GS1 Germany

GS1 Solutions

Collectively defining sustainability for product categories

An overview of global hotspot initiatives

Global Standards. Make Business Efficient.

Study

Publishing information

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1 Summary

Improving product sustainability is a key task and major goal for businesses today – particularly for those in the consumer goods industry. Many businesses have already developed extensive internal sustainability strategies and can provide information on the status and progress of their work on product sustainability. To improve product sustainability across the board, companies need to have acccess to harmonised approaches that can be scaled to fit different retailers and manufacturers. The solutions must also be affordable, not overly complex, and deliver results that are sufficiently comparable and credible.

Harmonised, industry-wide sustainability strategies are gaining in importance.

How sustainable is a product – environmentally, economically, socially, and across different industries?

The first step in establishing an efficient system of sustainability management in an industry is to define the main factors that affect the sustainability of a product and identify opportunities for improving these. “Hotspots” are summaries of the main problem areas and can be used to assess products over their entire lifecycle. The sustainability hotspots and improvement opportunities produced for each product category (and compiled in a “sustainability profile”) provide the basis for setting up uniform, scalable management and IT systems. The more businesses and stakeholders in an industry or branch of industry that refer to the same sustainability profile, the more authoritative and accepted the hotspots and improvement opportunities will become.

Need for a shared understanding of hotspots and improvement opportunities.

With this in mind, GS1 Germany commissioned the present study as a way of shedding light on the leading global approaches to defining hotspots and improvement opportunities for single or multiple product categories. The study aims to identify the most promising approaches that can be used by both retail and industry in Germany and throughout Europe. The results support the work of GS1 Germany’s Sustainability Advisory Board.

Study aims to identify promising approaches to defining hotspots for different product categories.

The study describes the basic characteristics of the approaches and then compares them using three parameters: comprehensiveness, efficiency and practicability, and transparency and openness. The GS1 Germany Sustainability Advisory Board believes that these are the most important factors in product transparency. The study also looks at two product categories, laundry detergent and milk, to investigate whether different methods produce similar results.

Basic requirements: comprehensiveness, efficiency and practicability, transparency and openness.

The study compares the following approaches:

- The Sustainability Consortium (TSC)

- The WRAP Product Sustainability Forum (WRAP PSF)
- The EU Product Environmental Footprint (EU PEF)
- A.I.S.E. Advanced Sustainability Profiles, an industry initiative
- The European Food SCP Round Table, an industry initiative
- PRO PLANET, an initiative of Germany's REWE retail group

The Sustainability Consortium has developed an extremely practical approach that takes account of numerous sustainability categories. It is very advanced in its development and therefore has the greatest chance of achieving broad market penetration. One problem with TSC, however, is that it is not fully compatible with the EU's Product Environmental Footprint initiative. Adapting the sustainability profiles at a European level would, therefore, probably be rather complex and time-consuming. There is also a chance that the TSC's pre-competitive character will lead to a situation where individual retailers diverge in the way they use the key performance indicators (KPIs). This could make it hard to harmonise the different approaches.

TSC performs well in practicability, but is incompatible with the EU's PEF approach and lacks transparency for non-members.

The European Commission's **Product Environmental Footprint (PEF) initiative** has developed the most comprehensive and substantiated approach to measuring and assessing the environmental performance of a product. Particularly relevant aspects of the approach include its wide range of possible applications for product labelling and green claims. The PEF's robust method, which builds on lifecycle assessments and helps create a level playing field for green claims, is also a welcome feature. At present, however, it is unclear how easy it will be for (in particular) small and medium-sized enterprises to apply the method in an efficient, practical way. Another problem is that the PEF does not yet take adequate account of social aspects when assessing product sustainability. The EU's three-year pilot project is designed to produce a highly practical method and to develop links to other processes and sustainability indicators.

The EU PEF's robust method means it could be used to compare products and for benchmarking.

Further methodological specifications needed to aid implementation.

The WRAP Product Sustainability Forum is a UK initiative. Its method is still in its infancy, which makes it hard to assess right now. The PSF is not at all well known outside the UK, and is largely considered immature. It seems likely that the PSF will align its methods with those of other initiatives. Given that this is a very open approach, the PSF is an interesting partner for dialogue and for developing a coherent international approach.

PSF's method still in its infancy.

High degree of transparency and openness.

The remaining (industry and retail) initiatives each have their own strengths and weaknesses. Pooling the approaches to create an industry-wide solution would make it possible to exploit their existing potential and benefit from potential synergies.

- The **A.I.S.E. Advanced Sustainability Profiles** show how an industry initiative can develop methods that are as robust as they are practical. The A.I.S.E. method provides the basis for consultations between producers of soaps, detergents and maintenance products.

A.I.S.E. demonstrates how a branch of industry can organize itself successfully.

- The **European Food Sustainable Consumption and Production (SCP) Round Table** is particularly relevant to the implementation of the EU PEF initiative, since it shows how individual industries can give more concrete form to cross-industry methodological guidelines. So far, few links exist between specific product categories and generic guidelines that apply to all products.

European Food SCP Round Table provides insight into how to adapt cross-industry methods to a single industry.

- The **PRO PLANET** initiative from Germany's REWE retail group is particularly interesting for the way it uses consultations to identify additional aspects (social dimensions) of sustainability.

REWE PRO PLANET is interesting for its consultations, and takes account of social issues.

To arrive at a viable solution, the initiatives should pool their respective strengths and overcome any weaknesses by constantly improving the way they work.

The comparison of the initaitives listed above shows that the PEF currently offers the most robust methodological framework for the environmental aspects of product sustainability. We will, however, have to wait and see whether the PEF will achieve the ambitious goal of creating scope for reliable product comparisons (benchmarking). There is no question that, with the right amount of political will and the right kind of regulation, this initiative has the most potential of all. If it exists on a level playing field, the PEF will be able to help create a market for environmentally sound products – for the long term and possibly even on a global scale.

The PEF offers a solid methodological framework and has great potential for global market penetration.

However, this depends on the following happening:

How to successfully implement the PEF:

1. The ongoing, very laborious process of developing product category specifications (Product Environmental Footprint Category Rules, PEFCRs) uses an industry approach that is as succesful as A.I.S.E's exemplary project.

Use expertise from individual industry initiatives.

2. Using the PEFCRs produces performance indicators, KPIs and hotspots (particularly for SMEs and companies with large ranges) that are as practical as the results of the TSC method, which strives to keep the cost of gathering information down and make it simple to integrate the data into existing management and supply-chain processes.

Efficiently draw up KPIs and improvement opportunities.

3. It continues engaging in intensive dialogue with other initiatives (WRAP PSF, TSC, PEF World Forum, UNEP/SETAC Life Cycle Initiative, GS1, etc.). This will prevent the emergence of isolated solutions or highly disparate approaches, and will pave the way for building a unified strategy.

Establish intensive dialogue and close collaboration.

The comparison of initiatives and case studies shows that the kinds of hotspots identified depend heavily on the individual goals (e.g. the aspects of sustainability that an initiative takes into account). To bring more similarity to the hotspots being identified and defined, it seems entirely conceivable that the initiatives could align their goals more closely without having to sacrifice their individual approaches.

Identification of hotspots and KPIs / improvement opportunities depends heavily on goals.

So far, no generally accepted methods exist for translating hotspots into reproducible improvement opportunities and KPIs. More research and development work is needed to address this situation. For the time being, therefore, initiatives still need to engage in consultations that include key stakeholders.

No generally accepted methods for translating hotspots into improvement opportunities and KPIs.

All the initiatives in this study are still very much in the active development stage. This means there is a great deal of scope for helping to shape the approaches from here on in. TSC, for instance, is working on a new business model and wants to increase its European presence. The PEF launched its pilot phase in 2013 with the aim of developing more key requirements that will ensure the method can be implemented successfully.

Dynamic state of the initiatives means the initiatives can converge and support each other.

As an independent network, GS1 offers retailers and manufacturers a unique platform from which they can work on making product transparency a global reality. From the perspective of retail and industry, GS1 should play a leading role in moving towards a world where product sustainability is part and parcel of daily life.

To sum up, we can make the following recommendations: firstly, A.I.S.E.'s exemplary industry solution should be incorporated into ongoing development efforts; secondly, it seems to make sense to participate actively and directly in TSC and the PEF pilot project. Success will depend on the following:

Participating in TSC and the PEF pilot project would make sense.

1. It must be possible to operationalize the approaches. This can be achieved via field trials with supply chain partners (retailers, manufacturers, suppliers) and various service providers (e.g. in the software, logistics and packaging industries).

Ensure the approaches can be operationalized.

2. The approaches must be transferable to other product categories or branches within the consumer goods industry – this should

Ensure transferability to other product categories.

involve preparing the food industry for the second PEF pilot phase – and retailers must adopt a coherent line on product sustainability.

3. All relevant stakeholders must be involved at an international level, so as to secure broad global acceptance of the results and processes.

Ensure global acceptance with widescale stakeholder involvement.

4. Product attributes relevant to sustainability must be incorporated into existing standards and processes.

Incorporate sustainability into existing standards and processes.

GS1 Germany is in no doubt that if the study results are put into practice quickly and consistently, we will all be able to make significant progress in our combined efforts to live and work in a more sustainable way. Furthermore, we believe that the consumer goods industry, with its fast-moving products and close relationship to consumers, can serve as a catalyst for ushering in a new era of global sustainability.

2 Background

2.1 Sustainability: a core task for the consumer goods industry

Secure livelihoods and the foundations of business for the long term.

If we, collectively, are to secure our livelihoods for the long term, we will have to solve the growing number of global challenges surrounding the environment and sustainability. Climate change, loss of biodiversity, and key social issues do not exist independently of human activity or, in particular, our economic undertakings. Companies and their goods and services affect many aspects of sustainability over the course of their lifecycles (cf. Figure 1).

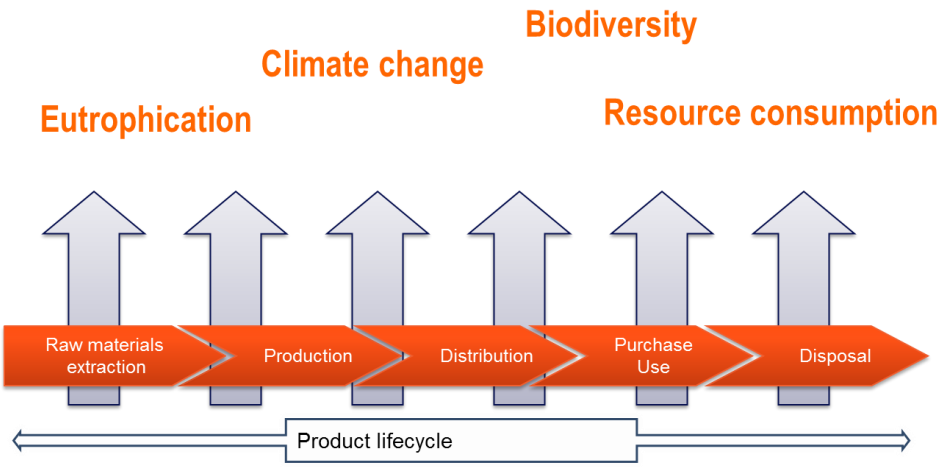

Figure 1: Example of a product's environmental impact as it moves along the value chain (own diagram)

Be proactive.

Largely as a result of governments failing to adequately regulate for global sustainability challenges, stakeholders and customers are expecting companies to do more for their sustainability performance and, increasingly, for that of their products and value chains.

Managing product sustainability is gaining in importance.

Over the years, many companies have introduced their own sustainability strategies and ensure that they continually improve their internal environmental and social performance. Practically managing product sustainability along the value chain is gaining in importance that goes above and beyond a basic understanding. Given the high level of visibility and awareness of its products, and the enormous throughput of resources needed to keep up with fast-moving ranges, the consumer goods industry is one of the primary areas of interest in this regard.

Primary goals: To mitigate climate change and ensure sustainable land and resource management.

In their study entitled "Sustainability in Germany's Consumer Goods Industry: Topics, Trends and Initiatives",[1] GS1 Germany and the Collaborating Centre on Sustainable Consumption and Production (CSCP) highlighted the main sustainability challenges facing the industry. Interviews with experts showed that by far the most important goals were to mitigate climate change and to use land and resources in a more sustainable way.

Principles for product sustainability:

1. Comprehensiveness
2. Efficiency and practicability
3. Transparency and openness

Key insights from the study come in its discussion of the changes that markets and companies can make to achieve these goals, and that will help consumers better recognise and demand good sustainability performance. As part of this, the experts point to the need to make products more transparent. GS1 Germany's Sustainability Advisory Board picked up on this and discussed how much and what type of transparency would foster improvement strategies and well-informed consumers within the supply chain. The experts' responses focused on three key principles. First, the product's entire lifecycle should be subject to an extensive sustainability analysis that includes all potentially relevant environmental, social and, if necessary, usage aspects (comprehensiveness). Second, to integrate the analysis into day-to-day business, it needs to be boiled down to the essential challenges, i.e. hotspots (efficiency and practicability). Third, this process and its results should be accessible to the relevant stakeholders (transparency and openness). These are the three principles that we will use to evaluate the hotspot initiatives in our study.

2.2 The road to making products more sustainable

Hotspots throughout the lifecycle: the foundation for product sustainability.

To make products more sustainable, companies need a thorough understanding of the main problems and of the opportunities available for improving the situation. This applies to upgrading existing product systems as well as to developing new products.

Specifically, retailers and manufacturers have to accomplish, both individually and as a unit, four key tasks:

Identify hotspots.

1. **Identify**: Be familiar with the main challenges – i.e. the impacts that clearly go against the concept of sustainability – that exist in a product's value chain (hotspots).

[1] GS1 Germany (2012): *Nachhaltigkeit in der deutschen Konsumgüterwirtschaft* (in German). www.gs1-germany.de/common/downloads/ecr/4015_nachhaltigkeit_konsumgueterwirtschaft.pdf.

2. **Improve**: Make substantial efforts and significant progress in boosting sustainability performance (throughout the value chain).

Tackle hotspots.

3. **Organise**: Harmonise supplier-manufacturer-retailer relationships as regards product sustainability.

Organise the supply chain.

4. **Communicate**: Present and market more sustainable products to customers and stakeholders (green claims).

Communicate progress.

Participating companies will benefit enormously from taking a cooperative approach to addressing the four tasks. This is especially true of producing shared, cross-company findings on hotspots for individual product categories.

2.3 Cooperate to improve product sustainability

Improve product sustainability by getting internal departments and external partners involved.

One of the biggest challenges involved in sustainability management is how to anchor it in day-to-day business. The only way companies can substantially improve product sustainability is if divisions like research & development, product management, purchasing, and marketing are aware of the requirements and challenges involved, and take account of these in their work. Given the variety and complexity of the issues that exist within sustainability, companies need to focus on the major challenges – i.e. the impacts that clearly go against the concept of sustainability – that exist in a product's lifecycle (hotspots).

Frameworks: standards for lifecycle assessments and carbon footprints.

Robust frameworks for identifying hotspots within a product's lifecycle can be found in the recently developed methods, norms and standards for conducting lifecycle assessments,[2] and in the climate-protection standards that measure a (product's) carbon footprint.[3] These analyses provide important, extensive and significant results. For further-reaching improvements, however, companies need to agree on what hotspots are relevant to which product categories. This kind of cross-company consensus offers major benefits:

A cross-company list of hotspots for different product categories acts as an assessment tool, reduces the amount of work involved, increases reliability, and makes it easier to cooperate.

- The agreed hotspots will give everyone in the value chain – from raw materials manufacturers to consumers – an efficient tool for evaluating products in terms of their sustainability performance.
- Trade partners will be able to make consistent, coordinated improvements to product sustainability. It will also minimise or avoid situations where, say, one retailer's requirements differ from another's.

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[2] Most-used method: DIN EN ISO 14040/44:2006.
[3] For example: Product Life Cycle Accounting and Reporting Standard, GHG Protocol, 2011. www.ghgprotocol.org/standards/product-standard.

- Sharing knowledge and pooling resources will significantly reduce the work involved in each product category, and will make for product claims that are much more reliable.
- An agreed list of hotspots will provide companies with a solid basis from which to engage in critical dialogue with policymakers and non-governmental organisations (NGOs).
- Companies can standardise and therefore greatly simplify the way they share data.

Hotspots are the jumping-off point for developing KPIs.

Once companies know what the hotspots for a specific product or product category are, they can start resolving them by identifying and collecting appropriate measures that they then translate into management-friendly tools like key performance indicators (KPIs).

Different approaches to identifying category hotspots exist, so it makes sense to compare the initiatives.

