...] transformation towards more sustainable production and consumption patterns could support 10.2 billion people within the planetary boundaries (Gerten et al., 2020)

  See draft methodology on IGD's website for full references.

Chosen planetary boundaries

We identified specific boundaries for each impact, based on the most up to date research[1] and industry targets.

Climate Change
Courtauld Commitment for 2030 (50% reduction against 2015 baseline of 172 $MtCO_2e$)

Land Use
Adaptation of Steffen et al. 2015 (75% of original forest cover)

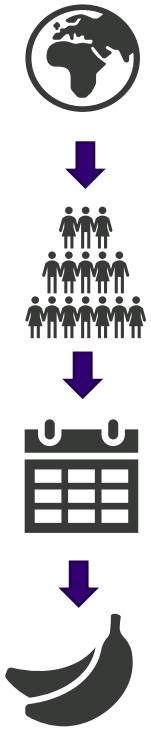
Water Use
Eat Lancet Commission, 2019 (Gerten et al. 2013 update of original Rockström et al. boundary)

Water Quality
EEA 2020 study (reframing of data underlying Steffen et al. 2015 where required to reference emissions rather than fixation/application)

[1]these planetary boundaries should be continually reviewed in line with the latest science. See draft methodology on IGD's website for full references.

Applying planetary boundaries to food products

For the planetary boundaries identified, we recommend a four-step approach to score food products against them.



Step 1: Identify planetary boundary for each indicator – this represents the sustainable annual impact allowance for food and drink consumption in 2030.

Step 2: Calculate the annual per capita sustainable impact – dividing by population to obtain an allowable annual impact per person.

Step 3: Calculate the daily per capita sustainable impact – reducing to allowable daily per capita impact, aligned with how food is purchased and consumed.

Step 4: Express the impact of individual products relative to the daily per capita sustainable impact – product score represents the share of daily impact associated with 100g

Applying planetary boundaries to food products: Climate change example

This worked example shows how we recommend applying a planetary boundary to a food product.

Step 1: Planetary boundary: Courtauld 2030 target: 50% reduction below 2015 baseline of 172 Mt CO_2e = 86 Mt CO_2e.

Step 2: Annual per capita sustainable impact: Dividing by UK population (c. 67 M in 2020) = annual per capita allowance of 1.3 t CO_2e.

Step 3: Daily per capita sustainable impact: Dividing by days in a year (365 ¼) = daily per capita allowance of 3.5 kg CO_2e.

Step 4: Scoring per 100g of the daily per capita sustainable impact (e.g., 100g of lettuce represents 1% of daily sustainable carbon impact)

Daily Carbon Impact 3.5 kgCO_2e	Lettuce	Hard cheese (cows' milk)	Butter
kg CO_2e/100g	0.03	0.49	1.32
% of daily sustainable carbon impact	1%	14%	38%
Score/100g	1	14	38

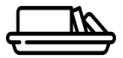
Hypothetical examples, with indicative scores and colour coding for illustrative purposes only.

Creating an overall score

Once a product has been scored across each of the five individual impact categories, we recommend combining these into a single score using the PEF weighting[1].

An overall score is easy for consumers to interpret and supports consumer behaviour change[2].

However, it should be noted that a single score means placing a subjective value on the relative importance of individual environmental impacts and no longer represent a planetary boundary.

Normalised Score				
				
/100g	PEF Weighting	Non-organic lettuce	Hard cheese (cows' milk)	Butter
Climate change	49%	1	14	38
Land use	18%	0.1	5	7
Water use	20%	2	1	10
Water quality (Phosphorus)	6%	4	32	77
Water quality (Nitrogen)	7%	0.2	4	8
Score	100%	1	10	27

Hypothetical examples, with indicative scores and colour coding for illustrative purposes only.

[1]PEF (Product Environmental Footprint) is a methodology developed by the EU designed to standardise the measurement of environmental performance using LCA. Available here.
[2]See a summary of our consumer research to date here

3 Presenting scores to consumers on a label

This section explains how the environmental impact scores can be converted into a label for consumers

RAG bandings - context

When presenting the overall environmental impact score for a product, our research[1] has shown that the use of red, amber and green (RAG) colours on a 5-point scale is better at helping consumers understand whether a product has a high, medium or low environmental impact.

[1]See pages 78 - 122 for consumer research findings and recommendations on the label.

Defining RAG bandings

We took the following approach to define the RAG bandings used for our consumer research:

1. Explored RAG bandings used in other schemes[1]
2. Worked with Anthesis and WRI to develop a recommended approach for environmental labelling in relation to planetary boundaries[2]
3. Reflected on our own consumer research[3] to inform RAG design

[1]See pages 142 -150 for more detail on other environmental labelling schemes
[2]See pages 30-36 for the planetary boundaries approach
[3]See Pages 78 – 122 for consumer research findings and recommendations on the label

RAG bandings – nutrition labelling

We set out to align with the methodology used to determine RAG bands on front-of-pack (FoP) nutrition labels because it is well established and widely accepted by industry and consumers. The two labelling approaches also share similar underlying principles, scoring food products against a daily allowance - Reference Intakes (nutrition) or Daily Planetary Limit[1] (environment).

Explanation[2]:

Numbers (Energy, Fat, Saturates, Sugars, Salt) displayed on the label typically relate to a specified **portion** of the product

Colours displayed on the label are determined by the amounts of fat, saturates, sugars and salt in **100g**/ml of the product

0-6	7-24	25+
≤6% of Reference Intake (RI), based on low cut offs for nutrition claims in EU legislation	>7% to ≤24% of RI	>25% of RI, or >30% RI per portion*

Example:

Each serving (150g) contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g:697kJ/167kcal

[1]Daily Planetary Limit refers to the daily per capita sustainable impact as defined on page 34

[2]See pages 172 - 173 for further detail on the criteria used to determine the RAG bands for FoP nutrition labelling

*additional criteria for portions >100g

Testing RAG bandings (1)

We applied the criteria used to determine RAG bands for nutrition labelling to a 5-band environmental label, but this approach was not suited to a label that displays a scale. The example below illustrates how this approach risks confusing consumers.

Explanation:

Environmental Impact Score (number or letter) relates to a specified **portion** of the product

Colours displayed on the label are determined by the daily planetary limit in **100g** of product

A 0-3	B 4-6	C 7-15	D 16-24	E 25+
0-3% of daily planetary limit per 100g	4-6% of daily planetary limit per 100g	7-15% of daily planetary limit per 100g	16-24% of daily planetary limit per 100g	>25% of daily planetary limit per 100g

Example:

The Environmental Impact Score relates to the portion size e.g., displayed as 18 (or D) for 2 sausages (114g serving).

The colour relates to the daily planetary limit per 100g e.g., displayed as amber as it's 14 (or C) per 100g.

The result is an Environmental Impact Score (18) that conflicts with the scale displayed on the label.

Testing RAG bandings (2)

To mitigate this, we explored an option to relate the Environmental Impact Score and the colour displayed on the label to the daily planetary limit per portion. This approach does not align with the criteria used to determine colours on FoP nutrition labels. The example below illustrates how it would be difficult for consumers to compare products where portion sizes are inconsistent using this approach.

Explanation:

The **Environmental Impact Score AND** the **colour** displayed on the label relate to a specified **portion** of the product

A 0-3	B 4-6	C 7-15	D 16-24	E 25+
0-3% of daily planetary limit per portion	4-6% of daily planetary limit per portion	7-15% of daily planetary limit per portion	16-24% of daily planetary limit per portion	≥25.1% of daily planetary limit per portion

Example:

The Environmental Impact Score **and colour** relates to the portion size e.g., displayed as 18 (or D) and light red for 2 sausages (114g serving).

Where portion sizes differ[1], e.g., 1/2 vs. 1/3 of pizza, it would be difficult for consumers to make a meaningful comparison. E.g., are the different scores due to a different portion size rather than the actual content of the product?

[1]In addition, products that are sold in different pack formats (e.g., crisps) could display a different score where portion sizes are not consistent.

Testing RAG bandings (3)

The criteria we used to determine RAG bands in our latest consumer research, apply the general principles used to determine colours on FoP nutrition labels, but the Environmental Impact Score displayed on the label relates to the daily planetary limit in 100g, and not per portion[1]. The example below illustrates how this approach enables a fairer comparison between products with different portion sizes, but the score may not always reflect the portion typically consumed.

Explanation:

The **Environmental Impact Score** **AND** the **colour** displayed on the label relate to daily planetary limit **per 100g**

A 0-3	B 4-6	C 7-15	D 16-24	E 25+
0-3% of daily planetary limit per 100g	4-6% of daily planetary limit per 100g	7-15% of daily planetary limit per 100g	16-24% of daily planetary limit per 100g	≥25.1% of daily planetary limit per 100g

Example:

The Environmental Impact Score and colour relate to the daily planetary limit per 100g e.g., displayed as 14 (or C) and amber.

This approach makes it easier for consumers to compare scores between products where portion sizes differ, but it is difficult to put this into context of a typical diet e.g., why does coffee have a high score when it is consumed in small quantity?

[1] **Numbers** (Energy, Fat, Saturates, Sugars, Salt) displayed on the FoP nutrition label can be provided per 100g/ml or on a per portion basis, but typically relate to a specified **portion** of the product.

RAG recommendations

Whilst we intend to align with the well-established approach to nutrition labelling and aligning with the principles could be a viable approach[1], we recommend further research is required to determine a RAG methodology that is robust for environmental labelling:

Use a 5-point RAG scale with bandings that relate to planetary boundaries.

Conduct additional research to ensure the criteria used to determine the RAG bandings are grounded in science and support behaviour change.

e.g., explore if there is sufficient colour differentiation within and between categories

[1]See pages 78 – 122 for the consumer research results

4 Supporting data to generate scores

This section outlines the options and recommended approach to underlying data for environmental labelling.

Supporting data

To generate scores, secondary data and supply chain specific data can be used. Informed by our guiding principles, we have considered two broad approaches that address the need for labelling that is inclusive and affordable whilst ensuring accuracy and continual improvement.

Representative impacts approach

Using **secondary data,** the environmental impact of a representative product life cycle in the UK can be generated.
Example: representative environmental impact of yellow bananas sold in the UK

- ✓ **Inclusive** and affordable for all organisations to use
- ✓ **Scalable** to cover a wide variety of products quickly
- ✓ **Pragmatic** as a starting point for organisations that do not yet have access to supply chain specific data
- × **Lack of specific data** may reduce ability to compare unique product impacts and reflect supply chain efficiencies

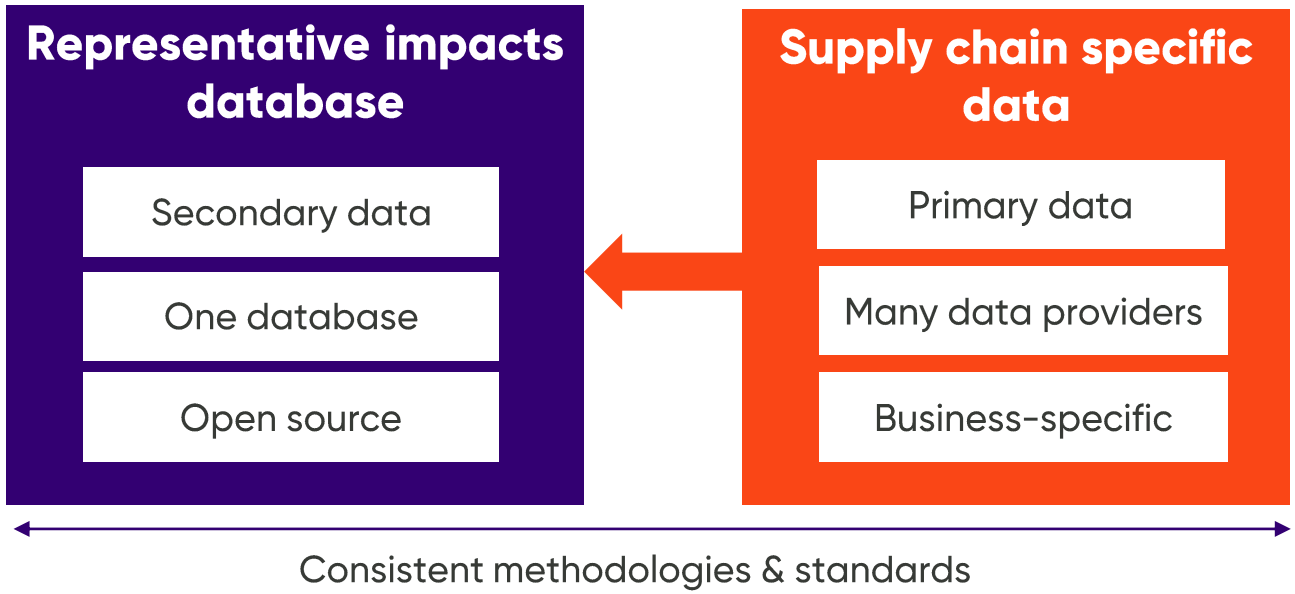
Supply chain specific approach

Using **supply chain specific data,** the environmental impact of a specific product life cycle can be generated.
Example: environmental impact of specific yellow bananas sold by Retailer X vs. Retailer Y

- ✓ Enables **business decisions** around supply chain **efficiency** and **sourcing**
- ✓ Supports the **development** of **representative impacts**
- × **Cost and complexity** of conducting supply chain specific calculations and data collection

Two complementary approaches

To meet our objectives, we recommend proceeding with both complementary approaches[1]. A database of representative impacts provides a starting point for the food industry that can be supplemented with supply chain specific data where available.

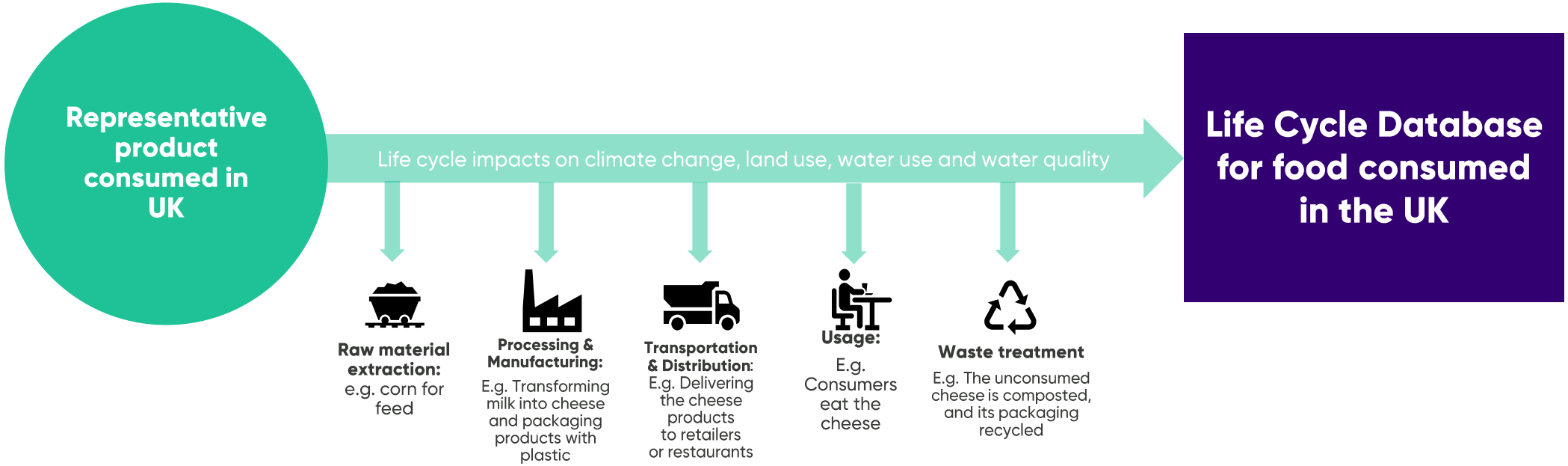


Supply chain specific data could be used to enhance the UK representative database.

  [1]This recommendation aligns with WRAP's conclusions: WRAP (2023), Banbury, Analysis of challenges for environmental reporting at product and organisation level, Prepared by H. Forbes, E. Trotman and M. Barker. Available here.

Developing a UK Life Cycle Database

Our research revealed existing Life Cycle Databases do not represent the UK food system. We recommend a new database is developed for the UK using 'best available' data from multiple sources. Given the number of food products in the UK food system (e.g., a retailer may stock over 50k products), we explored the opportunity for a database to store information on the impact of representative products consumed in the UK[1], rather than data for every unique product.



This is similar to the Agribalyse[2] blueprint for developing a National Food System Lifecycle Database and could provide a starting point for the UK food system.

[1]This includes imported products [2]More information on Agribalyse available here.

Developing representative impacts for products

To allow a rapid rollout of environmental labelling, these representative products could be defined at category or subcategory level in the database. Through extensive consultation with industry, the subcategories can be defined based on the following criteria:

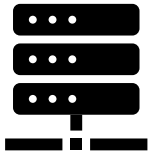
Significance

Is the difference in environmental impact significant enough between subcategories to warrant their creation?

Usefulness

Will consumers be able to recognise and appreciate the significance of the subcategory?

Supporting data

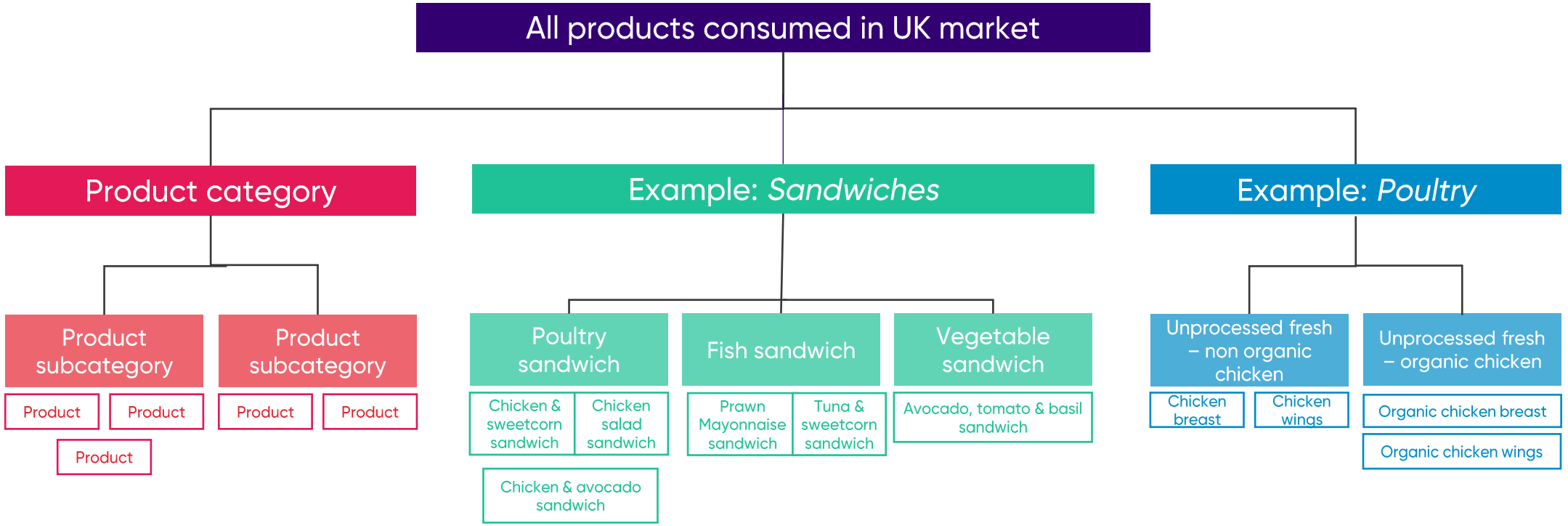


Is there sufficient quality data to accurately assess a subcategory as different from another?

More information on this protocol to define representative products is included in the methodology, available on IGD's website

Developing representative products

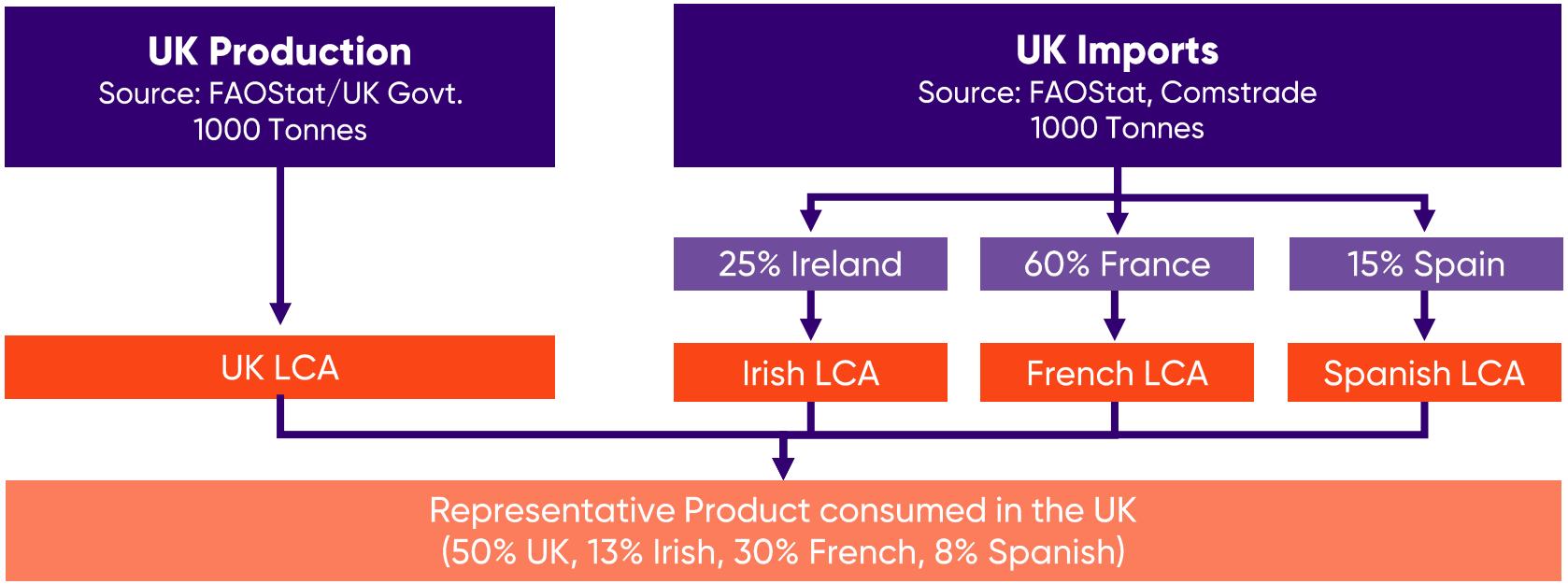
Based on these criteria and engagement with stakeholders in each category, the product categories and subcategories defined could capture all food consumed in the UK market.



Scoring products at category and subcategory level would enable environmental labels to scale quickly, allowing consumers to understand the impact of and compare a wide range of products.

Generating the environmental impact of representative products

For each product category and subcategory defined, its environmental impact can be calculated. This is based on a weighted average of sourcing locations and production systems taken from existing datasets.



