



Food Labeling:

Principles to support the uptake
of healthy and sustainable diets

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1 Introduction



1 Introduction

Transforming food systems to support healthy people and a healthy planet is fundamental to long-term sustainability, including mitigating climate and biodiversity catastrophes while equitably nourishing a growing global population.

Coaxing and driving food systems in a more sustainable direction will require countless interventions—most often simultaneously. While all food system stakeholders have important roles to play in this transition, food and agriculture companies – those that touch nearly all the food produced and consumed in the world – are critical to growing and manufacturing foods that nourish people and regenerate the planet. They also must use the power of their brands and marketing prowess to encourage people to choose the most nutritious and sustainable options.

This paper examines how food labeling can be used to support the widespread uptake of healthy and sustainable diets, where labeling falls short, and what can be done to increase the efficacy of food labeling systems for healthy people and a healthy planet.

WBCSD's [Food and Agriculture Roadmap](#) serves as the implementation plan for the [CEO Guide to Food System Transformation](#). It builds on the body of work developed by our [Food Reform for Sustainability and Health \(FReSH\)](#), [Scaling Positive Agriculture \(SPA\)](#), and [Global Agribusiness Action on Equitable Rural Livelihoods \(GAA-EL\)](#) projects. The Roadmap sets out the transformational targets, key action areas and solutions urgently required to transform food

systems to achieve environmental sustainability, equitable livelihoods, and healthy and sustainable diets for all. Grounded in scientific and economic analysis, the Roadmap helps companies prioritize and develop business-led solutions while advancing supportive policy, regulatory and financial frameworks. The Roadmap chapter on [Healthy and Sustainable Diets](#) highlights the urgent need to help consumers choose and access healthy and sustainable food.

One key action area focuses on shaping consumer awareness and demand for healthy and sustainable food options through effective labeling and providing information about food products to consumers in an accessible and clear way.

Since we published the Healthy and Sustainable Diets chapter, the breadth and diversity of food labeling systems has multiplied around the world. With over 500 labels linked to the environment and nutrition on the market today, the proliferation of labeling has raised questions regarding how to navigate this landscape and what types of principles to consider moving forward to support the pragmatic and impactful application of labels for companies and consumers alike. As a first step, FReSH members have identified the need to better understand when and how labels are most effective in supporting consumer behavior change towards healthy and sustainable diets, as well as the fundamental challenges associated with their implementation.

This document includes a high-level assessment of existing nutrition and environmental impact labels, with

a focus on the recent proliferation of scoring labels (e.g., traffic light systems), as well as the evidence to date on the factors that affect the efficacy and uptake of food labels. We propose a set of globally relevant principles that the agri-food industry believes should underpin effective nutrition and environmental impact labels (front-of-pack, on menus, and multi-channel) for food, with the ultimate goals of supporting consumer choice and industrial innovation to lessen the impacts of food on health and the environment. Building on the United Nations (UN) [Guidelines for Providing Product Sustainability Information](#), we have tailored these principles to be relevant and applicable to the agri-food sector. These principles will feed into and inform ongoing discussions related to health and environmental impact labeling held by governments, UN agencies, civil society, the private sector and other stakeholders of the [UN Food Systems Summit](#). The goal of this work is to help relevant stakeholders advance this topic collaboratively through the 2021 UN Food Systems Summit and beyond.

While this paper focuses on nutrition and environmental impact labels, it is important to note that other critical food system factors could be part of labels as well (e.g., labor, livelihoods, animal welfare, food safety, land rights, etc.). The decision to focus on nutrition and environmental impacts for this paper is due to the greater degree of research and evidence available on these topics in relation to food product labeling and the current market proliferation of labels on these topics. It is likely that many of the principles put forward below are applicable to other food systems topics as well.

② What are labels? How and why are they used?



2 What are labels? How and why are they used?

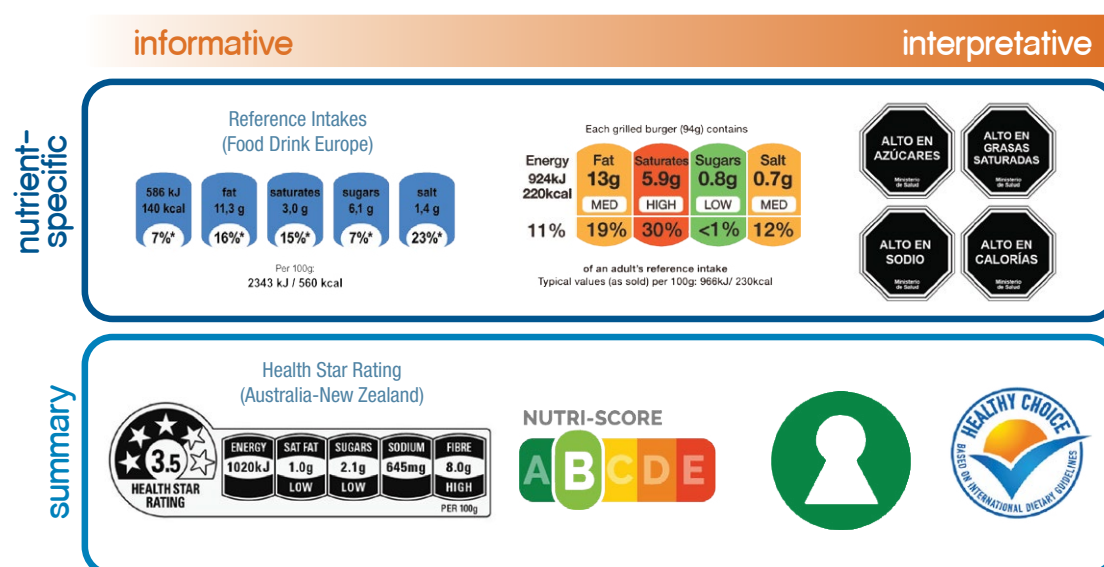
Labels transmit a sign, code, message or symbol to a consumer, with the intention of influencing consumer behavior.¹

Using labels to shift consumer behavior towards aspects of wellness and sustainability is a growing interest for businesses and other entities. According to the Ecolabel Index,² the nearly 500 labels currently on the market intend to indicate a preferable product, service or company based on defined standards or criteria for indicating sustainability. Many of these ecolabels communicate agricultural standards such as organic production; some include aspects of animal welfare or human labor. In addition to these ecolabels, there are also numerous labels transmitting information related to health, wellness and nutrition.