A number of initiatives exist that organise collaborative approaches to identifying and defining category-specific hotspots. They act as a basis for actively managing product sustainability and for publicising legitimate green claims. All the initiatives are still in development, which means no system has so far established itself at a global level. The question, as far as the German and European consumer goods industries are concerned, is which initiative, or system, will be best suited to collective, preferably cross-company use in the future.

2.4 Study aim and method

Aim: To lay the foundations for developing and using standardised sustainability profiles for product categories.

Method: Compare leading hotspot initiatives; identify outstanding approaches or outstanding elements of an approach.

As part of the activities of its Sustainability Advisory Board, GS1 Germany decided to produce a study that compared the leading initiatives for collaboratively identifying and defining hotspots, improvement opportunities and KPIs. The work focuses on the following question:

How can relevant, practical and universally recognised sustainability profiles (hotspots, KPIs) for different product categories be developed, and used in a standardised way?

To help us answer this question, we will describe and compare the following initiatives:

- The Sustainability Consortium (TSC)
- The WRAP Product Sustainability Forum (WRAP PSF)
- The EU Product Environmental Footprint (EU PEF)
- A.I.S.E. Advanced Sustainability Profiles, an industry initiative
- The European Food SCP Round Table, an industry initiative
- PRO PLANET, an initiative of Germany’s REWE retail group

- We will also compare a conventional approach that uses Product Category Rules (only in Section 6.5).

The outcome of the study should:

Outcome: Understanding of the initiatives, insights into strengths and weaknesses, options for helping to shape the initiatives.

- create a better shared understanding of the initiatives;
- provide key insights into strengths and weaknesses using the three principles mentioned above;
- highlight ways that the German and European consumer goods industries can help shape the initiatives in the future.

Section 4 describes each of the initiatives in turn. We pay special attention to the process they use to identify hotspots, and then summarise their specific features and our observations.

Section 4 describes the initiatives.

Section 5 compares the initiatives using the three principles identified by the Sustainability Advisory Board:[4]

Section 5 compares the initiatives, outlines strengths and weaknesses.

1. Comprehensiveness (fully sustainable)
2. Efficiency (efficient and practicable)
3. Openness (participative and open)

Section 6 reinforces the comparison by examining real-world case studies of two product categories: laundry detergent and milk. This is partly to work out whether using different approaches to identifying category hotspots produces similar results.

Section 6 consolidates findings by comparing case studies.

Section 7, which serves as a conclusion to the descriptions in Section 4 and the comparisons in Sections 5 and 6, provides a summary of the initiatives that highlights the strengths and weaknesses in each case.

Section 7 describes the strengths and weaknesses of the hotspot initiatives.

All of this prepares the ground for Section 8, which provides a general conclusion, describes the ways companies can take action, and explains how GS1 can play its part.

Section 8: Conclusions

[4] Cf. Section 2.1. For the specific criteria used in each case, see **Fehler! Verweisquelle konnte nicht gefunden werden.**

3 The hotspot initiatives

3.1 The Sustainability Consortium (TSC)

Description of TSC

TSC was initiated by Walmart in 2009 and is jointly administered by Arizona State University and the University of Arkansas. Its aim is to create a framework for the practical, scalable management of sustainability in consumer goods. The work has a strong focus on the collaboration between retailers and manufacturers (B2B):[5]

Goal: To create a framework for practical, scalable sustainability management.

"Through multi-stakeholder collaboration, our mission is to design and implement credible, transparent and scalable science-based measurement and reporting systems accessible for all producers, retailers, and users of consumer products."

TSC's members are primarily companies operating in the consumer goods industry. At the end of 2012, the initiative covered 90 companies (including service providers and associations) and 11 civil society organisations. Members include Walmart, Tesco, Coca-Cola, Dell, Henkel, Procter & Gamble, and Unilever. TSC is financed by membership fees.

TSC members:
90 companies and 11 civil society groups (as of 2012).

Figure 2: The Sustainability Consortium

[5] Source: The Sustainability Consortium's website: www.sustainabilityconsortium.com.

The TSC hotspot process

At the heart of TSC's activities lies its work on producing Category Sustainability Profiles. These are developed by sector-specific working groups and summarise the hotspots and improvement opportunities for different product categories. They provide the basis for defining standardised KPIs that can be used for sustainable product management, and to help retailers select and purchase products. TSC refers to this process as Level 1 of its Sustainability Measurement & Reporting System (SMRS™ Level 1).

SMRS™ Level 1 (product category level) is a three-step process: desktop screening, summary of results, and formulation of standardised KPIs.

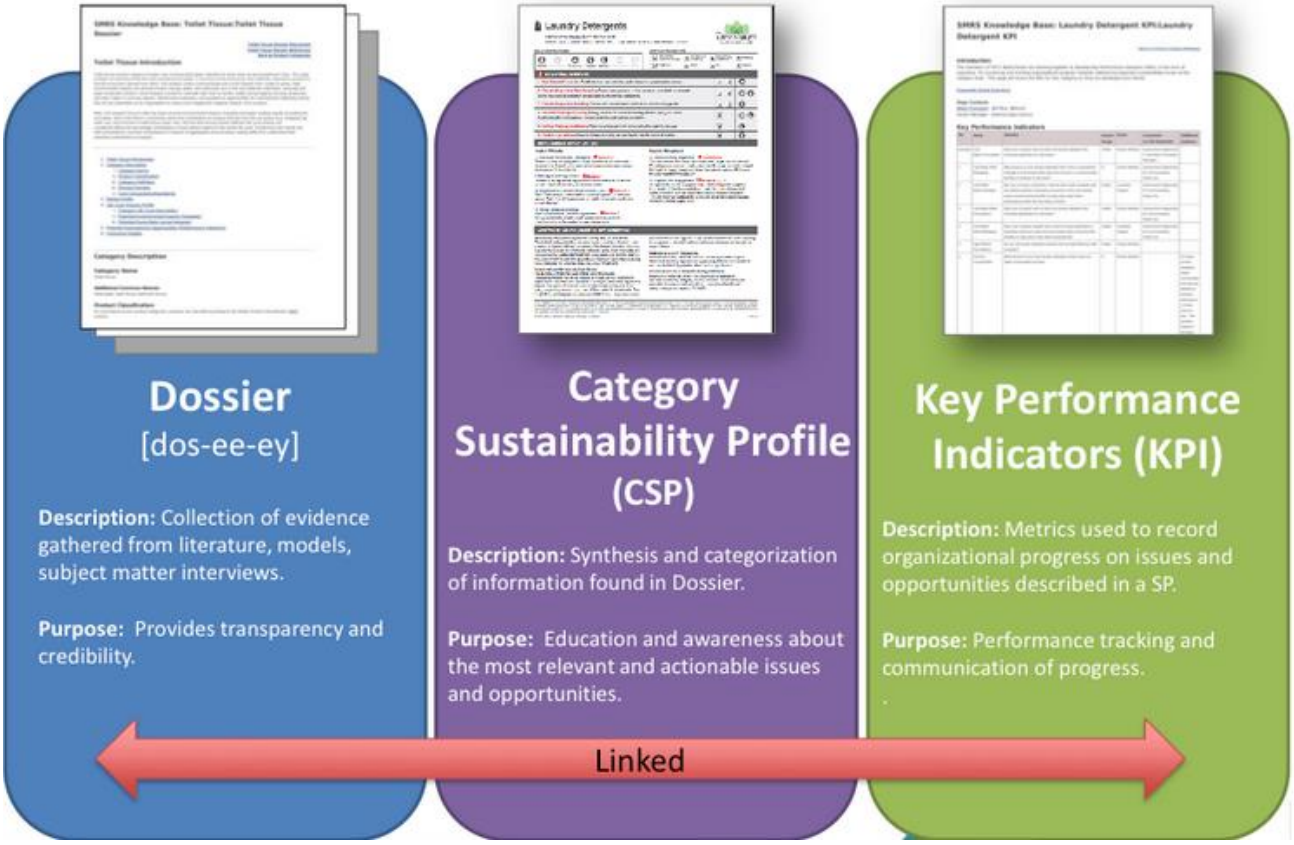


Figure 3: Main components of TSC's SMRS™ [6]

As an example, these are the hotspots identified for the laundry detergent category:

- Production of raw chemical ingredients
- Heating water for clothes washing
- Drying clothes using electrical machine dryers
- Wastewater treatment of laundry water

[6] Source: The Sustainability Consortium SMRS Methodology, The Sustainability Consortium, unpublished.

Each hotspot concerns specific phases in the product's lifecycle and one or more of its environmental and social impacts. The KPI for the "production of raw chemical ingredients", for example, asks:

"Does your company have policies or procedures for making decisions on feedstock materials to address the following: carbon footprint, biodiversity loss, freshwater scarcity?"

To develop its Category Sustainability Profiles (for SMRS™ Level 1), TSC begins by producing "Dossiers". These are science-based summaries of findings on the environmental and social impacts of products within a given product category. Next comes a multi-stage process in which sector representatives (TSC member companies), TSC employees and selected experts use the dossier to decide on the relevant hotspots, improvement opportunities and KPIs. The participants do not consult with external stakeholders.

Sustainability profiles cover environmental and social aspects.

KPIs are drawn up without the involvement of external stakeholders.

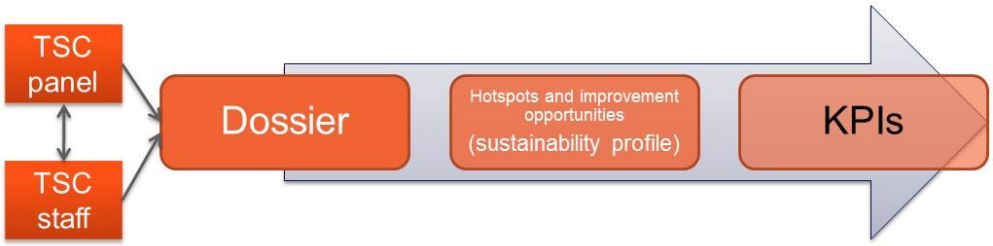


Figure 4: The TSC process for producing sustainability profiles and KPIs (SMRS™ Level 1)

The TSC process does not involve producing its own studies (e.g. lifecycle assessments). Instead, the internal consultations and decision-making processes aim to pool and summarise existing findings. This means it can include aspects of sustainability for which no lifecycle-based evaluation methods yet exist (applies to social issues in particular).

Summarises existing knowledge rather than producing its own LCAs and S-LCAs. .

TSC is currently developing Category Sustainability Profiles for the sectors listed below. It has adopted the Global Product Classification (GPC) system, which is used throughout the consumer goods industry and at GS1, and is also the subject of ongoing development at GS1:

- Clothing, Footwear & Textiles
- Electronics
- Food, Beverage & Agriculture
- Home & Personal Care
- Paper, Pulp & Forestry
- Packaging
- Toys

Covers numerous product categories in the consumer goods industry.

TSC chooses product categories based on their relevance to the overall impact that the US consumer goods industry has on the environment. By the end of 2014, TSC hopes to cover the categories that account for 80 percent of the environmental impacts of consumer goods. The initiative produced CSPs for over 100 categories by the end of 2012, and achieving the 80-percent target will mean working on 600 in total. These are some examples of product categories:

Product categories selected on the basis of their absolute environmental impact in the US market.

- Food: milk, beef, grains/cereal, packaged cereal, bread, beer
- Home & Personal Care: laundry detergent, surface cleaners, showering products
- Electronics: computers and peripherals
- Toys: plastic toys
- Paper: toilet tissue, copy paper

Number of sustainability profiles for product categories:
2012: 100
Target: 600

The profiles are currently available to TSC members only. As things stand, it is unclear whether and in what format TSC might publish them. The outcome will depend largely on its future business model.

Only TSC members can access the product profiles.

SMRS™ Level 2 is the next stage after developing Category Sustainability Profiles and should allow users to compare two products within a single category. The process will draw on existing tools for conducting lifecycle assessments. The idea is that Product Category Rules (PCRs, for assessing products in the same category) will provide the basis for developing parameterised models for standard products in a category. These Baseline Models, as TSC calls them, should make it easy to produce Environmental Product Declarations (EPDs), which can then be used to directly compare products (quantitative benchmarking). TSC is not currently planning to develop the necessary PCRs itself. At the start of 2013, SMRS™ Level 2 existed merely as a vision for the future, and had only been piloted in selected product categories.

SMRS™ Level 2 (product-level) will build generic assessment models to make it easier to draw up Environmental Product Declarations.

Figure 5: The future TSC system for differentiating between products on the market (SMRS™ Level 2)

Specific features and observations: TSC

Walmart is leading the way when it comes to implementation, and is setting itself ambitious targets.

In 2012, Walmart launched its first round of pilot projects to test out the sustainability profiles and KPIs. By the end of that year, 500 suppliers had provided answers to KPI questions in 38 product categories. Walmart used these to benchmark suppliers according to product group. The participating suppliers generate 65 percent of the turnover in these categories. As of 2013, sustainability objectives are to become part of the annual evaluation carried out by purchasing teams. Walmart also plans to maintain a six-month reporting cycle for suppliers, and to gradually add other categories. By 2017, it wants 70 percent of all products sold in the US to come from suppliers that report to Walmart as part of the Walmart Sustainability Index.

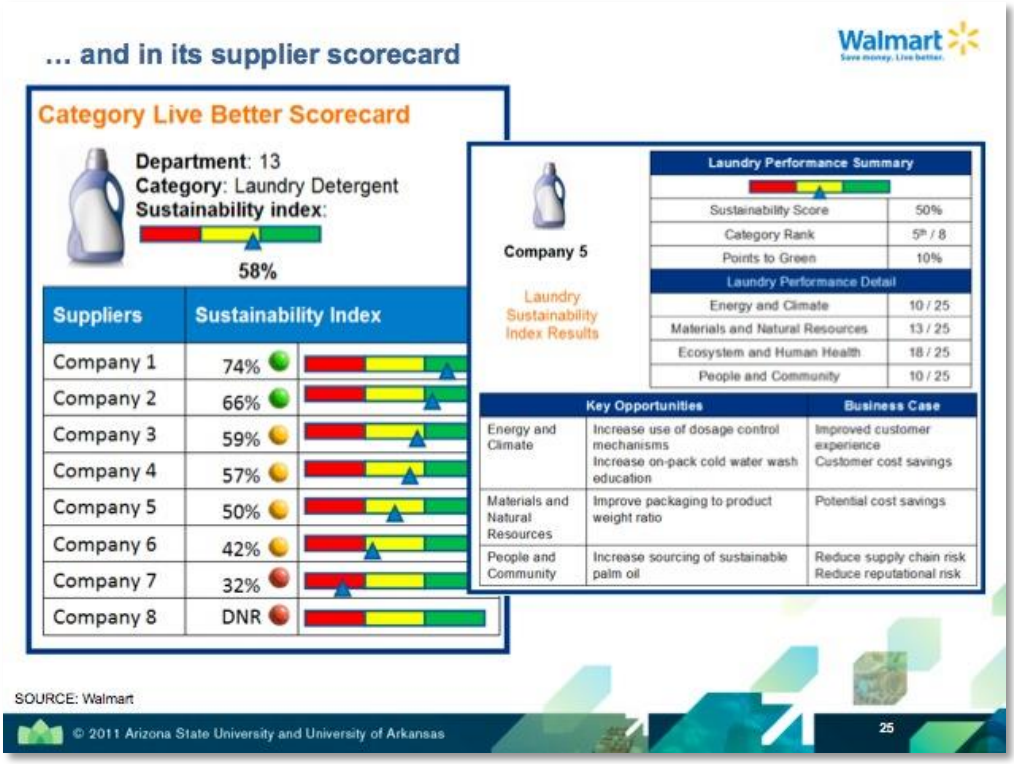


Figure 6: Integration into Walmart Supplier Scorecards[7]

TSC is also building up its presence in other key countries. Walmart has given the initiative $2 million to develop its work in China, which will focus on four sectors: electronics, textiles, toys, and household goods.

[7] Source: Presentation on TSC during the 7th PCF World Summit held on 17 April 2012.