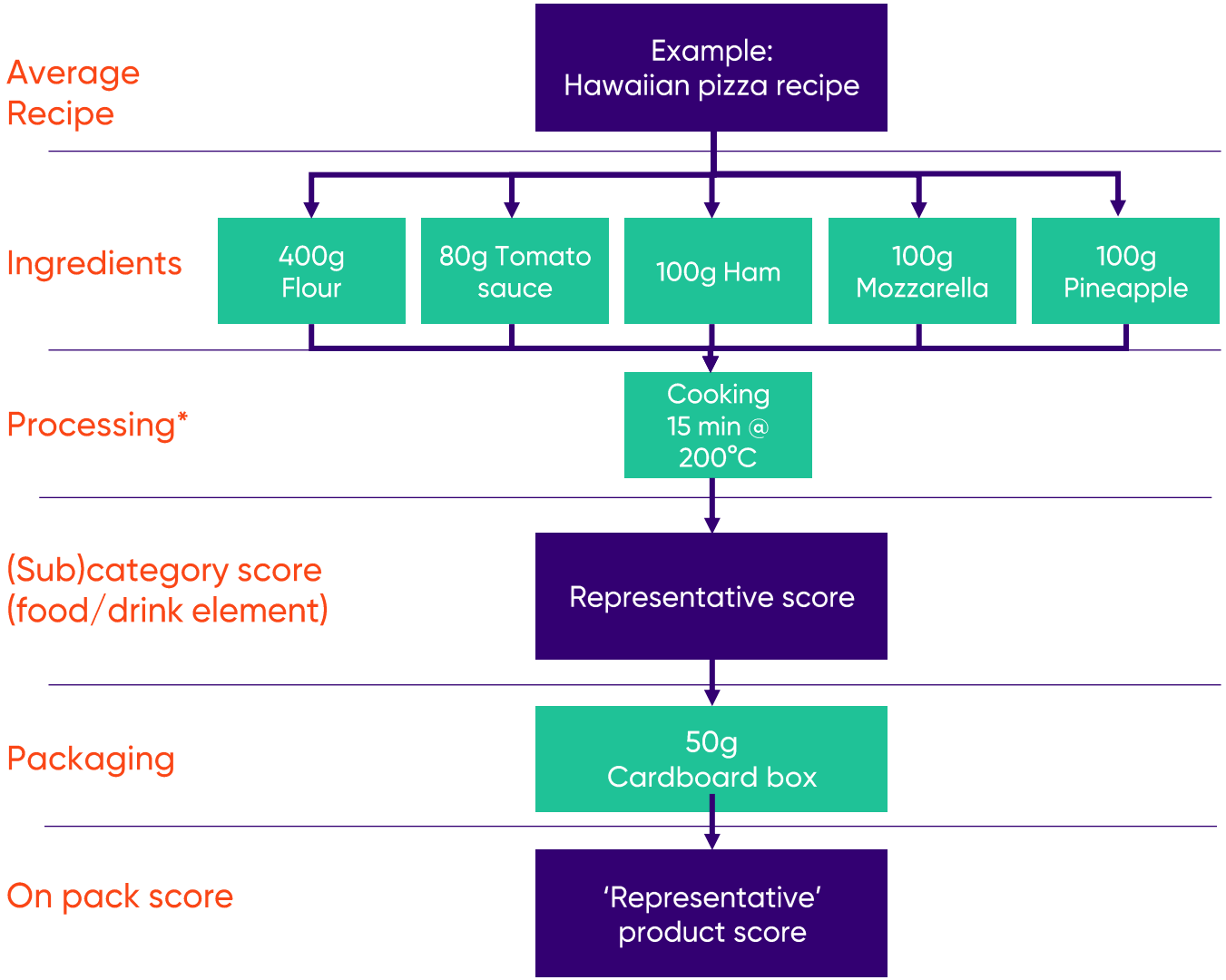
UK production and trade data is used to identify the provenance and lifecycle of a category or subcategory. Based on this, relevant lifecycle data is applied (e.g. 15% Spanish tomatoes consumed, 15% Spanish LCA data used). Where a data match is not available a decision tree has been developed to help identify proxy data.

Simple and complex products

We explored how the methodology can work for both simple and complex products.

The impact of simple products or ingredients can be calculated first, then 'combined' to create complex (multi-ingredient) product impacts.

Packaging impact is calculated at a product level rather than being defined at a subcategory level.



*Following the Agribalyse method, we assume that with the exception of drying, grinding and slaughter, these additional processes occur within the UK.

Stress-testing the approach to data

from IGD

Stress-testing the approach to data

Once the draft methodology was developed, we stress-tested the approach to data to answer two key questions:

- Are representative impacts viable?
- Along the continuum, when is data 'good enough' to put in front of consumers?

Key contributors to the stress-tests

The stress-tests were conducted by Anthesis and Mondra[1], with the support of a retailer subgroup and researchers at Oxford University. Feedback from stakeholders such as the BRC/Mondra Coalition Technical Alignment Group (TAG) and WRAP also informed this work and critiqued the results.

Anthesis and Mondra conducted the stress-tests.
Anthesis is a sustainability consultancy.
Mondra is an environmental product footprinting platform for the food system.

Anthesis
mondra

A group of four retailers supported the stress-tests by providing insights and data from their businesses.
Researchers at Oxford University contributed to the stress-tests by providing recipe data for representative products.

co-op
M&S EST. 1884
Sainsbury's
TESCO
UNIVERSITY OF OXFORD

The BRC/Mondra Coalition Technical Alignment Group is a group of organisations providing recommendations on standardised approaches to measuring environmental performance, including areas where lack of consensus exists.
Waste and Resources Action Programme is a climate action NGO working around the globe to tackle the causes of the climate crisis.
The TAG and WRAP assessed and critiqued the stress-tests.

BRC/Mondra Coalition Technical Alignment Group (TAG)

wrap

[1] Note our recommendations are not exclusive to one data provider. The views and opinions in this document do not necessarily represent those of Mondra Global Limited (Mondra). Mondra remains agnostic to all labelling initiatives at this time.

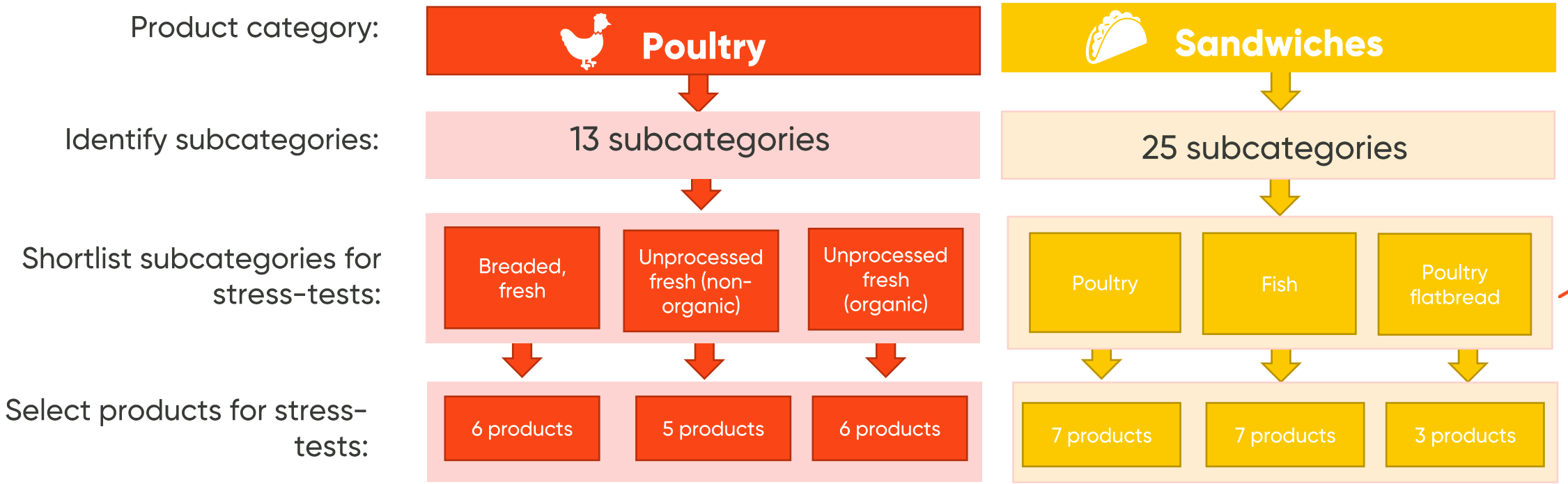
Defining 'good enough' data

With these organisations, we developed a set of success criteria that would enable us to define when data is 'good enough' to use for environmental labelling.

These criteria build on WRAP's data quality framework for Scope 3 reporting. We recommend that data used for product level environmental labelling has more rigorous criteria than data for company reporting.

Defining product categories and subcategories for the stress tests

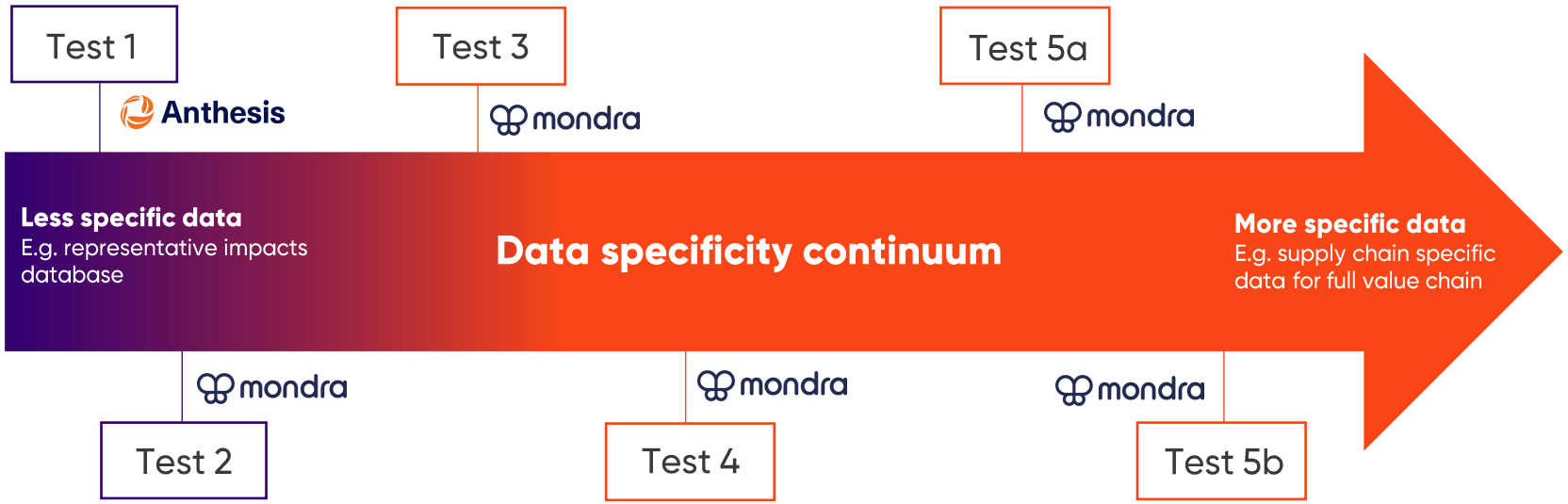
We selected one simple and one complex product category to conduct the stress-tests with. As per the protocol[1] outlined on page 49, we broke down these product categories into subcategories that warranted representative environmental impact scores.



[1] Note due to time and resource constraints, limited stakeholder engagement was conducted to develop the subcategories used as part of the stress-tests.

Stress-test method

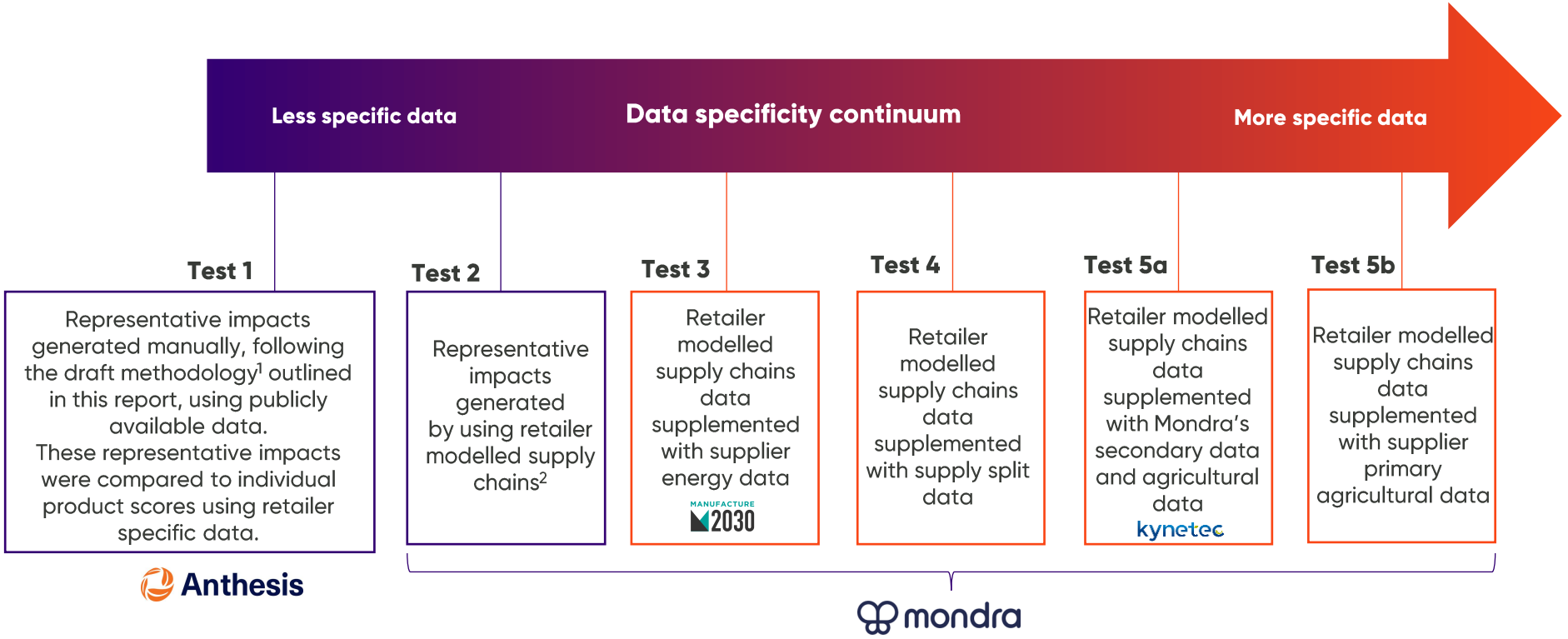
For each product identified, we worked with Mondra and Anthesis to generate environmental impact scores. We conducted multiple tests using data that ranged from representative impacts to more supply chain specific along the below continuum.



Note: Tests on the arrow are in indicative positions

Stress-test method – specific tests

The specific tests conducted with Anthesis and Mondra are outlined below. Results were assessed against the pre-defined success criteria to understand when data is 'good enough' to put in front of consumers.



[1]This approach combines combines open-source product recipe data into an average score.
[2]This approach combines retailer data into an average score. For more information on Mondra's approach please see here

Note: Tests on the arrow are in indicative positions

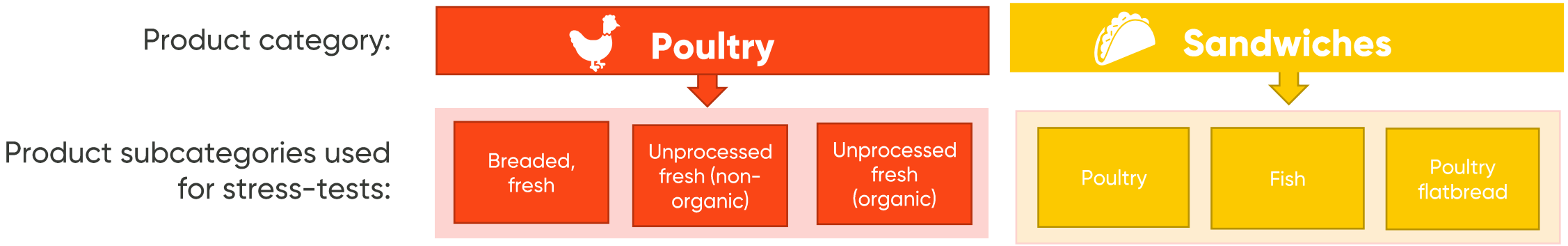
Representative impacts

This section outlines the results & findings from stress-tests on representative impacts as well as the recommended way forward.

from IGD

Generating representative environmental impact scores

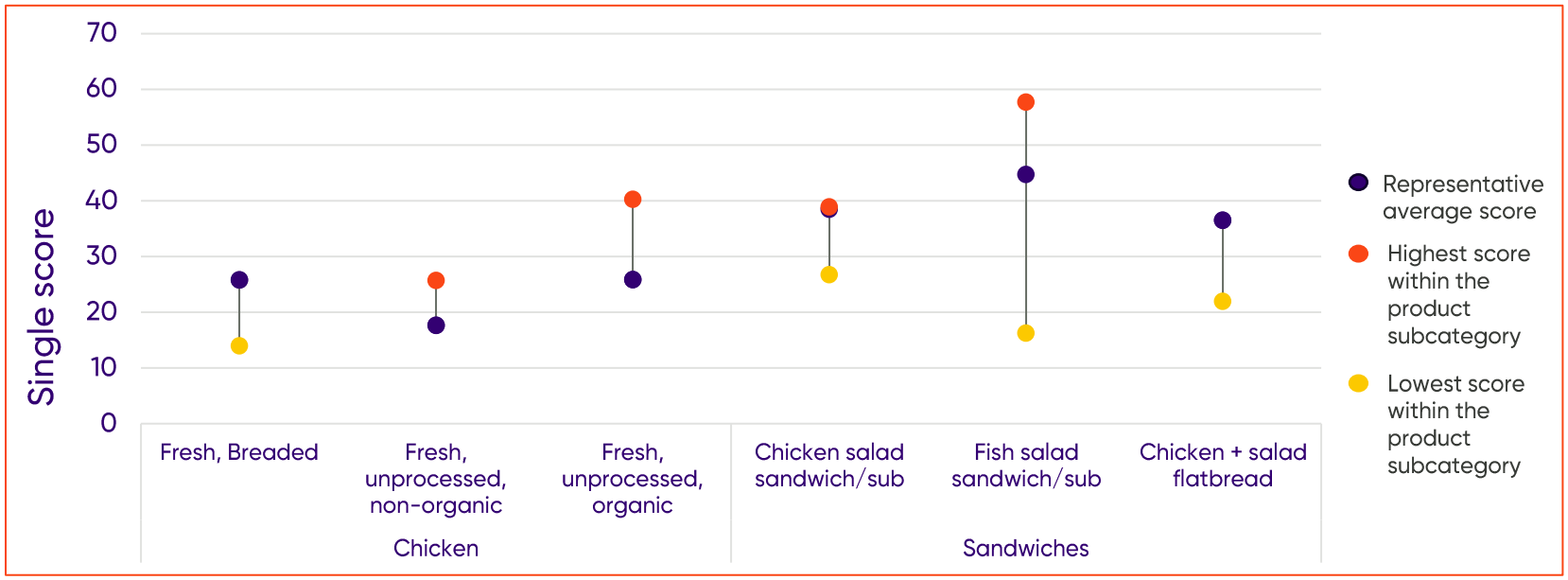
We generated[1] representative environmental impacts for six product subcategories using open-source data.



[1]The six product subcategories' scores were generated using open-source data. Retailer data available through Mondra currently uses impacts which are similar but incompatible with the water use and water quality planetary boundaries proposed in the methodology, as such the environmental impact score using retailer data could not be calculated.

Accuracy of representative environmental impact scores

We then compared the representative impacts to actual impacts calculated for a subset of retailer products[1]. We found the range of actual scores within a subcategory was too wide to be effectively represented by a single score.



Example:

The representative impact score for the fish sandwich subcategory was 45. When using retailer data, fish sandwich scores ranged from 58 to 16. This means the the subcategory as defined, is too broad and so includes too wide a range of scores to be effectively represented by a single average score.

The accuracy of environmental impacts could be improved by more narrowly defining the subcategories.

[1]For confidentiality purposes, we are unable to share each retailer's product specific scores. The subset of retailer scores used is not a representative sample of products within the subcategory

Assessment of representative impacts

We assessed the representative impacts[1] against the pre-defined success criteria. Whilst representative impacts provide a good starting point, they did not meet all success criteria for environmental labelling[2].

Data quality

- ✓ Background data sufficient to generate representative scores
- × Subcategories as defined were too broad and include too wide a range of scores to be effectively represented by a single average score - hence they did not meet all CMA principles

Comparability within and between product categories

- × Did not allow comparability due to broad impact range of subcategories defined
- ✓ Could allow comparability if accuracy is improved

Applicable to the 4 recommended impact categories

- ✓ Background data allowed the calculation of the 4 impacts

Suitable for simple and complex products

- ✓ Appear to work for simple and complex products
- • Further testing required due to the limited sample size of the stress tests

Inclusive, scalable and pragmatic

- ✓ Can provide an inclusive, scalable and pragmatic approach to UK food labelling

Support future improvement in data specificity

- ✓ Representative lifecycle is granular enough to enable replacement of representative data with supply chain specific data.

Representative of products sold in the UK

- • Sample size for stress-tests was limited to 3 retailers. Further testing required

Provide level of international harmonisation

- ✓ Underlying LCA method aligns with many international schemes
- × Planetary boundaries scoring system is unique

Suitable for retail and food service

- ✓ Product level representative impacts can work for retail
- × Product level impacts are impractical for food service
- • Opportunity for ingredient level representative impacts to work for food service, but further research required

  [1]For both the draft methodology and retailer modelled supply chain approaches [2]Note the assessment is based on evidence from small scale stress-test and may not reflect all product categories.

Feedback on representative impacts

The BRC/Mondra Coalition Technical Alignment Group provided feedback on the results of the stress-tests. Specifically, they suggested developing a database of representative impacts at ingredient level that could be used by businesses to develop labels for complex products, based on recipe data.

Feedback

- Not sufficient evidence to proceed with representative impacts for complex products
- Findings on product subcategories suggest a database of many thousand UK representative products would be needed that could be costly and time-consuming to develop.
- Data quality threshold would be required for representative impacts

Recommendations

Using an agreed methodology:

- Develop representative impacts for ingredients (e.g., flour or egg)
- Use product specific recipe data to calculate 'representative impacts' for complex products (e.g., chocolate cake)
- Incorporate additional life cycle stages (processing, use and end of life)

Considerations

- Recommendation aligns with work underway by BRC/Mondra coalition and FDTP
- Potential barrier to entry for smaller businesses
- Recommendation does not align with approach taken by other European countries such as France and the Netherlands

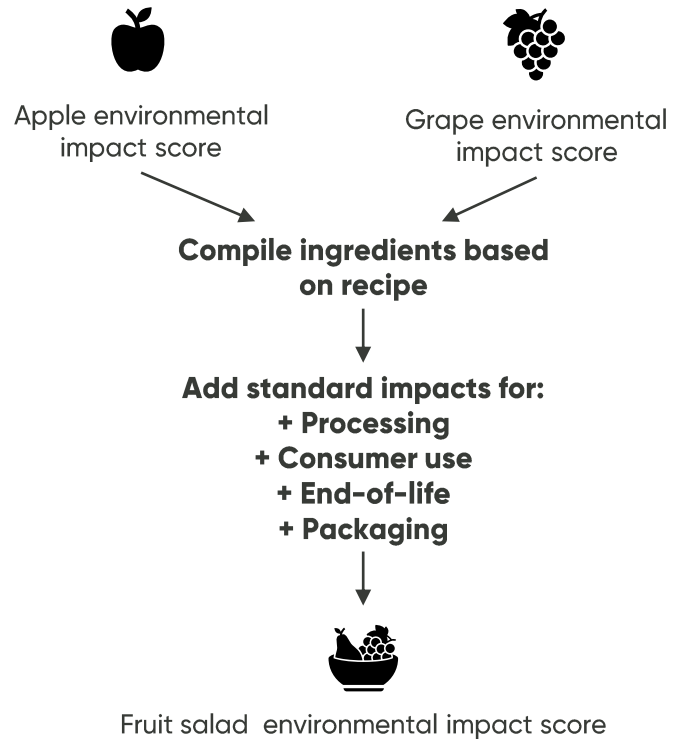
Building a representative impacts database

Based on feedback from the BRC/Mondra Coalition Technical Alignment Group, we explored two approaches outlined below. Whilst both approaches require the development of representative impacts for ingredients[1], they differ as to how complex product impacts are generated.

Product-level database

Composed of ingredients[1] and complex products.

Applying average recipes, the ingredient data would be compiled by a database provider to generate complex product impacts



Ingredient-level database

Composed of ingredients[1] only

Businesses would compile ingredient impacts for complex products using their specific recipes.