Regulators around the world have created rules and guidelines over the last 40 years for front-of-package labeling (FOPL) specifically for nutrition.³ FOPL for nutrition includes a wide variety of options. Figure 1 provides an overview of the different classes. For nutrition information on food, FOPLs complement the widely used (and often mandatory) back-of-pack nutrition labels. For environmental impact information on food, there are currently no internationally recognized or official guidelines and the proliferation of various types of labels is causing confusion.⁴ Many of the labels on the market indicate certifications or compliance with a standard (the International Trade Centre Standards Map provides an overview⁵) but do not offer information on specific environmental impacts, such as greenhouse gas emissions.

Nutrition labels provide information about the nutritional composition of the labeled food (an attribute that is measurable and verifiable) and can be found in regulatory databases. Environmental impact labels (e.g., regarding carbon footprint) often reflect modeled or procedural outcomes (e.g., certifications). As an example of modeled outcomes, it is possible to determine the information on the label using generic datasets on a food's agricultural impacts paired with a modeling methodology, such as life-cycle assessment (LCA). As an example of procedural outcomes, it is possible to determine the label's information by submitting a report or having an audit.

Figure 1: Classes of front-of-pack nutrition labels
Source: WHO Regional Office for Europe⁶



Labels that demonstrate a score (referred to in this paper as “scoring labels”) for nutrition and environmental impacts are a relatively new concept with growing interest.⁷ A range of public and private entities have created scoring labels. They often use detailed and scientifically robust datasets and appear on front-of-pack labels, websites, mobile phone applications, and menus. They often represent a summary of several impact indicators and use visual depictions, such as traffic light colors (red, yellow, green) to signify if a product or menu option is healthy or environmentally

sustainable based on the criteria established by the group that developed the label. Scoring labels are gaining in popularity around the world. Figures 2 and 3 (on pages 10 and 11) present several examples. An advantage of scoring labels is that they can indicate the performance of a food product compared to other food products along a common scale and allow for comparison between and across products.⁸

Compared to labels that focus on a single issue or topic, scoring labels tend to take a more holistic approach to the nutrition profile

or environmental impacts of food products. This aggregated and harmonized approach often intends to reduce confusion among consumers (e.g., only one or two labels can display a lot of information) but it can also be challenging when consumers are looking for the performance of a food’s score relative to a specific issue they care about (e.g., organic or fair trade).⁹ For this reason, in order for scoring labels to truly support the broad uptake of healthy and sustainable diets, we recommend the careful consideration and application of the principles outlined below.



③ Which scoring labels are currently on the market?



3 Which scoring labels are currently on the market?

Many scoring labels for nutrition and environmental impacts are currently in use, with a variety of attributes. Figures 2 and 3 provide an overview of scoring labels and their various attributes, including:

- The visual design (e.g., if color or black and white)
- The developer (e.g., if public or a private entity developed the label)
- The scaling system used (e.g., stars or letters)
- The application of the scale's focus and scope (i.e., product types and indicators)
- The calculation method, framework or algorithm used to define the score, as well as the source of data and if a public scoring tool is available

- The specific indicators (e.g., climate, biodiversity, nutrients)
- The method's maintainers and endorsers (organizations actively controlling calculation methods or approving and supporting the method used).

Scoring labels are proliferating globally at various scales and with various levels of publicity. Figures 2 and 3 therefore only reflect known scoring labels at the time of publication. Figure 3 includes, as important references, three examples of threshold labels for nutrition (i.e., when there is a warning when a nutritional element exceeds a specified amount). Most scoring labels in use today keep the nutrition and environmental information separate.







Nutrition labels are, compared to environmental impact labels, mostly developed by public organizations, and often have publicly available calculation tools or methods. The scoring methods for nutrition tend to be similar across these labels, while the scoring methods for environmental impacts are diverse. For example, the range of environmental indicators included in the score can be up to 16 (e.g., carbon footprint, eutrophication, etc.) or only one (carbon footprint). The World Resources Institute's (WRI) "Cool Food Meal" scoring system is one of the only systems that combines both nutrition and environmental information.



Figure 2: High-level benchmark of environmental scoring labels

	Label	Scale	Market*	Scope**	Calculation method – Data – publicly available	Env. impact categories and (nutritional) indicators***	Aggregated?†	Developers - public or private	Organizations involved or consulted include	Sources
ECO-SCORE		A-E	Retail	Farm to Processing	LCA-based: Agribalyse database Additional quality criteria (bonus/malus system) Calculation tool public: Yes	Env. footprint (EU-PEF impact categories), country of origin, seasonality, recyclability, threatened species, other labels	YES	Public + Private	Yuka, Eco2 Init., ScanUp, OpenFood Facts, Etiquettable, Frigo Magic, La Fourche, FoodChéri, Marmiton, Seazon	Eco-Score documentation
BEE LONG ECOSCORE		A-E	Food service	Farm to Processing	LCA-based: WFLDB Calculation tool public: No	C footprint, H2O footprint, country of origin, soil use, seasonality, threatened species, innovation, other labels	YES	Private	Beelong, Quantis	About Beelong Ecoscore Beelong Ecoscore documentation
FOUNDATION EARTH	ECO IMPACT (UK)	A-G	Retail	Farm to Shelf	LCA-based: Mondra LCA Oxford University, Agroscope Calculation tool public: in development	C footprint, H2O footprint, biodiversity	YES	Public + Private	Foundation Earth, Oxford University	About Eco Impact Eco Impact documentation
	ENVIROSCORE (EU)	A-E	Retail	Farm to Fork	LCA-based: Ecolinvent, Agrifootprint database Calculation tool public: in development	Env. footprint (EU-PEF impact categories)	YES	Public + Private	Foundation Earth, EIT Food; KU Leuven, AZTI	About Enviroscore Enviroscore documentation
M-CHECK		1-5 Stars	Retail	Farm to Processing	LCA-based: WFLDB 3.1 database Calculation tool public: No	C footprint	YES	Private	Treeze, myclimate, Intep, HAFL, Migros	About M-Check
COOL FOOD MEALS		N/A	Retail	Farm to Processing	GHG Threshold: FAO's Food Balance Sheet Identifying Cool Foods: Emission factors grey literature (C footprint) + FSA model (nutrition) Calculation tool public: No	C footprint, nutritional quality	N/A	Public + Private	WRI, The Cool Food Pledge	Cool Food Meals documentation Additional documentation on Cool Food Meals
EATERNITY SCORE		1-3 Stars	Retail, Food service	Farm to Processing	LCA-based: Ecolinvent, Agribalyse, Agri-food and Agri-footprint database, WFLDB, BONSAI, Hestia, Rise Calculation tool public: No	C footprint, H2O footprint, other labels	NO	Private	ZHAW, UZH, ETHZ, FiBL, Quantis, Eaternity	About Eternity Eternity documentation
PLANET-SCORE		A-E, color scale, graphic	Retail	Farm to Fork	LCA-based: Agribalyse Calculation tool public: In development	Env. footprint (EU-PEF impact categories), biodiversity, country of origin, soil use, seasonality, human health (food additives)	YES/NO (1 aggregated score + 4 categories)	Public + Private	ITAB, Sayari and Very Good Future	About Planet Score Planet Score documentation