3.2 The WRAP Product Sustainability Forum (WRAP PSF)

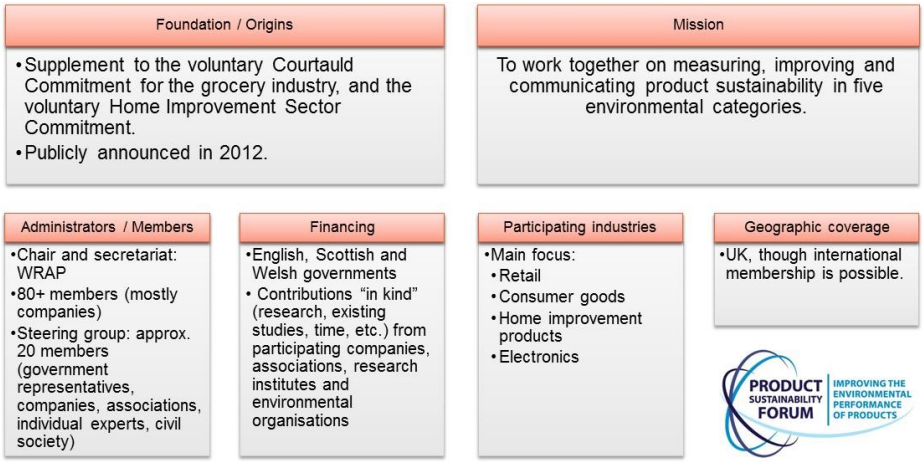
Description of the WRAP PSF

The WRAP PSF is a collaboration of British organisations that receives funding from the English, Scottish and Welsh governments. Private companies also lend support by giving their time and input free of charge. The PSF acts as a platform for more than 80 organisations (mostly companies) to come together and measure, improve and communicate the environmental performance of grocery and home-improvement products. Its members include Tesco, Marks & Spencer, Sainsbury's, Henkel, Kellogg, Nestlé, Procter & Gamble and Unilever. The PSF was designed to supplement two voluntary commitments: the Courtauld Commitment[8] (for the grocery sector) and the Home Improvement Sector Commitment. The PSF's role is to bring the existing activities on product-specific environmental protection together under one roof. The idea is that access to research, methods and action plans will help participating organisations to develop targeted measures.

Goal: To measure, improve and communicate the environmental performance of 70 popular consumer goods.

Members: 80 organisations (mainly businesses)

The organisations in the PSF aim to jointly improve product sustainability in the product categories that affect the environment the most – i.e. in those that carry the most weight in terms of market volume and specific environmental impacts. The first step is to identify hotspots for the 70 most environmentally relevant grocery products, which together make up 80 percent of UK sales, and to do the same for key home-improvement and electronic products.[9]



Relevance is defined by looking at the environmental impact and sales volume of an individual product category.

Impact categories considered: GHGs, energy, waste, water, materials

[8] See www.wrap.org.uk/category/initiatives/courtauld-commitment.
[9] Source: An initial assessment of the environmental impact of grocery products, WRAP, 2013.

Figure 7: WRAP Product Sustainability Forum[10]

To support the hotspot process, the PSF also works with participating companies to develop and plan Pathfinder projects. These focus on five areas of environmental impact: greenhouse gas emissions, energy, waste, water and materials. The PSF is also "watching" biodiversity and will include it at a later date if necessary.

The fundamental idea behind the PSF is to identify and develop methods for measuring, reducing and communicating the environmental impact of consumer goods (product portfolios, product categories, product groups). However, it has yet to announce the exact form that these will take.

The WRAP PSF hotspot process

The PSF's current approach to defining hotspots involves producing what it calls Slide Decks. Each Slide Deck is a collection of the hotspots and possible improvement opportunities that have been identified for a product category. They are designed to be viewed as a slide show.

PSF uses Slide Decks to collect evidence-based hotspots and improvement opportunities for a given product category.

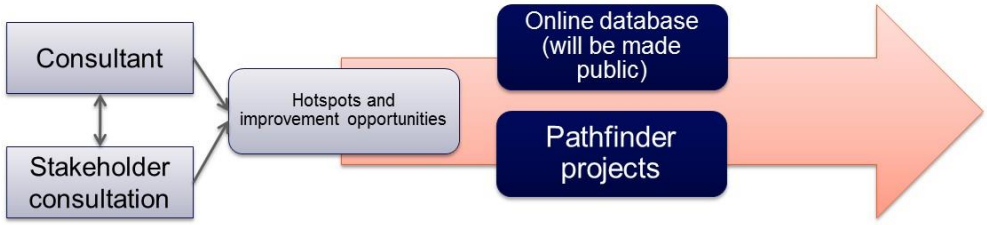


Figure 8: The WRAP PSF hotspot process

While the TSC system uses internal consultations to identify hotspots, the PSF starts by commissioning external service providers to carry out hotspot studies. These are basically summaries of existing studies on hotspots in the relevant product categories. The next step involves holding open stakeholder consultations to validate the study findings. The PSF tries to get as many expert researchers and professionals as possible to give feedback on the hotspots and improvement opportunities. The latter, which largely come from the existing experiences of companies within the PSF, are presented as case studies so that other companies can use them to plan their own measures. Additional documentation and joint projects should help with implementing the solutions. At present, the PSF is not planning to translate the findings into indicators that, for example, retailers could

Process:
1. Hotspot study
2. Consultation with external stakeholders
3. Improvement opportunities presented in case studies

Currently no plans for KPIs.

[10] Source: WRAP PSF: www.wrap.org.uk/content/product-sustainability-forum.

use to survey their suppliers. The hotspot data should, in future, be published on a central platform that is available to everyone.

Looking ahead, the PSF plans to identify and define methods for measuring, reducing and communicating the environmental impact of different products.

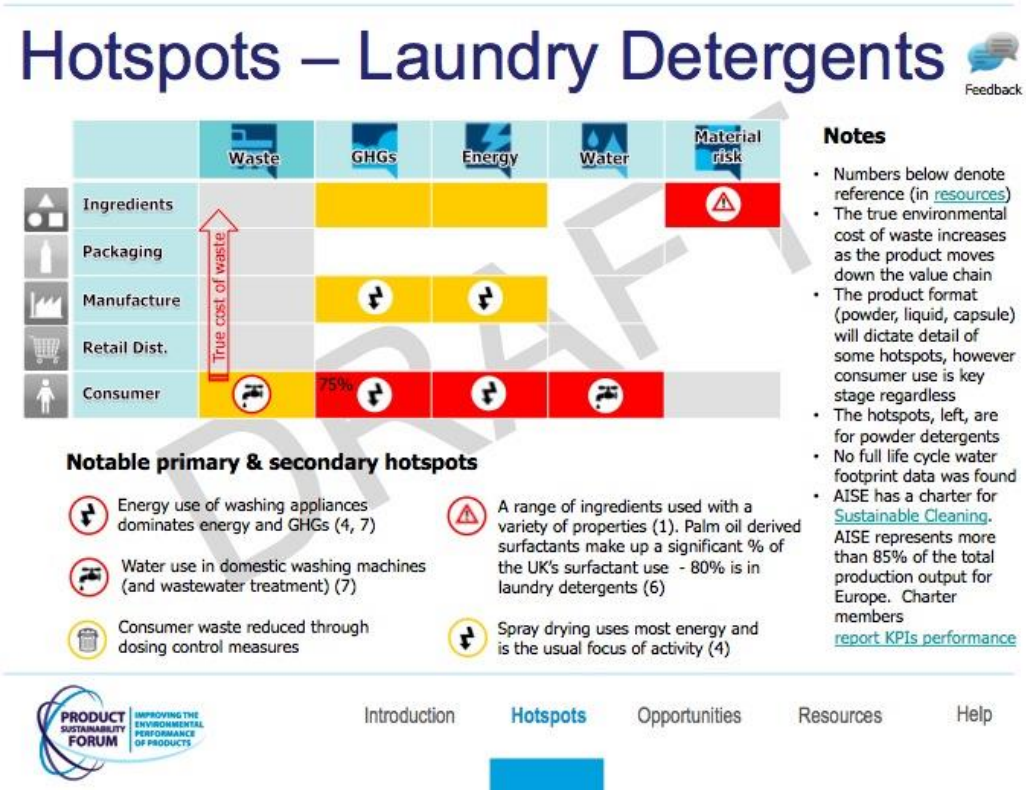


Figure 9: The WRAP PSF hotspot matrix as it appears in a Slide Deck[11]

Specific features and observations: WRAP PSF

PSF has numerous links to other initiatives.

The PSF is still in the development stage, so we can assume that it will be adapting its methods and approaches as time goes on. Worthy of particular note are its efforts to build networks with other international initiatives and, where possible, to work together on developing solutions that function on a global scale. The initiatives include: TSC, the Consumer Goods Forum, the European Food SCP Round Table, the GHG Protocol, the Beverage Industry Environmental Round Table, the French environmental labelling initiative, the EU PEF, GS1, the UNEP/SETAC Life Cycle Initiative, and the PEF World Forum.

[11] Source: Draft PSF Slide Deck for laundry detergent hotspots.

3.3 The EU Product Environmental Footprint (EU PEF)

Description of the EU PEF

With its work on the PEF, the European Commission wants to make it possible to compare products (within the same category) in terms of their environmental performance. Achieving this relies on having a single understanding of which environmental aspects are relevant to which product. Directly comparing the PEF to other hotspot initiatives therefore seems both appropriate and sensible. The PEF is the result of a number of political decisions (see box), which led, in early April, to the Commission issuing a communication entitled Building the Single Market for Green Products,[12] and to the publication of a method for calculating environmental footprints.[13]

Goal: To make it possible to compare the environmental performance of different products (in the same category).

Background: Communication on Building the Single Market for Green Products

Single Market Act[14]
"Proposal No 10: Before 2012, the Commission will look into the feasibility of an initiative on the Ecological Footprint of Products to address the issue of the environmental impact of products, including carbon emissions. The initiative will explore possibilities for establishing a common European methodology to assess and label them."

Conclusion of the Council of the European Union (20 December 2010, No 17495/10)[15]
The Council of the European Union invites the Commission "to develop a common methodology on the quantitative assessment of environmental impacts of products, throughout their life cycle, in order to support the assessment and labelling of products."

Resource Efficiency Roadmap, 20 September 2011, COM(2011) 571[16]
"By 2020, citizens and public authorities have the right incentives to choose the most resource efficient products and services, through appropriate price signals and clear environmental information. Their purchasing choices will stimulate companies to innovate and to supply more resource efficient goods and services. Minimum environmental performance standards are set to remove the least resource efficient and most polluting products from the market. Consumer demand is high for more sustainable products and services."

The Environmental Footprint method is based on existing standards for lifecycle assessments, but specifies the rules in more detail. This is to minimise the need for decision-making and to maximise comparability and ease-of-use. The level of reliability that the method achieves makes it suitable for a variety of political measures (cf. Figure 10).

Maximum comparability as a basis for future political measures.

[12] See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0196:FIN:EN:PDF.
[13] See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:124:FULL:EN:PDF.
[14] See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0608:FIN:en:PDF.
[15] See: http://register.consilium.europa.eu/pdf/en/10/st17/st17495.en10.pdf.
[16] See: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0571:FIN:EN:PDF.

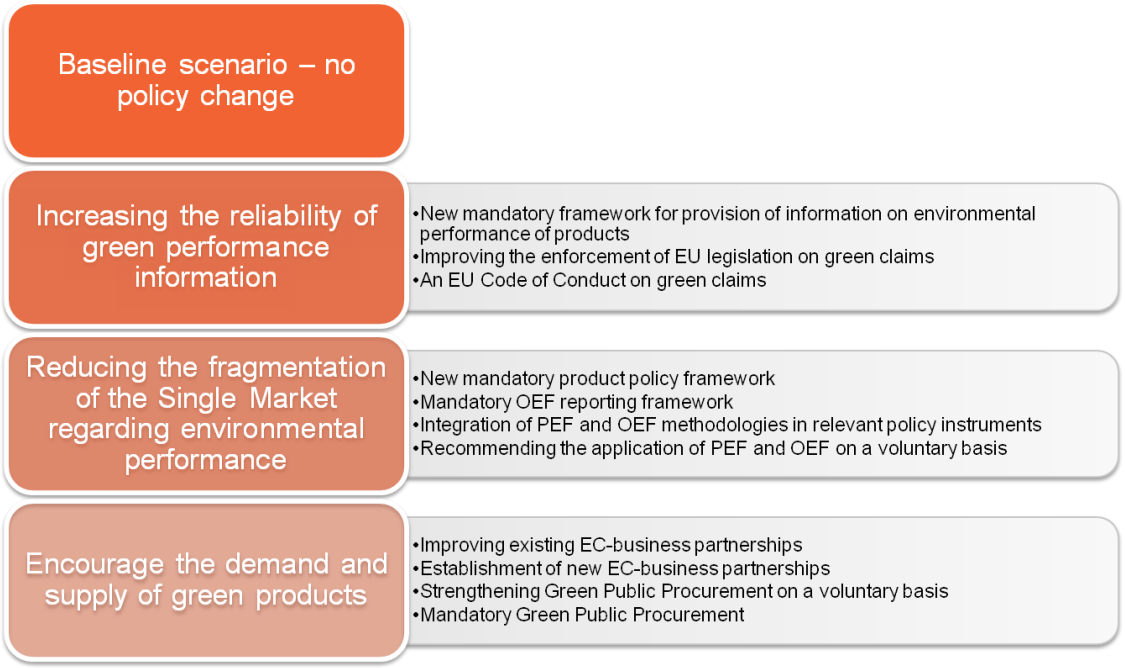


Figure 10: Political measures that could be based on the EU PEF method[17]

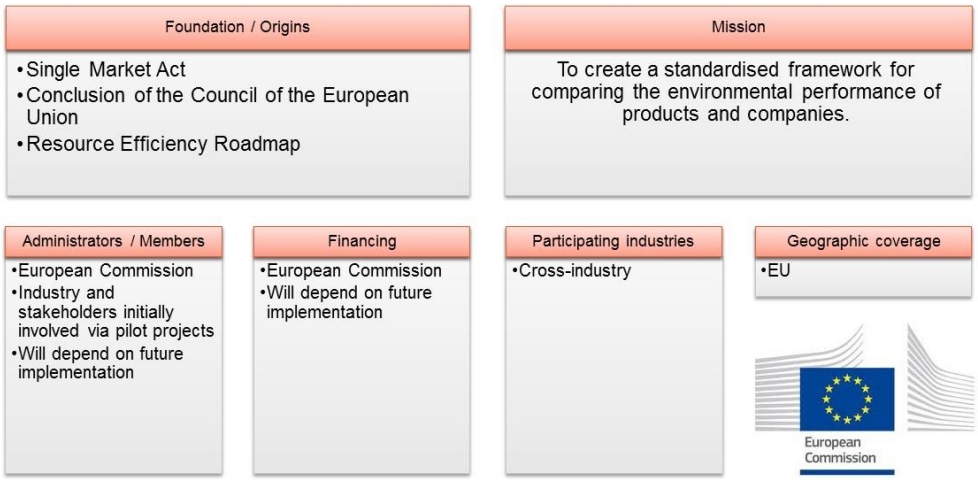


Figure 11: The EU PEF initiative[18]

Single, uniform method

The European Commission's communication on Building the Single Market for Green Products, and the publication of the environmental footprint method also recommend that businesses and EU member states apply the method so as to reduce the number of standards being used and thus prevent further fragmentation of the market.[19]

[17] Source: Presentation given by Michele Galatola, DG Environment, at the 8th PCF World Summit, 2012.

[18] Source: European Commission, DG Environment, http://ec.europa.eu/environment/eussd/smgp/index.htm.

[19] Source: Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations, European Commission, 2013.

The EU PEF hotspot process

PEF gives detailed methodological guidelines for assessing a product's environmental impacts.

The PEF method provides detailed guidelines on how to calculate environmental footprints. A footprint is made up of a series of environmental impacts that are each quantified according to a specific model:

- Climate change / CO_2e
- Ozone depletion
- Ecotoxicity for aquatic fresh water
- Human toxicity – cancer effects & non-cancer effects
- Particulate matter
- Ionising radiation
- Ozone formation
- Acidification
- Eutrophication – terrestrial and aquatic
- Resource depletion – water, mineral, fossil
- Land transformation

Using the PEF Guide for a product in a given category therefore produces detailed information on the degree to which its environmental impacts apply throughout its lifecycle. Given the precision of the guidelines, the results that they produce are much more comparable than those from conventional lifecycle assessments. It is therefore reasonable to assume that hotspots identified using the PEF method are more consistent than those identified using existing lifecycle-assessment standards only.

Specifying product categories opens the door to benchmarking and green claims.

To expand the PEF's field of applicability, especially to cover (comparative) green claims and product benchmarking, the European Commission plans to draw up supplementary category rules (PEFCRs). By providing more detailed specifications for individual product categories, PEFCRs will reduce the need for decision-making and will address the questions most relevant to each category. A three-year pilot study, which started in 2013, will test the process for developing PEFCRs and thus further refine the system as a whole.

Specifications (PEFCRs) will be developed using lifecycle assessments and subject to a detailed consultation process.

The pilot phase will include, for each category, a very detailed consultation process that involves the entire industry and all interested stakeholders. As well as specifying the additional category rules, the consultations will also define benchmarks for environmental performance. These could then be used to label and classify products according to their impact on the environment. The PEF's pilot projects are also trialling relevant forms of B2B and B2C communication.