[1]Ingredients are defined as raw and simple processed products. Raw products are sold and consumed in their raw form with limited preparation or processing before consumption (e.g. cleaning, pealing, cutting). Examples include tomatoes, chicken breast. Simple processed products are mono-ingredient processed into non-raw formats. Examples include flour, sugar. Raw and simple processed products can be ingredients in complex, multi-ingredient products.

Feedback on the two approaches

For both approaches, we explored the pros, cons and key considerations outlined below. Our Steering Group were supportive of the ingredient-level database, so long as it is open-source.

Approach	Pros	Cons	Considerations
Product-level database	✓ Inclusive, scalable, pragmatic ✓ Centralised source of verified reference values	× Lack of specificity × Time and resource to develop, verify and maintain the database × Lack of clarity as who would own and fund it × Not consistent with approaches adopted across industry (e.g., BRC/Mondra)	Further research required to: • Reduce impact range of subcategories • Define the data quality threshold • Meet the CMA requirements • Ensure consistency with supply chain specific approach
Ingredient-level database	✓ Good starting point ✓ More specific scores for complex products ✓ Level of consistency with other industry initiatives adopted e.g., Scope 3, FDTP, Mondra/BRC coalition and nutrition labelling ✓ Opportunity to drive supply chain efficiencies and sourcing decisions through reformulation ✓ Less confusing for consumers where initial scores for complex products are more specific	× Time and resource for businesses to calculate impacts × Time and resource to develop, verify and maintain the database × Lack of clarity as who would own and fund it	Further research required to: • Develop consistent approach including data quality threshold, verification process and integration of supply chain data • Assess time & resources for smaller businesses • Develop ingredient subcategories Opportunity to develop new tools or verify existing tools and systems providers

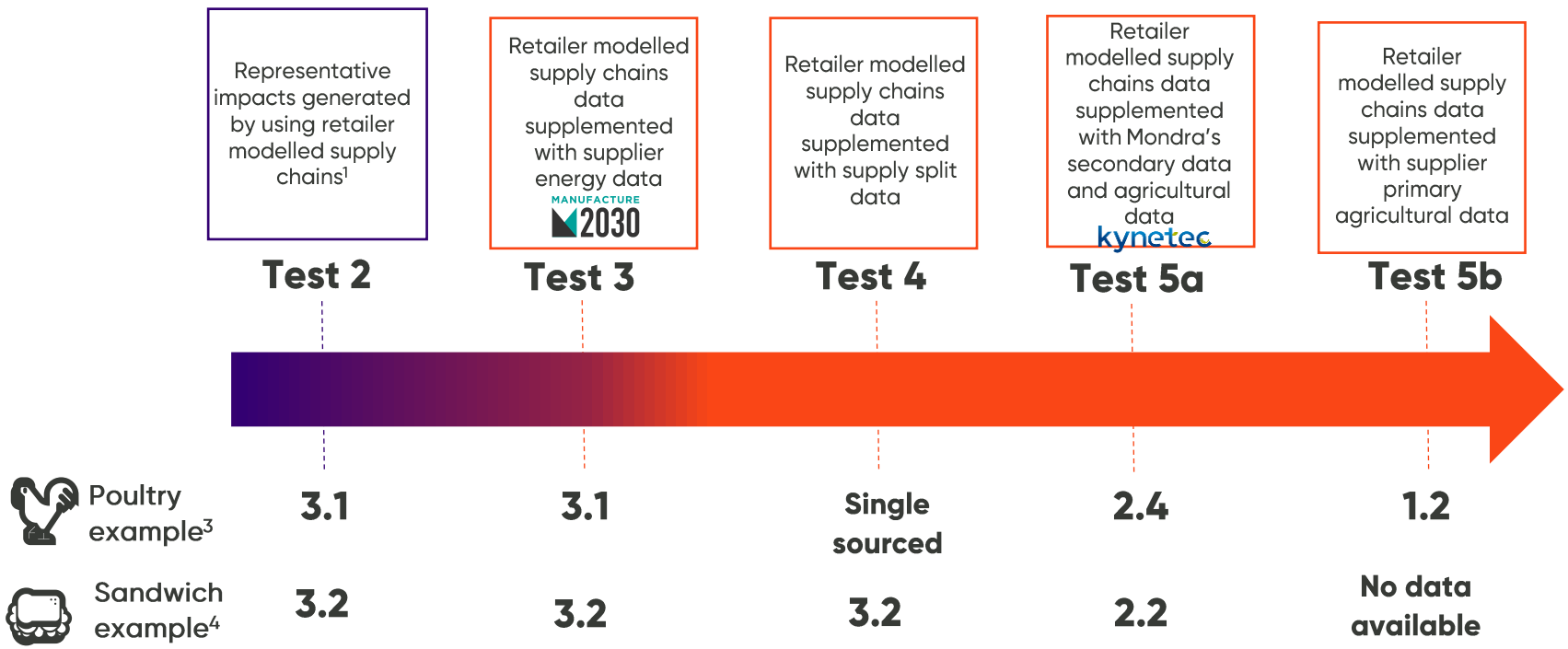
Supply chain specific data

This section outlines the results & findings from stress-tests on supply chain specific data as well as the recommended way forward.

from IGD

Data quality of supply chain specific data

We generated[1] supply chain specific scores and assessed the data quality using WRAP's data quality framework[2] where a score of 1 is 'very good' and 5 is 'unsuitable'. We found that integrating better farm data represents the most significant driver of data quality.



WRAP's Framework

Whilst the quality of foreground data cannot be assessed using WRAP's framework, **the framework is useful in tracking improvements in data quality** for background data through the addition of supply chain specific data.

A **score of 2.5 or lower** could be used as a suggested threshold for supply chain specific claims.

[1]The supply chain specific scores were generated by Mondra [2]WRAP's data quality framework can be accessed in appendix page 175

[3]Unprocessed Fresh > Non-organic (incl. free range) fresh chicken [4]Chicken + salad/sauce sandwich/sub

Note: Tests on the arrow are in indicative positions

Assessment of supply chain specific data

We assessed the supply chain specific scores against the pre-defined success criteria. Whilst supply chain specific data can increase the specificity of the scores, they did not pass all the success criteria for environmental labelling. For example, most supply chain specific data is carbon-only.

Data quality
- × Background data not sufficient

Comparability within and between product categories
- ✓ Allow comparability

Applicable to the 4 recommended impact categories
- × Most supply chain specific data is carbon-only.
- × Secondary data is still necessary to backfill gaps in supply chain specific data availability.

Suitable for simple and complex products
- ✓ Appear to work for simple and complex products

Inclusive, scalable and pragmatic
- × Inclusive
- ✓ Pragmatic[1]
- ✓ Scalable[1]

Support future improvement in data specificity
- ✓ Primary agricultural data is the biggest driver in data quality

Representative of products sold in the UK
- ✓ Supply chain specific data would be exactly representative of the UK market

Provide level of international harmonisation
- ✓ Underlying LCA method aligns with many international schemes
- × Planetary boundaries scoring system is unique

Suitable for retail and food service
- × Further research is required to understand the methodological challenges and possible solutions

  [1]depending on how data is collected and/or tool used

Recommendations for the approach to data

from IGD

Recommendations for the approach to data

Based on the current evidence and stakeholder feedback received, we recommend:

Develop an open-source representative impacts database at ingredient level

Proceed with supply chain specific data following the development of a standardised and consistent methodology

Underpinned by an agreed and consistent approach to:

- A standardised, specific LCA methodology for 4 impact categories (including a standardised approach to allocation)
- Standardised data quality threshold for foreground and background data
- A protocol for the integration of supply chain specific data
- Link to CMA requirements

Feedback on the methodology

from IGD

Feedback on the recommended methodology

Many stakeholders shared valuable feedback with us to inform the development of the recommended methodology. With Anthesis and WRI, we have reviewed and responded[1] to all feedback received and updated the methodology where appropriate.

1-2-1 calls

Methodology workshops

Emails

Position papers from businesses, NGOs and trade associations

Some examples of the technical feedback we received is presented on the next page. The detailed feedback and responses are available on IGD's website.

[1]Please note that our responses to the feedback were based on the knowledge we had at the time of writing this report. These responses may thus be subject to change as new scientific evidence becomes available.

Examples of feedback received on the recommended methodology

LCA approach

"The methodology should support a regenerative vision"

"A product could have a low score when a small quantity is produced but drastic environmental impacts if scaled beyond globally sustainable levels "

Planetary boundaries

"All products leading to an overshoot on any one of the boundaries should default to a poor environmental performance rating"

" We do not believe Planetary Boundary - LCA is mature enough to support an environmental labelling framework at this stage"

System boundaries

"The impact of feed supply chain needs to be included in LCA data"

"Including the consumer use stage is complex for other products than ready meals"

Packaging

"There are market failures with regards to waste and waste processing in the UK"

"We question the rationale for including packaging in the LCA given it contributes to quite a small extent, and variability in packaging is small compared to other lifecycle stages"

Allocation & functional unit

"Allocation is a complex problem to solve. We suggest testing complex products"

"The methodology should be on a 'per serve' basis"

  Detailed feedback and responses are available on IGD's website.

Examples of feedback received on the recommended methodology

Scoring & RAG bands

"We have concerns with the level of accuracy of using a 100-point scale"

"Consumers may not understand the unit of the scale and the concept of 'daily planetary limit' "

Impact indicators

"Land use is not a proxy for biodiversity"

"The methodology needs to assess blue, green and grey water use and availability"

"Have you considered the impact of not including metrics. i.e. no inclusion of biotoxicity/ pesticide use"

Product categories & subcategories

"Product origin should be a criteria for subcategorisation"

"It could be worth using the same food classification for both nutritional and environmental purposes"

Data quality

"Initial data may be old and unrepresentative"

"When drawing from multiple databases, how do you ensure data consistency?"

Governance

"The methodology should be reviewed on a frequent basis"

"It is crucial for data underpinning labelling to be publicly available and easy to access to allow for independent monitoring and verification (e.g. by using HESTIA)

  Detailed feedback and responses are available on IGD's website.

Summary of recommendations on the methodology & data

from IGD

Summary of recommendations – Methodology & data

1

Use an LCA-based approach covering climate change, water use, water quality and land use impact categories

2

Develop an open access UK database of representative environmental impacts at ingredient level

3

Develop a consistent methodology to generate supply chain specific scores and continually improve the representative database

4

Score products against planetary boundaries

5

Undertake further scientific research on RAG bandings

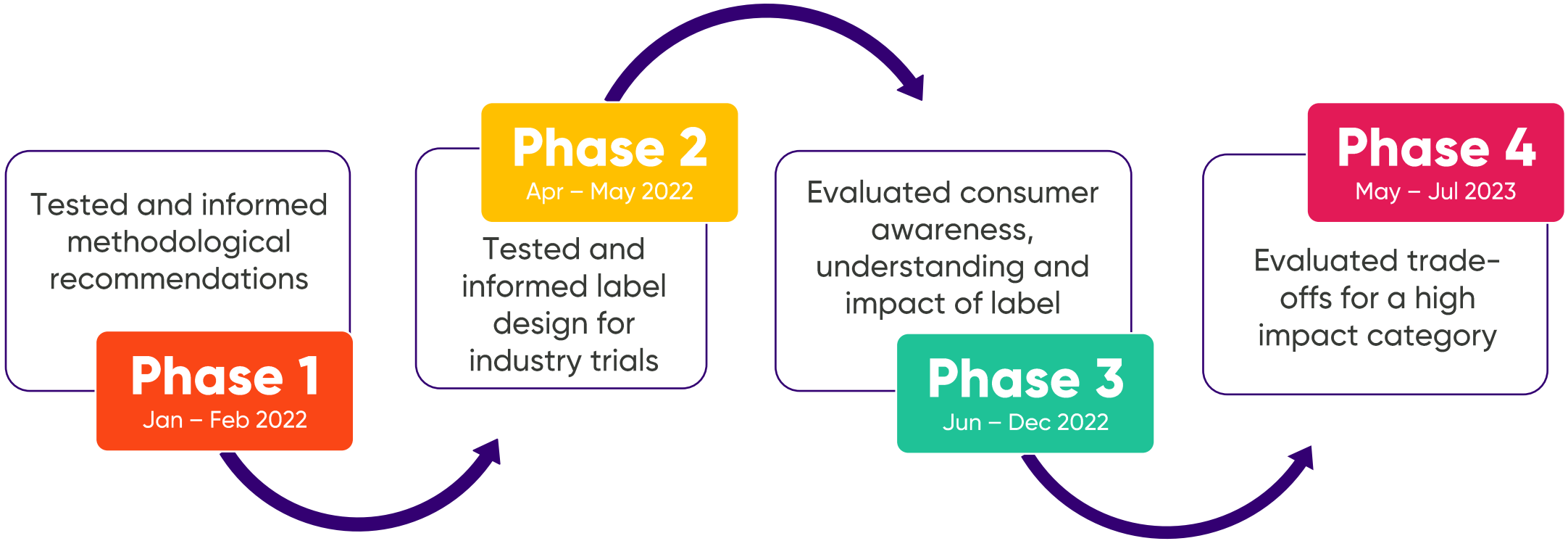
Informed by consumers

Introduction to consumer research

from IGD

Developing recommendations for the label

We have completed four phases of consumer research with the overall objective of exploring attitudes, understanding and preferences relating to environmental labelling to identify what an effective solution could look like.



Key contributors to the research

Our research was conducted by independent market research agencies Walnut and Savanta, in partnership with retailers in our Steering Group. Consultation with industry stakeholders also informed the design of our research.

Retailers in our Steering Group supported various phases of consumer research.

ASDA, Co-op, Morrisons, M&S EST. 1884, Sainsbury's, TESCO

Walnut are the human understanding agency blending research solutions neuro, behavioural, data sciences and semiotics. Walnut supported with the research across Phases 1-3.

WALNUT

Savanta are a data, market research and advisory company who specialise in informing and inspiring clients through powerful data, empowering technology and high-impact consulting. Savanta supported with the research in Phase 4.

Savanta

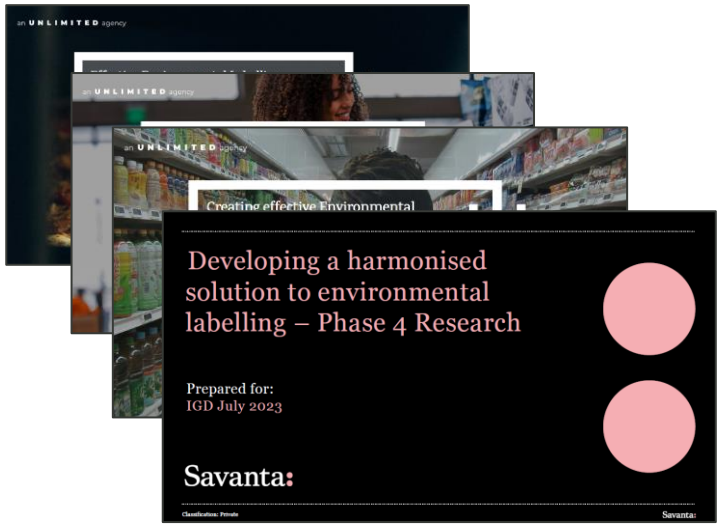
Scope of recommendations for the label

Working with these organisations, we have built on existing studies as well as the IGD ShopperVista research to develop recommendations across the areas below.

Summary of our work

Our recommendations and key considerations are outlined in the pages below. The 4 phases of consumer research that have been conducted build on each other, and for each we will cover:

- Research objectives
- Research method
- Summary of research findings
- Headline research findings



The full consumer research results are available on request at environmentallabelling@igd.com

Phase 1

Consumer research objectives

- To test the scientific recommendations for the environmental label (including the four indicators)
- To provide recommendations for the label design

Phase 1

Research method

To achieve our Phase 1 research objectives, we used three methods:

15 qualitative online depth interviews with consumers

Behavioural science techniques

- We used these to provide an in-depth understanding of why consumers behave the way they do, say what they say and feel the way they do when it comes to environmental labelling

Semiotics analysis

- We used semiotics to develop engaging and effective communications, messaging, visual elements and iconography. The analysis helped shape the language and images for the label. It also helped optimise comprehension and understanding and ensure better differentiation for the environmental labelling.

Phase 1 Summary of research findings

Appeal

There is support for environmental labelling on food products

Understanding

Most consumers accepted the four recommended indicators represented the greatest environment impact of the food system

Some indicators are not intuitive and most lack clarity of meaning

The concept of a daily allowance was seen to be unrealistic for higher scoring products

Impact on behaviour

There is concern that label scoring may nudge choice towards intensively produced products and away from higher welfare products

Label design

There is support for label design that included red, amber and green on a 5-point scale using symbols

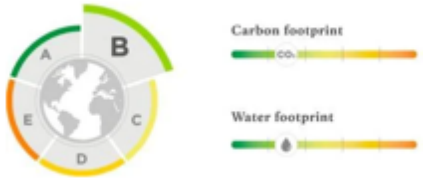
There is support for label design that is distinctive from other labels (e.g. the nutritional label)

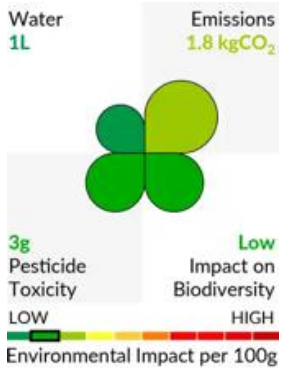
  Source: Phase 1 consumer research

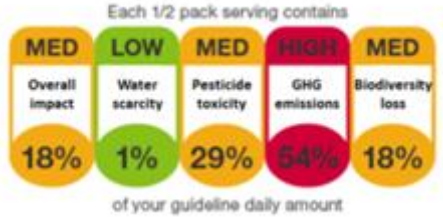
Phase 1

Headline research findings (1)

Some of the key research findings around the label design were based on our testing of existing environmental labels with consumers. We gathered feedback on the design, colours and iconography used:







These examples show some of the labels used as stimulus during the research

- Simplicity and symbolism has visual impact
- 5-point scale fits with people's ability to gauge good from bad
- A picture of the earth may have symbolic potential
- Preference for colour rather than black and white
- Traffic lights welcomed
- Important for environmental label to be distinctive from nutritional label
- Avoid using technical and scientific terms e.g. CO_2

Source: Phase 1 consumer research

Phase 1

Headline research findings (2)

We also gained key insight into consumer understanding of the four environmental impact indicators. Most consumers accepted that they represented the greatest environmental impact on the food system.

Climate Change

Reference to greenhouse gases such as carbon and methane. The impact upon weather may help people to understand what this means.

Land Use

A few assume this is about deforestation initially, although not all. Some are unsure, but most accept the description of species loss and nature.

Water Use

Initial surprise, followed by understanding of the water used in food production. Some had not seen water use as an issue for the UK.

Water Quality

Preference for term 'Water quality' rather than 'Water Pollution'. People associate water pollution with sewage or plastics in water .

  Source: Phase 1 consumer research

Phase 2

Consumer research objective

- To test various prototype labels across different categories to inform the design for industry trials

Phase 2

Research method

Building on our Phase 1 consumer research findings, we used three different methods to achieve our Phase 2 research objective.

10 minutes online survey of over a thousand (nationally representative) respondents

Reaction time testing techniques to measure emotional conviction

1-day online community

- We conducted this with 11 of the 15 participants that took part in the phase 1 consumer research
- The participants spent 30 minutes responding to activities on an online platform. These focused on preference and understanding, response to design and understanding; and the need for supporting communications to aid understanding

Phase 2 Research method – *label prototypes*

To feed into the research method, we created six different prototype label designs. These were developed based on the results from our Phase 1 consumer research and input from the Steering Group.

Prototype 1

A-E
Lettering system

Prototype 2

0-100

Scale normalised and compressed so there is a maximum score of 100. Colour bands evenly distributed.

Prototype 3

0->66
Scale has not been normalised and colour bands are not evenly distributed so they reflect planetary boundaries. There is no maximum score so a high scoring product could show a score of e.g. 224

Prototype 4

0->66
Including RAG colours for each of the four indicators

Prototype 5

0-100
Including scores and RAG colours for each of the four indicators

Prototype 6

0->66
Including scores and RAG colours for each of the four indicators

Phase 2 Research method – *product categories*

After the six prototype labels were developed, we tested them across six product categories using indicative data.

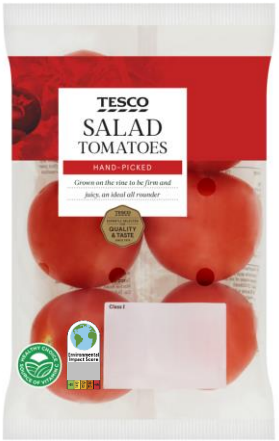
Chicken salad sandwich

Chicken breast fillets

Meat-free mince

Steak mince

Semi-skimmed milk



Salad tomatoes

Note, label designs and scores were used for the purposes of Phase 2 consumer research only. Score were based on indicative data and subject to change, hence they are not shown here.

Phase 2 Summary of research findings

Appeal

All prototype labels were something people looked at and found appealing

Understanding

Prototypes were understood in terms of whether the products had a high or low environmental impact

Colour is most important

Comprehension of the scoring is mostly driven by the colour rather than numbers or letters

Label preference

Simplicity is key

No benefit to understanding by including detailed breakdown of scores for each indicator

Normalised score prototypes A-E and 0-100 perceived to be easier to understand

Impact on behaviour

Prototype 3 had greatest potential to drive behaviour change[1]

A high score of 224 received attention and surprise

Label design

All prototype label designs were liked

The globe positions the label distinctively as having an environmental impact

5-point scale preferred

Communications

Requirement for an impactful communications campaign

Need for positive messages to help consumers achieve positive change and nudge behaviour

Need for supporting information in-store, on the packaging and on QR codes

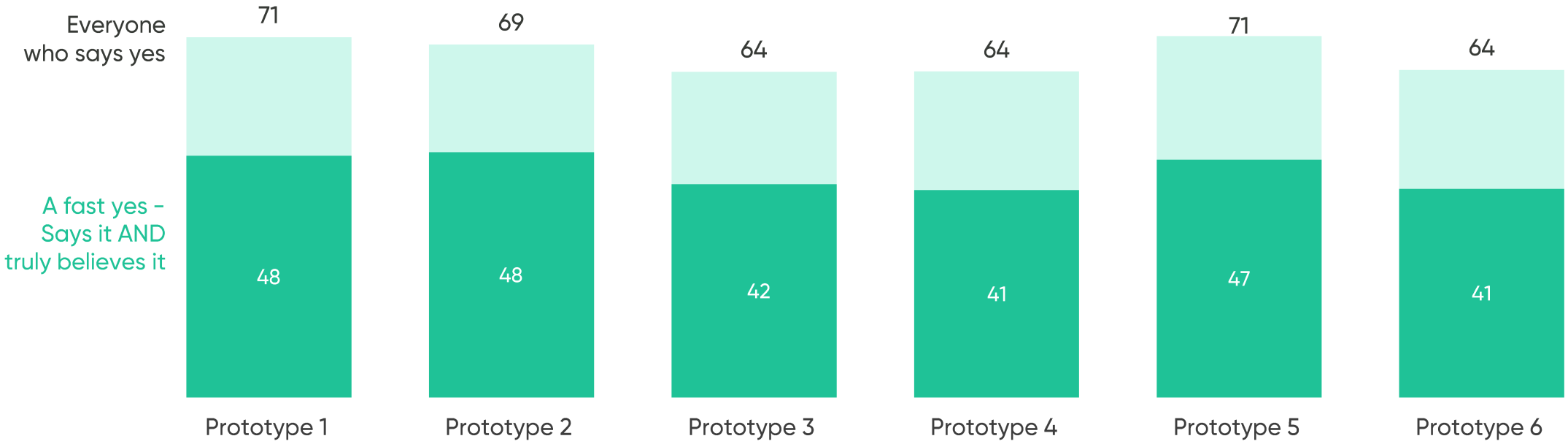
Source: Phase 2 consumer research

[1]The granularity of scores and higher differentiation not only between bands, but also within bands meant that prototype 3 had the greatest potential to influence change

Phase 2 Headline research findings (1)

One of the key findings from our research was that the A-E label (Prototype 1) and the 0-100 label (Prototypes 2 or 5) were easier to understand

Emotional Conviction: Has an environmental label that's **easy to understand (%) – when looking at sandwich**



Source: Phase 2 consumer research

  Q. Please indicate whether you agree that the statement shown applies to the product you see here. Has an environmental label that is easy to understand? Base: 6774 (1129 respondents looking at 6 prototypes)

Phase 2

Headline research findings (2)

We also found the 0->66 label (Prototype 3) with high numerical scores had most potential to drive consumer behaviour change.