Figure 3: High-level benchmark of nutrition scoring labels

	Label	Scale	Market	Focus [‡]	Calculation method - Data – publicly available	Nutritional indicators	Aggregated?	Developers - public or private	Organizations involved or consulted include	Source
NUTRI-SCORE		A-E	Retail	Food products	Method: Nutritional values with point system per 100 grams or mL Data: Nutrition label Calculation tool public: Yes	Depends on food type, examples: Sugar, saturated fats, trans fats, sodium, fibres,...	YES	Public	PNNS, ANSES, HCSP, Transnational Scientific Community of: Belgium, France, Germany, Luxembourg, The Netherlands, Spain, Switzerland	Nutri-Score Documentation
GUIDING STARS		1-3 Stars	Food service	Food products	Method: Nutritional values with point system per 100 kilocalorie (kcal) serving size Data: Nutrition label product or USDA Nutrient Database Calculation tool public: Yes	Depends on food type, examples: Sugar, saturated fats, trans fats, sodium, fibres,...	YES	Private	Scientific Advisory Panel (SAP), (WHO, US Food & Drug Admin. etc.) Guiding Stars Licensing Company	Guiding Stars Documentation
HEALTH STAR RATING		0.5-5 Stars	Retail	Food products	Method: Nutritional values with point system per 100 grams or mL Data: voluntary – companies themselves Calculation tool public: Yes	Depends on food type, examples: Sugar, saturated fats, trans fats, sodium, fibres,...	YES	Public + Private	HSRAC, FRSC, The Forum Front-of-Pack Labeling (FoPL) Steering Committee	Health Star Rating Documentation
UK TRAFFIC LIGHT LABEL		Color scale: green, red, orange	Retail	Packaged food	Method: Threshold values per 100 grams or portion Data: voluntary – companies themselves Calculation tool public: Yes	Voluntary system under Food Regulation, no controlled database: Fat, saturates, (total) sugars, salt	NO	Public	Department of Health, the Food Standards Agency UK	About UK Traffic Light Label
HEALTHIER CHOICE LABEL		N/A	Retail	Food products	Method: Threshold values per 100 grams Data: Nutrient analysis reports from companies Calculation tool public: Yes	Depends on food type, examples: Sugar, saturated fats, trans fats, sodium, fibres,...	NO	Public (varies per country)	Health Promotion Board (Singapore), HCL Secretariat, Nutrition Division (Malaysia),...	About Healthier Choice Label Additional information about Healthier Choice Label
MINSAL WARNING LABEL		N/A	Retail	Packaged food	Method: Threshold values per 100 grams Data: Nutrition label Calculation tool public: No	Calories, sodium, sugar, saturated fats	NO	Public	MINSAL	About MINSAL Warning Label

Figures 2 & 3: 2. High-level benchmark for environmental impact scoring labels (top); 3. High-level benchmark for nutrition scoring labels.

Legend (in brackets indication of which part of the figure has which column):

*Market (2 and 3): The market context (e.g., retail or food service) where the scoring label is used;

**Scope (2): The included system boundaries for the life-cycle stages (e.g., farm to fork, which includes retail impacts or farm to processing);

***Environmental impact categories and (nutritional) Indicators (2): C footprint = carbon footprint (kgCO2eq), H2O footprint = water footprint (various indicators concerning water use and pollution);

†Aggregated (2 and 3): If one element (such as one score) summarizes multiple impact categories/indicators (YES) or if multiple elements appear separately (such as showing multiple categories) (NO);

‡Focus (3): Products on which label can be used, ranging from packaged food to vegetables and other non-processed foods.

4 Can scoring labels drive behavior change?



4 Can scoring labels drive behavior change?

According to the World Health Organization (WHO), "For FOPL to support consumers to make informed food purchases and healthier eating choices, consumers must be aware of, and recognize the FOPL, understand what it means and be able to use it correctly, and be motivated to use it."¹⁰

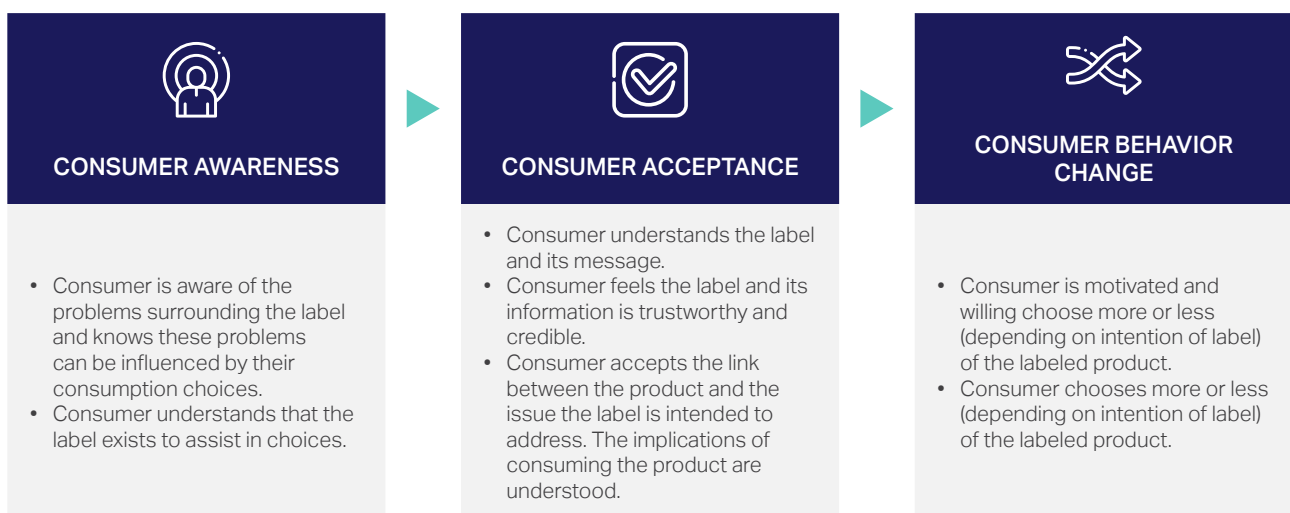
Generally, this means that FOPL will not drive behavior change on its own; sufficient awareness and acceptance (described in Figure 4) among consumers is key to support lasting behavior change.^{11,12,13,14,15,16}