Depending on how individual industries apply the method and on what the future design of the overall system actually looks like, products could also be assigned to environmental performance classes on the basis of whether or not they fulfil certain parameters and criteria. This means working out a product's environmental footprint would no longer require detailed calculation, or it could be reduced (and therefore greatly simplified) to a model calculation that takes account of fewer (hotspot-related) measurement points. These kinds of criteria and measurement points could also be beneficial when it comes to implementing the system at the management level (as with TSC activities).

Further development could make it possible to calculate a PEF on the basis of parameters and so reduce the amount of work involved.

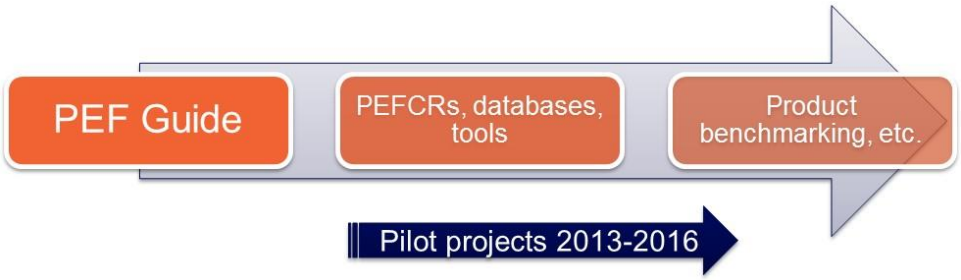


Figure 12: EU process for laying the foundations for product benchmarking

Specific features and observations: EU PEF

It is not yet clear what form the EU initiative will finally take. For instance, no decision has been reached on whether it will include compulsory elements or if the whole system will simply be a recommendation that companies can choose to follow or not. It is also conceivable that using the PEF method to measure environmental performance will be made compulsory in certain instances (e.g. for existing directives, public procurement and calls for tender, tax breaks). A lot will depend on the approaches that, having proven successful in helping one industry apply the PEF to its needs, can then act as examples for putting the method to work in other industries.

Final design of the PEF will be decided after the pilot phase finishes.

It is important that the results can be transferred to other industries.

An EU-wide system that makes it possible – either on a voluntary or compulsory basis – to compare the environmental performance of different products can only come into being after 2017, once the pilot phase has been successfully completed. That said, the PEF Guide and the importance of the individual industries for defining PEFCRs and benchmarks have already defined key elements for using the system in future. The process will also bring category-specific hotspots to the fore and will encourage designers and manufacturers to make, and retailers to sell, more sustainable products.

Future benchmarks will be based on the PEF method and incorporate different industries.

3.4 A.I.S.E. Advanced Sustainability Profiles (ASPs), an industry initiative

Description of A.I.S.E. ASPs

For several years now, the International (though mainly European) Association for Soaps, Detergents and Maintenance Products has included Advanced Sustainability Profiles in its Charter for Sustainable Cleaning Products. The ASPs set out minimum requirements designed to make products in the industry more sustainable. The charter itself aims to encourage the whole industry to continually work on becoming more sustainable. With this in mind, it regularly reviews and raises the requirements. Achievements are published yearly in an aggregate industry report.[20]

Goal: To make products in the soap, detergent and maintenance-product sector more sustainable.

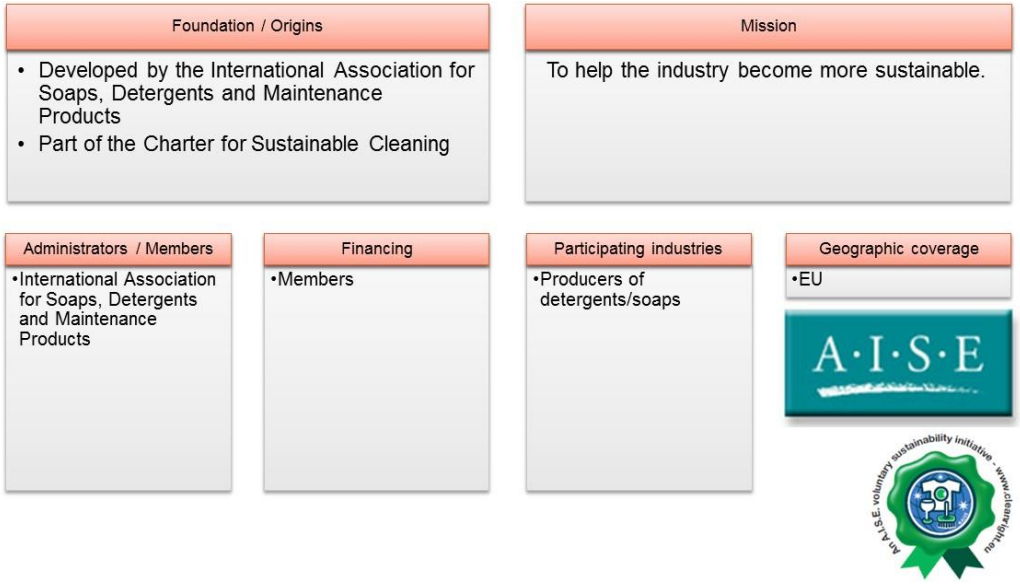


Figure 13: The A.I.S.E. Advanced Sustainability Profiles[21]

The A.I.S.E. ASP hotspot process

A.I.S.E. uses lifecycle assessments as the basis for defining its ASPs. It produces an assessment for a generic product from selected product categories, and then revises it at irregular intervals. The lifecycle assessment and a "substantiation dossier" are used to identify the main environmental hotspots. A consultation process held within the industry then uses the hotspots to define measures that will improve the environmental performance of a product within a product category. The criteria are designed to be ambitious and to exceed the industry

Hotspots identified using lifecycle assessments.

Improvement criteria developed in an internal consultation process.

Company KPIs as well as product-category KPIs.

[20] See: www.sustainable-cleaning.com/en.publicarea_sustainabilityreport.orb.
[21] Source: A.I.S.E., www.sustainable-cleaning.com/en.companyarea_documentation.orb.

average while still remaining attainable for all manufacturers, regardless of size. As well as improvements in resource efficiency, the criteria also focus on consumer information. The process is therefore comparable to that of the EU PEF initiative. However, A.I.S.E. is not open about how it decides on the five criteria (the PEF considers a much wider variety of environmental aspects, and its process for reducing these to the product-category level is transparent).

The Charter for Sustainable Cleaning Products also asks companies and production processes to meet environmental safety requirements similar to those that the products themselves have to fulfil. Products that comply with all the criteria can display the special industry logo shown at the bottom right of Figure 13.

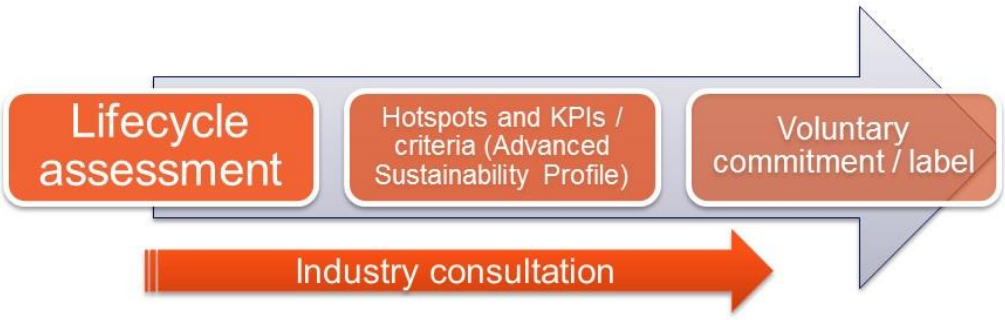


Figure 14: The A.I.S.E. Advanced Sustainability Profiles hotspot process

Specific features and observations: A.I.S.E. ASPs

Positive example of an industry-wide approach.

The industry-wide approach adopted by the International Association for Soaps, Detergents and Maintenance Products is remarkable. By establishing a shared understanding of product sustainability and defining criteria to operationalize it, A.I.S.E is already doing the work that many other industries and product categories have yet to start.

3.5 The European Food Sustainable Consumption and Production Round Table, an industry initiative

Description of the European Food SCP Round Table

The European Food SCP Round Table was founded in 2009 and is a joint initiative of the European Commission and 24 representatives of the food industry. One of its key principles is that "environmental information communicated along the food chain, including to consumers, shall be scientifically reliable and consistent, understandable and not misleading, so as to support informed choice."[22]

Members: European Commission and 24 representatives of the food industry (producers and suppliers).

To help implement this principle, the Round Table aims to create a standardised framework for voluntarily quantifying, reducing and communicating the environmental impacts of food products. It breaks this down into three main objectives:

1. Define standardised, scientifically reliable environmental assessment methods for food and drink products.
2. Identify suitable tools and offer guidance for voluntarily communicating environmental information to consumers and stakeholders.
3. Promote continuous environmental improvement along the entire food supply chain.

Goal: To develop a standardised framework for quantifying, reducing and communicating the environmental impacts of food products.

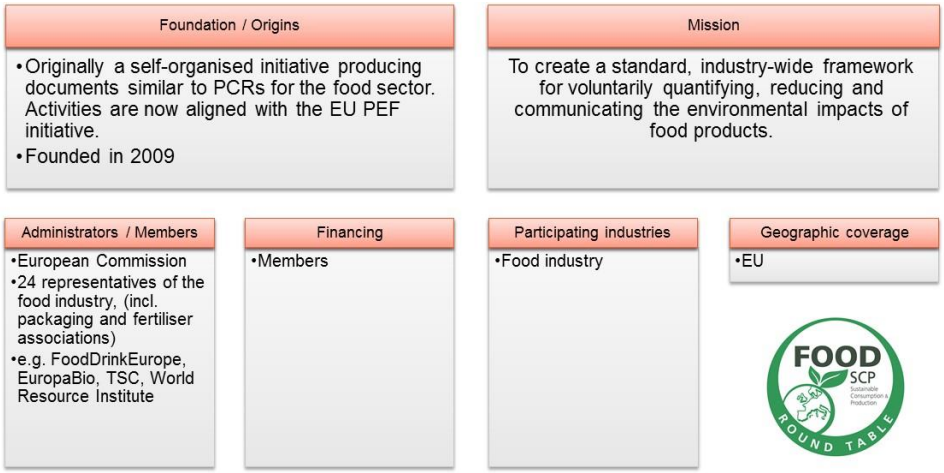


Figure 15: The Food SCP Round Table[23]

[22] See: www.food-scp.eu.
[23] Source: European Food SCP Round Table, www.food-scp.eu.

The Food SCP Round Table hotspot process

ENVIFOOD Protocol defines the EU PEF method for food products.

The Food SCP Round Table is currently developing the ENVIFOOD Protocol, a tool that builds on lifecycle assessments. It defines PEF assessment requirements for food products, which means it is paving the way for category rules (PEFCRs) for food products. These will establish basic principles for defining sustainability hotspots in the food industry. The definition process focuses on measuring, reducing and communicating the environmental impacts of food products.

Several years of consultations with numerous stakeholders.

The ENVIFOOD Protocol is the result of consultations held within the industry over a period of several years. Participants include actors involved in the lifecycle of food products (e.g. trade partners, suppliers, the packaging industry, logistics service providers), as well as environmental and consumer associations.

Member experiences provide the basis for identifying hotspots and improvement opportunities.

Working Group 3, one of four working groups in the initiative, is doing collaborative work on identifying hotspots and improvement opportunities.[24] The activities are still very much in their infancy and, as yet, do not follow any clearly defined method. The group has summarised its results in a hotspot study, but no information is available as to how it went about aggregating them. Its main aim is to present the results of existing voluntary sustainability initiatives that operate within the food industry. To do so, it divides the lifecycles of food and drink products into the nine groups listed below. Participating actors are responsible for compiling the information relevant to their group.

1. Suppliers to the agricultural sector
2. Agriculture
3. Agricultural trade
4. Food and drink industries
5. Packaging supply chain
6. Retailers
7. Consumers
8. Consumer waste
9. Transport and logistics operators

Study identifies the biggest challenges and their main causes.

After providing a general description of each sector (size, main components, etc.), the study then identifies specific environmental challenges and their main causes. The key issues dealt with are: water (consumption/pollution), air, greenhouse gas emissions, soil quality, land use, biodiversity, and resource depletion. These are the most

[24] Source: European Food SCP Round Table, Continuous Environmental Improvement, Working Group 3 on continuous environmental improvement, November 2012.

important categories for agriculture, and for suppliers to the agricultural sector. In other groups, such as retailers, the issues are addressed as cross-cutting categories (though this doesn't apply to greenhouse gas emissions), such as sustainable sourcing and consumption (supply chain improvement), waste, and land use and urban planning. Again, it is unclear how the working group decided to select these topics.

The last part of each section outlines the main obstacles to reducing environmental impacts, and makes recommendations on tools, policy options, and areas where further research is needed.

The study makes no mention of a standardised method for identifying the hotspots and appropriate measures or initiatives. It seems likely that these decisions were made during meetings between experts in the nine groups, where associations play a dominant role.

No sign of a standardised method for identifying hotspots.

Specific features and observations: Food SCP Round Table

Although work on the Food SCP Round Table began before the European Commission started the Product Environmental Footprint, the two initiatives are very closely aligned. The ENVIFOOD Protocol, which is expected to launch this year, will probably be compatible with the PEF. As such, it is a good example of how an individual industry can organise itself. It addresses the questions relevant to the food sector in a way that complies with more extensive approaches.

Round Table likely to be compatible with PEF.

Positive example of how an industry can organise itself.

3.6 PRO PLANET, an initiative of Germany's REWE retail group

Description of PRO PLANET

REWE Group launched the PRO PLANET initiative to promote improvements in product sustainability that go beyond niche eco-social segments and address the mass market. Products that display the PRO PLANET label are produced, processed and used in a way that is much kinder to humans and the environment than similar products are. Earning the label involves being aware of the main hotspots in the relevant category, and taking measures to neutralise or at least significantly improve them. The initiative currently focuses on REWE's own-brand products that are particularly popular among its customers.

Goal: To use product labelling to make mass-market products more sustainable.

Focuses on neutralising/improving hotspots.

REWE Group has set up a number of committees to help with implementing the initiative. These include an internal strategy group and an independent external board that scrutinises the initiative and provides strategic advice. The board is made up of high-ranking representatives of Colabora, NABU, Verbraucher Initiative, and Caritas. It is organised and overseen by the Collaborating Centre on Sustainable Consumption and Production, which is based in Wuppertal, Germany.

The initiative is run by REWE Group and overseen by an external board.

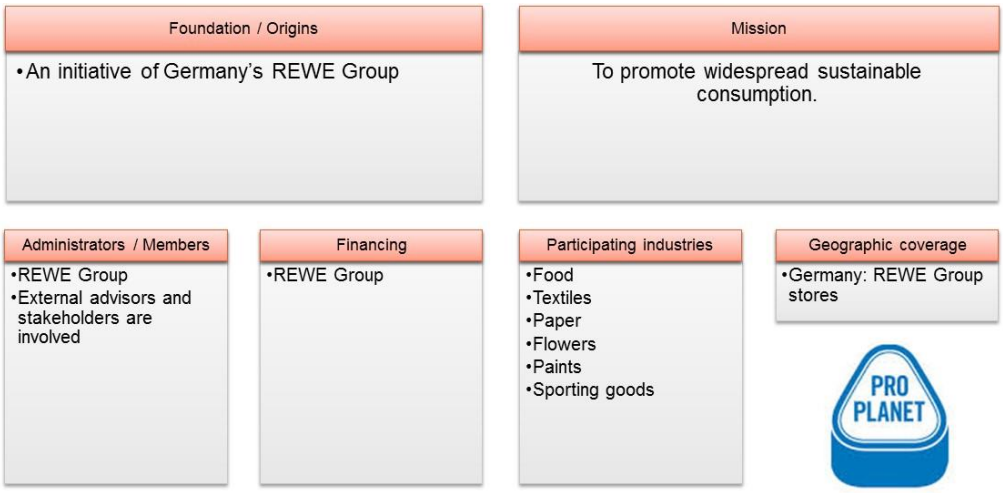


Figure 16: The REWE PRO PLANET initiative[25]

The PRO PLANET hotspot system

The PRO PLANET label is awarded to selected REWE brands upon successful completion of a multi-stage process. REWE's internal strategy group decides on which product groups will undergo the

[25] Source: REWE PRO PLANET, www.proplanet-label.com.

process next, based on proposals from employees, the external board, and business partners.

External institute conducts hotspot analysis.

A REWE Group employee is named as project moderator for each product group that undergoes the process. The strategy group selects an external institute to carry out the hotspot analysis, which involves compiling relevant scientific investigations and empirical studies. The work follows a method set out by REWE Group. The steps are as follows:

The method investigates environmental, social and socioeconomic aspects.