Driving change – which would you be most likely to choose: **Beef mince vs Plant mince**

Current intentions towards product *(% definitely/probably buy)*	Prototype 1	Prototype 2	Prototype 3	Prototype 4	Prototype 5	Prototype 6
Plant mince	34	40	36	42*	37	36	34
Steak mince	64	48	55	40	49	47	53

*42% would choose plant mince when shown the product with prototype 3 label on compared to 34% who stated they would choose the product without the environmental label shown
40% would choose steak mince when shown the product with prototype 3 label compared to 64% who stated they would choose the product without the environmental label shown

Source: Phase 2 consumer research

Q. Between the two products, which would you be most likely to choose? Base: (188 per cell)

Phase 2

Headline research findings (3)

Another key finding from our research identified the need for an impactful communications campaign. Environmental labelling is unlikely to be effective in driving behavioural change without support in these areas.

Gain attention

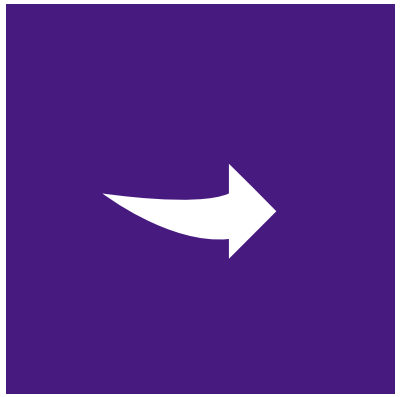
Impactful campaign
Include surprising facts
Use in-store and media channels

Build knowledge

Include meaning behind indicators
Explain how to achieve an environmentally sustainable diet

Drive positive emotions

Provide a message of hope
Show that this will result in a positive impact on the environment



Nudge behaviour

Provide easy product swap suggestions i.e. to products with a lower environmental score

Source: Phase 2 consumer research

Phase 3

Consumer research objectives

- To test awareness and understanding of the label
- To test the impact of point-of-sale communications

Phase 3

Research method

To achieve our Phase 3 consumer research objectives, we used three approaches including innovative testing in virtual reality retailer stores. These methods built on those used in Phase 1 and Phase 2 research.

2,600 respondents conducting an online survey

- Tesco, Sainsbury's , Morrisons and Co-op shoppers *

Virtual Reality shop (see next page)

Followed by a 15-minute online post-shop survey

*Tesco, Sainsbury's Morrisons and Co-op provided support for this phase of the research

Phase 3

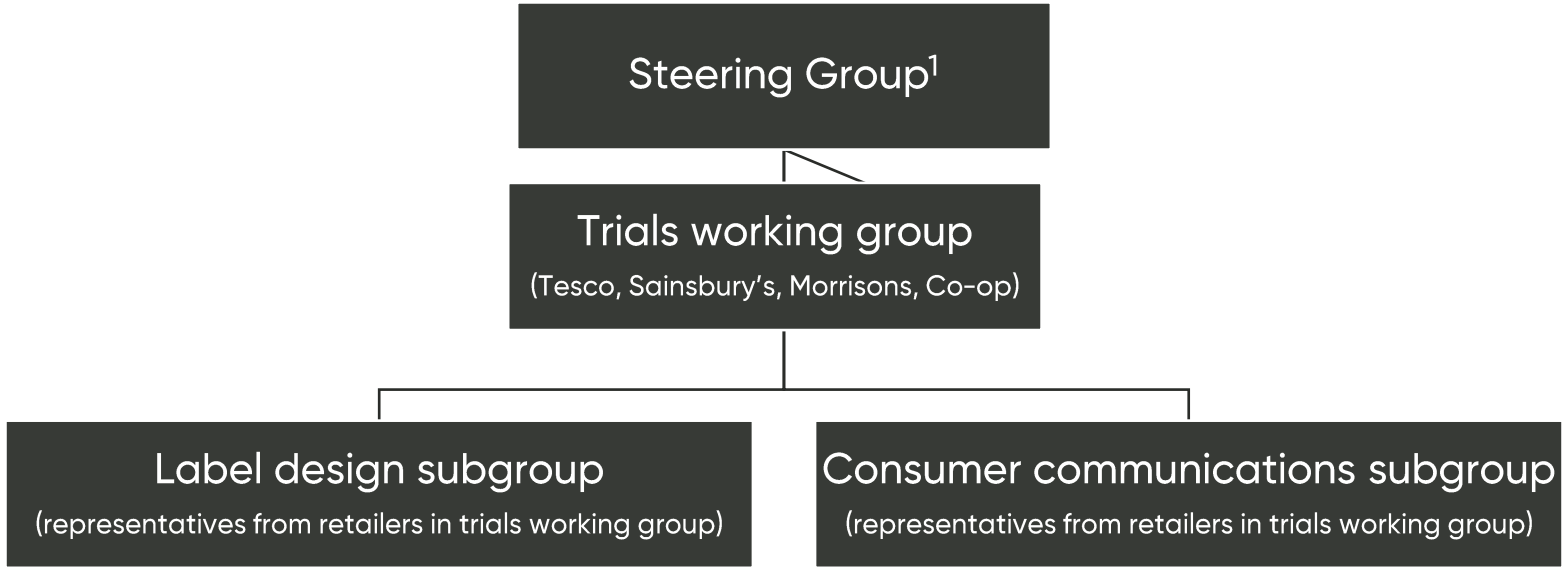
Research method – *virtual reality shop*

We developed a virtual reality shop environment and tailored it to each retailer taking part in the trials.

- Respondents were asked to buy a sandwich at lunchtime by visiting the bespoke virtual reality environment
- All sandwich options included packaging with an environmental label
- While respondents conducted the virtual reality shop, behavioural data was collected including dwell time at fixture, interactions with products and conversion to purchase

Phase 3 Research method – *stimulus development*

To build a consistent virtual reality shop environment, we convened two subgroups to agree label prototypes and point-of-sale communications to test in Phase 3.



The subgroups helped to develop a consistent package of inputs to be used as part of the virtual reality consumer research including: label design, point-of-sale communications, product information, and images of indicative environmental impact scores on product packaging.

[1]See make up of Steering Group on page 12

Phase 3 Research method – *label prototypes*

Based on our results from Phase 1 and Phase 2 consumer research, working with the label design subgroup, we agreed five label designs.

Prototype 1

A-E
Lettering system

Prototype 2

0-100+
Scale has not been normalised. Products that score above 100 would be shown as '100+'

Prototype 3

0-67+
Scale has not been normalised. Products that scored above 67 would show their actual score e.g. 124

Prototype 4

0-67+
Scale with scoring for the four indicators

Prototype 5

0-67+
Scale without the globe image

Phase 3 Research method – *consumer communications*

Working with the consumer communications subgroup, we agreed on consistent designs for communications at point-of-sale (POS) to test in the virtual reality environment.

We agreed key principles with the subgroup:

- Need to be clear and uncomplicated to build trust, aid understanding and inform product choice
- Need for consistency across different retailers
- Include an image of the environmental label
- Include the RAG scale showing what is high and low
- Include a headline call to action encouraging consumers to make a positive difference

Phase 3 Summary of research findings

Appeal

Clear desire for an environmental label on food and grocery products

77% say it is important to have an environmental label on pack

68% say it would help them make more environmentally friendly choices

Awareness

Label awareness is relatively low

31% unprompted awareness and 44% prompted awareness

57% of those aware of the label say it influenced choice of sandwich

Understanding

A-E label perceived as easiest to understand

Over two thirds believed the label was easy to understand. Prototype 1 (letters) was significantly easier to understand than prototypes 2 and 3 (numbers)

Label preference

Preference for wording on the label stating "it is typical for a product of this type" for a label denoting average data

Preference for wording on the label stating "calculated specifically for this product" for a label denoting data specific to the product

Label design

Three in four believed the image of the globe helps to show the label is about the environment[1]

Seven in ten liked the label design[1]

Seven in ten agreed that the label was easy to read[1]

Communications

Point-of-sale was liked and delivered benefits

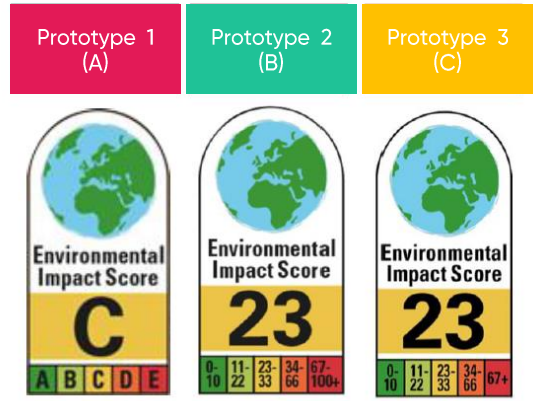
Over two thirds remembered seeing the point of sale when prompted. Around half agreed that it influenced their purchase

It was seen as easy to understand and was liked

  Source: Phase 3 consumer research [1]For prototypes 1-3

Phase 3 Headline research findings (1)

One of the key findings from our Phase 3 consumer research was that the A-E label (Prototype 1) was easier to understand and had less confusion with the nutrition label.



Source: Phase 3 consumer research

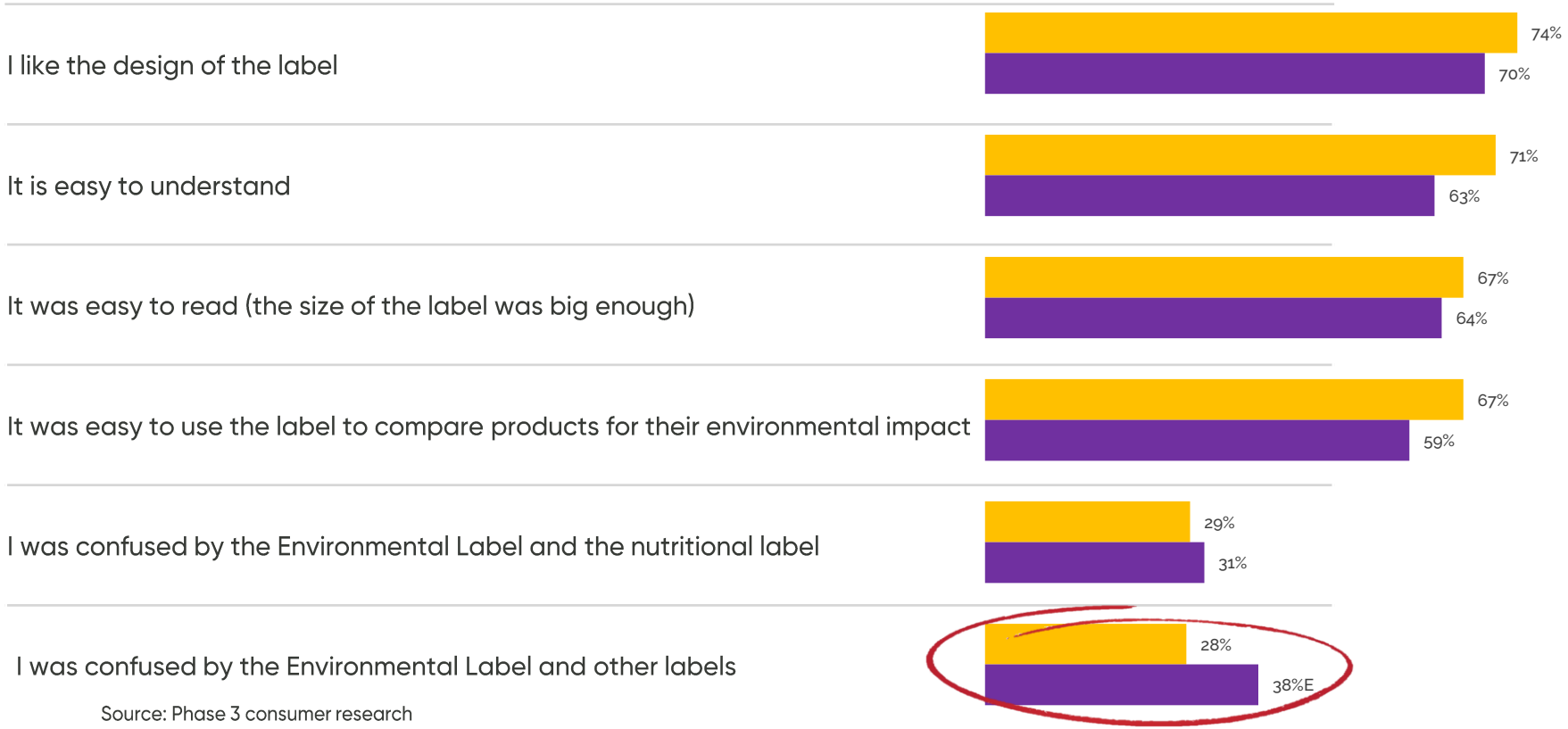
Q. To what extent do you agree or disagree with the following statements about the environmental label? Base: Prototype 1 (600), Prototype 2 (603), Prototype 3 (800) A/B/C= Indicates significant difference at 95% confidence level

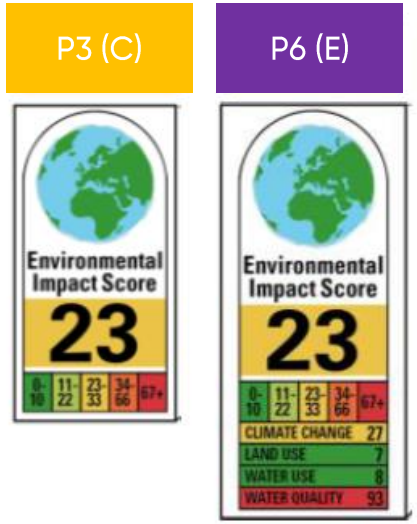
Phase 3

Headline research findings (2)

We also found the extra information about the environmental indicators on Prototype 6 caused more confusion with other labels.

Perceptions about Environmental Label – % agree strongly/slightly





Source: Phase 3 consumer research

Q. To what extent do you agree or disagree with the following statements about the environmental label? Base: Prototype 3 (200), Prototype 6 (200)

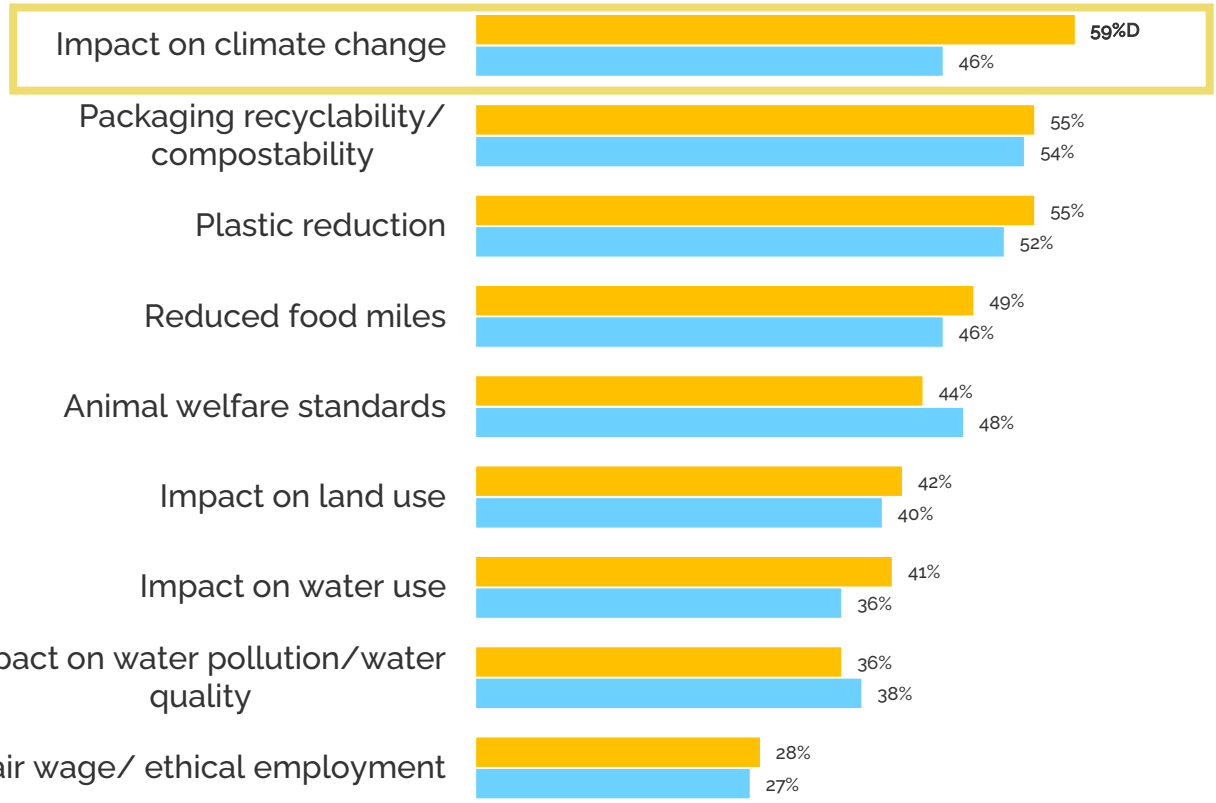
A-E= Indicates significant difference at 95% confidence level

Phase 3

Headline research findings (3)

The globe on the label design helped highlight to consumers that the score shows an impact on the environment, particularly climate change.

I believe the Environmental Impact score includes calculations for…



Prototype 3 with globe (C)

Prototype 3 without globe (D)

  Source: Phase 3 consumer research

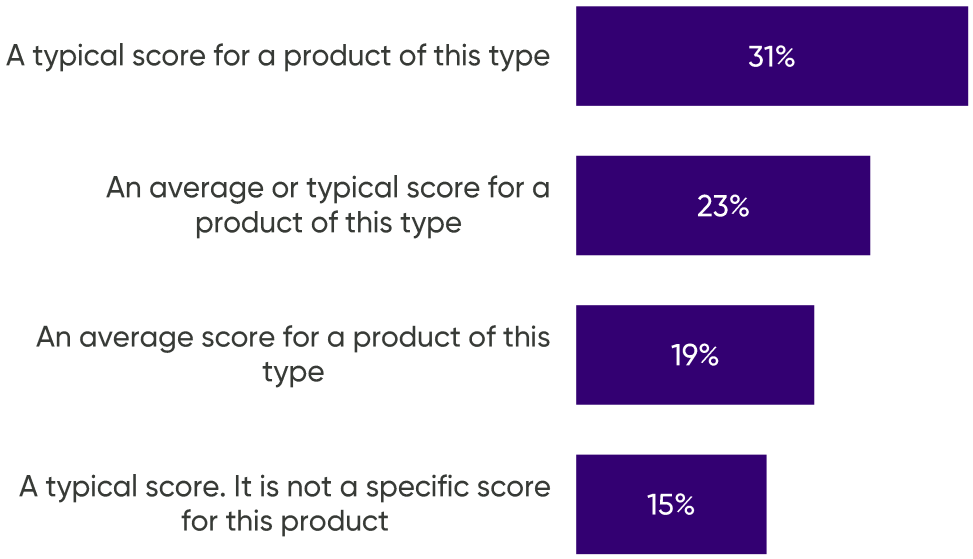
Q. Which of the following do you think are included in the calculations for the environmental impact score? Base: 603 C/D= Indicates significant difference at 95% confidence level

Phase 3

Headline research findings (4)

Our research also tested wording that could appear on the environmental label to ensure consumers were clear that the score was either average data or specific to that product. They had a clear preference:

(Current wording) The Environmental Impact Score is...



(Future wording) The Environmental Impact Score is...

  Source: Phase 3 consumer research Q. Which one of these statements best explains this? Base: 2,600

Phase 4

Consumer research objectives

- To understand how consumers trade-off different product choice factors when considering the environmental label
- To test the appeal of different prototype labels for a higher impact category
- To identify any areas of confusion and identify ways to mitigate these

Phase 4

Research method

We used a multi-method approach to achieve the objectives of our Phase 4 consumer research. Different to previous phases, a conjoint method was introduced to test trade-offs.

- 15-minute online survey of 3,231 (nationally representative) respondents
- Conjoint trade off research
- Reaction time testing
- 5-day online community x 30 participants
- 6 online focus groups

Phase 4 Research method – *stimulus development*

Based on our results from Phase 1, Phase 2 and Phase 3 consumer research, the Steering Group and our new consumer research subgroup agreed the label prototypes to use in Phase 4.

[1]See make up of Steering Group on page 12
[2]Tesco, Sainsbury's Morrisons and Co-op provided support for this phase of the research

Phase 4 Research method – *label prototypes*

We agreed to test multiple prototype label designs including a label design without the globe. The label with scoring for the four indicators was not taken forward into our Phase 4 research.

Prototype 1

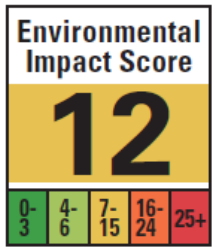
A-E
Lettering system

Prototype 2

0-100+
Scale has not been normalised. Products that score above 100 would be shown as "100+

Prototype 3

0-25
Scale has not been normalised. Products that scored above 25 would show their actual score e.g. 33



Prototype 4

0-25+– Scale without the globe image

Each respondent only saw one version of the label. Respondents also saw products without the environmental label.
The RAG bandings agreed were different to previous research phases due to an updated scoring methodology. See pages 36 - 43 for more detail.

Phase 4

Research method – *product category*

With our consumer research subgroup, we also agreed to test a high impact category (sausages) in phase 4 consumer research.

1. We reviewed anticipated high impact categories including ready meal curry, diced meat, sausages and mince.

2. Sausages were chosen as this category has a high market penetration. Sausages has well-established meat-free options and the different options within the category are relatively easy to substitute within the same recipe.

3. We conducted an audit of all sausage products. Nine specific products were selected to ensure that a range of different labelling options and environmental impact scores could be tested (see next page).

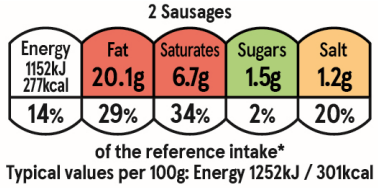
Phase 4 Research method – *conjoint*

We used a conjoint trade-off method that was set up via the following process:

Respondents to the online survey were put into a simulated shopping environment where they were tasked with making a purchase of sausages from selected options

Q. Please imagine you are looking to purchase some sausages. Below are the options which are available to you. Please select which of the options you would be most likely to buy:

The nutritional label for each product was always shown on pack



Other labels as shown were added and taken off packs during the conjoint exercise

To isolate the impact of the different pack elements, product pack images were created as shown. These were based on real products removing all imagery and other factors such as brand and price.

Phase 4 Research method – *product scores*

We applied a range of environmental scores for each product tested. This enabled us to test a range of scenarios and future-proof results in light of potential changes to methodology, sourcing and formulation of products.

Product	Indicative environmental impact scores			'Alternative' lower score	'Alternative' higher score
	Prototype 1 (A-E)	Prototype 2 (0-100+)	Prototype 3 (0-25+)		
Plant-based sausages	C	9	9	A/3 B / 6	D / 17
Pork sausages	C	12	12	B / 6	D / 17
Outdoor bred pork sausages	C	13	13	B / 6	D / 17
Reduced fat pork sausages	C	13	13	B / 6	D / 17
Chicken sausages	C	14	14	B / 6	D / 17
Meat & vegetable sausages	C	15	15	B/6	D/17
Turkey sausages	D	17	17	C / 14	E / 33
Organic pork sausages	D	21	21	C / 14	E / 33
Beef sausages	E	33	33	D / 21	N/A

The current score was shown as well as scores that were one band up and one band down, using indicative data. Plant-based also tested two levels up and down to future proof results against further product development.