Awareness of environmental and nutrition issues is an important driver of consumer response to labels on these topics.^{18,19} Awareness can be demographic-specific and at the same time can be more indicative of consumer behavior than other demographic factors, such as income.²⁰ This suggests that sufficient awareness in a target consumer group (e.g., consumers with unhealthy diets or diets that have high environmental impacts) is an important pre-condition for that target group to change behavior in response to a label.^{21,22} Public education or marketing campaigns, as well as providing additional information on food packages, are examples of ways to increase awareness of

information on labels.^{23,24} In addition to awareness, acceptance of a label is considered important in informing behavior change. Consumer acceptance of scoring labels varies demographically and geographically, and evidence suggests this can be related to the design of the label.^{25,26,27,28,29} Well-designed labels convey something meaningful to consumers – something most people can understand quickly, without having to study the label, which can rapidly inspire or motivate the intended behavior. For example, the black stop sign-shaped nutrition labels used in Chile (see Figure 3) clearly depict the desired behavior to the consumer.

Figure 4: Overview with explanation of behavior change

Source: Adapted from Leire et al. (2005)¹⁷



Note: Awareness (left) and acceptance (center) influence a consumer's actions (right)

Beyond awareness and acceptance, consumers may prefer labeled products based on perceptions of improving their own well-being or in response to general social pressure (like popularity) related to the issue the label reflects (even when the information may not lead to an actual benefit, such as an improvement in health for the consumer). As an example of how labels influence perceptions, the “halo effect” is the tendency of consumers to perceive labelled products to be “better” than non-labelled products on even more criteria than a label is intended for (e.g., consumers can inappropriately perceive a label indicating that a product is more environmentally friendly as also being healthier).^{30,31} The role of awareness, acceptance and popularity of an issue may explain the range of findings across studies on labeling and scoring systems. For example, improved nutrition or animal welfare may inspire greater behavior change than an environmental label due to the attention given to these issues in public health or pop culture.^{32,33} Some research has demonstrated that when a food product has both a nutrition and environmental score, the nutrition score primarily drives behavior change.³⁴

Specific recommendations and educational outreach can help to guide customers in understanding and using different kinds of labels on one package. Over time, understanding of consumer behavior in relation to different labeling systems and combinations of labels will likely evolve as consumer awareness and acceptance of environmental and nutrition issues shift. It is important to note that research on scoring labels tends to consider nutrition and environmental impact scores separately (or together without combining them into a single score), which helps to determine which of the labels are most likely to influence consumer behavior.³⁵ Given the breadth and diversity of sustainability and nutrition issues, as well as

potential interest in including more than one label or score on packs (e.g., such as an Omnilabel, proposed in the context of the 2021 UN Food Systems Summit³⁶), there is a need for additional research on consumer behavior with respect to combined scoring information.

Overall, scoring labels specifically for environmental impacts are relatively new; limited but growing data demonstrate their efficacy in driving behavior change.^{37,38} For example, a new study in a simulated online environment with a small group of German participants shows that simple and clear scoring systems can help influence behavior change towards better-scoring products.³⁹ This limited evidence is promising and further work should support improvements in the evaluation of the efficacy and effectiveness of scoring systems in real-life consumer scenarios, as well as how scores can help drive companies towards improved formulation from sustainability and nutrition standpoints.^{40,41} A solid evidence base on the effectiveness of scoring labels can help guide improvements in their application and ensure measurable advancements in healthy and sustainable consumption patterns.

Finally, many things beyond the information provided on a package, website or menu influence people’s food choices. Food decisions tend to be automatic decisions, governed by impulse and habit.⁴² Factors such as convenience, price, taste, culture and nostalgia weigh heavily in rapidly made choices in the supermarket aisle or at the restaurant counter.⁴³ While labeling is a promising and important intervention to support changes in consumer behavior towards healthier and more sustainable eating patterns, it will not shift habits or preferences immediately and it will inevitably have different effects on different people, or even the same person at different moments in time. However, over time, as consumers become more familiar with labeling and scoring systems, they may exert greater influence over food decisions – linking back to awareness and acceptance of the issues the label intends to address, public trust in the label, and the individual’s willingness to shift old habits and try something new.



5 Building on the United Nations
*Guidelines for Providing Product
Sustainability Information*



5

Building on the United Nations Guidelines for Providing Product Sustainability Information

With the Sustainable Development Goals (SDGs) and the UN Food Systems Summit (UN FSS) setting the global ambition for driving food system transformation, there is an opportunity for the private sector to be at the table to implement and scale the necessary changes.