- Analysing the lifecycle in four lifecycle phases.
- Considering the environmental, social and socioeconomic aspects (see Table 1).
- Supplementing scientific facts by collecting opinions from selected stakeholders and REWE Group employees.
- Using the hotspot analysis to draw up a hotspot chart for the product group. The chart identifies where the hotspots (either environmental or social) come in the four lifecycle phases.

Table 1: Environmental and social aspects in the PRO PLANET initiative

Environmental aspects	Social aspects
(Raw) materials	Working conditions
Energy	Social security
Greenhouse gas emissions	Education and training
Water	Occupational health
Land use	Human rights
Emissions to air	Income
Emissions to water/soil	Animal protection
Waste	Consumer health
Biodiversity	Product quality

Weights problems according to relevance.

Subsequent feasibility study to further reduce problem areas.

The institute doing the analysis weights the problems according to their relevance and produces a catalogue of proposals for removing or improving weak spots in the supply chain. It consults with the board and REWE Group employees during this process. The next step is to conduct a feasibility study on the proposals and alternative solutions. Cases where it is impossible to eliminate a hotspot are also documented, along with the reasons. REWE Group uses this preliminary work as a starting point for drawing up its own proposals (which include priorities and targets) for improving or eliminating specific hotspots. The group coordinates the proposals with its trade partners and suppliers.

Next, a project partner is tasked with either implementing the hotspot measures or overseeing their implementation. The partner has the

right to veto any decision to award a PRO PLANET label. The ultimate decision on whether or not to award a label lies with REWE's internal strategy group, which:

- takes account of the board's comments;
- is committed to reaching an agreement on whether or not to award a label;
- awards the label when hotspots improve.

The PRO PLANET system will recognise existing labels, providing they document appropriate measures for tackling the hotspots. For instance, REWE paper products that already carry the Blue Angel label are also awarded the PRO PLANET label because they are made from 100-percent recycled paper. Here, too, the label is awarded in collaboration with a civil society actor.

Hotspot analyses and the associated measures are reviewed every three years to ensure that they are up to date. If the necessary improvements have not been made in that time, the product risks having its label revoked.

Hotspot studies are reviewed every three years to make sure they are up to date.

Example of the improvements for dairy products (not previously certified):

REWE Group states that producers of dairy products must not use any genetically modified animal feed and must gradually, though within two years, eliminate all soya from their animal feed.

Specific features and observations: REWE PRO PLANET

Since PRO PLANET is an independent initiative, our study is especially interested in seeing to what extent its approach can be applied to collective initiatives.

4 Comparison of the initiatives

In what follows, we compare the collective initiatives using the three criteria mentioned earlier: comprehensiveness, efficiency and practicability, and transparency and openness. We did not include the Food SCP Round Table in the comparison because, as things stand, it is largely an analytical tool and the implementation will ultimately be part of the EU PEF initiative. In addition, since REWE Group's PRO PLANET initiative only defines hotspots for a single company, it also does not feature in the direct comparison.

Criteria for the comparison:

1. Comprehensiveness
2. Efficiency and practicability
3. Transparency and openness

Later, we give an overview of the strengths and weaknesses of all the initiatives, and discuss their future prospects.

4.1 Comprehensiveness

We used the following questions to compare how comprehensive the initiatives are:

Evaluation based on a set of key questions.

- Does the initiative take adequate account of a product's entire lifecycle?
- Does it consider all key aspects of sustainability?
- How does it determine the relevance of lifecycle phases, processes, and aspects of sustainability?
- What is its geographic coverage?
- Does it take adequate account of stakeholder perspectives when identifying hotspots?

Table 2 gives an overview of the results.

Table 2: Outcome of the comparison for comprehensiveness

Criteria	TSC	WRAP PSF	EU PEF	A.I.S.E.
Whole lifecycle?	Yes (detailed)	Yes (basic)	Yes (detailed)	Yes
All aspects of sustainability?	Yes (depending on expert panel), plus additional social aspects	No (few indicators)	Yes (detailed guidelines)	No (few indicators for products), additional indicators for companies
Relevance ascertained?	Decision tree, backed up with individual references	Gathers stakeholder feedback, but process is unclear	Yes (detailed guidelines)	Yes (for the parameters in question)
Geographical differentiation?	Planned, but doesn't seem to have been implemented yet	Communicated as doing so, though examples have strong UK focus	Yes (requirement for the method)	No (covers Europe, method could be transferred)
Stakeholder opinions?	Limited to members and experts	Unclear	At various stages in the consultation process	No

All the initiatives we compared take the entire lifecycle – from extracting raw materials to disposal – into account. TSC and the PEF adopt the most extensive approach to addressing aspects of sustainability. TSC demonstrates (or will demonstrate) strengths in the way it considers social aspects, while the PEF sets out very clear guidelines on the environmental impacts that should be addressed. A.I.S.E. strives to do the same thing, but fails to adequately communicate the goal and scope of the lifecycle assessments used. For instance, it provides no information to externals on how it selects the impact categories studied.

Entire lifecycle well established as framework for analysing sustainability.

Social aspects not given enough attention, including in assessment standards.

The initiatives that are based on lifecycle assessments perform well in ascertaining relevance. This is because they make it possible to locate the relevance of individual processes (and therefore hotspots) very accurately over the course of the lifecycle. The initiatives based on consultations and evidence (TSC, PSF), however, do not make it clear exactly how relevant the individual hotspots are.

Methods that use lifecycle assessments perform better in ascertaining relevance.

Almost all the initiatives need to improve on geographical differentiation. The PEF is the only method that requires geographical differentiation (via the underlying data quality).

Geographical differentiation needs work.

As for taking account of stakeholder perspectives, the PEF offers the greatest scope for stakeholder participation. Its pilot phase stipulates face-to-face and web-based consultations with interested stakeholders and requires that the outcomes be taken into account. The PSF initiative has a high degree of openness (see Section 4.3) and accepts comments from all actors who wish to have a say. However, the PSF does not stipulate that these opinions must be taken into account when selecting the hotspots. TSC largely limits stakeholder perspectives to those of its members.

The PEF pilot process stipulates that stakeholder perspectives must be taken into account.

Overall, the PEF initiative puts in the strongest performance for comprehensiveness. Unlike TSC, however, it does not yet take social aspects into account.

The PEF puts in the strongest performance (but neglects social criteria).

4.2 Efficiency and practicability

We used the following questions to compare how efficient and practicable the initiatives are:

Evaluation based on a set of key questions.

- Is efficient implementation one of the initiative's main goals?
- Did practical experiences play a big enough part in the development process?
- Does it provide support for real-world use (in-house, B2B, B2C)?

- Is it compatible with the approaches used in other initiatives?

Table 3: Outcome of the comparison for efficiency and practicability

Criteria	TSC	WRAP PSF	EU PEF	A.I.S.E.
Efficient implementation a key goal?	Yes	Yes	Yes	Yes
Practical experiences incorporated into development process?	Yes (through a range of pilot projects)	Yes, though the toolkit is in the early stages	In part (outcome of pilot project and future development is pending)	Yes (as far as can be made out)
Support for real-world use (in-house, B2B, B2C)?	Yes	Yes	Unclear	In part (label)
Compatible with approaches used in other initiatives?	Unclear	Unclear	Unclear	Unclear

All initiatives say efficiency is an important goal.

All the initiatives we compared say that efficient implementation is one of their main goals. They also all incorporate practical experiences (either gained in pilot projects or shared by the participating businesses) into their development processes. TSC is the most advanced in this regard, but the EU's extensive pilot project is also worthy of note, since it will encompass numerous industries, and companies of all shapes and sizes.

Many initiatives have a clear focus on SMEs.

Help available for putting methods into practice.

TSC, A.I.S.E. and the PSF appear to be working the hardest to help companies put their methods to real-world use.

Currently unclear whether the initiatives will be compatible.

As things currently stand, we cannot say whether the individual approaches will be compatible with each other. The outcome depends heavily on how they develop from here on in. If all of the initiatives continue exactly as they are, then compatibility is likely to be a problem.

TSC most efficient and practicable.

The PEF's performance will depend on its implementation.

Overall, TSC leads the pack in efficiency and practicability. This is hardly surprising, given that Walmart's aim was to develop a way of managing the majority of its products in the shortest time possible. The PEF's performance for this criteria will depend largely on how it is implemented from now on – especially in the pilot projects, where a number of outcomes seem possible.

4.3 Participation and openness

Evaluation based on a set of key questions.

We used the following questions to compare the initiatives for participation and openness:

- Can all key stakeholders participate?

- Are the results transparent or accessible?
- Is the process sufficiently transparent?

Table 4: Outcome of the comparison for participation and openness

Criteria	TSC	WRAP PSF	EU PEF	A.I.S.E.
Allows all key stakeholders to participate?	Only paying members	Yes	Yes	No
Transparent or accessible results?	Only for members (future situation unclear)	Explicitly planning an open platform	Yes, in principle – specific details still unclear	In part (clear criteria)
Process sufficiently transparent?	Only for members	In progress	Yes	In part (process is described, lifecycle assessment not public)

The PEF initiative offers by far the widest range of ways to participate. The PSF also takes a very inclusive approach, although it is unclear exactly how the participation feeds into developing methods and hotspots (see the section on comprehensiveness, above). And while TSC does take stakeholder opinions into account, this is largely limited to those active in its member organisations.

The PEF offers a wide range of ways to participate.

The PSF has very extensive plans for making its work and results transparent and accessible. It wants to publish its Slide Decks and other results on a central online platform that will be open to everyone. It is unclear how the PEF intends to handle transparency and accessibility. The outcome will doubtless depend heavily on political measures that may or may not be implemented.

The PSF plans to make its work and results highly transparent and accessible.

The PEF has the most transparent process, since all the key information is available online. It is much harder to find the relevant documents for the other initiatives. The PEF's extensive (though in some cases still in the planning stage) consultation processes also put it ahead of the rest when it comes to taking account of stakeholder opinions. A.I.S.E. makes numerous documents and tools available to the public, but does not provide details on the information (e.g. lifecycle assessments) that influences important decisions.

The EU's PEF is the most open about its process.

5 Case study comparison

In this section, we use two product categories – laundry detergent and dairy products – to demonstrate the extent to which results and conclusions depend on the choice of method and its goals.

The product categories we selected for the case study comparison:

- are relevant, fast-moving consumer goods;
- are representative of common food and near/non-food products;
- have a great deal of environmental assessment data available, or are at an advanced stage of assessment;
- place different requirements on assessments.

Our aim was to investigate how the initiatives deal with information already available – in contrast to how they handle product categories, where they have to begin by collecting the basic data themselves. According to the large-scale initiatives, laundry detergent and dairy are among the product categories that are highly environmentally relevant and use a lot of raw materials.

The two categories differ widely in the way the results are distributed. With laundry detergent, the production processes and composition of a product are very similar and don't vary much between locations. With dairy products, however, geographic differences or changes in the way animals are reared can produce very different outcomes in lifecycle assessments. Part of our case study comparison involved looking at how the initiatives deal with this situation.

The initiatives in this comparison were selected chiefly on the basis of their international relevance. We also included initiatives and studies whose methods might offer interesting avenues for advancing the way hotspot analyses are carried out and the way KPIs and possible opportunities for action are drawn up. The selection differs between the two product categories because not all the initiatives included studies for both laundry detergents and dairy products.

5.1 Laundry detergent

Highly organised industry; solid basis of results/experiences.

The laundry detergent industry is, at least within Europe, a highly organised one. The International Association for Soaps, Detergents and Maintenance Products (A.I.S.E.) represents large companies as well as SMEs. Its Charter for Sustainable Cleaning has been helping the industry actively collaborate on improving business and product

sustainability for several years now. The work has brought together a wealth of results and experiences from numerous different companies.

Hotspot analysis

Comparison included sustainability and carbon-footprinting initiatives

For the laundry detergent comparison, we used the profiles provided by TSC, PSF and A.I.S.E., and the results from two carbon-footprinting initiatives. The first, PCF Pilot Project Germany[26], conducted a series of pilot studies to produce results that would allow it to measure and communicate product carbon footprints. The second, Climatop[27], identifies products that are particularly climate-friendly and awards them a label that will allow consumers to recognise them as such. The sustainability initiatives, by contrast, put developing KPIs and identifying improvement opportunities very much in the foreground.

Consistent findings for the raw materials hotspot.

The different goals and the methods used (evidence-based consultations, consultations based on lifecycle assessments, or straightforward lifecycle assessments / carbon footprinting) produced consistent results in some cases, complementary results in others, but never any contradictions. The “raw materials” and “consumer behaviour during use” hotspots can be considered as both essential and robust. Of course, we cannot rule out the possibility of the evidence-based methods referring to identical studies or, possibly, to the carbon footprinting studies used here. A.I.S.E. also draws on existing studies to some extent. This shows that the initiatives are already highly synchronised in terms of how they identify hotspots.

Initiatives differ in how they translate results into recommendations for action.

However, we found some major differences in how the initiatives translate the results into recommendations for action and, particularly, in how they use them to develop KPIs. The differences exist because the processes are not standardised within the lifecycle assessments and carbon footprinting schemes that guide all the studies. Additional stipulations are therefore needed to produce product-category sustainability profiles that are the same across the industry.

KPIs and improvement opportunities

TSC does not directly link KPIs and opportunities for action; benchmarking happens individually, at the company level.

TSC does not link every KPI to an improvement opportunity. Instead, it compiles questionnaires that ask suppliers about general aspects of sustainability. One aim of these is to establish whether or not a supplier does anything to manage its environmental impacts (e.g. “Does your company have goals for reducing greenhouse gas

[26] See: www.pcf-projekt.de.
[27] See: www.climatop.ch/.

emissions?"). TSC compiles its KPIs in a carefully defined, consultative (but not public) selection process that happens within the relevant working group – in our case the Laundry Detergent group. The working groups do not conduct benchmarking, but individual companies can choose to do so if they wish. This option applies particularly to retailers who use the TSC profiles to make purchasing decisions. Given that TSC is keeping a very close eye on developments in the EU's Product Environmental Footprint initiative, the PEF pilot phase (2013-2017) could prompt efforts to develop a standardised benchmarking process.

The PSF makes no clear connection between hotspots and improvement opportunities.

Based on the current draft of its hotspot Slide Deck for laundry detergent, the PSF does not clearly match hotspots to specific improvement opportunities. At the time of compiling this study, we found that, compared to recommendations for other product categories, the ones in this case were rather unstructured and somewhat generic in places.

A.I.S.E. makes communication with end users one of the main opportunities for action.

One of A.I.S.E.'s main KPIs for laundry detergent concerns dosing. The detergent must specify the amount of product appropriate to a wash cycle (e.g. a maximum dose of 75 g per wash) and communicate the information to consumers. The initiative has made consumer communication one of the most important opportunities for action. These decisions are the result of consultations between members of the initiative.

The two carbon footprinting initiatives (PCF Pilot Project Germany and Climatop) do not have standardised processes for developing KPIs and identifying opportunities for action.

Table 5: Case study comparison, laundry detergent: goals and scope

	TSC	WRAP PSF	A.I.S.E	PCF Pilot Project	Climatop
Goal	To define hotspots and KPIs	To define hotspots and improvement opportunities	To define KPIs	To gather knowledge	To label particularly climate-friendly products in a variety of categories
Scope	Product category	Product category	Product category	Single product (Persil Megaperls®)	Individual products
Method	Evidence-based consultation	Evidence-based consultation	Consultation based on lifecycle assessments	ISO 14040/44 and PAS 2050 + own recommendations	ISO 14040/44
Sustainability categories	CO2e Ecosystems Human health Resources + Social impacts	GHGs Energy Raw materials ("material risk") Waste Water	Energy Water Waste	CO_2e (eutrophication) (human toxicity) (potential for photochemical oxidant formation / smog) (biochemical oxygen demand)	CO_2e
Phases	Cradle-to-grave	Cradle-to-grave	Cradle-to-grave	Cradle-to-grave	Cradle-to-grave

Table 6: Case study comparison, laundry detergent: hotspots

	TSC	WRAP PSF	A.I.S.E	PCF Pilot Project	Climatop
Hotspots	• Production Raw materials (climate, human health, resources) • Heating water (climate, ecosystems, resources) • Wastewater treatment (climate) • Drying during the use phase (climate, resources)	• Raw materials ("material risk", especially palm oil, energy, GHGs) • Energy used by washing appliances (energy, GHGs) • Water use in domestic washing machines (water) • Wastewater treatment (waste) • Spray drying (energy, GHGs)	• Resource use (quantity affects energy and waste) • Energy use during the use phase • Water use in the use phase • Environmental safety	• Raw materials use (CO2e, special focus on specific enzymes) • Use phase (energy/CO2e)	• Raw materials (CO2e, dosage, special focus on cold-water detergents) • Heating water

Table 7: Case study comparison, laundry detergent: opportunities for action / KPIs

	TSC	WRAP PSF	A.I.S.E	PCF Pilot Project	Climatop
Opportunities for action / KPIs	• Cold-water detergents • Detergent for high-efficiency washing machines • Dosage aid • Packaging information on dosing and laundry loads • Consumer information • Management processes, goals and programmes for improving the way raw materials are used (in terms of CO_2e footprint, biodiversity, and water use) • Others for "Issues" and "Concerns"	• Dosing • Motor drive energy efficiency • Shared logistics • Renewable packaging materials • Capital allowance for green tech • Closed-loop recycling • Sustainable forestry products • Identifying the true cost of waste	• Ability to wash at ≤30°C • Concentrate + compact • Maximum dosage: 75g/115ml/wash • Environmental Safety Check (ESC) for all ingredients • Primary and secondary packaging max: 6.5g/wash • Minimum 60% recycled content in packaging, or packaging from sustainable forests • End-user information	• Washing temperature • Dosing • Duration of wash • Energy efficiency of the washing machine	• Cold-water detergents • Optimised dosing

Conclusion

Irrespective of the method used, all the initiatives identify the essential hotspots (raw materials, energy consumption, and use). But when it comes to identifying other hotspots, deciding how to describe them (phase, process), and choosing which sustainability categories to focus on, the situation varies according to the initiative's goals, the method it uses and how the approach is implemented in a given study situation (implementation differed in the case studies we used).