Phase 4 Summary of research findings

Appeal

Environmental label is welcomed

81% say it is a good idea

69% say it would help them make more environmentally friendly choices

61% say it would help them decide what to buy

Understanding

Areas of ambiguity rather than confusion identified

Surprise about scoring i.e. organic, higher welfare and meat free sausages did not have better environmental impact scores

Limited confusion between nutrition and environmental label (using prototypes 2-4)

Lack of understanding on the scoring and what indicators are included in the overall score

Label preference

A-E label preferred

A-E was better at encouraging consumers to switch away from higher scoring sausages

A-E was significantly easier to understand than other prototypes

A-E was less confusing and less distracting

Some support for numerical prototypes, though more complex and harder to read

Prototype 4 was least preferred

Impact on behaviour

With current scoring, the environmental label has a limited impact on product choice when considering a single category of sausages

Improving the environmental impact score has potential to increase product preference

Label design

5-point scale was most preferred

Some support for 3-point scale

Low level of support for 7-point scale

Communications

Impactful communications campaign required to include:

How the score is calculated

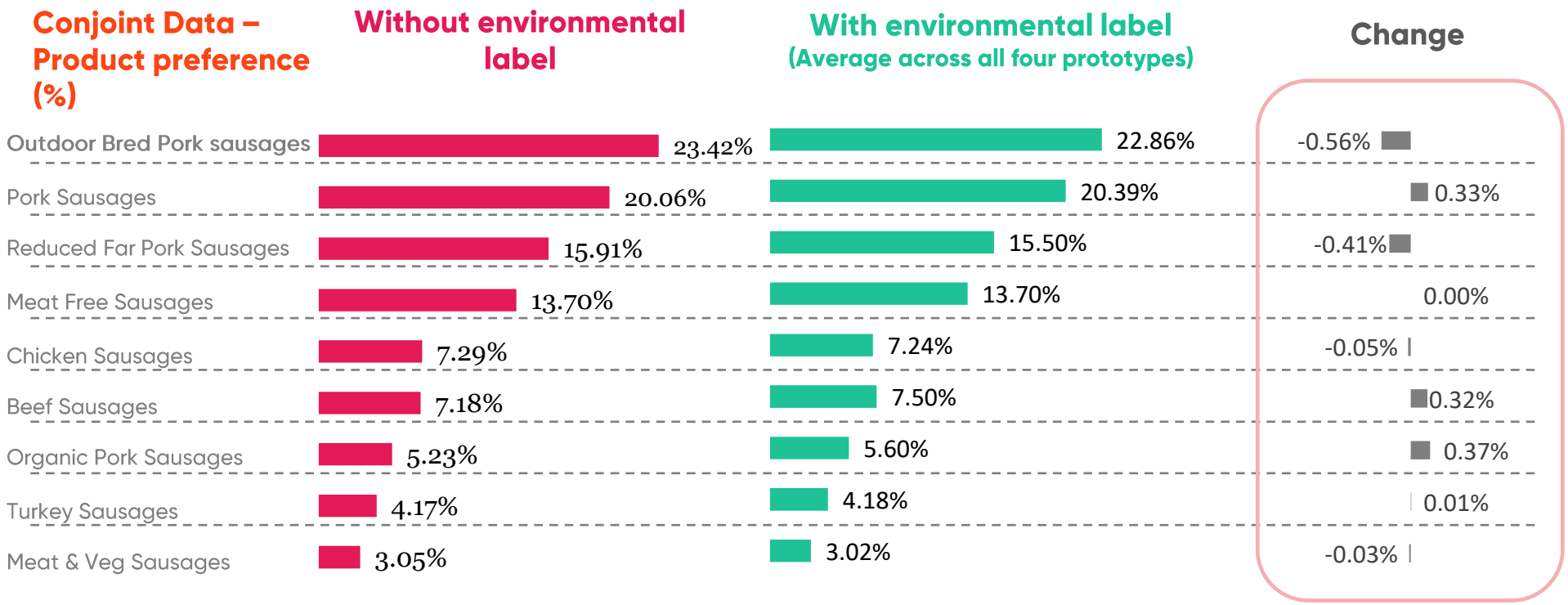
What is included in the score

  Source: Phase 4 consumer research

Phase 4

Headline research findings (1)

One of the key findings from our consumer research indicates there would be limited impact on product choice when environmental labels are present on packaging, using current scores.



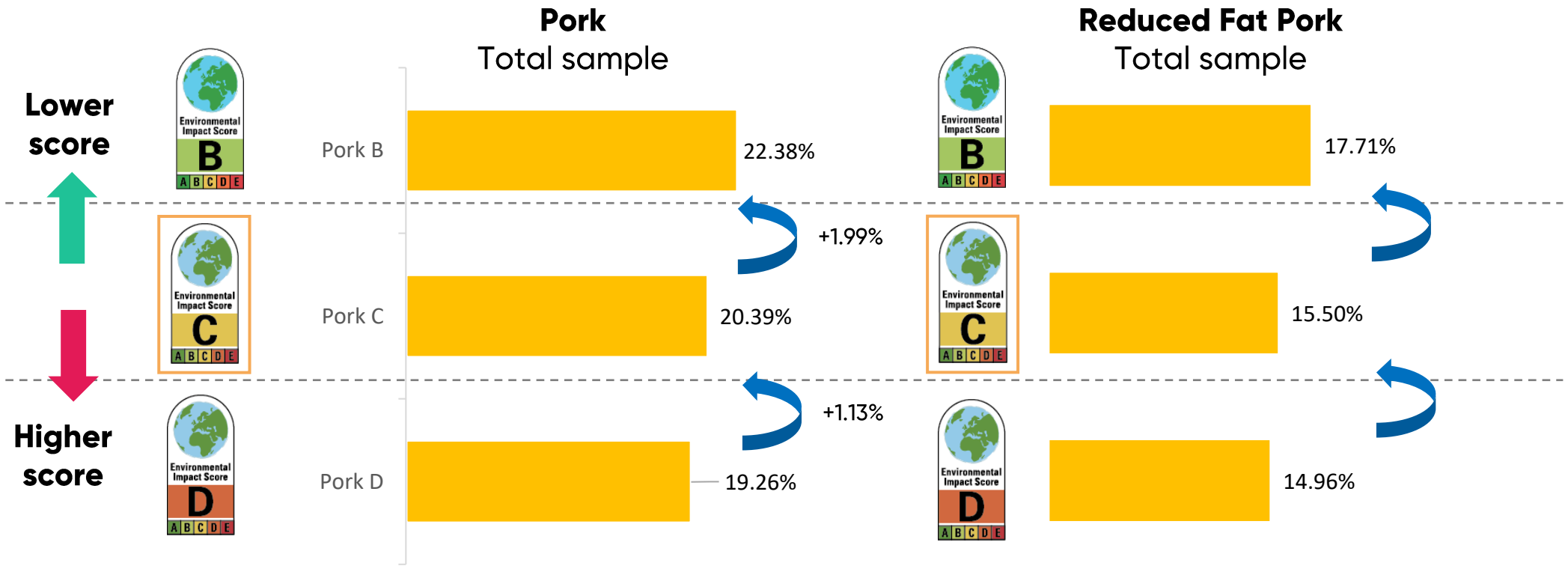
Q. Please imagine you are looking to purchase some sausages. Below are the options to you when you go into the shop. Please select which of the options you would be most likely to buy? Base: All Respondents (n=3231)

  Source: Phase 4 consumer research

Phase 4

Headline research findings (2)

Our results also show that improving the environmental impact score has the potential to increase product preference.



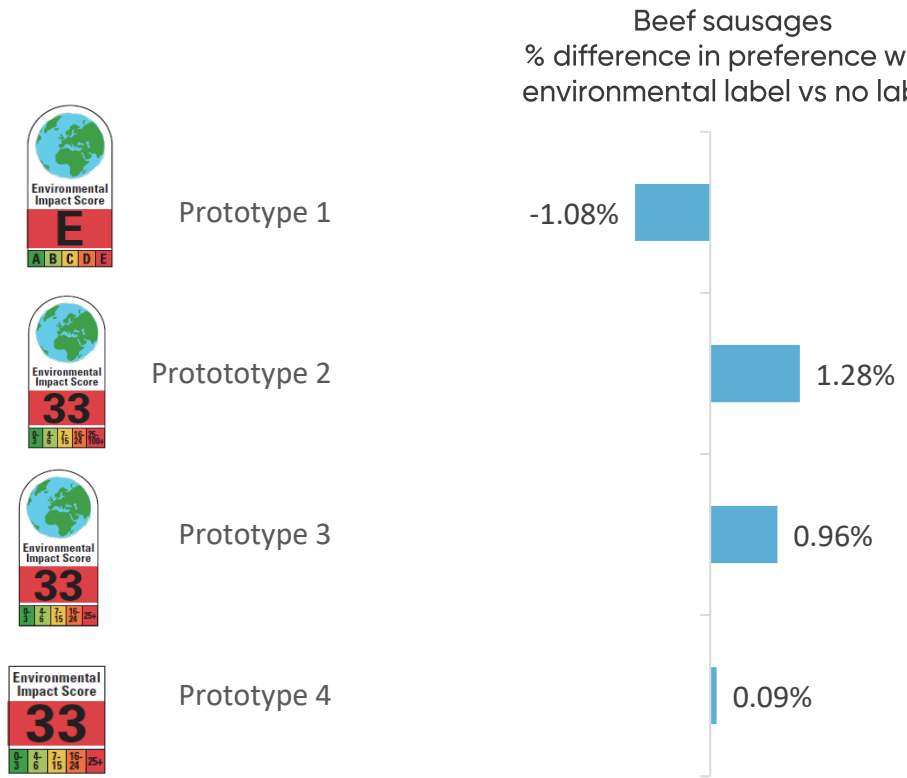
Q. Please imagine you are looking to purchase some sausages. Below are the options to you when you go into the shop. Please select which of the options you would be most likely to buy?
Base: All Respondents (n=3231)

  Source: Phase 4 consumer research

Phase 4

Headline research findings (3)

Another key finding showed the A-E label was better at encouraging a switch away from higher scoring sausage products.



> I would think the letter (E) is worse. 33 is better than being at the 100 end

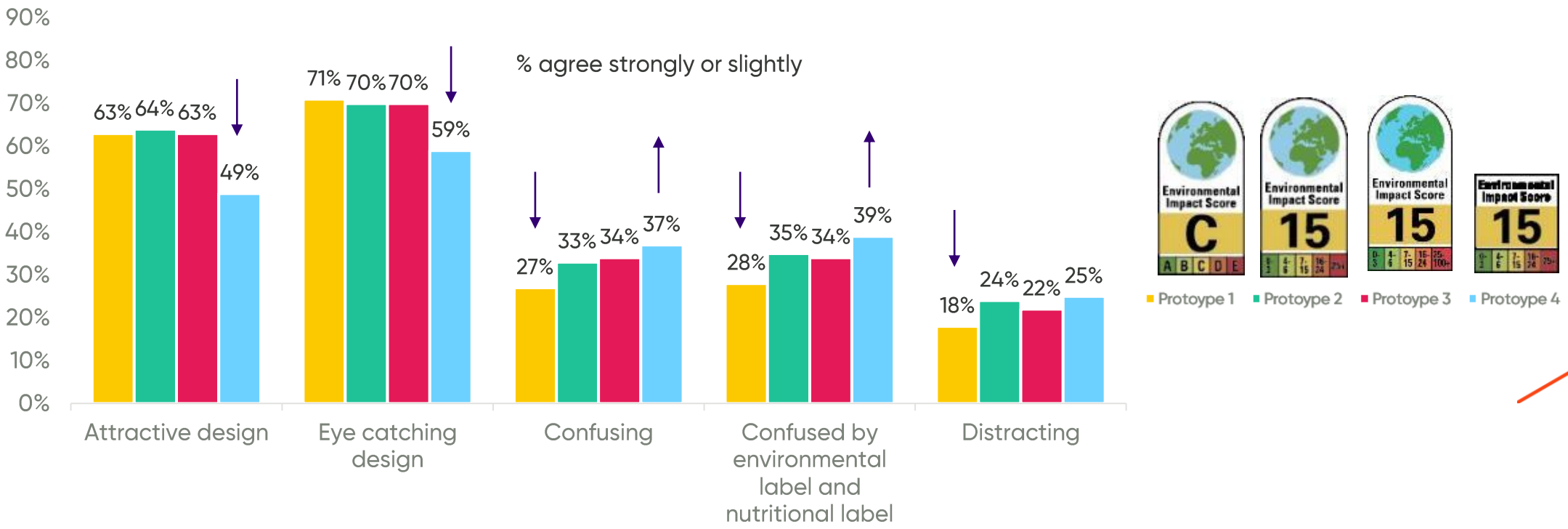
Female, with children, lower income

  Source: Phase 4 consumer research Conjoint exercise. Base: All respondents (n=3231)

Phase 4

Headline research findings (4)

The A-E label was also preferred by consumers, and the label without the globe was not preferred.



  Q. How much do you agree or disagree with the following statements about this environmental label? Base: Prototype 1 (n=805), Prototype 2 (n=809), Prototype 3 (n=810), Prototype 4 (n=807)

Summary of recommendations on the label

from IGD

Summary of recommendations - label

1

Introduce an environmental label on food and drink products to encourage positive change and help nudge behaviour

2

Use a label design with an A-E display, using a red, amber and green 5-point scale, and that includes the globe[1]

3

Introduce an impactful communications campaign to provide more detail about the label to consumers, to answer key questions and address areas of ambiguity

4

Provide further information in-store to consumers to increase awareness and understanding. This should include point-of-sale.

  [1]including the globe where possible

Opportunities for further research

We recommend consideration is given to conducting further consumer research in the following areas:

1

To determine the most effective communications campaign

2

To assess the guidelines and label design for different products e.g. different pack sizes, location of label

3

How to optimise the in-store and online environment

e.g. placement of products to encourage shoppers to choose products with a lower environmental score

Governance is key

Introduction to governance

from IGD

Context for environmental labelling governance

Robust governance is needed to determine how environmental labelling is operated, maintained and continuously improved.

Rules and standards

Rules and standards are required to ensure environmental labelling remains robust and credible, is operated in a consistent way and aligns with the guiding principles set out earlier in this report.

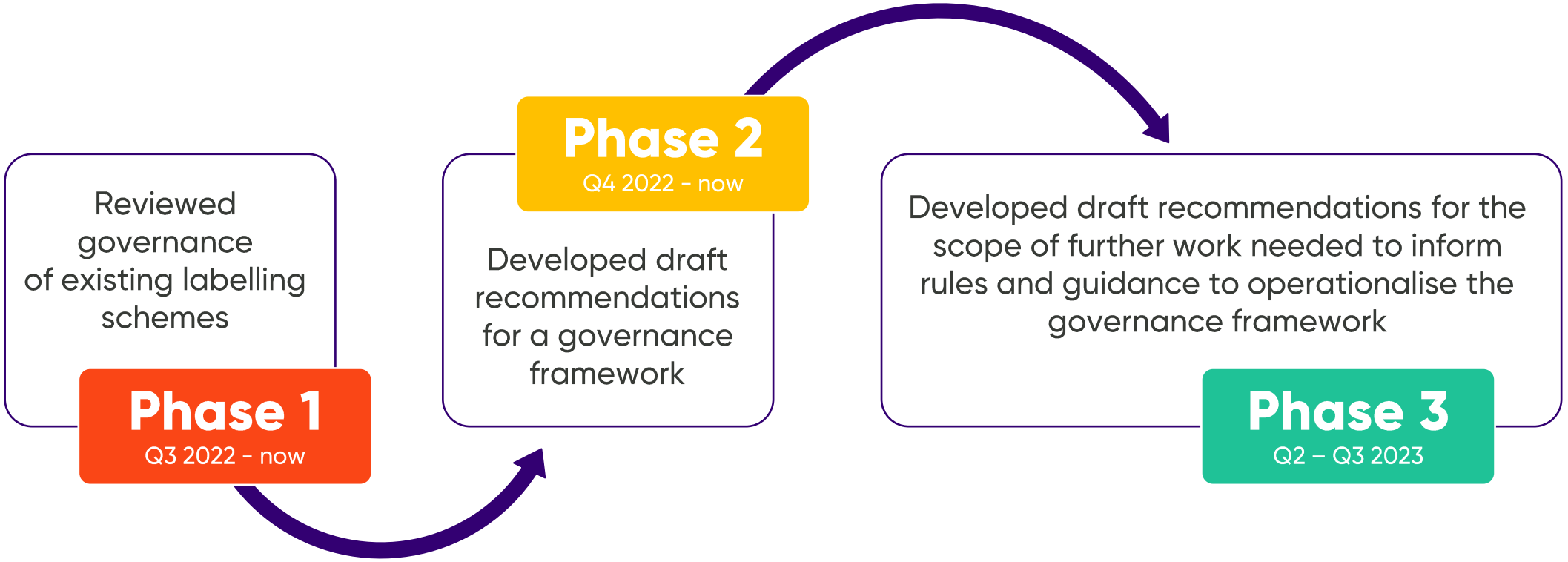
Evolving landscape

As the science and policy landscape evolves, robust governance will help drive continuous improvement of environmental labelling whilst ensuring its fair and proper use.

We acknowledge that governance for environmental labelling and the wider food data landscape are interconnected, and we recommend alignment where possible.

Developing recommendations for governance

Based on this context, we have completed three phases of work to inform our governance recommendations:



Key contributors to the work

Our research was conducted with a subgroup of our Steering Group and sustainability consultancy Anthesis. Consultation with industry stakeholders also informed our governance recommendations.

Our Steering Group supported throughout, and a subgroup of our Steering Group members supported us in Phase 3

Anthesis is a sustainability consultancy who supported in critiquing our governance recommendations

A summary of the feedback we received from industry stakeholders can be found on page 130.

Scope of recommendations for governance

Working with these organisations, we built on learnings from existing schemes[1] to develop recommendations across the following two areas:

1

Governance framework

We reviewed existing labelling schemes with our Steering Group and developed draft recommendations for what a governance framework could look like.

2

Operational rules, compliance and assurance

We convened a Subgroup to identify key areas where further work needs to happen to inform rules to operationalise the governance framework. We also consulted with our Steering Group.

[1]See pages 142 - 150 for existing schemes reviewed

1 Governance framework

from IGD

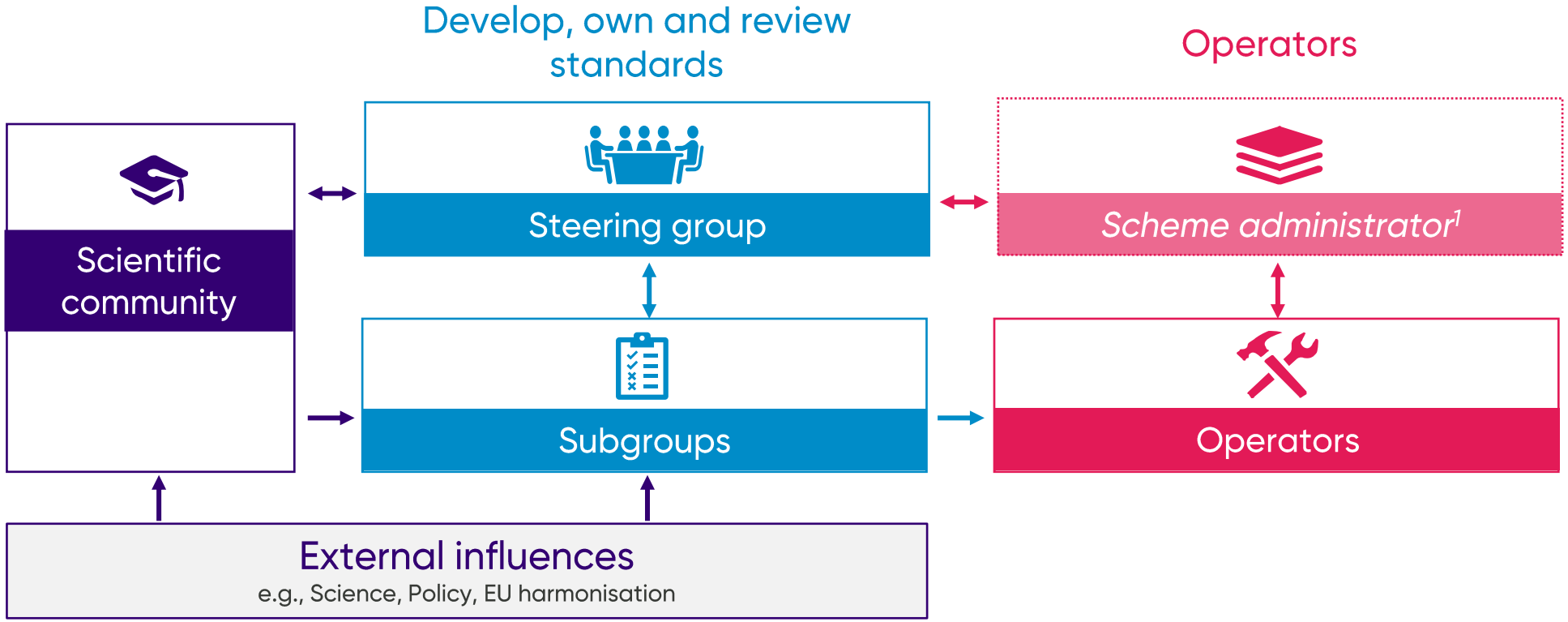
What we have heard

Our governance framework recommendations were informed by our consultation with industry. Their feedback covered several key areas that we have considered, for example:

- Governance is critical to develop a harmonised solution to environmental labelling
- Support for standards and rules over guidance, but the rules need to be pragmatic to minimise costs and ensure inclusivity
- Need to consider how to incentivise early adoption to avoid landscape dominated by 'low' scoring products
- Consider the role and scope of each group, including a review on whether a scheme administrator is needed, the extent of industry involvement on the Steering Group and how it links to the wider landscape e.g., Food Data Transparency Partnership
- Further consideration should be given to what a 'light-touch' governance framework could look like to support an initial roll-out

Recommended governance framework

Based on this stakeholder feedback, our proposed governance framework to support environmental labelling is below. We recognise the framework will evolve over time.



  [1]requirement for a scheme administrator should be reviewed as part of future work. Financial rigour is not included. See appendix page 176-177 for more detailed information on the recommended governance framework.

2 Operational rules, assurance and compliance

from IGD

What we have heard

Our recommendations for the scope of operational rules, assurance and compliance were also were informed by our consultation with industry. Their feedback covered several key areas that we have considered, for example:

Identification of key areas for governance that require additional consideration ahead of implementing environmental labelling.

Recommendations should help to drive continuous improvement as well as ensuring comparability and consistency.

Future work should be guided by the principles set out earlier in this document to ensure the environmental labelling is inclusive, scalable and pragmatic.

Recommendations for the scope of further work

We recommend further work is carried out to inform rules and guidance to operationalise the governance structure. Our recommendations cover five key areas:

1. Consistent rules for methodology and data
2. Consistent rules for the application of an environmental label
3. Consistent guidance for displaying an environmental label
4. Consistent rules for assurance and compliance
5. Consistent guidance for communicating to consumers

1 Consistent rules for methodology & data

Considerations	Recommendations
Updating Environmental Impact Scores	Rules on tolerances (e.g., de-minimis) and when it is appropriate to update scores e.g., seasonal changes or split supply. Rules or incentives to improve data quality over time e.g., incentivising businesses to move from representative impacts to supply chain specific data. Scientific community review latest science periodically and highlight implications e.g., updated scores.
Methodologies and data evolving at pace	Specific and consistent methodologies and rules on minimum data quality standards for environmental reporting[1]. Process to ensure representative impacts database is accurate, and rules on ownership.
Process for creating an environmental label	Guidelines to create an environmental label that is compliant with rules set by the Steering Group. Individual businesses work with their provider(s) to explore whether the environmental label information could be integrated into existing software/systems, where used. There may be a role for IGD, and/or others to support/coordinate.

[1]See recommendations on page 71

2 Consistent rules for the application of an environmental label

Considerations	Recommendations
Updating artwork	Rules to make it clear what prompts a change in artwork (e.g., changes to environmental impact scores – for example due to seasonal changes or moving from representative impacts to supply chain specific data) and the process for doing this. Packaging waste is considered.