Applying scoring labels to food products is one way in which business can aid consumer awareness and choice in support of these broader aims. Companies are looking to government leaders, policy-makers and academic experts to establish consistent and harmonized approaches to nutrition and environmental impact scoring labels, especially for the underlying data and acceptable methodologies used to provide this information. The purpose of this section of the document is to

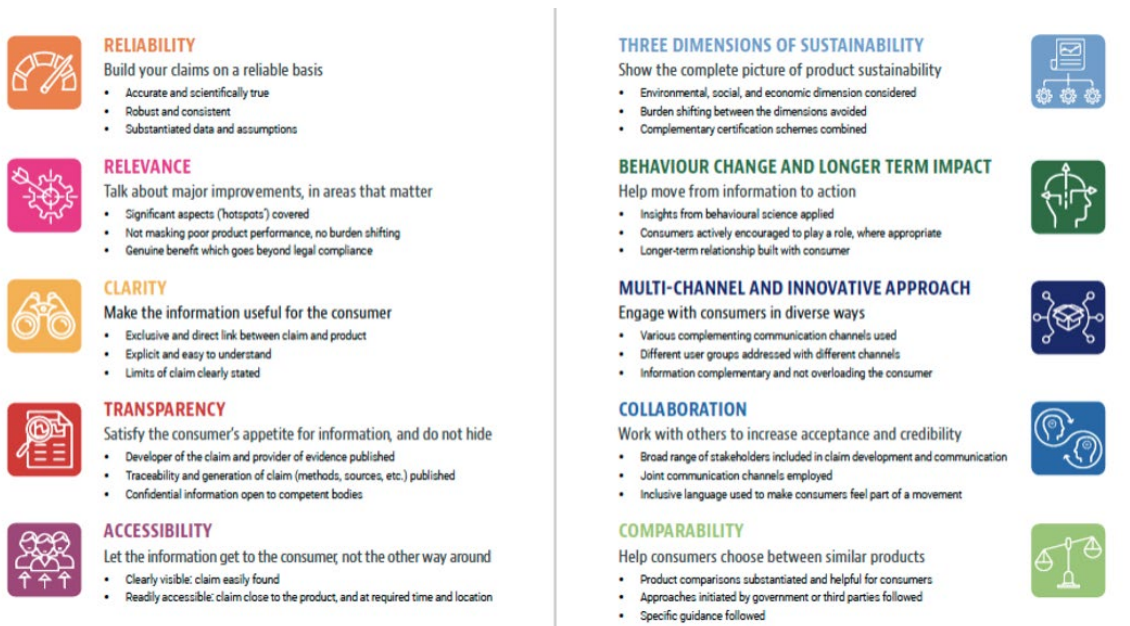
highlight important considerations from the perspective of the private sector to support the development of consistent and harmonized approaches to food product scoring labels in the form of 10 key principles.

The purpose of the 10 principles in the United Nations *Guidelines for Providing Product Sustainability Information*⁴⁴ (Figure 5) is to establish essential considerations for providing product sustainability information to consumers and to encourage sustainability leadership by business and other entities. The UN Principles intend to be relevant across all sectors and product types but they require further contextualization and adaptation to ensure their relevance and applicability to the food system, especially with regards to scoring or labeling food.

Therefore, rather than starting from scratch, industry leaders have worked together to propose adaptations to these principles for the food system. First, each UN Principle is presented in its original form (usually summarized) and then the adapted version of the Principle is presented. The adapted version is based on existing literature and discourse on nutrition and environmental impact labeling in the food sector.

It is important to acknowledge that the UN did not design these guidelines to provide nutrition information. There are other sets of guidelines available to support nutrition disclosure.⁴⁵ However, the adapted principles outlined below are applicable across nutrition and environmental impact scoring labels and complement other forms of guidance available.

Figure 5: Principles from the United Nations Guidelines for Providing Product Sustainability Information



ESTABLISHING PRINCIPLES FOR FOOD SCORING LABELS

The primary objective of nutrition and environmental impact scoring labels is to help consumers make informed choices. A scoring system can also promote sustainability

leadership, encouraging businesses to foster improvements in food systems. Below we include each summarized principle according to the UN Guidelines, followed by

our recommended additions or adaptations to each principle for nutrition and environmental impact scoring for food.

Principle 1: Reliability

Definition according to the UN Guidelines

The conveyed message needs to follow and reflect the available evidence. Gather information about the methods and data used in the labeling system (state of the art, up to date). Take extra care when looking at limitations such as exclusions and assumptions built into the evidence. Communicate key limitations to stakeholders.

Adapted principle 1 for nutrition and environmental impact scoring for food

Design a scoring system using either primary or secondary data or a mixture of sources. Communicate a methodological summary of the data sources (e.g., Agribalyse, ecoinvent, World Food LCA Database) and the calculation method (e.g., life cycle assessment following an ISO standard) applied for the score publicly as part of the company's communication about the scoring system. Provide methodological and other supplemental information about a scoring label (e.g., on an easy to locate website). Require a trusted third-party verification of the score. Disclose the limitations of the data and calculation method used publicly, along with the methodological summary. This principle ensures consistent evidence-based approaches where it is possible to check the accuracy and that promote consumer acceptance to drive behavior change towards foods with better scores.



Principle 2: Relevance

Definition according to the UN Guidelines

Highlight characteristics or innovations that make a difference in a product and ensure any claims made go beyond legal requirements. The claims must reflect aspects integral to the product (function, materials, or performance) and ensure that any changed behavior would have a relevant impact.

Adapted principle 2 for nutrition and environmental impact scoring labels for food

Couple nutrition and environmental impact scoring labels for food with information that underscores attributes that go beyond business-as-usual and legal requirements for agriculture, sourcing, processing and formulation (and more, as relevant). The purpose of this principle is to disrupt business-as-usual practices and ensure scores reflect relevant actions made by companies beyond legal compliance. This principle is analogous in many ways to the concept of “additionality” in the carbon credits market, which ensures a project has generated a carbon credit beyond business-as-usual. This principle has important implications for the method and framework used for the calculation of the score. For example, this principle suggests that scoring systems for environmental impact (e.g., greenhouse gas emissions) should reflect improvements beyond business-as-usual and legal compliance. This principle is important to driving systemic change, as it ensures scoring can track improvements in nutrition and environmental impact. Another important aspect of this principle is that the score reflects relevant aspects of the characteristics of the food item. As an example, most nutrition scoring does not include information on whole grains; however, widely accepted scientific evidence shows diets low in whole grains have increased risk for diet-related diseases and diets high in whole grains have reduced risk for diet-related diseases.⁴⁶ Therefore, according to this principle, nutrition scores should reflect whole grain content as a relevant characteristic of cereal food items. As another example of relevance, water scarcity is an international consensus metric⁴⁷ that demonstrates large regional variability in the impacts of water use. Therefore, according to this principle, the metric of water scarcity and not just water use (e.g., consumption without considering regional scarcity) is more relevant as a metric for scoring.