All initiatives identify the same key hotspots, but differ when it comes to additional hotspots.

In some cases the KPIs and improvement opportunities differed widely between initiatives, even in relation to a single hotspot (cf. Figure 17, below). This is probably because the processes used to select KPIs

KPIs and improvement opportunities differ widely in some cases

and opportunities for action mostly involve consultations, but are not defined in detail or made transparent. In addition, the procedures for organising KPIs and opportunities for action according to relevance are not sufficiently developed.

Sensitivity analyses to evaluate the relevance of KPIs and opportunities for action.

To better evaluate the relevance of KPIs and improvement opportunities in the future, existing evaluation methods should continually undergo sensitivity analyses (i.e. where different scenarios are taken into account) and the outcomes should be evaluated with interested stakeholders. Given the extra work involved, conventional methods do not stipulate that sensitivity analyses be carried out. Joint pilot and research projects are good ways of refining methods for deriving relevant KPIs and improvement opportunities.

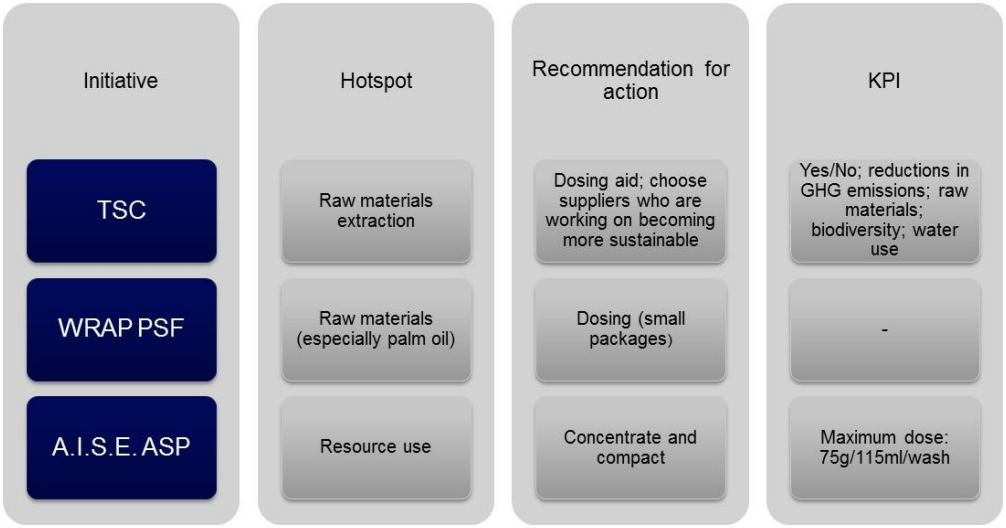


Figure 17: The same hotspot (raw materials) produces very different KPIs

5.2 Dairy products

Exchange between companies is less standardised.

The dairy industry is also well organised within associations, though there is more variety than with laundry detergent. Companies and associations therefore don't communicate with each other in such a standardised way.

Regional differences can be a bigger issue with dairy products than laundry detergents.

Dairy products differ from laundry detergent in that regional differences and variations in production processes can lead to big changes in environmental impacts and applicable recommendations for action. Figure 18 for example, shows that the greenhouse gas emissions from milk production differ enormously from region to region (e.g. Europe and Africa). It would therefore make sense to investigate if and how the different initiatives address these disparities, or rather, whether they lead to different findings.

Hotspot analysis

Comparison looked at two sustainability initiatives and a lifecycle assessment.

We compared hotspot studies from the PSF and PRO PLANET sustainability initiatives, and from a lifecycle assessment initiative that was drawn up to define a baseline for cheese consumption in the US. TSC and the Food SCP Round Table did not have case studies or profiles available at the time of compiling this study.

Findings depend heavily on goals.

As with the laundry detergent comparison, the results here depend very much on the initiative's goals. That said, all three studies identified the production phase (agriculture and dairy) as a hotspot for this category. Where they differ, is in their specific areas of focus. PRO PLANET, for instance, includes biodiversity and social responsibility in its goals, making it the only initiative to explicitly include genetically modified animal feed in the hotspot analysis. Because PRO PLANET requires that civil society groups be involved in the analysis process and provides very precise details on how this should happen, it is also able to address issues that are currently of most concern to consumers (in Germany). The hotspots therefore partly depend on the topics that society is discussing at any one time. Methods that use straightforward lifecycle assessments struggle to do this (they can only manage it by producing subsequent value-based weightings). Another difference between the initiatives is that the PSF and the lifecycle assessment are the only two that explicitly mention food waste (both during production and when the product reaches the consumer) as a hotspot. This, again, is the result of different study frameworks. The waste issue has long been at the heart of the PSF's activities and is a key part of its organisational structure.

Regional differences play inferior role in the hotspot analysis.

Regional differences in production play only a small role in the hotspot analyses for dairy products. This is because, as with laundry detergent, the initiatives often use the same (international) studies as their sources. So, again, a lot depends on the choice of goal and study framework.

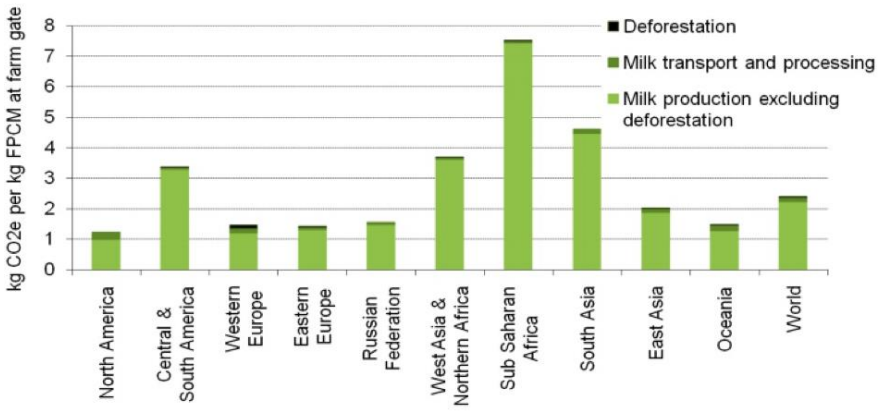


Figure 18: Regional differences: carbon footprint (cradle-to-retail) per kg FPCM, from farm-gate[28]

How the initiatives select opportunities for action

PRO PLANET describes how it selects courses of action, and adapts the process to individual product categories.

PRO PLANET is the only initiative that gives externals insight into how it selects opportunities for action. The process involves REWE representatives, scientific institutes and NGOs. Practicability (especially from a market-economy perspective) plays an important role in the selection criteria, which means that, to start with, just one or two opportunities are linked to a product category. If the suppliers put these into practice, then work begins on drawing up more. For example, a PRO PLANET supplier can take up to two years, from the time that the product goes on sale, to stop using soya feed from overseas.

Lifecycle assessments do not specify a standardised way of identifying opportunities for action. Those who commission and write the study are free to decide how KPIs and opportunities should be drawn up.

See Section 3.2 for information on the PSF's selection process.

Table 8: Case study comparison, dairy products: goals and scope

	WRAP PSF	PRO PLANET	University of Arkansas (Kim et al., 2013)
Goal	To define hotspots and opportunities for action	To define hotspots and improvement opportunities	To produce a baseline for investigating the environmental impacts of cheese consumption, right up to end-of-life
Scope	Product category	Product category	Product category: cheese
Method	Evidence-based consultation Results: semi-quantitative and quantitative	Evidence-based consultation (own method) Results: semi-quantitative	ISO 14040/44
Sustainability categories	GHGs Energy Raw materials ("material risk") Waste Water	Climate protection Resource use Biodiversity and animal protection Social responsibility Product safety	Climate change Marine eutrophication Freshwater eutrophication Photochemical oxidant formation Ecosystems/land use Ecotoxicity Human toxicity Cumulative energy demand Freshwater depletion
Phases	Cradle-to-grave	Cradle-to-grave	Cradle-to-grave, incl. food waste

[28] Source: FAO (2010): Greenhouse Gas Emissions from the Dairy Sector. A Life Cycle Assessment, www.fao.org/docrep/012/k7930e/k7930e00.pdf.

Table 9: Case study comparison, dairy products: hotspots

	WRAP PSF	PRO PLANET	University of Arkansas (Kim et al., 2013)
Hotspots	Ingredients: • GHGs (80%): animal rearing (CH_4 emissions + feed) • Energy (20%-60%): producing feed, milking • Water: animal feed + rearing • Risk: Soya • Waste Processing: • Energy: e.g. pasteurisation • Waste • GHGs • Water Consumer: • Waste Packaging: • GHGs • Energy (20%) • Risk	Hotspot report: Farming/agriculture • Raw materials (animal feed) • Climate protection: CH_4 • Land use • Water pollution Social aspects: • Farmers' pay • Use of GM feed Hotspots communicated externally: • Biodiversity and ecosystems • Use of GM feed	• Climate change: CH_4: enteric and from manure management; CO_2: fossil fuels combustion; nitrous oxide: fertiliser application + manure management • CED: direct use of fossil fuels; production of nitrogen fertiliser • Water: irrigation • Eutrophication: phosphate release / nitrogen compound runoff • Ecosystems: land occupation for growing animal feed • Human toxicity: energy (coal) • Ecotoxicity: Pesticides/disinfectants

Table 10: Case study comparison, dairy products: opportunities for action

	WRAP PSF	PRO PLANET	University of Arkansas (Kim et al., 2013)
Opportunities for action	• Generate process heat • Reduce consumer food waste • Use sustainably produced feed • Fertiliser management • Efficient animal farming • Water efficiency • Better manure management	• Use non-GM feed • Replace soya feed from oversees (within two years) (soya content in feed (EU) approx. 13% (FAO, 2010))	• Reduce milk loss (along the supply chain) • Methane + manure management • Reduce pesticides (in feed + livestock farming) • Use water efficiently (feed) • Erosion control (eutrophication)

Conclusion

The initiatives agree on the most important phase, but specific areas of focus can differ widely.

All the initiatives identify production (agriculture and processing) as the most important phase of the lifecycle. However, they often vary in terms of the specific aspects they choose to focus on (e.g. methane emissions, animal feed). Some big discrepancies also exist between the areas of sustainability they choose to address, which affects the kind of hotspots identified. As was the case with laundry detergents, the study goals determine the results. PRO PLANET's broad approach means that it is the only initiative to perform well in identifying hotspots beyond the limits of specific goals.

Accurate information on product use can be very important.

The comparison shows how important it is that methods include the entire lifecycle of a product. Given, for instance, that perishable dairy products lead to a great deal of food waste, the sustainability of these products should not be assessed on sales volume but on how much is actually consumed. Accurate information on consumer behaviour is therefore extremely important for building models of the usage phase. Existing studies, however, often fail to take adequate account of such data.

No guidelines for helping users prioritise measures.

Another similarity with the laundry detergent category is that the initiatives do not define scope for sorting opportunities by relevance and practicability while also taking account of regional differences. Users of the hotspot methods receive no quantitatively based guidelines on which measures (given the specific conditions at the production location) they should favour. Again, this shows how crucial it is that the initiatives and lifecycle assessors share more information. However, the comparison also indicates that the initiatives all build on the same foundations and that the challenge is now for them to develop in a consistent, coordinated way.

Comparison shows that different initiatives build on the same foundations.

6 Strengths and weaknesses of the global hotspot initiatives

6.1 Strengths and weaknesses of The Sustainability Consortium

TSC is highly practical and has good chances of penetrating the global market (with limitations).

One of TSC's biggest strengths is that it uses an extremely practical method. Its clearly defined, multi-stage process produced over 100 Category Sustainability Profiles by 2012. There is therefore every reason to believe that by 2014 it will have reached its goal of compiling profiles for 600 categories, which will mean it can be used on a much wider scale. TSC's members include numerous international retailers, which implies that it could well cover a large part of the market in future, and also lends it a weight that could help it expand its global reach. Penetrating the international market would be a major advantage, as it would make life much easier for suppliers. As things stand, suppliers have to fulfil a whole series of reporting requirements that can vary widely depending on the export country, individual programme or customer.

Lack of transparency.

The TSC method is scientifically founded and was developed in collaboration with an independent institution, the University of Arkansas. Nonetheless, this does not make up for the lack of transparency that non-members come up against when exploring TSC. It provides no information on how it reaches important decisions (e.g. on selecting relevant environmental and social impacts), which means that outsiders cannot evaluate them. Moreover, existing proprietary (non-standardised) evaluation and communication methods, which some TSC members currently use, could make it hard for TSC to maintain a coherent profile.

Inconsistent approach to operationalizing results poses a threat.

Unlikely to spread through the EU.

Right now, it is unlikely that the TSC method will become widely used within the EU. This is partly because conducting a European consultation process is considered as being too time consuming, and partly because the PEF is seen as being so relevant. The TSC's current business model, in which findings are made available to members only, is stopping it from increasing its market penetration (especially in Europe) and is currently its biggest strategic challenge.

Ongoing development offers great deal of potential.

These structural challenges aside, the ongoing development of the TSC method offers great potential for resolving weak spots. Taking account of particularly relevant government guidelines could be a big help, for instance. The initiative's move to set up offices in other regions (e.g. China) is likely to make the opinions and experiences of market participants from newly industrialised countries an important factor in this process. It will also get TSC working more closely with other major initiatives, like the PEF.

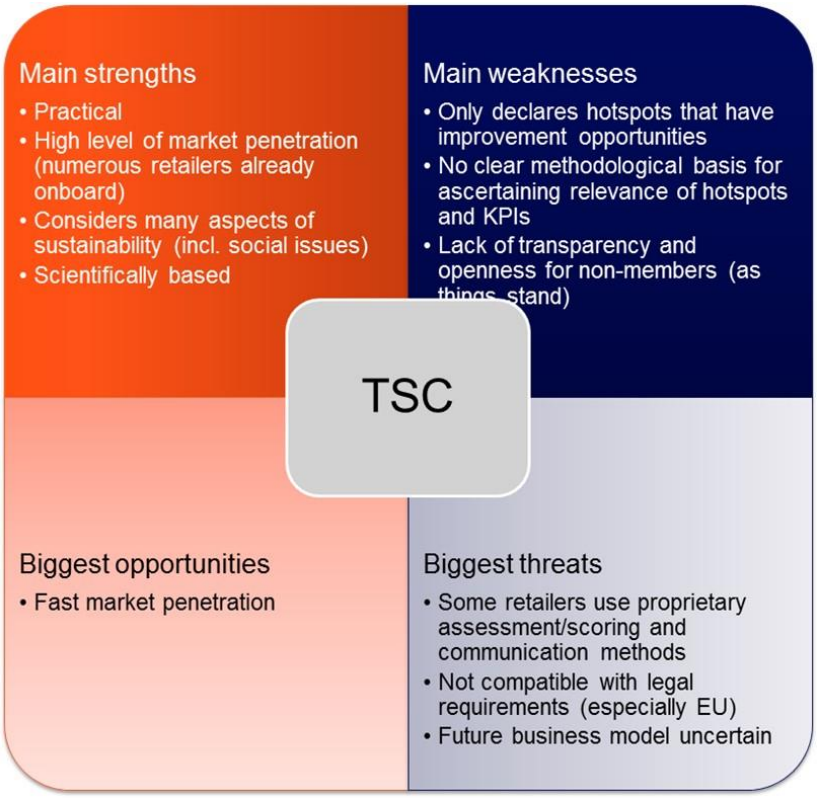


Figure 19: Strengths and weaknesses: TSC

6.2 Strengths and weaknesses of the WRAP PSF

Publicly funded.