3 Consistent guidance for displaying an environmental label

Considerations	Recommendations
Space on front-of pack/ principal field of vision is limited	Government intention is to make the application of an environmental label voluntary (but with a mandatory methodology). Individual business decide on which products the information will be most useful to consumers. Insights from IGD's consumer research could help to inform these decisions. It could be helpful to explore other customer touchpoints, such as point-of-sale communications and QR codes, to communicate the Environmental Impact Score for unpackaged products (e.g. loose produce, refill in-store), products with limited space on pack and products sold online.
Consistency on how information is presented to consumers will support greater awareness and understanding	Rules for the design and positioning of an environmental label to make it clear which components of the label design are mandatory for businesses that want to display environmental labels. See pages 78 -122 for recommendations on label.
For some products, the cost and resource required to implement an environmental label could be overly burdensome for businesses e.g., products typically consumed in small quantities or infrequently	Manufacturers and retailers should be encouraged to display environmental labelling on as many of their products as possible where the information is meaningful for consumers. However, the application of an environmental label would be voluntary, and it is for the individual business to decide on which products the information is most useful to consumers. Guidance and/or a checklist would help businesses decide which products to apply an environmental label.

4 Consistent rules for assurance and compliance

Considerations	Recommendations
Verifying supply chain specific data	Guidance for the process to verify supply chain specific data in line with relevant standards/codes.
Quality assurance	Guidance for the process to verify the correct data is applied to the correct packs, and who is responsible for auditing. Individual businesses would establish processes and procedures to govern and make sure information on pack is accurate and legally compliant. Guidance (e.g., minimum technical standards) for being a recognised data provider.
Liability	Guidance on the audit process, if applicable, and which governing body will manage this. Processes are in place to maintain confidentiality of data for individual businesses.
IP and ownership	Governance framework includes recommendations for IP and ownership of logo.
Compliance	Compliance with standards for collecting and reporting, plus green claims and FOP.

5 Consistent guidance for communicating to consumers

Considerations	Recommendations
Priming consumers on a new label	A widespread campaign to prime consumers and help them to understand how to use an environmental label in the context of existing certification schemes and dietary recommendations.
Maintaining consumer understanding and trust if the Environmental Impact Score changes	Changes to the score will need to communicated to consumers though wider communications. IGD is engaging with the CMA to review recommendations for communicating data quality (e.g. representative vs. supply chain specific data) to prevent any practices that may mislead the consumer.
Green claims	Further guidance on green (environmental) claims is needed to help businesses understand and comply with consumer protection legal obligations when referencing environmental impact scores.

  Note, see page 96 for further recommendations on consumer communications

Summary of recommendations on governance

from IGD

Summary of recommendations – governance

1

Introduce robust governance to operationalise environmental labelling within agreed standards and drive continuous improvements over time

2

Convene a Steering Group[1] and agree Terms of Reference for a governance framework

3

Convene relevant stakeholders to develop initial standards and operational rules for environmental labelling

4

Consider the feedback and recommendations for further work (pages 132 -139) when developing operational rules

  [1]Steering Group involved in governing environmental labelling at scale might look different to the current Steering Group that has led this work to date

National initiatives and existing environmental labelling schemes

Scope of review

To inform our recommendations for environmental labelling for the UK food industry and ensure a level of international harmonisation[1], we conducted a review[2] of the European ecolabelling landscape that included the following initiatives:

National initiatives

- France
- Netherlands
- Denmark
- Italy
- UK

Belgium, Greece, Switzerland, Portugal, Finland and Germany are in early stages of discussing ecolabelling at the national scale and have thus not been included.

Private initiatives

- Eco-score
- Planet-score
- Eco-impact by Foundation Earth
- Enviroscore
- INOQO
- Eco-score by Beelong
- Eaternity

Note: Our review focused on product labels which assess and score the environmental impact of food products across multiple environmental impacts, using lifecycle assessment (LCA). Other environmental labels, such as carbon-only or production-practice-specific labels (e.g., Organic, or Fairtrade) are not considered in scope for this report.

[1]See guiding principles

[2]Please note that our review is based on the knowledge and publicly available information we had at the time of writing this report. The review may be subject to change as these initiatives develop.

Key contributors to the review

Our review of the ecolabelling landscape was conducted by Anthesis, with insights and support provided by Wageningen University & Research (WUR). Our review was also informed by the research conducted by the University of Surrey in collaboration with Unilever[2].

Anthesis is a sustainability consultancy who conducted the research of the ecolabelling landscape and development of the comparative analysis of existing schemes.

Anthesis

Wageningen University & Research is a combination of a Dutch university and applied research institutes. They are developing an environmental labelling scheme for the Netherlands together with 25 stakeholders and will shortly start working on a project funded by the EU towards a harmonised environmental labelling across Europe.

WUR completed their own comparative analysis[1] of the European ecolabelling landscape used as a foundation for this review. They supported our review by providing insights and feedback.

WAGENINGEN UNIVERSITY & RESEARCH

[1]van Haaster-de Winter, M. A., Boone, J. A., Verweij-Novikova, I., & Adema, H. (2021, Oct 5). Summary ordering principles and sustainability measurement systems. Wageningen Economic Research. https://edepot.wur.nl/563398

[2]Courtat, Maelys, James Joyce, Sarah Simon, Jhuama Sadhukhan, Richard Murphy. 2023. 'Towards credible, evidence-based environmental rating ecolabels for consumer products: A proposed framework'. University of Surrey, Unilever.

European landscape

A number of initiatives are shaping the European ecolabelling landscape.

Product Environmental Footprint (PEF)

PEF is a multi-criteria LCA methodology developed by the European Commission.
Its objective is to establish a common methodological approach to enable Member States and the private sector to assess, display and benchmark the environmental performance of products, services and companies based on a comprehensive assessment of environmental impacts over the life-cycle ('environmental footprint')[1].

Green Deal

The EU Green Claims Directive[2] aims to harmonise rules on environmental claims across the EU to ensure they are reliable, comparable and verifiable.
The Sustainable Food Labelling Framework[3] will cover the provision of consumer information related to nutritional, climate, environmental and social aspects of food products.

Eco-Food Choice

The project is led by a consortium of 8 public and private institutions from Germany, France, the Netherlands & Spain.
Funded by the EU LIFE project, the purpose of the ECO Food Choice is to provide international harmonisation on food ecolabelling.

[1]Manfredi, S., Allacker, K., Pelletier, N., Chomkhamsri, K., & de Souza, D. M. (2012). Product environmental footprint (PEF) guide
[2]GCI (2020). Legislative proposal on substantiating green claims, Inception Impact Assessment. Access here
[3]European Commission. (2020). A farm to fork strategy for a fair, healthy and environmentally-friendly food system. Access here

Summary of national initiatives

	France	Netherlands	Italy	Denmark	UK
Key milestones	• **2012**: First national-scale environmental labelling trial across all sectors of activity • **2020**: Following a law decree, the French government deployed a 2-year pilot programme for environmental labelling	• **2021**: A multi-stakeholder environmental footprinting working group from the Dutch Climate Covenant was formed • **2022:** Launch of national food ecolabelling initiative	• **2010**: Launch of a programme to test a methodology for product footprinting • **2015**: Introduction of the 'Made Green in Italy' following a law decree • **2018**: Scheme legislation	• **2022**: Ministry of Food, Agriculture & Fisheries announced the development of a traffic-light climate label for food products	• **2021**: IGD was approached by industry and asked to help mobilise UK food businesses to develop a harmonised solution to environmental food labelling • **2021/22**: Publication of the National Food Strategy and the intention to mandate a methodology for ecolabelling in the UK (see page 11)
Key deliverables	• Publication in 2022 of key findings from the pilot & areas of further research • A PEF-wise methodology with additional indicators (in final stages) • Agribalyse, a national database with 2,500 product category averages	• A harmonised PEF-wise methodology fit for Dutch products (under development) • A national database with 3,000 product category averages (under development)	• The methodology, and requirements for certification of the 'Made Green in Italy' • Developed national Product Category Rules when not available	• The University of Aarhus is working on an LCA PEF aligned methodology and a national generic footprint database (under development)	• **2023:** IGD to share initial recommendations with UK government on methodology & data (see pages 16 – 76), consumer research (see page 77 -121) and governance (see page 122 – 140)
Key stakeholders	• ADEME • 3 ministries • Members of the scientific community, food value chain, consumer groups, operators of trial projects	• Wageningen University • Ministry of Agriculture, Nature & Food Quality • Stakeholders from the agri-food supply chain, the financial sector, RIVM and Milieu Centraal	• Ministry of the Environment • Academic support from Sant'Anna School of Advanced Studies	• Danish government • Danish Veterinary and Food Administration • University of Aarhus	• IGD • Government • Wider stakeholders including (industry, academics, NGOs & charities, trade bodies, labelling schemes & data providers)

  See details on each initiative on pages 179 – 183.

Summary of private initiatives

	Eco-score	Planet-score	Eco-Impact by Foundation Earth	Enviroscore	INOQO	Eco-score by Beelong	Eaternity
Icon							
Launch date	2021	2021	2021	2021	2020	2014	2009
Status	In use	In use	In use	Under development	In use	In use	In use
Origin & ownership	• French non-profit consortia (part of French pilot) • Supported by 2020 French law decree • Developed and owned by Yuka, in collaboration with ECO2 and others	• French non-profit consortia (part of the French pilot programme) • Developed by ITAB, Sayari and Very Good Future	Developed by Foundation Earth, an independent, non-profit organisation, issuing front-of-pack environmental scores	Developed by EU-funded EIT Food consortium of AZTI (Spain) and Leuven University (Belgium)	Austria-based startup	Founded by two graduates from the EHL Hospitallity Business School with support from EHL	• Founded at ETH Zurich • Developed a database based on collaboration with ZHAW
Geographical scope	• Operational in France and Belgium • Tested in Germany, the Netherlands, Italy, Spain, Portugal, Luxembourg, UK	Partner companies in 12 countries and on-pack display deployed in 30 countries	Operational in the UK	Testing in the EU	Operational in Austria	Operational in Switzerland	Operational in Switzerland
Retailers/ Brands/ Products	• Implemented by Colruyt • Tested by Carrefour and Lidl	207 businesses including brands such as Nestle and retailers such as Carrefour and Lidl	• ~180 products • Brands include Abel & Cole, Meatless Farm, Natco Foods, MIGHTY and Finnebrogue	• Spanish food companies e.g. Kaiku, Avramar, Grupo Calvo, Harivenasa and Campomayor • Validated in more than 20 categories	Austrian retailers and food brands	• 300+ brands, distributors such as Coop and restaurants • +150,000 products	• 150+ participating restaurants • 22,000+ markets with scored products • 100,000+ CO_2eq impacts calculated

  See details on each initiative on pages 184 -194.

Criteria for the comparative analysis

We identified 18 multi-metric environmental food label initiatives across Europe, of which 10 were found to provide sufficient, publicly available information to enable a comparative analysis[1]. The following criteria was used to compare the 10 initiatives:

Scientific methodology & data

- LCA approach
- Type of data and databases
- Lifecycle stages
- Environmental impacts
- Product comparison (within or between product categories)
- Scoring approach

Consumer-facing label

- Icon
- Display format

Governance

- Third-party assurance
- Updates to product scores & data
- Transparency of methodology and data sources

  [1]See page 185

Comparative overview – Methodology

	LCA approach & data	Lifecycle stages	Impacts	Comparison (within vs. between product categories)	Scoring approach
Eco-score	• Secondary LCA data from Agribalyse • Product specific data for additional impacts	Cradle-to-fork	• 14 PEF categories • Additional impacts: Recyclable packaging, labels, country of origin and seasonality	Both	• Single score aggregated following PEF weighting with further bonus/malus adjustments • Relative scoring
Planet-score	• Secondary LCA data from Agribalyse • Product specific data for additional impacts	Cradle-to-fork	• 12 PEF categories (with corrections) • 13 additional impacts including pesticides, antibiotics, deforestation, GMOs, farm practices	Both	• Overall score and 3 sub-scores (for pesticides, biodiversity, climate) aggregated following adjusted PEF weighting with bonus/malus • Relative scoring
Eco-Impact (by Foundation Earth)	• Product specific LCA data supplemented with secondary data from verified databases	Cradle-to-grave	• 16 PEF categories	Both	• Single score aggregated following PEF weights • Relative scoring
Enviroscore	• Product specific PEF LCA data supplemented with secondary data from Ecoinvent, Agrifoodprint and other databases accepted by the EC.	Cradle-to-grave	• 16 PEF categories	Both	• Set of normalisation factors developed to aggregate 16 PEF categories into single score • Scoring relative to the European Food Basket
INOQO	• Secondary LCA data from GS1, Agribalyse and other databases • Product specific data provided by retailers and brands (e.g., ingredients, packaging)	Cradle-to-shelf	• Climate, animal welfare, biodiversity, nutrition, social, packaging, regionality, seasonality	Both	• Information unavailable
Eco-score by Beelong	• Secondary LCA data from the WFLDB, Ecoivent and Agribalyse • Product specific data for additional impacts (composition, production methods, distances traveled, etc.)	Cradle-to-shelf	• Carbon footprint, water use, water pollution, land use • Additional impacts including endangered species (fish), animal husbandry programmes, packaging, agricultural legislation, corporate sustainability policy, environmental policy of producing countries	Both	• Single score aggregated following an adjusted PEF weighting with bonus/malus adjustments. • Relative scoring
Eaternity	• Developed an LCA database of CO_2eq • Based on businesses' product recipes	Cradle-to-fork	• Climate, water, rainforest, animal welfare	Both	• Scores produced for each impact indicator • Scoring relative to 100,000 food products
Made Green in Italy	• Full LCA PEF study for each product following all the applicable EU and national rules	Cradle-to-grave	• 14 PEF categories • Applies PEFCRs available at EU level. Where not available national CRs were developed	Within	• Single score aggregated following PEF weights • Scoring relative to specific product benchmark

French national initiative	• Under development but aims to prioritise:
	  • Secondary LCA data from Agribalyse
	  • Supplemented with semi-specific data (e.g., recipe used, product origin, packaging type) and/or specific product data (e.g., weight, packaging composition)
		Cradle-to-grave	• 16 PEF categories
			• Additional impacts: under development
				Both	• Under development

UK national initiative (IGD)	• Representative impacts database at ingredient level • Integration of supply chain specific data where available	Cradle-to-fork (with cradle-to-grave included for packaging)	• Climate, land use, water use and water quality	Both	• Single score aggregated using adjusted PEF weighting • Absolute scoring based on planetary boundaries

See details on each criteria on pages 195 -203.

Comparative overview – Consumer-facing label & Governance

	Icon	Display format description	Research on display format	Third-party assurance	Updates to product scores & data	Access to methodology
Eco-score		• RAG letter grading (5)	Information unavailable	Third party assurance applies to LCA database, not product specific data	Information unavailable	Information unavailable
Planet-score		• RAG letters (5) for overall score and three sub-scores • Additional Information provided on breeding method	Consumer research has been undertaken and findings can be accessed here	Third party assurance applies to LCA database, not product specific data	Information unavailable	Access here
Eco-Impact (by Foundation Earth)		• RAG letter grading (8)	Consumer research has been undertaken and findings can be accessed here	Information unavailable	Product certifications expire after 12 months, then require recertifying	Access here
Enviroscore		• RAG letter grading (5)	Consumer research has been undertaken and findings can be accessed here	Information unavailable	Information unavailable	Information unavailable
INOQO		• RAG letter grading (5) • Display three most impactful impacts (depending on product) • Additional information via QR code	Information unavailable	Information unavailable	Information unavailable	Information unavailable
Eco-score by Beelong		• RAG letter grading (15) from A+ to G	Information unavailable	Information unavailable	• Scores updated when brands or Beelong communicate changes to data and methodology • Underlying methodology at minimum every 2 years	Access here
Eaternity		• Raw impact figures (e.g., kg CO2e) • Score from 1 -3 stars (from 1 star: critical to 3 stars: very good). • Additional information via an App (barcode scan)	Information unavailable	Information unavailable	Scores based on a yearly-reviewed LCA database.	Information unavailable
Made Green in Italy		• Class A & B products get "Made Green in Italy" logo • Indicators on three main impact categories are communicated • Additional information via bar code	Information unavailable	PEF studies verified by independent third-party certification body	Logo granted for three years, upon which product needs to conduct a new PEF study	Access here
French national initiative	Under development	• Under development	Consumer research has been undertaken and findings can be accessed here	Under development		
UK national initiative (IGD)		• RAG letter grading (5)	Information can be found on pages 77 - 121	Under development		Access via IGD's website

See details on each criteria on pages 195 -203.

Summary of findings

Whilst we identified similarities in the 10 schemes we assessed such as the use of the PEF methodology or a RAG letter grading system, our comparative analysis revealed there is at present no harmonised approach to environmental labelling in the European food landscape.

As the Eco Food Choice project deploys at the end of 2023, IGD will engage with the programme, share our learnings and ensure a level of alignment with Europe as outlined in our guiding principles.

Summary of recommendations

Summary of recommendations (1)

Based on the evidence built and stakeholder feedback we have received on environmental labelling so far, we have come to the following summary of recommendations across the methodology & data, label and governance:

Methodology & data[1]

- Use an LCA-based approach covering climate change, water use, water quality and land use impact categories
- Develop an open access UK database of representative environmental impacts at ingredient level
- Develop a consistent methodology to generate supply chain specific scores and continually improve the representative database
- Score products against planetary boundaries
- Undertake further scientific research on RAG bandings

  [1]See pages 16 – 77 for more detail on the methodology & data

Summary of recommendations (2)

Label[1]

- Introduce an environmental label on food and drink products to encourage positive change and help nudge behaviour
- Use a label design with an A-E display, using a red, amber and green 5-point scale, and that includes the globe
- Introduce an impactful communications campaign to provide more detail about the label to consumers, to answer key questions and address areas of ambiguity
- Provide further information in-store to consumers to increase awareness and understanding. This should include point-of sale.

Governance[2]

- Introduce robust governance to operationalise environmental labelling within agreed standards and drive continuous improvements over time
- Convene a Steering Group and agree Terms of Reference for a governance framework
- Convene relevant stakeholders to develop initial standards and operational rules for environmental labelling
- Consider the feedback and recommendations for further work (pages 134 - 139) when developing operational rules

[1]See pages 78 -122 for more detail on the label

[2]See pages 123 - 141 for more detail on governance

Summary of key considerations

Summary of key considerations (1)

We have identified several cross-cutting considerations on environmental labelling that we recommend exploring further. The following pages summarise the considerations we've heard from stakeholders and our recommended management.

Scope of labelling scheme

Consider additional UK industries, sectors and categories to enable a level of interoperability beyond in-store food retail.

For example: food service, out-of-home, online, pet food and more.

Recommended management

In-store food retail has been a starting point for this programme. We have engaged with many businesses in the above listed industries, sectors and categories[1] to inform our work to date, and recommend continued engagement and evidence is built to ensure a level of interoperability in future.

European alignment

UK environmental labelling should be interoperable with other initiatives across Europe.

This should reduce time and resource requirements for multi-national organisations and reduce consumer confusion.

Recommended management

Ensuring a level of international alignment has been a guiding principle[2] for this work and we have engaged with many nations and organisations internationally[1]. We have completed a review of existing European initiatives and schemes[3] and recommend continued engagement with EU harmonisations efforts, and where appropriate alignment in future.

  [1] See pages 12 - 13 [2] See page 14 [3] See page 142 - 150

Summary of key considerations (2)

Scope of impact indicators

Scope of the LCA-based approach across 4 environmental impact categories[1] may not be broad enough to truly reflect the environmental impact of products.

For example: impact on nature and biodiversity

Recommended management

The 4 environmental impact indicators have been selected based on three key methodological criteria[1]. Currently, some environmental impacts such as those involving nature and biodiversity are very difficult to quantify.

We recommend the latest science is reviewed periodically and indicators continually improved. This process should be carefully managed as part of environmental labelling governance[2] including the impact of changing label scores on consumers.

Production systems

Environmental labelling should differentiate the impacts of different production systems and reflect and reward different supply chain practices.

For example: organic production, regenerative agricultural production, carbon capture

Recommended management

We recommend representative impacts[3] are used as a starting point, where significant differences in production systems are recognised. Where possible, supply chain specific data[3] should be generated using an agreed methodology to reflect the unique impact of different production systems.

Our consumer research[4] showed that consumers were surprised by some product scores e.g. assuming organic or higher welfare sausages would be lower scoring than standard sausages.

We recommend introducing a communications campaign[5] to educate shoppers on what impacts make up the overall score and how this relates to other labels e.g. organic.

[1] See page 25-26 [2] See page 135 [3] See page 46-47 [4] See page 115 [5] See page 96

Summary of key considerations (3)

RAG bandings

Using a 5-point A-E scale means businesses efforts to reduce the impact of their products may not be reflected as a lower score on pack.

If there is a lack of colour differentiation within food categories, this will not support consumers to make more sustainable purchasing decisions.

Recommended management

Further research is needed to ensure RAG bandings are grounded in science and support behaviour change[1].

Our consumer research showed an A-E RAG scale was most effective for consumers, though we recognise the limitations of presenting less specific scores on pack.

We recommend more granular information (numerical values) should be used by businesses to support decisions around supply chain efficiencies and sourcing, and incentivisation for businesses to reduce environmental impacts should be managed as part of the environmental labelling governance[2].

There is also an opportunity to provide more granular information to consumers in wider communications around the label.

Functional unit

For some food categories, labelling products per 100g, rather than per portion could be confusing for consumers.

For example, if the score and RAG bands relate to a 100g unit, instant coffee (with serving of 1-2 teaspoons) could display a very high score.

Recommended management

Further research is needed to ensure the methodology for RAG bandings and the functional unit is robust for environmental labelling.

Research should determine if the score and RAG bands should use portion or 100g information, or a combination, also if the same approach is applied to all products, or if a tailored approach for certain categories is needed.

We also recommend a consistent approach for businesses to determine portion sizes is developed.

[1] See page 44 [2] See page 135

Summary of key considerations (4)

Representative impact database

Developing and maintaining a database[1] of representative impacts could be costly and time consuming.

The database should be publicly available and support a range of applications and technology platforms.

Recommended management

The development of a database and its governance including funding, ownership and maintenance should be managed as part of the environmental labelling governance[2] and should be considered as part of government's consultation[3] on environmental labelling.

We recommend the latest science is reviewed periodically and representative impacts continuously improved. Where the representative impact database is adjusted, we recommend this is communicated clearly to businesses and consumers and managed through governance.

Supply chain specific data

A methodology for generating supply chain specific data needs to be agreed to ensure it is consistent and robust.

Cost and resource should be considered so collecting specific data is not overly burdensome for businesses, particularly smaller suppliers.

Recommended management

We recommend a consistent, standardised methodology for supply chain specific data is developed and this should build on exiting work (including TAG, Mondra/BRC, FDTP, WRAP) to develop an impartial approach that is available to all[4].

We acknowledge that supply chain specific data may be resource intensive for businesses to generate therefore we recommend the methodology is developed with extensive stakeholder engagement to ensure that it is operable. For businesses that are unable to move to supply chain specific data, we recommend representative impacts are used as a starting point[5].

Continual improvement of these methodologies and data sources should be managed as part of the environmental labelling governance.

[1]See page 48 [2]See page 135 [3]See page 11 [4]See page 71 [5]See page 46-47

Summary of key considerations (5)

Business incentivisation

Importance of businesses to be incentivised to use voluntary environmental labels, drive supply chain efficiencies and use supply chain specific data where possible. Concerns include:

- Limited coverage of labels in a product portfolio, reducing ability for consumers to make informed decisions.
- Businesses generating higher scores with specific data than with representative data.
- Businesses with high scoring products hiding behind representative data.
- Businesses with low scoring products being penalised by representative data.
- Businesses free-riding on those that are investing in specific data that is improving the average

Recommended management

To address the above concerns, we recommend operational rules[1] are developed including % portfolio coverage, and a commitment for organisations to move to supply chain specific data once they place a label on pack.