Principle 3: Clarity

Definition according to the UN Guidelines

Avoid vague, ambiguous and broad claims and share information that helps consumers understand their role in the impact of their consumption and their role in improving product performance. The graphical elements of a label help with this.

Adapted principle 3 for nutrition and environmental impact scoring labels for food

Nutrition and environmental impact scoring labels and complementing information should reflect specific measurable characteristics (e.g., greenhouse gas emissions, or quantity of sodium) that influence the score in order to avoid vague and non-specific information that cannot help improve the score performance or behavior change. If scores represent aggregated or netted values (e.g., emissions of CO₂ and removals of CO₂), disaggregated scores should be available publicly as well. So, for example, if the scoring aggregates multiple indicators to give a single score, the public should have access to the sub-scores the aggregation comes from. Furthermore, because labels are often physically located on packaging, it must be clear what the indicated environmental impact score is referring to. For example, whether is it referring to the food within the packaging, the packaging itself, or both. The clarity of a score can help transmit information to the consumer that enables their acceptance of the label and thereby its effectiveness in driving behavior change toward a specific goal.

Principle 4: Transparency

Definition according to the UN Guidelines

Allow consumers to evaluate the information that underpins the claim. For this, the label system needs to provide comprehensible information and adapt the information supply to the consumer's interest and product-related needs. In general, tailor the level of information to the scoring type and what the consumer needs to understand the information. If the underlying information is confidential, then do not make the claim. Selected methods, data sources, assumptions or professional judgements, and value choices must be available or published. If confidential information arises, competent bodies must be able to access it to verify the claim.

Adapted principle 4 for nutrition and environmental impact scoring labels for food

Nutrition and environmental impact scoring labels and complementary information should reflect, as much as possible, non-proprietary information that the organization can share publicly with consumers. The implications and consequences of any aggregated information should be clear. The source of the data and the method applied to create a score should be public and any limitations should be clear to consumers. For example, if the label chooses a proxy from a food database that is not from the correct country or is based on data from just one study that is not scientific consensus, disclose this assumption and limitation. Verify and protect confidential data used to inform scoring (e.g., anonymize, aggregate or transform it in a way that does not distort the evidence yet protects confidentiality). If it is not easy to reproduce the score's calculation with publicly available information (e.g., it is based on unshared primary data), a trusted third party should verify the results using a replicable method or protocol available to the public. When primary data demonstrate a different score than secondary data (e.g., available in any life-cycle inventory database) for the same item, document and demonstrate that the explanation or investigation of the difference does not reflect a methodological difference (e.g., allocation), an assumption or an uncertainty. Transparency may be a way to ensure consumer acceptance of the label and thereby its effectiveness in driving behavior change.

Principle 5: Accessibility

Definition according to the UN Guidelines

Present information to consumers such that they do not need to spend time searching for the information. Clearly visible claims with appropriate information should be available where and when consumers need it. Avoid any barriers and use several communication methods to satisfy different information-seeking habits.

Adapted principle 5 for nutrition and environmental impact scoring labels for food

Present nutrition and environmental impact scoring labels and complementary information to the consumer in a way that is clear and suitable for the target population. The basic version of a labeling system that appears on food packaging or signs in stores should employ a simple, harmonized approach that works across multiple markets and, if possible, globally, making the relevant information clear and available to consumers when they need it. In certain cases, provide complementary information through additional channels targeted at the population the information intends to serve (e.g., if the target population is unlikely to use a mobile phone application, then a mobile phone application would not be an accessible way to transmit information).

Principle 6: Three dimensions of sustainability

Definition according to the UN Guidelines

Inform the consumer of the improved performance of the product in all three sustainability dimensions (environmental, social and economic). Consider all relevant aspects of sustainability. Take complementary certification schemes into consideration. If using a single score, specify the overall sustainability performance and references to each dimension.

Adapted principle 6 for nutrition and environmental impact scoring labels for food

If a score is to consider multiple sustainability aspects, these scores should reflect Principle 3 on clarity: in general, do not present the multiple dimensions of sustainability as a combined single score. For example, separate the score for nutrition and the score for environmental impacts. There may be exceptions to this if it is possible to clearly interpret the design of a scoring system for multiple indicators. One reason for separating scores for various dimensions is to prevent a lack of clarity in interpreting the score. Another reason is that each score may have various levels of uncertainty. For example, nutrition is an intrinsic aspect of a food that it is usually easy to measure or infer, whereas environmental impacts usually come from models and can have a high level of variability (e.g., between seasons) and uncertainty (e.g., the models may not capture reality, especially when based on generic database information). Another reason for showing scores separately is because they may conflict. For example, in some cases products with lower environmental impact scores are not healthier than products with higher impact scores (e.g., there is no evidence that sugars produced with more sustainable agricultural methods are healthier than sugars produced with less sustainable agriculture methods).



Principle 7: Behavior change and long-term impact

Definition according to the UN Guidelines

Encourage action/reuse and disposal during purchase. Implement engagement processes to secure longer-term relationships to better understand their behavior and information needs. This helps your own improvement and the development of educational sustainability content for society. Embed the sustainability information in a wider context and support customers' sustainability knowledge.

Adapted principle 7 for nutrition and environmental impact scoring labels for food

While preliminary evidence exists, further evidence is needed to demonstrate the efficacy of nutrition and environmental scoring labels in relation to long-term changes in consumer behavior and ultimately the desired observable outcomes (e.g., improved dietary health in a given population; reduced environmental impacts of food production). Periodically evaluate the efficacy of labels in driving change towards healthier and more sustainable diets across various consumer populations.

Principle 8: Multi-channel and innovative approach

Definition according to the UN Guidelines

Address consumers who need information. Remind and inspire consumers creatively about how they can act more sustainably and use different communication approaches for this goal.

Adapted principle 8 for nutrition and environmental impact scoring labels for food

Nutrition and environmental scoring labels should have complementary information to help build trust with consumers and inspire and inform consumers in creative ways, using a variety of communications approaches. Online or other technology-based approaches may be relevant in driving behavior change for subsets of consumer populations but not for all. An on-product score may not directly influence several consumer behaviors that are relevant to improving health and environmental impacts related to food, for example, increasing plant-based food consumption, decreasing food waste, and decreasing over-consumption.