Unlike TSC, which is a privately funded initiative, the PSF receives public funding. This means all the participating organisations function on an equal, collaborative footing that does not depend on the size of their financial contribution. The PSF primarily relies (at the screening stage) on publicly available sources of data and information. As a result, it is free to publicise the results without having to worry about violating data protection laws. This puts the PSF at a considerable advantage when it comes to transparency.

High degree of transparency.

The PSF's collaborative approach is also visible in its efforts to create networks of international and, in some ways, rival initiatives. By bringing everyone closer together, the PSF hopes to make the process of refining the methods and approaches both more efficient and more effective. To date, businesses have been relatively unaware of the PSF, but these efforts have made it an important player among global sustainability initiatives.

The PSF's collaborative approach is its biggest strength.

PSF paints a limited picture of sustainability.

As things stand, the method paints a rather limited picture of sustainability. Although it covers important aspects of international debates on the environment, such as climate change, the energy crisis, finite resources, waste, and water, it does so in an aggregated and at times redundant way (e.g. energy and climate). Methodological inconsistencies pose the greatest threat to its acceptance. However, the method and the evaluation tools are still in the development stage. Careful monitoring, and engaging in dialogue with other initiatives mean the PSF can learn quickly and make changes fast.

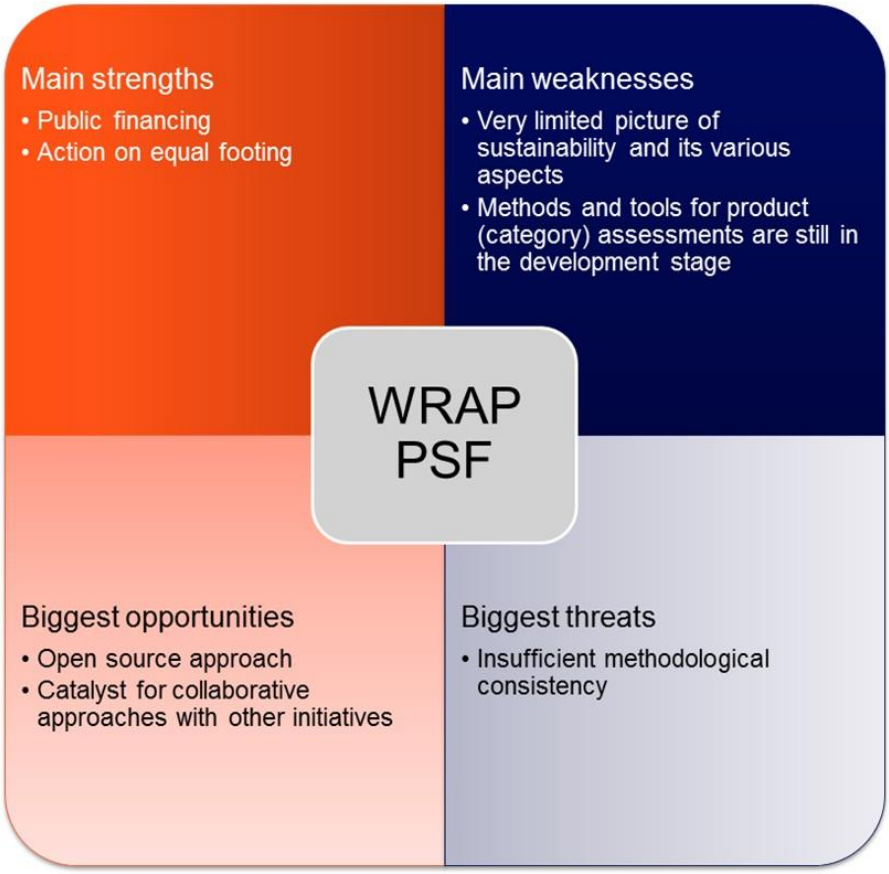


Figure 20: Strengths and weaknesses: WRAP PSF

6.3 Strengths and weaknesses of the EU PEF

Should make product comparisons and benchmarking possible.

PEF studies follow a fixed method that is accessible to the public. The method is based on an analysis of the most important initiatives and takes a very wide range of environmental impacts into account. Unlike lifecycle assessments, the PEF favours comparability over flexibility, which means it should allow direct product comparisons and benchmarking in the future. It will also simplify B2B communication (with robust selection criteria for suppliers) and make end consumers aware of environmental pros and cons where necessary, all of which will help energise the market for green products. Before that can happen, though, the PEF needs to build up its framework. This is the aim of the current pilot phase, and it is still unclear what the final outcome will be. Precise guidelines (which pay special attention to drawing up PEFCRs) for the pilot phase already exist, so the method can serve as a basis for other initiatives.

Lack of social indicators.

Introducing procedures for standardising and weighting results – also currently in the development stage – will mean the PEF can produce uniform information on the environmental relevance of the individual categories, hotspots, and targeted impact-reduction measures. A lack of assessment standards means the PEF method ignores social indicators, which will make it impossible to work out whether environmental burdens are simply being shifted over into society.

Method is highly complex and therefore problematic.

The PEF Guide says that users need no prior knowledge to put the method into practice. But in reality, anyone unfamiliar with lifecycle analyses and carbon footprinting will find it extremely difficult to produce a Product Environmental Footprint. Given the complexity and extent of the work involved, there is a risk that, say, companies with large product portfolios or products that rely on complicated supply chains will avoid using the PEF Guide to conduct assessments.

Developing rules for product categories could prove helpful.

Although developing product category rules, which can be seen as supplementing the PEF Guide, might simplify things, they also run the risk of over-regulating matters. If that happens, compatibility with other initiatives (especially TSC and proprietary systems) might only be possible in one direction. However, the European Commission is currently communicating with other international initiatives. At the 2013 PEF Policy Conference, for example, TSC announced plans to conduct a comparative study of the similarities and differences in results.

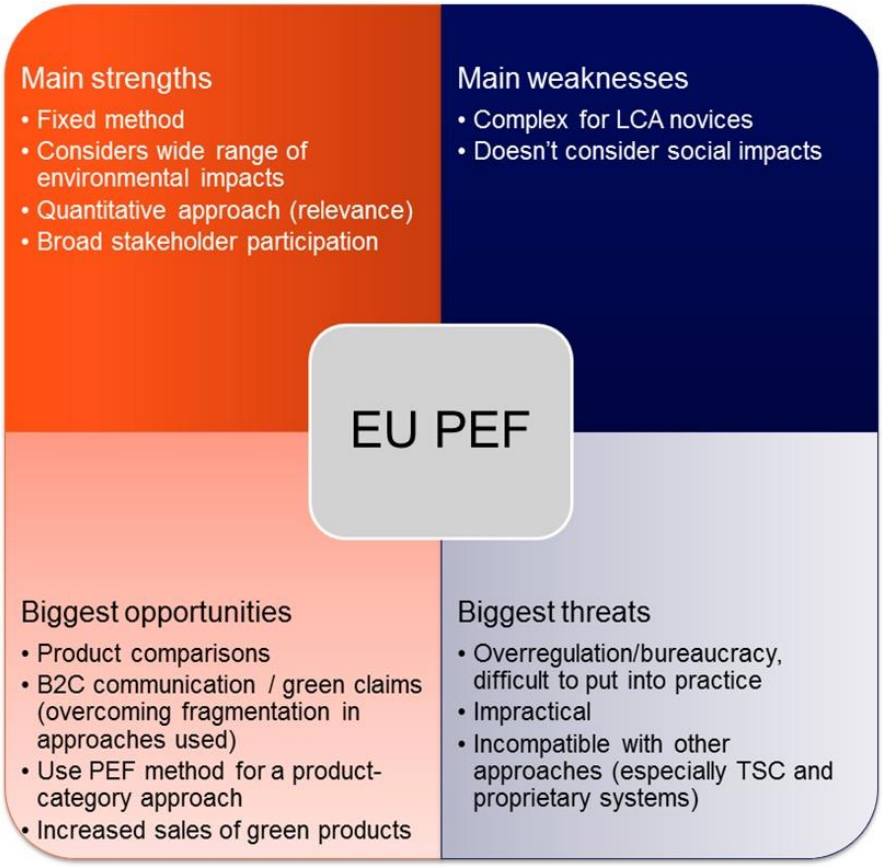


Figure 21: Strengths and weaknesses: EU PEF

6.4 Strengths and weaknesses of the A.I.S.E. ASPs

Clear rules for defining hotspots and recommendations for action.

Criteria and tools are updated regularly.

The ASP system is a long-established, industry-wide approach that contains clearly defined processes for identifying hotspots, KPIs and recommendations for action. As part of the Charter for Sustainable Cleaning, ASPs are an extension of the Charter Sustainability Procedures that A.I.S.E. asks companies to follow. Together, they produce the content for the annual reporting on KPIs (which are also clearly defined). The results are published and compared with 2005, the baseline year. This means that even stakeholders outside A.I.S.E. can keep track of how things in the industry are developing. Another strength of this initiative is that it regularly revises and updates the ASP criteria and tools for each product category.[29] However, it only gives stakeholders limited scope to participate in developing and revising the criteria and tools.

Lack of transparency in the way criteria are developed and KPIs produced.

As for weaknesses, there is a distinct lack of transparency surrounding the processes for developing ASP criteria and producing KPIs. Both are based on lifecycle assessments that are either done internally or

[29] www.sustainable-cleaning.com/en.companyarea_documentation.orb

by external service providers. The initiative does not publish the results in their entirety, or rather does not explain how it selects its impact categories. It is also hard to follow how it chooses which aspects of sustainability to focus on. The Charter Sustainability Procedures consider more environmental aspects than the ASPs do, and also take social dimensions into account.

Could be compatible with the PEF initiative

Despite the room for improvement in matters of transparency (a problem that is partly down to the need to retain a competitive advantage), the A.I.S.E. initiative is well placed to become a role-model project for other industries and to encourage them to take a collective approach to identifying and addressing hotspots. The PEF method could conceivably be used to produce generic lifecycle assessments, a move that would foster compatibility between the two systems. The short revision cycles will also create the momentum necessary for bringing the ASPs into greater harmony with other initiatives.

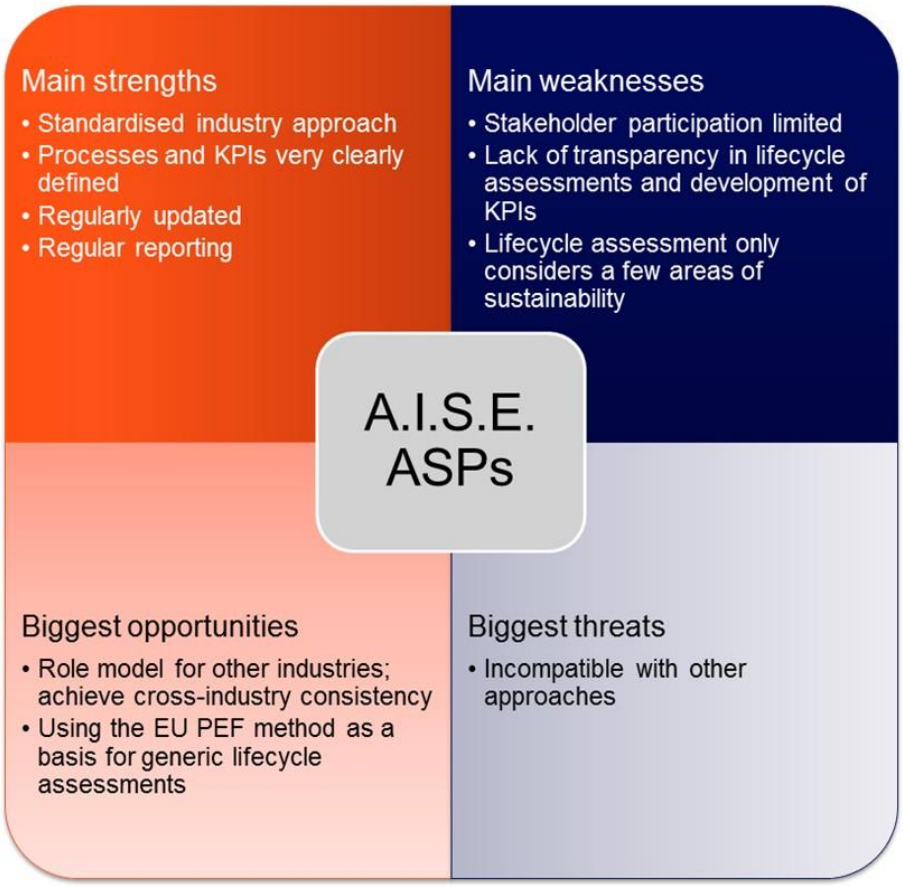


Figure 22: Strengths and weaknesses: A.I.S.E. ASPs

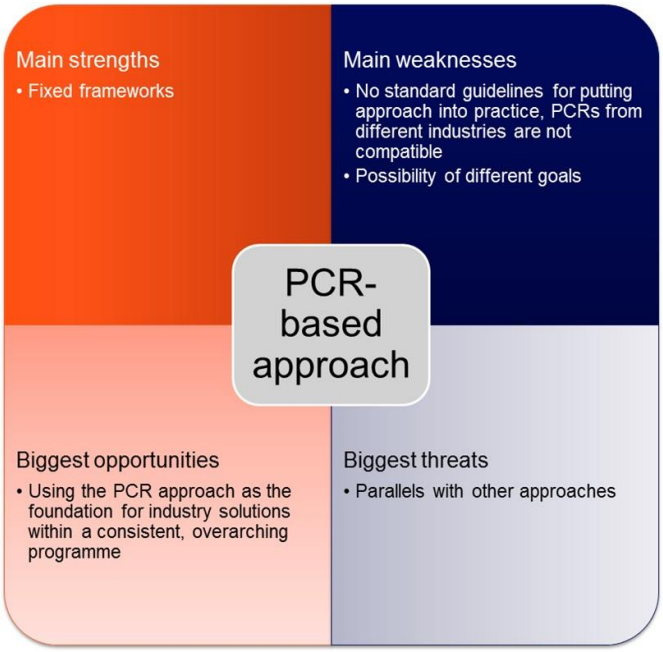
6.5 Strengths and weaknesses of PCR-only approaches

Different goals mean PCRs are not compatible.

Product category rules (PCRs) for lifecycle assessments can be developed outside of existing initiatives and are a necessary part of producing Environmental Product Declarations (EPDs). Two major strengths of this approach is that the initiative comes from the individual actors in the industry, and that PCRs can be implemented relatively practically within a predefined framework. However, product categories are defined neither uniformly (scope of product types varies), nor on the basis of relevance criteria (no prioritisation), all of which means the process lacks sufficient steering. What is more, with different sectors setting different goals, PCRs from one industry are not compatible with those from another.

Developing PCRs within a recognised programme offers a great deal of potential.

Given these inconsistencies, efforts are now being made to standardise the processes. Initiatives like the PCR Taskforce[30] and the PCR Guidance Development Initiative[31] are helping to harmonise the ways that PCRs are developed and revised. It also makes sense to keep an eye on schemes, like the ENVIFOOD Protocol, which use the PCR approach as a basis for developing cross-category solutions and make it the focus of additional industry-led (and PEF-led), harmonisation efforts. The greatest potential for the PCR approach lies in developing the rules as part of a widely recognised programme.



30 An initiative of the PEF World Forum.
31 www.pcrguidance.org/.

Figure 23: Strengths and weaknesses: PCR-only approach

6.6 Strengths and weaknesses of the REWE PRO PLANET retailer initiative

Takes social aspects of sustainability into account.

Along with TSC (and, to a certain degree, A.I.S.E.), PRO PLANET is one of the few initiatives whose hotspot analyses, in addition to taking account of a wide range of environmental issues, also make a point of examining the social aspects of sustainability. Its combination of quantitative (desktop screening) and qualitative (stakeholder consultation) analyses has the potential to find its way into collaborative approaches. Stakeholder participation is an integral part of the method, and another major strength of this initiative.

Combines quantitative and qualitative analyses.

Stakeholder participation is a clearly defined part of the method.

One of PRO PLANET's shortcomings is that it fails to replicate the transparency of its process in the way it handles the results, which are only partially accessible. It only publishes information linked to the measures that are currently being put into practice. Also, like other initiatives, PRO PLANET only pays attention to the effects of regional differences in production locations in exceptional cases (e.g. in the social categories) and applies its assessments to entire product categories in the hotspot study.

Lack of transparency in selecting opportunities for action.