Where supply chain specific data is integrated and resulting scores change, we recommend this is communicated clearly to businesses and consumers.

We also recommend that more granular data behind the label is made available to businesses[2] to show supply chain efficiencies and enable sourcing decisions.

Business incentivisation should be reviewed as part of environmental labelling governance.

Evolving science

Environmental science is evolving at pace so the methodology and data may become outdated.

If label scores change as a result of improvements to methodologies and data this could be confusing for businesses and consumers, and impact consumer trust.

Recommended management

We recommend the science is reviewed periodically as part of environmental labelling governance to ensure scores are robust in the context of UK and global developments in environmental methodologies and data[1].

Rules around these periodic updates should be developed in consultation with businesses to manage cost and resource burden e.g. frequency of packaging changes.

Where scores are updated due to methodological improvements, we recommend this is communicated clearly to businesses and consumers.

[1]See page 135 [2]See page 137

Summary of key considerations (6)

Policy & legislation

Clear sequencing and consistency will be needed between IGD's environmental labelling programme, Government's Food Data Transparency Partnership, legislative action and industry action.

Recommended management

With the proliferation[1] of environmental labelling schemes in the UK, a consistent approach is needed as soon as possible to reduce confusion and cost, and enable better decision making for consumers and businesses.

We recommend that our latest recommendations on environmental labelling should be continually improved, accounting for changes in the external landscape (e.g. evolving science, legislation, international activity)[1].

Throughout this programme we have been regularly engaging[3] with government, industry and others to avoid divergence, and we recommend close engagement continues going forwards.

Consumer behaviour change

Important to consider if environmental labelling will encourage long term consumer behaviour change before roll-out, and to understand what the levers for behaviour change are.

Recommended management

Our consumer research[4] indicates that introducing a label in isolation would have limited impact on consumer behaviour. We therefore recommend conducting further research to determine the most effective communications campaign[5] to educate consumers about the label.

Long-term behaviour change is inherently difficult to measure, so we recommend taking learnings from established schemes such as nutrition labelling and continuing research as environmental labelling is operationalised.

[1]See page 9 [2]See pages 123-141 [3]See pages 12-13 [4]See pages 78 – 122 [5]See page 96

Summary of key considerations (7)

Label design

Consistent rules will be needed around how to apply the label and how much information should be presented.

E.g. how to apply the label to small packs and how to explain to consumers that the label is using representative or specific data

Recommended management

We recommend developing label design guidelines[1] to ensure the label is presented on pack consistently. These guidelines should include, for example, the amount of information presented, language and iconography, placement of the label.

Further research on the label design may be required in future to determine, for example, the effectiveness of the label on small packs or online[2].

Wider communications

Additional information should be available to consumers if they want to know more about product score. This information should be provided in the context of healthy and sustainable diets.

Recommended management

We recommend that further research should be undertaken to determine the most effective communications campaign around the label[3], and consumer communications guidance[4] for businesses should be developed to ensure a level of consistency, for example in the language used and iconography.

Further research and guidance should be developed in the context of the information consumers are already presented with (e.g. nutrition labels, the Eatwell Guide).

[1]See page 137 [2]See page 121 [3]See page 96 [4]See page 139

Summary of key considerations (8)

Operational rules

Clear rules will be required to enable consistent operation of environmental labelling.

These rules should consider financial implications for businesses, and clearly state where there is flexibility.

Recommended management

Operational rules[1] should be developed to cover:

- Methodology & data
- Label design & communications
- Assurance & compliance

We recommend these rules are developed as part of IGD's next phase of work in consultation with industry stakeholders to ensure they are operable (inclusive, pragmatic, affordable). They should also be developed through consultation with other relevant stakeholders such as CMA and ASA to ensure compliance.

Governance structure

Clarity needed around who will own the database, police the labels, be liable for misinformation, and how this will dovetail with other programmes e.g. Government's Food Data Transparency Partnership

Recommended management

We recommend operational rules around assurance and compliance processes are developed for environmental labelling[1].

These rules should be developed in close consultation with Government and FDTP to ensure there is a level of alignment.

We recommend that ownership of such a database should be considered as part of Government's consultation[2] on environmental labelling. In the meantime, we recommend securing a light-touch approach to environmental labelling governance to enable an initial roll-out.

[1]See pages 132-139 [2]See page 11

Summary of key considerations (9)

Scope of mandatory methodology

Clarity needed around the scope of Government's mandatory methodology for ecolabelling, and whether claims made outside of this scope would be prohibited.

E.g. claims such as carbon neutral, footprint reduction, antibiotic use, or other environmental indicators

Recommended management

We recommend the scope of the mandatory methodology and impact on claims made outside of this scope should be considered as part of Government's planned consultation on environmental labelling[1].

Rules and guidance around environmental claims should also be developed through consultation with other relevant stakeholders such as CMA and ASA to ensure compliance.

[1]See page 11

Next steps for programme

Next steps for programme

IGD's environmental labelling programme is ongoing. Based on feedback from the Steering Group and as we understand the requirements for operationalising environmental labelling, our work in 2024 will be focused on the areas below:

Areas to lead

Development of environmental labelling Toolkit with guidance, rules and governance to enable consistent operation of environmental labelling in the UK.

Areas to support

Ongoing development of environmental data in the UK and efforts to develop a consistent approach to environmental labelling across Europe.

Extensive engagement with stakeholders will continue as part of the ongoing programme of work. For more information, please contact environmentallabelling@igd.com

We welcome your feedback

As part of IGD's ongoing programme of work on environmental labelling there will be continued opportunities for businesses to engage and provide feedback to inform our work. There will also be opportunities for businesses to provide feedback as part of Government's consultation planned in early 2024.

If you have any feedback on our summary of progress to date, have questions or require more information, please get in touch via environmentallabelling@igd.com

from IGD

Thank you

from IGD

Glossary of terms

Glossary of terms

- **Allocation:** Allocation is how impacts are attributed to multiple outputs of a single process within an LCA.
- **Background vs. Foreground data:** Background data is the data that describes the system environmentally with emission factors that can be obtained from databases, whereas foreground data describes the system technically.
- **Emission factor:** A coefficient that describes the rate at which a given activity releases GHG into the atmosphere.
- **Functional unit:** quantified description of the function of a product that serves as the reference basis for a life-cycle assessment (LCA). Examples include 1 kg of salmon, 1000 calories of food, or 1 ha of land.
- **Green/blue/grey water:** Virtual water as defined by Allan (1998) is the volume of water used to produce a good. It comprises of three colours: (1) Green water is water transpired by a plant that comes from rainwater stored in the soil, (2) Blue water is used for irrigation (3) Grey water is contaminated by agrichemicals.
- **Life Cycle Assessment (LCA):** Methodology to measure the environmental impacts of a product or service.
- **Planetary boundary:** Defines the environmental limits within which humanity can safely operate.
- **Scoring:** Most consumers do not have sufficient knowledge of environmental impacts to determine whether a given impact value (e.g. XkgCO2e) is 'good' or 'bad'. A common solution applied by most environmental labels is to convert environmental impacts into an environmental score designed to support consumer interpretation. The scoring system is therefore a critical component of any label, as set the goalposts for what 'good' and 'bad' impacts are.
- **System boundary:** System boundaries determine what elements of the product lifecycle are included in impact analysis, and by extension, the product label score.
- **Primary packaging:** Defines the packaging in direct contact with the product itself.

Allan, J.A. (1998) Virtual Water: A Strategic Resource Global Solutions to Regional Deficits. Ground Water, 36, 545 546. http://dx.doi.org/10.1111/j.1745-6584.1998.tb02825.x

Appendix

Appendix 1: Methodology for RAG bandings

from IGD

Methodology for RAG bandings

This page shows how we consolidated the criteria for determining RAG colours for fat, saturates, sugars and salt on FoP nutrition labels to a 5-band RAG criteria for environmental labelling.

Step 1: Looked up the UK Reference Intakes (RI) for Fat (70g), Saturates (20g), Total Sugars (90g) and Salt (6g) and determined how much each RAG criteria per 100g of food contributed (shown as % RI in table)

Step 2: Consolidated the % RI for fat, saturates, total sugars and salt into a 3-band RAG criteria.

The 'Low' cut-off is the average of the low % RI's, rounded to the nearest whole number i.e., 6.

Step 3: Distributed the numbers in the 3-band RAG into a 5-band RAG.

		Low		Medium		High	
Fat	RAG criteria per 100g food	≤ 3.0g/100g		> 3.0g to ≤ 17.5g/100g		> 17.5g/100g	> 21g/portion
	% RI	4.3%		4.3 - 25%		25%	30%
Saturates	RAG criteria per 100g food	≤ 1.5g/100g		> 1.5g to ≤ 5.0g/100g		> 5.0g/100g	6.0g/portion
	% RI	7.5%		7.5 – 25%		25%	30%
Total Sugars	RAG criteria per 100g food	≤ 5.0g/100g		> 5.0g to ≤ 22.5g /100g		> 22.5g/100g	> 27g/portion
	% RI	5.6%		5.6-25%		25%	30%
Salt	RAG criteria per 100g food	≤ 0.3g/100g		> 0.3g to ≤ 1.5g/100g		>1.5g/100g	>1.8g/portion
	% RI	5%		5-25%		25%	30%
RAG bands	3-band RAG scale	**0-6**		**7-24**		**25+**	
	5-band RAG scale	**0-3**	**4-6**	**7-15**	**16-24**	**25+**	

Appendix 2: WRAP data quality framework

from IGD

WRAP data quality framework

Rating	Score	Technology	Time	Geography	Completeness	Reliability
Very good	1	Emission factor represents the same production method / technology (e.g. greenhouse production heated using natural gas).	Data age less than 3 years	Emission factor represents the same geographical area (e.g. UK production for a UK-sourced product).	Highly complete - all appropriate life cycle stages and GHGs and entire supplier population covered or sampling of data promises excellent representation of the population.	Emission factor is quantified in accordance with a published sector-specific standard (e.g. PEFCR, PAS 2050 Category Rules, GHG Protocol Sector Guidance) and verified by a third party.
Good	2	Emission factor represents a similar production method / technology.	Data age less than 5 years	Emission factor represents a geographical area with likely similar production characteristics (e.g. European production).	Mostly complete - sampling of data promises good representation of the population. All appropriate life cycle stages and GHGs included.	Emission factor quantified in accordance with a published product footprinting standard (e.g. PEF, PAS 2050, GHG Protocol Product Standard) and verified by a third party.
Fair	3	Emission factor represents a different production method / technology - but technological variability is expected to be low.	Data age 5 -10 years	Emission factor represents a geographical area that could have different production characteristics (e.g. global average value) - but geographical variability is expected to be low.	Generally complete - sampling of data promises reasonable representation of the population. All appropriate life cycle stages and GHGs included.	Emission factor quantified in accordance with a published product footprinting standard and / or sector-specific rules - but not verified by a third party.
Poor	4	Emission factor represents a different production method / technology - and technological variability is expected to be high.	Data age of more than 10 years	Emission factor represents a geographical area that could have different production characteristics (e.g. global average value) - and geographical variability is expected to be high.	Data covers a small sample of overall activities and is unlikely to be representative of the population. Some life cycle stages and GHGs not included.	Calculation method for emission factor is not fully described in source publication, or not reported to be in line with a standard methodology.
Unsuitable	5	Technological representativeness of emission factor is unknown.	[n/a - no threshold]	Geographical representativeness of emission factor is unknown.	Completeness of emission factor is unknown.	Source is unknown.

Score descriptor	Score
Very good	1
Good	2
Fair	3
Poor	4
Unsuitable	5

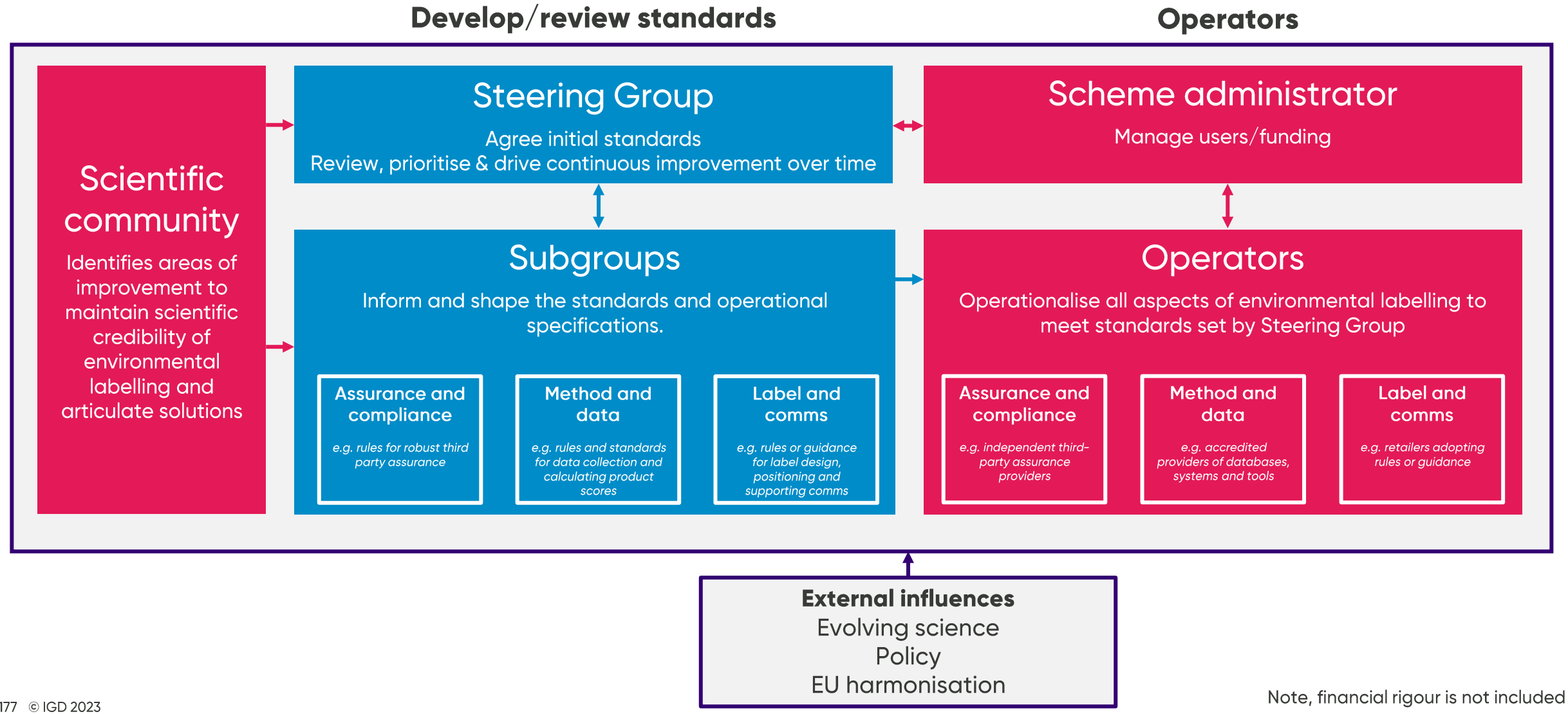
Technology, Time, Geography, Completeness and Reliability

  Source: Scope 3 GHG Measurement and Reporting Protocols for Food and Drink | WRAP

Appendix 3: Governance framework

from IGD

Governance framework recommendation



Note, financial rigour is not included

Appendix 4: National initiatives and existing environmental labelling schemes

from IGD

National initiatives

from IGD

French national initiative

Key milestones	• **2012:** France deployed its first national-scale environmental labelling trial across multiple sectors, concluding the feasibility of applying environmental labelling to food products. • **2020:** Following article 2 of the Climate and Resilience Act, the French government mandated and deployed a two-year pilot programme. The programme's objective was to "determine how environmental information could be evaluated, implemented and displayed by actors in the economy, with the goal of meeting consumer demand for this information."[1] • **2023:** The French government is aiming to deploy a harmonised environmental labelling scheme for food products in France, upon the finalisation of its methodology and design the label.
Key deliverables	• **2022:** ADEME published a government report outlining key findings from the pilot programme and areas of further research to implement a national environmental scheme for food products[1]. • **2023:** ADEME is finalising their methodology for calculating environmental scores. The methodology will use the 16 PEF indicators. Additional indicators to PEF also being considered for inclusion. The methodology will be based on generating representative average product scores based on Agribalyse, a public database that they have started building since 2010[1], which can be supplemented by semi-specific and specific data. Ademe have developed a tool called 'Ecobalyse' to support their semi-specific approach to data.
Key stakeholders	• French Environment and Energy Management Agency (ADEME) • Three government ministries : Ecological Transition, Food and Agriculture, and Economy, Finance and the Recovery • Stakeholders from the scientific community, the food value chain, civil society and consumer groups as well as operators of trial projects.

[1]ADEME (2022), Environmental labelling for food products. Government report to parliament. Overview and Key findings. Access here

Dutch national initiative

Key milestones	• **2021:** A sub-group of the Dutch Climate Covenant working group was formed with the objective to achieve a harmonised methodology and communication on environmental footprint of food products[1]. • **2022:** Commissioned by the Dutch Ministry of Agriculture, Nature and Food Quality, Wageningen University and the subgroup drafted a roadmap for a Dutch harmonised food environmental label. This led to the decision to develop a representative Dutch average database as well as a PEF-wise methodology[2].
Key deliverables	The Netherlands are currently developing: • a harmonised PEF-wise methodology fit for Dutch products • a Dutch database with 3,000 representative average product categories. The scheme is due to be made available for the food industry to adopt on a voluntary basis.
Key stakeholders	• Wageningen University • Dutch Ministry of Agriculture, Nature & Food Quality • A wide range of stakeholders from the agri-food supply chain, the financial sector, the National Institute for Public Health and the Environment (RIVM) and the public information organisation Milieu Centraal

[1]Boone, Koen, Broekema, Roline, Verweij-Novikova, Irina (2022). Product Environmental Footprint: Overview of EU and national public and private initiatives in agro-food
[2]Boone, Koen, Roline Broekema, Mariet van Haaster-de Winter, Irina Verweij-Novikova, and Houkje Adema (2023). 'LCA-Based Labelling Systems: Game Changer towards More Sustainable Food Production and Consumption across Europe'. Wageningen University & Research.

Danish national initiative

Key milestones	• **April 2022:** the Danish Ministry of Food, Agriculture and Fisheries announced plans to publicly fund the development of a traffic-light climate label for all food categories. • The scheme is part of Denmark's Global Climate Action Strategy, which states that Denmark will reach climate neutrality by 2050.
Key deliverables	• Preparatory work has begun on developing the label in 2022 • The University of Aarhus is working on a proposed LCA PEF aligned methodology that could be used as a basis to generate generic footprints. • The scheme is due to be made available for the food industry to adopt on a voluntary basis.
Key stakeholders	The Danish government has established a working group led by the Danish Veterinary and Food Administration, with the support of the University of Aarhus.

Italian national initiative

Key milestones	• **2010:** Italy launched a programme to test a methodology for product footprinting [1]. • **2015:** Italy introduced the 'Made Green in Italy' certification through the law decree 221 as a voluntary scheme. • **2018:** 'Made Green in Italy' was legislated.
Key deliverables	• The scheme can apply to all products (goods and services) which originate in Italy. • To be able to display the 'Made Green in Italy' logo on their products, an applicant company must follow a set of requirements including conducting a PEF study and communicating the PEF results to consumers[1]. • The product performance on which the scheme is based on is derived from PEF Category Rules (PEFCRs). When a PEFCR was not available, a national product category rule was developed[2]. • The food PEFCRs developed include cheese, vinegar, pasta, pig and bovine meats.
Key stakeholders	• The operational regulation was enforced by the Ministry of the Environment and Energy Security. • Academic support for the scheme's implementation was provided by Sant'Anna School of Advanced Studies.

[1]Iraldo, F. (2021). The «Made Green in Italy » initiative. Moving the European markets toward a circular economy. PEF – a life cycle based harmonised toolbox – is intended to form the monitor in new regulatory measures for driving products in a green direction. NEF International Conference, 30 September 2021
[2]Boone, Koen, Broekema, Roline, Verweij-Novikova, Irina (2022). Product Environmental Footprint: Overview of EU and national public and private initiatives in agro-food

Existing environmental labelling schemes

from IGD

Initiatives included in the analysis

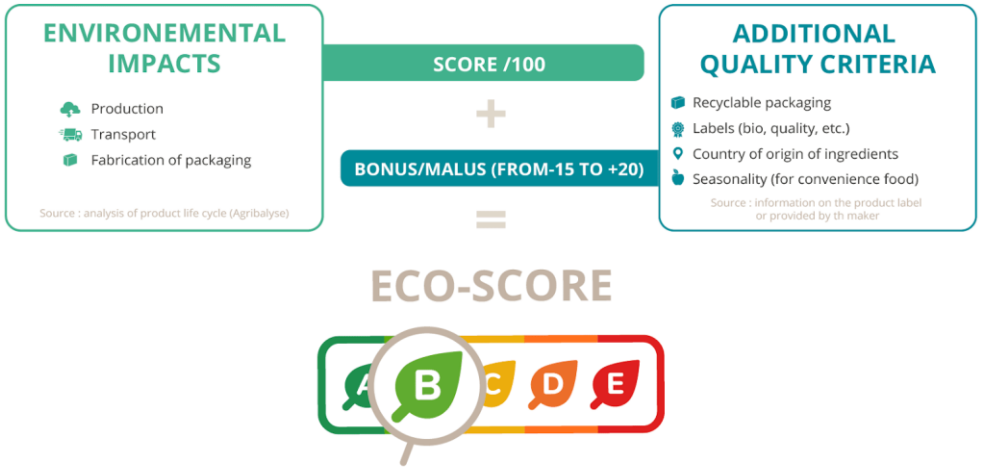
	Publicly available information on methodology	Included in this assessment
Eco score	Yes	Yes
Eco-Impact/Foundation Earth*	Yes	Yes
Planet score	Yes, though limited	Yes
Enviroscore	Yes	Yes
Made green in Italy	Yes, though limited	Yes
INOQO	Yes, though limited	Yes
Eco-score Beelong	Yes	Yes
Migros M-check	Insufficient information	No
Coop Sweden sustainability declaration	Insufficient information	No
Eaternity	Yes, though limited	Yes
French national initiative (ADEME)	Yes, though limited	Yes
UK national initiative (IGD)	Yes	Yes
Sustained	Insufficient information	No
OmniAction	Insufficient information	No
Nommm	Insufficient information	No
University of Oxford Environmental Impact Score	Insufficient information	No
Etichetta ambientale	Insufficient information	No
La Note Globale	Insufficient information	No

*Foundation Earth have previously been involved in 2 ecolabelling trials, but the details included in the analysis here are based on the methodology published in March 2023. The first pilot, which was launched in 2021, was inspired by the work from Oxford University and developed by life cycle assessors at Mondra, and used a label that is now used in Foundation Earth's current methodology. The second pilot ran in parallel and combined the Mondra method with a system devised by other researchers – this pilot has gone on to become Enviroscore.

Eco-score

Eco-score is a French five-level (A - E) label that scores products using LCA data from the Agribalyse database supplemented by a bonus/malus point system to account for additional impacts.

Data	• Secondary LCA data from the Agribalyse database • Product specific data for additional impacts
Life-cycle stages	• Cradle-to-fork
Indicators	• 14 PEF categories • Additional impacts: Recyclable packaging, labels, country of origin and seasonality
Comparison	• Between product categories and within (following the bonus/malus adjustments)
Scoring	• Single score aggregated following PEF weighting with further bonus/malus adjustments • Relative scoring
Label design	• RAG letter grading (5)
Governance	• Third party assurance applies to the LCA database, not to product specific data



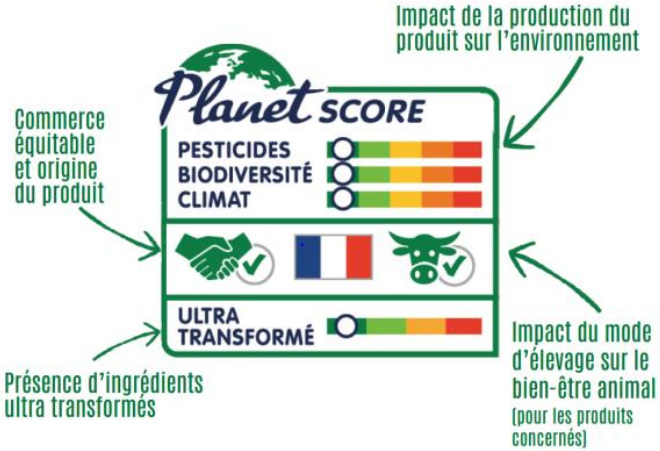
  Sources: Eco-score's website. Access here.