Principle 9: Collaboration

Definition according to the UN Guidelines

A wide group of actors and stakeholders must make the label through collaboration, keeping in mind the use of inclusive language to inspire consumer behavior change. Inviting the involvement of various stakeholder groups (NGOs, government, etc.) in the creation of the label will likely create greater public acceptance of the label itself.

Adapted principle 9 for nutrition and environmental impact scoring labels for food

Align nutrition and environmental impact scoring labels and complementary information pragmatically with industry and relevant stakeholders such as regulatory officials and NGOs. It is important for collaboration to aim to improve the efficiency and efficacy of scoring labels. Highly quantitative approaches tend to slow down the process to reach consensus and application. To avoid the proliferation of different types of scoring labels that can lead to confusion, lack of alignment, and loss of resources, there is a need for collaboration that reaches across various market regions to ensure consistency and harmonization of labeling approaches, enabling their use internationally as appropriate.



Principle 10: Comparability

Definition according to the UN Guidelines

Consumers need guidance in product comparisons only where it really helps them make sustainable choices. Base comparisons on very strict and objective rules relevant to the specific product (such as product category rules). Participation by companies is necessary in government-led or third-party initiatives or industry/sector collaborative approaches to develop constructive comparability.

Adapted principle 10 for nutrition and environmental impact scoring labels for food

Nutrition and environmental scoring labels and complementary information should inform the choice of better-scoring foods within a food category (e.g., beverage) and inform the choice of better-scoring foods out of the specific food category. The calculation of a nutri-score, for example, allows for comparisons across products in various categories (e.g., comparing a yogurt to a breakfast cereal).

If environmental scoring is to drive behavior towards out-of-category replacements, score comparisons across food categories should support the adoption of new dietary patterns by consumers (e.g., encourage people to choose more sustainable diets). Scores within a category should reflect production practices (e.g., encourage the purchase of more sustainable products). To reflect the “Relevance” principle and drive relevant behavior change, it is important that environmental scoring be both consistent within a category and allow for comparisons across categories (e.g., tea versus milk for a drink, or a peach versus a chocolate bar for a snack). This requires the careful design of a scoring system that allows the level of granularity of the score (e.g., if 3-5 points) to reflect the positioning of a product within its category and out-of-category. As an example, this would mean that not all dairy products have the same score. A last consideration of the principle of comparability is that regional governments have different acceptable evidence for the nutritional and environmental impacts of food.⁴⁹ Therefore, the relevant authorities must accept a scoring system, yet the system must still allow for fair comparability across regions.

COMPARING PRODUCTS

Environmental impact quantification frameworks (like the European Commission’s Product Environmental Footprint – PEF) usually focus on comparing products within a single category (e.g., dairy, beer, pasta, packed water). This is because the service or function provided by a product category is often tied to a fair and helpful unit of comparison. Impacts per mass (e.g., kilogram or pound) is a common unit of comparison for the environmental impacts of food products. In some cases, such as the comparison of different meals or of foods typically consumed in different quantities (e.g., chocolate versus milk), it may be more relevant to compare the environmental impacts using a typical serving size. It should be clear to the consumer if the score is related to the serving size or to another unit.



⑥ Recommendations on driving behavior change with food impact scoring



6 Recommendations on driving behavior change with food impact scoring

Based on desk research conducted for this paper, the development of the adapted principles above, and consultations with industry leaders, several challenges have come up that are necessary to resolve to advance nutrition and environmental impact scoring labels for food. Following each gap (challenge area) below, we provide a recommendation to address the gap.

GAP

The scientific evidence regarding nutrition and environmental impacts can change and vary with respect to its consensus in the scientific community.

RECOMMENDATION

Use evidence that has strong international consensus and a strong scientific basis. Industry should align with relevant stakeholders (regulators, NGOs, academics) on evidence lines that are robust enough to include in scoring frameworks. If evidence that would influence a score changes, update the scores and communicate with the public why the score has changed and what new evidence became available.

GAP

There are various indicators for environmental impacts (e.g., biodiversity and water) and levels of information (e.g., transport distance, transport means) that may be important for consumers; yet when there is too much information it can lead to confusion or lack of consumer acceptance.

RECOMMENDATION

Scoring frameworks should aggregate details into a single or a set of several scores and ensure the amount of detail on packages is concise and specific to allow for clarity and consumer acceptance of the score. Furthermore, when aggregating scores on-pack, provide a further level of detail through another channel (e.g., online through a QR code) to allow for easy access to the relevant contributions to the score and other details. To find a balance between aggregation of information and clarity of information there may be a need to test the scoring system with consumer groups from the target market audience or various market segments, such as demographics or purchasing behaviors.

GAP

Consumer awareness may be low for various nutrition and environmental impact issues.

RECOMMENDATION

Use resources (likely a combination of private and public) to promote consumer awareness of how to improve nutrition and environmental impacts and how to do this through changes in consumption.

GAP

Do not exclude food products without packaging (e.g., fresh fruits, vegetables) from scoring labels (which often only includes information that provided on-package).

RECOMMENDATION

Evidence shows that diets low in fruits, vegetables, legumes, nuts, seeds and whole grains are the main drivers of death and disease in many countries around the world.⁴⁹ Retailers and other food producers and marketers should work to avoid the risk that the scoring labels on packaged products induce the “halo effect” where consumers perceive labeled foods as better than unlabeled foods (even if the opposite is true). Scoring foods without packaging alongside packaged foods can help ensure there is a lack of “halo effect” bias that drives consumer behavior away from healthier and more sustainable diets.

GAP

Environmental impact metrics for food that regulators accept tend to be static values, e.g., in a database, estimated from an available or representative supply chain, and don't reflect on-the-ground changes.

RECOMMENDATION

Find alignment on acceptable secondary evidence (e.g., from a database) and primary evidence (e.g., collected for a farm area or a given supply chain). Agree upon guidelines for the use of secondary evidence (e.g., how often to update values and which databases and datasets to use). Also agree upon guidelines for the use of primary evidence (e.g., verification and transparency). There may be a need to develop a public database or methodology that clarifies these needs and provides reference values or a process.

GAP

Primary data collection and certification can be costly and challenging.

RECOMMENDATION

Use primary data when tracking specific improvements (e.g., a unique or innovative supply chain intervention). However, have a trusted third party verify primary data and make the effort to publicly disclose data. Agree on which types of evidence and influence on scores are acceptable when using primary versus secondary evidence.

GAP

Third party verifiers, data providers and practitioners can use various levels of rigor in their sources and methods.

RECOMMENDATION

Industry should align with relevant stakeholders to define the level of rigor needed to be both pragmatic and actionable. Using collaborative platforms, such as Standards Maps,⁵⁰ could help to alleviate some of the challenges associated with third-party verification if industry has already met certain standards.

GAP

Having enough resources to employ a robust scoring system for products may prevent smaller actors from being able to engage, which could cause bias towards products from companies that put resources into scoring, instead of leading consumers towards evidence-based behavior change.

RECOMMENDATION

Industry should investigate how to contribute to publicly developed or endorsed scoring systems based on easily obtainable and verifiable data (which can be qualitative) and offer a harmonized approach that enables smaller players to also engage. Public bodies, in conjunction with the private sector, could develop automated tools that facilitate and make more affordable calculations.

GAP

The research conducted to date has not borne out the assumption that “providing information” will significantly change behavior at scale.

RECOMMENDATION

Avoid positioning scores or labels as the silver bullet solution to driving food system transformation. Maintain a realistic and pragmatic approach to the application of scores or labels and make sure those used are meaningful to the target population, complementing other interventions aimed at nudging consumers towards healthy and sustainable options. Support further research to better understand the circumstances in which scores or labels are most and least effective in driving consumer behavior change and product reformulation from a health and sustainability standpoint.



7 Conclusion



7 Conclusion

Labels are one of many levers in influencing consumer behavior, with the aim of helping people become healthier and pulling production practices and supply chains in a more sustainable direction.

Hundreds of studies on the “food environment” look at how consumers interface with their purchases in the context of their own day-to-day lives. This research suggests that the “community food environment” (i.e., the distribution of supermarkets and food retailers in relation to, for example, a person’s daily mobility patterns) and the “consumer food environment” (i.e., the in-store, in-restaurant, or online experiences of consumers) influence food choice in terms of availability, accessibility and product promotion, placement and price.^{51,52,53} Generally, research on the food environment presents a range of conflicting findings (e.g., increased price leading to increased consumption, to the opposite).⁵⁴ Further research should consider how scoring systems interact with other aspects of the food environment (e.g., promotion, price, etc.) along with the more habit-based or automated decision-making that often accompanies food choices.

A holistic approach to consumer behavior change considering the complementary roles of education and information, as well as trust, acceptance and motivation, is key to delivering the necessary shifts that will support healthier and more sustainable diets. Collaborative efforts among companies, governments and other food

systems stakeholders have the potential to generate more rapid change at scale than what any single entity could accomplish alone. By shifting the broader enabling environment through policy and financial incentives, local food environments and individual food experiences are more likely to shift in the desired direction, helping the whole system become more sustainable and equitable.

The principles we present in this document build on the United Nations *Guidelines for Providing Product Sustainability Information*. We have tailored them for the food sector in relation to nutrition and environmental impact scoring labels. These principles suggest a need for the development of a harmonized approach to food impact scoring that is reliable, relevant, clear, transparent and accessible. Scores should encourage long-term behavior change. Multi-channel media (e.g., QR codes that link to a website with further information) can couple with on-pack labels to provide more information about the score or about additional actions that influence health and environmental sustainability (e.g., consumer food waste; frequency of consumption). Collaboration across industry and with other stakeholders, such as non-governmental and governmental organizations, can help harmonize methodologies and promote the application of an approach globally. A key challenge to tackle is how to develop scoring systems that enable comparisons within and across products that can allow for more flexibility in consumer behavior change at the dietary level.

As labeling systems continue to come on to the market, there is a risk that having a diverse array of approaches to 1) measuring and assessing impact and 2) communicating the impact to consumers may hamper progress on the widespread adoption of healthy and sustainable eating patterns. The proliferation of various types of labels can pull companies in different directions, for example, driving investments in collecting various types of data or making claims or frameworks that are ultimately not compliant with future labeling regulations. Furthermore, from a consumer perspective, the diverse array of impact information can potentially lead to confusion, especially if the information appears in a way that consumers cannot compare across or within product categories.

To resolve issues presented by the proliferation of scores and labels on the market, we recommend that industry come together to decide on the next steps to harmonize a scoring label approach that considers data, methods, verification and communication. Ultimately this approach should help drive improved consumer behavior change *and* product reformulation and innovation to lessen negative environmental and health impacts. Consolidating efforts will help drive corporate investment in the right direction and help consumers navigate the market. Industry leaders are prepared to partner with government agencies, academics and others to test scoring systems in real-world contexts and to help iterate and improve them over time to support the widespread uptake of healthy and sustainable diets.

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- Dr. Alexi Ernstoff is the global scientific director at Quantis and specializes in sustainability quantification for the agri-food sector. alexi.ernstoff@quantis-intl.com
- Amanda Martin is the global director of Communications & Engagement Solutions at Quantis, with expertise in sustainability claims and communications for fast-moving consumer goods. amanda.martin@quantis-intl.com
- Chiara Rolland and Lucie Gerber are consultants at Quantis focusing on sustainability communications and engagement solutions for fast-moving consumer goods. Sofie Lamens is a post-master's student at the Paris School of Mines ParisTech and a science intern at Quantis.

INPUT & COORDINATION

Food Reform for Sustainability and Health (FReSH) member companies involved in the Labeling Working Group: Danone, Givaudan, Google, Nestle, PepsiCo, Tesco, Unilever.

Emeline Fellus is Director, Food Reform for Sustainable and Health (FReSH) at WBCSD. You may contact her at fellus@wbcسد.org

Emily Grady is Senior Manager, Food Reform for Sustainable and Health (FReSH) at WBCSD. You may contact her at grady@wbcسد.org

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ABOUT WBCSD

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we currently face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing "how-to" CEO-guides from these insights; by providing science-based target guidance including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical regions.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of a world where 9+ billion people are living well, within planetary boundaries, by mid-century.

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