Planet-score

Planet-score is a French five-level (A-E) composite product label that scores products using LCA data from the Agribalyse database and supplements this data with additional indicators so that scores better reflect planetary boundaries.

Data	• Secondary LCA data from the Agribalyse database • Product specific data for additional impacts
Life-cycle stages	• Cradle-to-fork
Indicators	• 12 PEF categories (with corrections) • 13 additional impacts including pesticides, antibiotics, deforestation, GMOs, agricultural practices
Comparison	• Between product categories and within (following the bonus/malus adjustments)
Scoring	• An overall score and 3 sub-scores (for pesticides, biodiversity and climate) aggregated following an adjusted PEF weighting with further bonus/malus adjustments • Relative scoring
Label design	• RAG letter grading (5) for the overall score and three sub-scores • Additional Information provided on the breeding method
Governance	• Third party assurance applies to the LCA database, not to product specific data

Current layout of the label



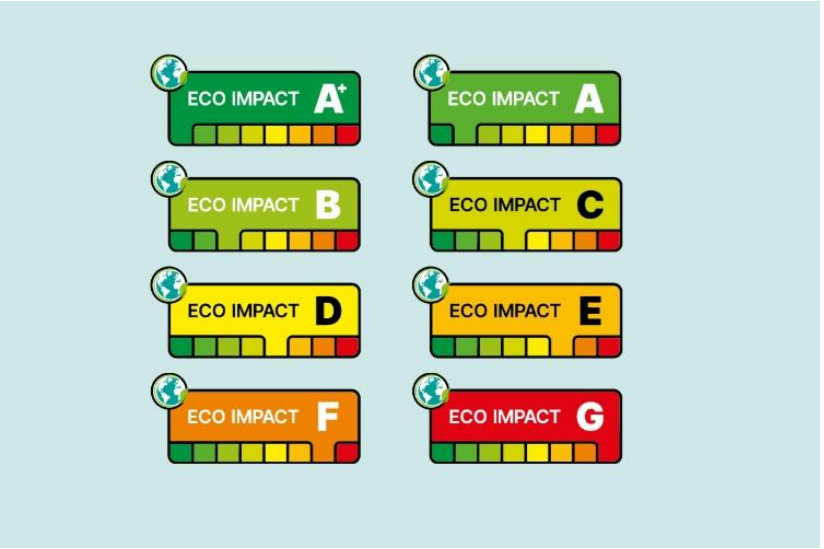
New layout of the label to be introduced on pack (announced on May 31st 2023)

  Sources: Planet-score's methodology (2022). Access here

Eco-Impact by Foundation Earth

Foundation Earth is an independent, non-profit organisation established to issue front-of-pack environmental labels. Eco-Impact is an eight-level (A+ to G) label which scores products using a PEF LCA using primary data, supplemented by secondary data.

Data	• Product specific LCA data supplemented with secondary data from allowed databases (where primary data is limited/unavailable)
Life-cycle stages	• Cradle-to-grave
Indicators	• 16 PEF categories
Comparison	• Between product categories and within
Scoring	• Single score aggregated following PEF weighting • Relative scoring
Label design	• RAG letter grading (8)
Governance	• Product certifications expire after 12 months, upon which products require recertifying



  Sources: Foundation Earth's methodology (March 2023). Access here

Enviroscore

Enviroscore is a five-level product label developed by a Belgian-Spanish institute with the aim to promote sustainable food production and consumption. Products are scored relative to the average European Food Basket.

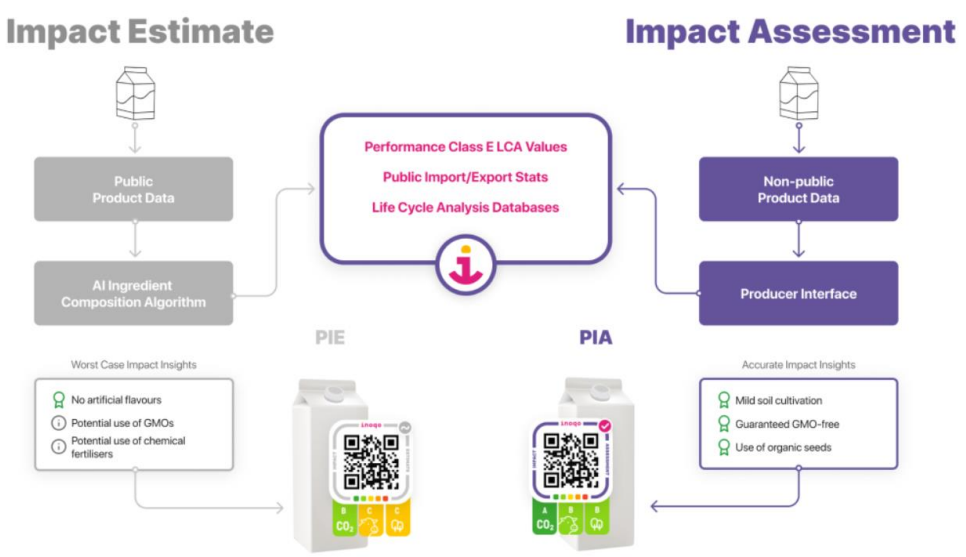
Data	• Product specific PEF LCA data supplemented with data from Ecoinvent and Agrifoodprint databases and other databases accepted by the European Commission
Life-cycle stages	• Cradle-to-grave
Indicators	• 16 PEF categories
Comparison	• Between product categories and within
Scoring	• A set of normalisation factors developed to aggregate the 16 PEF categories into a single score • Scoring relative to the European Food Basket
Label design	• RAG letter grading (5)
Governance	• Information unavailable

  Sources: Enviroscore's website. Access here

INOQO

INOQO are a privately founded Austrian food product label. Their services allow a producer to see the impact of their food products, and an estimate of its performance in comparison with third-party products.

Data	• Secondary LCA data from databases such as GS1 and Agribalyse • Product specific data provided by retailers and food brands (e.g., ingredients, packaging)
Life-cycle stages	• Cradle-to-shelf
Indicators	• Climate, animal welfare, biodiversity, nutrition, social, packaging, regionality, seasonality
Comparison	• Between product categories and within*
Scoring	• Information unavailable
Label design	• RAG letter grading (5) • Display three most impactful impacts (depending on product) • Additional information via QR code
Governance	• Information unavailable



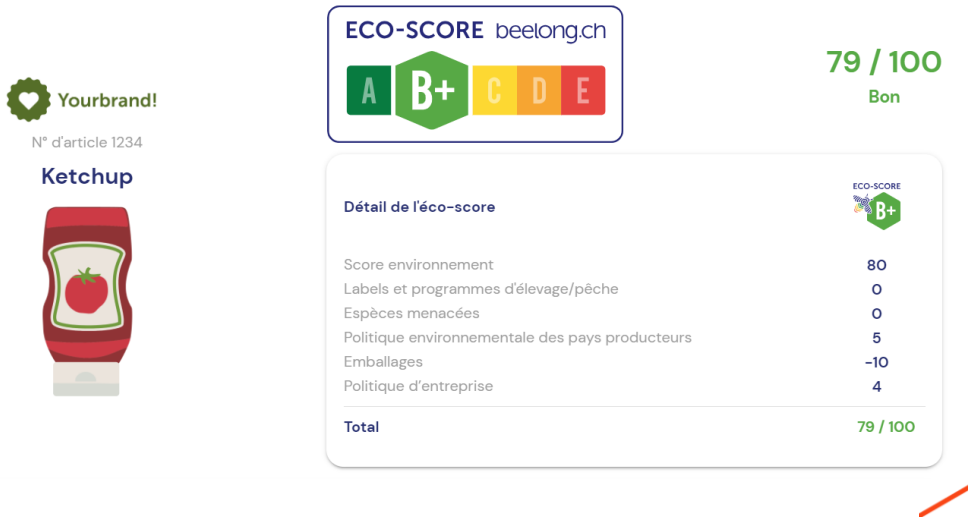
  Sources: INOQO's website. Access here

*This has been assumed based on publicly available information. INOQO states they deliver an impact assessment for the given product and an estimated impact assessment for 'third-party products', and so scores must therefore be comparable.

Eco-Score Beelong

Eco-Score Beelong is a privately founded Swiss product labelling scheme, that provides a life cycle assessment based on data from Ecoinvent, the World Food Database and Agribalyse, as well as actual data collected on food products.

Data	• Secondary LCA data from the WFLDB, Ecoivent and Agribalyse databases • Product specific data for additional impacts (composition, production methods, distances traveled, etc.)
Life-cycle stages	• Cradle-to-shelf
Indicators	• Carbon footprint, water consumption, water pollution, land use • Additional impacts: agricultural labels of ingredients, endangered species (fish), animal husbandry programmes, packaging, agricultural legislation, corporate sustainability policy, environmental policy of producing countries
Comparison	• Between product categories and within
Scoring	• Single score aggregated following an adjusted PEF weighting with further bonus/malus adjustments. • Relative scoring
Label design	• RAG letter grading (15) from A+ to G
Governance	• Scores are updated when brands communicate possible changes or by the Beelong team during specific controls • Underlying methodology is frequently updated, and at minimum every 2 years

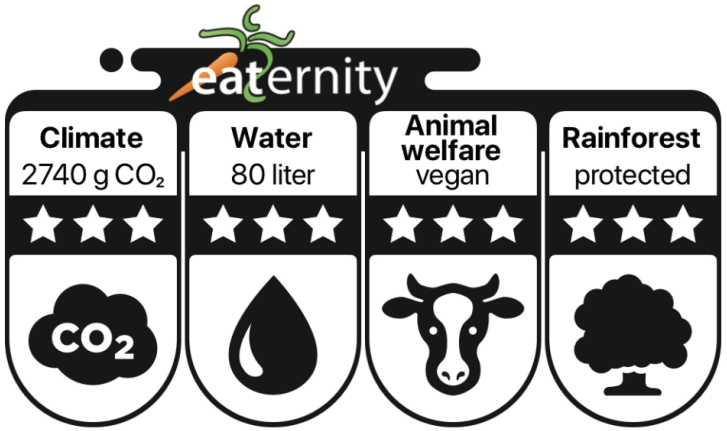


  Sources: Beelong's website. Access here

Eaternity

Eaternity is a privately founded Swiss product label, working with food producers and restaurants. Eaternity claims to have developed the world's largest environmental impacts database of food products.

Data	• Developed an LCA database of CO_2eq • Based on businesses' product recipes
Life-cycle stages	• Cradle-to-fork
Indicators	• Climate, water, rainforest, animal welfare
Comparison	• Between product categories and within
Scoring	• Scores are produced for each impact indicator • Scoring relative to 100,000 food products
Label design	• Raw impact figures (e.g., kg CO2e) • Score from 1 -3 stars (from 1 star: critical to 3 stars: very good). • Additional information via an App (barcode scan)
Governance	• Scores are based on a yearly-reviewed LCA database.



  Sources: Eaternity's website. Access here

Made Green in Italy

Made Green in Italy is an Italian label which scores food products as well as non-food products against a specific product benchmark. It requires producers to perform a full PEF LCA study for each product.

Data	• Full LCA PEF study for each product following all the applicable EU and national rules
Life-cycle stages	• Cradle-to-grave
Indicators	• 14 PEF categories • Applies PEFCRs available at EU level. Where not available national CRs were developed
Comparison	• Within product categories only
Scoring	• Single score aggregated following PEF weighting • Scoring relative to specific product benchmark
Label design	• Only Class A and B products can obtain the "Made Green in Italy" logo • Indicators on the three main impact categories are communicated • Additional information via a bidimensional bar code
Governance	• PEF studies are verified by an independent third-party certification body • Logo granted for three years, upon which product needs to conduct a new PEF study

Sources: Ministry of the Environment and Energy Security's website. Access here
Testa, F. (2020). How PEF methodology can support the green transition? The case of Made Green in Italy policy. Sant'Anna School of Advanced Studies. Access here.

French national initiative (under development)

ADEME are developing a methodology and label to inform France's national voluntary labelling scheme.

Data	Under development. The French initiative aims to prioritise semi-specific and specific data: • Secondary LCA data from Agribalyse • Supplemented with semi-specific data (e.g., recipe used, product origin, packaging type) and/or specific product data (e.g., weight and composition of the packaging material)
Life-cycle stages	• Cradle-to-grave
Indicators	• 16 PEF categories
Comparison	• Between product categories and within
Scoring	• Under development with plans to supplement the LCA with bonus / malus points
Label design	• Under development
Governance	• Under development

  Sources: ADEME (2022). Rapport du Gouvernement au Parlement. Affichage environnemental des produits alimentaires. Access here

Comparison of national initiatives and existing environmental labelling schemes

from IGD

Methodology – LCA approach & data

Labelling schemes can use a combination of primary (i.e. product-specific) and secondary data to assess environmental impact. Greater use of primary data can improve accuracy but can also pose a barrier to widespread adoption due to associated time/cost requirements.

Some national schemes aim to mitigate this by developing national databases, using secondary data, as a starting point for widespread labelling, from which products can transition to more primary data.

Key findings

- Most schemes use a combination of primary and secondary data
- Some schemes (Eco-score, Planet-score and Eco-score by Beelong) incorporate product specific information (such as a Fairtrade certification) using a bonus/malus point system

	LCA approach & type of data	Databases (For secondary data)
Eco-score	• Secondary LCA data • Product specific data for additional impacts	• Agribalyse
Planet-score	• Secondary LCA data • Product specific data for additional impacts	• Agribalyse
Eco-Impact by Foundation Earth	• Product specific LCA data supplemented with secondary data from allowed databases (where primary data is limited/unavailable)	• EcoInvent 3.9 • Agri-footprint 6.2 • GFLI • World Food Life cycle Database (WFLDB) • Agribalyse
Enviroscore	• Product specific PEF LCA data supplemented with secondary data	• EcoInvent • Agri-footprint • Other databases accepted by the European Commission
INOQO	• Secondary LCA data from databases • Product specific data provided by retailers and food brands (e.g., ingredients, packaging)	• GS1 • Agribalyse
Eco-score by Beelong	• Secondary LCA data • Product specific data for additional impacts (composition, production methods, distances traveled, etc.)	• World Food Life cycle Database (WFLDB) • EcoInvent • Agribalyse
Eaternity	• Developed an LCA database of CO_2eq • Based on businesses' product recipes	• Eaternity database
Made Green in Italy	• Full LCA PEF study for each product following all the applicable EU and national rules	• Information unavailable

French national initiative	• Under development. The French initiative aims to prioritise semi-specific and specific data as follows:
	  • Secondary LCA data
	  • Supplemented with semi-specific data (e.g., recipe used, product origin, packaging type) and/or specific product data (e.g., weight and composition of the packaging material)
		• Agribalyse

UK national initiative	• Representative impacts database at ingredient level • Integration of supply chain specific data as and when it becomes available	• Under development

Methodology - Lifecycle stages

The inclusion of different supply chain stages will influence the final score of the product.

Key findings

- Most labels include all life cycle stages, as recommended by PEF.
- Some schemes only measure impacts up to the supermarket shelf (INOQO, Eco-score by Beelong), with the rationale being that this is where the purchasing decision takes place.
- Generally, a full cradle-to-grave[1] assessment is recommended.

	Raw material acquisition and pre-processing	Manufacturing	Distribution	Consumer Use	End-of-life
Eco-score	✓	✓	✓	✓	
Planet-score	✓	✓	✓	✓	
Eco-Impact by Foundation Earth	✓	✓	✓	✓	✓
Enviroscore	✓	✓	✓	✓	✓
INOQO	✓	✓	✓		
Eco-score by Beelong	✓	✓	✓		
Eaternity	✓	✓	✓	✓	
Made Green in Italy	✓	✓	✓	✓	✓
French national initiative	✓	✓	✓	✓	✓
UK national initiative	✓	✓	✓	✓	✓[2]

[1]A cradle-to-grave assessment includes all life cycle stages from raw material acquisition to end-of-life
[2]Cradle-to-grave included only for packaging

Methodology – Impacts

The assessed ecolabels vary in terms of the indicators that are included in their impact assessment.

Key findings

- All labels include climate and water use.
- Most labels include the indicators that align with the PEF method.
- Some labels include additional non-LCA indicators such as pesticide impacts, animal welfare considerations, and health impacts.

	LCA indicators	Non LCA additional impacts
Eco-score	14 PEF categories	• Recyclable packaging • Labels • Country of origin • Seasonality
Planet-score	12 PEF categories (with corrections)	• Pesticides • Antibiotics • Deforestation • GMOs • Agricultural practices • Origin of production, • Irrigation • Packaging • Air transportation • Carbon stock • Synthetic fertilisers • Local production • Seasonality
Eco-Impact by Foundation Earth	16 PEF categories	None
Enviroscore	16 PEF categories	None
INOQO[1]	• Climate • Animal welfare • Biodiversity • Nutrition • Social • Packaging • Regionality • Seasonality	
Eco-score by Beelong	• Carbon footprint • Water consumption • Water pollution • Land use	• Agricultural labels of ingredients • Endangered species (fish) • Animal husbandry programmes • Packaging • Agricultural legislation • Corporate sustainability policy • Environmental policy of producing countries
Eaternity[1]	• Climate • Water • Rainforest • Animal welfare	
Made Green in Italy	14 PEF categories	• None
French national initiative	16 PEF categories	• Under development
UK national initiative	• Climate change • Water use • Water quality • Land use	• None

[1]INOQO and Eaternity do not specify which indicators used in LCA.

Methodology – Product comparisons

Ecolabels scores vary in their ability to allow consumers to compare scores between different product categories (e.g., steaks vs tomatoes) and within the same product category (e.g., egg sandwich vs chicken sandwich).

Key findings

- Some labels score the food products according to their ranking within a product category (e.g., Made Green in Italy), and therefore scores can only be compared to other products within the same category
- Other labels use the same scoring scale for all products (e.g., Eco-score Beelong), and so consumers can compare product scores both within and between categories.

	Comparison between product categories	Comparison within product categories
Eco-score	✓	✓ with the use of bonus/malus scores
Planet-score	✓	✓
Eco-Impact by Foundation Earth	✓	✓
Enviroscore	✓	✓
INOQO	✓[1]	✓[1]
Eco-score by Beelong	✓	✓
Eaternity	✓	✓
Made Green in Italy		✓
French national initiative	Under development	
UK national initiative	✓	✓

[1]This has been assumed based on publicly available information. INOQO states they deliver an impact assessment for the given product and an estimated impact assessment for 'third-party products', and so scores must therefore be comparable.

Methodology – Scoring approach

Most eco-labels do not present raw environmental impacts (e.g., kg CO2e) but instead convert impacts into a (usually single) score to support consumer understanding. There are three common aspects to scoring:

1. **Weighting:** Weighting is required to combine multiple environmental impacts into a single value.
2. **Bonus/Malus:** Some eco-labels apply bonus/malus points, based on non-LCA considerations, to the single, weighted value.
3. **Scoring Approach:** There are two common approaches:
   - **Relative:** The score is determined by a product's relative impact within a defined range, often bound by the highest and lowest scoring products within the system. This enables product comparison but does not indicate overall product sustainability.
   - **Absolute:** The score is determined by real-world environmental benchmarks (e.g., planetary boundaries). This enables product comparison and indicates overall sustainability which is why it is generally favoured by environmental experts.

Key findings

- **Weighting** – 7/10 eco-labels apply PEF aligned weighting
- **Bonus/Malus** – 3/10 eco-labels apply bonus/malus points
- **Scoring Approach** – 7/10 apply relative scoring

	Weighting	Additional steps	Scoring approach
Eco-score	PEF weighting	Bonus/malus applied for non-LCA impacts	Relative
Planet-score	Adjusted PEF weighting	Bonus/malus applied for non-LCA impacts	Relative
Eco-Impact by Foundation Earth	PEF weighting	N/A	Relative
Enviroscore	A set of normalisation factors developed to aggregate the 16 PEF categories into a single score	N/A	Relative to European Food Basket
INOQO	Information unavailable		
Eco-score by Beelong	Adjusted PEF weighting	Bonus/malus applied for non-LCA impacts	Relative
Eaternity	Individual scores are produced for each impact indicator	N/A	Relative to 100,000 food products
Made Green in Italy	Adjusted PEF weighting	N/A	Relative to specific product benchmark
French national initiative	PEF weighting	Under development	
UK national initiative	Adjusted PEF weighting	N/A	Absolute scoring based on planetary boundaries

Consumer-facing label

	Icon	Overall single score	Individual impact scores	Value presented	Value Range	Uses RAG	Colour Range	Additional features	Research on display format
Eco-score		✓		Letter grade	5 A – E	✓	5	N/A	N/A
Planet-score		✓	✓	Letter grade	5 A – E	✓	5	Additional information provided on breeding method	Information can be accessed here
Eco-Impact by Foundation Earth		✓		Letter grade	8 A+ - G	✓	8	N/A	Information can be accessed here
Enviroscore		✓		Letter grade	5 A – E	✓	5	N/A	Information can be accessed here
INOQO			✓	Letter grade	5 A – E	✓	5	• The three most impactful impacts are displayed on the label (depending on product) • QR code to find more info, INOQO also estimate third-party product impacts	N/A
Eco-score by Beelong		✓		Letter grade	15 A+ - E-	✓	5	N/A	N/A
Eaternity			✓	Raw values and stars	3 1 star – 3 star			Complete product assessment can be found on app	N/A
Made Green in Italy		✓		Product class	2 Class A – B			• Class C product cannot display the logo • QR code with link to detailed information	N/A
French national initiative				Under development					Information can be accessed here
UK national initiative		✓		Letter grade	5 A – E	✓	5	N/A	Information can be found on IGD's website

Consumer-facing label

Label design affects how and what information is communicated to consumers on an eco-labelled product.

Some labels have publicly disclosed that they have conducted consumer research to help design their product label.

Key findings

- Overall scores are widely used (7/10), individual impact scores are not.
- Letter grades are most common (7/10), though value ranges vary.
- RAG colours are common (7/10), with 5 colour range.
- Most labelling schemes include a coloured rating, from green to red.
- Eaternity and Made Green in Italy are the only label that was included in the analysis that don't include a coloured rating.

Governance

Third party assurance helps to increase the validity and robustness of a products' impact score. However, it's not currently publicly available whether most of the labels included in this analysis partake in third party assurance.

Key findings

- Some labels require third party assurance, such as Made Green in Italy.
- Some labels, such as Foundation Earth, require recertification every 12 months.

	Third-party assurance	Updates to products scores & data	Access to methodology Full methodology available online
Eco-score	Third party assurance applies to the LCA database, not to product specific data	Information unavailable	Information unavailable
Planet-score	Third party assurance applies to the LCA database, not to product specific data	Information unavailable	Access here
Eco-Impact by Foundation Earth	Information unavailable	Product certifications expire after 12 months, upon which products require recertifying	Access here
Enviroscore	Information unavailable	Information unavailable	Information unavailable
INOQO	Information unavailable	Information unavailable	Information unavailable
Eco-score by Beelong	Information unavailable	• Scores are updated when brands communicate possible changes or by the Beelong team during specific controls. • Underlying methodology is frequently updated, and at minimum every 2 years	Access here
Eaternity	Information unavailable	Scores are based on a yearly-reviewed LCA database.	Information unavailable
Made Green in Italy	PEF studies are verified by an independent third-party certification body	Logo granted for three years, upon which product needs to conduct a new PEF study	Access here
French national initiative	Under development		
UK national initiative	Under development		Available on IGD's website

Thank you

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