Selecting (prioritising) courses of action happens in a multi-stage process. It links the semi-quantitative weighting of each aspect of sustainability with a consultation process. This step significantly reduces the courses of action that were initially identified. However, the selection, which is heavily oriented towards practicability, is not always transparent to consumers.

Too many labels can create problems.

PRO PLANET also makes it hard for outsiders (consumers, say) to understand how it links in with other independent labels, such as those that mark a product as organic or fairtrade. Because the scheme is limited to REWE's own brands, products made by third parties cannot earn the PRO PLANET label yet, even if they fulfil the sustainability criteria for their product category. The biggest threats therefore lie in B2C communication, though B2B is also a problem area. The situation means suppliers who produce for other companies besides REWE have to manage numerous different requirements, and consumers are faced with yet more labels.

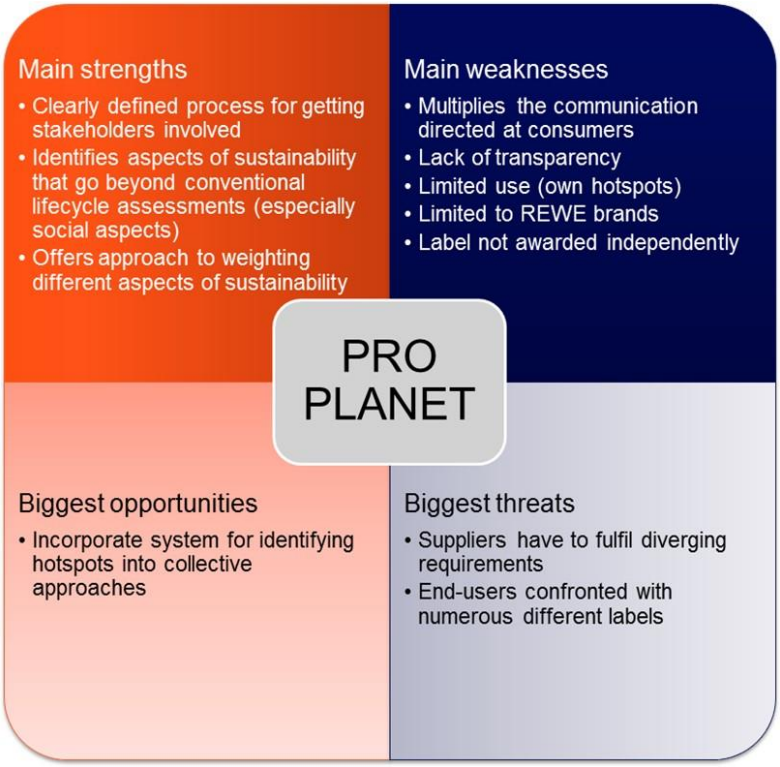


Figure 24: Strengths and weaknesses: REWE PRO PLANET retailer initiative

6.7 Summary of the strengths and weaknesses of the global hotspot initiatives

Each initiative has interesting aspects.

None of the initiatives fulfil all three requirements.

Our comparison shows that none of the initiatives can fulfil all three requirements (comprehensiveness, efficiency and practicability, and participation and openness). We also found that each initiative has different strengths and weaknesses:

- TSC and A.I.S.E. perform well in terms of practicability.
- The EU PEF is the initiative that comes closest to fulfilling the comprehensiveness requirement (at least with regard to the environmental aspects of sustainability).
- PRO PLANET's extensive analysis matrix is well suited to improving hotspots in a way that avoids causing unwanted effects elsewhere (burden shifting).
- The EU PEF has plans for the widest reaching consultation process.
- The WRAP PSF currently has the most open approach, which means it achieves a high level of transparency and credibility.
- A.I.S.E. can provide other industries with an excellent example of how they can collaborate internally.

The TSC process is the most developed of all. Users can already apply it to a wide range of products without having to sacrifice too

much in the way of comprehensiveness. However, the method has two major weaknesses:

- It lacks transparency for non-members (the result of its current business model).
- It does not provide for standardised benchmarking, so there is a danger that retailers will take diverging approaches to this (i.e. use their own weighting).

Successful conclusion to PEF pilot phase could bring initiatives closer.

The weaknesses could become less of a problem if the PEF pilot phase proves successful and if sufficient energy goes into refining the PEFCRs. Since TSC uses publicly available data, it seems likely that it would adapt the benchmarks produced with considerable methodological effort during the PEF pilot project, and that this will create a degree of transparency. The same also applies to the other hotspot initiatives.

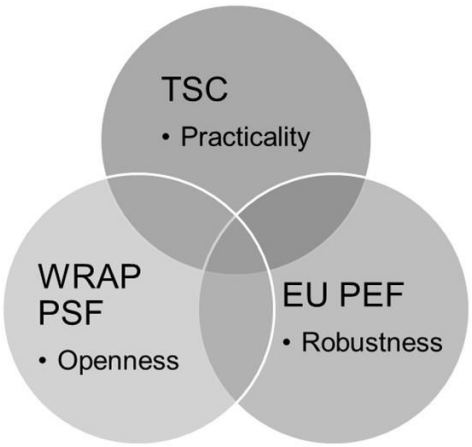


Figure 25: Summary of the strengths of the large cross-industry initiatives

Ongoing need for a recognised system for developing opportunities for action and KPIs.

Our comparison did not find any generally accepted system for translating the results of lifecycle assessments into hotspots, recommendations for action and KPIs. There is no general consensus on whether a hotspot is a lifecycle phase, a process, or a sustainability category. Furthermore, the processes used to justify the relevance of specific indicators are not sufficiently transparent. The initiatives also either take a very limited approach to weighting the different aspects of sustainability or ignore the task all together. Decisions on weighting rely on the value judgements of just a handful of actors. It is therefore vital that, for the time being at least, the initiatives engage in consultations that incorporate as wide a variety of stakeholders as possible.

7 Conclusions

7.1 Overall: strengthen existing strengths

Initiatives inspire each other and strive for viable solutions.

However much we, as people, might wish for a single solution to everything, there is no denying that competition invigorates business. The same applies, in a slightly different way, to the highly dynamic field of product sustainability. Different initiatives inspire each other, arrive at shared insights, and invest a great deal of energy in studying pros and cons to identify the most viable solutions. Redundancy translates into progress, consensus produces the norm. The many opposing forces contained in our study of comprehensiveness, practicability and openness bring sustainability initiatives face-to-face with challenges on a similar scale to those facing conventional market participants, who have to address the stereotypical mass consumer's apparent demand for quality, speed and value. In most cases, overly fulfilling one criteria happens at the expense of another. The solution here lies in genetics: use recombination to strengthen existing strengths and keep improving the systems until they overcomes their initial weaknesses.

The PEF will offer the most robust methodological framework, and has the potential to penetrate the market on a large scale.

The European Commission's PEF initiative will, in all probability, deliver the most robust methodological framework for the environmental side of product sustainability. Whether or not it achieves the ambitious goal of effective benchmarking remains to be seen. If implemented consistently at the political level and if properly regulated, the PEF also has the biggest chance of penetrating the market for the long term and of achieving a global reach. That said, the PEF method will only be able to establish itself and live up to its inherent potential if the following things happen:

For the PEF to establish itself, it must do the following:

1. The ongoing (highly complex) process of developing PEFCRs builds on a successful industry/subsector approach, such as the A.I.S.E project.

   Incorporate experiences from successful industry/subsector approaches, such as the A.I.S.E. project

2. The results of the PEFCR process produce performance indicators / KPIs / hotspots (particularly for SMEs and businesses with large product portfolios) that achieve a similar level of practicality as we find with TSC, which strives to keep the cost of gathering information down and make it simple to integrate the data into existing management and supply-chain processes.

   Look to TSC for guidance on practicality.

3. The intensive, highly promising discussions with other initiatives (WRAP PSF, TSC, PEF World Forum, UNEP Life Cycle Initiative, GS1, etc.) continue and help either avoid or mitigate situations where proprietary and highly divergent approaches come into play.

Continue engaging in intensive dialogue with other initiatives, such as the PEF World Forum, PSF, and TSC.

7.2 For businesses: Take a proactive role in dynamic developments

Given that the initiatives discussed here are all still in a highly dynamic stage of development, numerous opportunities exist for getting actively involved and helping shape them from here on in. TSC is on the lookout for a new business model and wants to increase its presence in Europe. In the second half of 2013, the PEF launched an important pilot phase for developing the methodological framework that will ensure successful implementation. Communicating green claims is a challenge that still needs to be addressed. The apparent contradiction of, on the one hand waiting until an international consensus is reached and, on the other, taking a proactive approach to try and shape the field, generally disappears as soon as one begins (with the right motivation) to steadily tread a path towards more sustainable products.

The initiatives are still developing, so there is scope for reaching an international consensus / developing compatible systems.

With all this in mind, we recommend that companies consider the following before taking action:

Recommendations for companies:

1. All the initiatives use lifecycle assessments. Gaining a thorough understanding of one's own value chain (i.e. bringing transparency to the supply chain) is the first, crucial step on the path to lasting product transparency.

Make the supply chain transparent.

2. All initiatives focus on increasing cooperation along the value chain. Sending out numerous questionnaires and defining proprietary performance indicators (and communication content) will confuse and irritate partners, and will delay collective efforts aimed at developing a standardised global system for evaluating sustainability.

Cooperate and agree on a shared system for evaluating sustainability.

3. The A.I.S.E. project is an outstanding example of the power of an industry-wide cooperation that could, for its own product groups, be tested and developed as part of the PEF pilot phase. As things currently stand, proactively supporting or possibly participating directly in the PEF pilot phase probably offers the greatest potential for companies to advance their sustainability efforts in a way that is based on a sound methodology, organised

Proactively support the PEF pilot phase.

within a robust structure, and well suited for being communicated to stakeholders.

7.3 For GS1: Take control

GS1 is well placed to help with implementation.

As a unique collaboration between retailers and producers, GS1's international network is well placed to provide global support for increasing product transparency in a way that promotes sustainability. GS1 has extensive experience in standardisation, which means that, from the point of view of the consumer goods trade and industry, it can and should play a leading role in moving towards a world where product sustainability is part and parcel of daily life.

Taking account of the A.I.S.E.'s outstanding industry solution, it seems important and right to get actively and directly involved in TSC and the PEF pilot project with the following goals in mind:

Ensure the approaches can be operationalized

1. Ensure the approaches can be operationalized by carrying out field trials with supply chain partners (retailers, producers, suppliers) and with various service providers (e.g. from the software, logistics and packaging industries).

Ensure specific findings can be transferred to other sectors and product categories.

2. Ensure findings can be transferred to other product categories or sectors within the consumer goods industry (this should involve preparing the food industry for the second PEF pilot phase)[32] and work out a uniform role that retailers can play in product sustainability.

Secure global acceptance by incorporating all relevant stakeholders.

3. Ensure all relevant stakeholders are involved on a global level, so as to secure worldwide acceptance for the results and processes.

Introduce sustainability into established standards and processes.

4. Make product attributes that concern sustainability part of established standards and processes.

Implementing (or partially implementing) these conclusions will help make significant, much-needed progress on the shared path towards a more sustainable way of working and living. The fast-moving, consumer-oriented nature of the consumer goods industry and its products could very well be the catalyst that takes the world into a whole new era of sustainability.

[32] The second part of the PEF pilot phase will focus on food products and starts in spring 2014.

Annex 1: Glossary

A.I.S.E.	Association Internationale de la Savonnerie, de la Détergence et des Produits d'Entretien / International Association for Soaps, Detergents and Maintenance Products. Author of the Charter for Sustainable Cleaning and of the Advanced Sustainability Profiles.
ASP	Advanced Sustainability Profile: part of the A.I.S.E. Charter for Sustainable Cleaning. ASPs define the hotspots for soaps, detergents and maintenance products. They include requirements concerning environmental safety checks, resource efficiency and consumer information.
B2B	Business-to-Business
B2C	Business-to-Consumer
Benchmark	Reference value used to compare processes or performance measurements.
Climatop	Private-sector Swiss initiative for certifying products that have low carbon emissions.
Cradle-to-grave	Adjective to describe, e.g. a lifecycle assessment that covers all phases of a product's lifecycle: from raw materials extraction to production, distribution, use and disposal.
Cradle-to-retail	Adjective to describe, e.g. a lifecycle assessment that covers all phases of a product's lifecycle up to the point when it is sold: from raw materials extraction to production and distribution.
CSCP	Collaborating Centre on Sustainable Consumption and Production: a collaborative think-tank and do-tank founded by the United Nations Environment Programme (UNEP) and the Wuppertal Institute for Climate, Environment and Energy.
CSP	Category Sustainability Profile: CSPs are produced by TSC and provide a combined overview of the hotspots for a given product category (the A.I.S.E.'s Charter Sustainability Procedures are not abbreviated in this study, to avoid confusion).
EPD	Environmental Product Declaration: EPDs build on lifecycle assessments and describe the environmental performance of goods and services (based on PCRs).
EU	European Union
EU PEF	see PEF
EU PEF pilot	Pilot project for studying the implementation of the PEF

project	method.
Food SCP Round Table	Food Sustainable Consumption and Production Round Table: an initiative of the food industry, designed to create a standardised framework for voluntarily quantifying, reducing and communicating the environmental impacts of food products.
GPC	Global Product Classification: system for classifying products in a standardised way. Useful for creating a shared language between trade partners. A GPC “brick” refers to a category of products that share similarities in purpose, form and material.
Hotspot	A major sustainability challenge within a given product category. Requires the most urgent action compared to other parts of the lifecycle.
KPI	Key performance indicator (for product sustainability): parameter and indicator that plays a big role in the overall sustainability of a product category. Useful for managing sustainability in a practical way.
Lifecycle assessment	Environmental management method designed to measure all environmentally relevant input and output streams of a company or product.
NGO	Non-governmental organisation
Opportunities for action	Set of specific improvement opportunities for a given product category. Designed to make the products significantly more sustainable.
PCF	Product Carbon Footprint: used for quantifying greenhouse gas emissions (including CO_2, methane and nitrous oxide) over a product’s entire lifecycle.
PCF Project Germany	Pilot project designed to create a framework for uniform international standards on calculating product-related greenhouse gas emissions.
PCF World Forum	see PEF World Forum.
PCR	Product Category Rule: PCRs specify product categories, and are used in combination with carbon footprinting or environmental assessment methods (e.g. the PEF). The rules make it possible to compare the environmental performance of different products.
PEF	Product Environmental Footprint: method developed by the European Commission to measure and communicate the environmental impacts of different products.

PEFCR	Product Environmental Footprint Category Rule: PEFCRs specify product categories used in the PEF method (see also PCR and PEF).
PEF World Forum	Product Environmental Footprint World Forum: impartial global forum for dialogue and exchange on environmental assessments and for promoting sustainable methods of production.
REWE PRO PLANET	Retailer initiative run by Germany's REWE Group. Awards its label to products that fulfil its sustainability requirements.
SME	Small and medium-sized enterprises.
SMRS™	Sustainability Measurement and Reporting System: launched by TSC to evaluate the sustainability of different product categories (Level 1) and, in future, of individual products (Level 2).
Substantiation Dossier	Dossier drawn up using lifecycle assessments. Serves as the basis for defining hotspots (part of the A.I.S.E. process).
TSC	The Sustainability Consortium: international initiative for promoting sustainable consumption.
UNEP/SETAC Life Cycle Initiative	Initiative organised by the United Nations Environment Programme and the Society of Environmental Toxicology and Chemistry. Aims to bring lifecycle-thinking into production processes.
WRAP	Originally known as the Waste & Resources Action Programme (see also WRAP PSF)
WRAP PSF	WRAP's Product Sustainability Forum is a global initiative that assesses hotspots and develops improvement opportunities for production processes.

Annex 2: About the study's authors and publishers

GS1 Germany

GS1 Germany helps companies, regardless of industry, use modern communication and process standards to make their business run more efficiently. It is responsible for the GS1 Article Number system, which provides the foundation for unique barcodes worldwide. GS1 Germany also promotes the use of new, fully automated technologies for identifying objects (EPC/RFID), and offers solutions that help companies improve their customer focus (Efficient Consumer Response).

GS1 Germany is a private company based in Cologne, Germany. It is part of the Global Standards One network and is one of the largest of over 100 national GS1 offices. Markenverband and the EHI Retail Institute are joint shareholders in GS1 Germany.

GS1 Germany's Sustainability Advisory Board is made up of representatives from retail, production, research institutes, and logistics companies. The members are developing a collective solution for efficiently managing sustainability along the supply chain. This involves adapting global strategies to fit the specific requirements of the German market. The board's main aim is to make product sustainability more transparent. This will improve collaboration across the supply chain and will provide consumers with concrete, easy-to-understand information that will encourage and help them to make sustainable purchasing choices. Authors Stephan Schaller and Dr Bahar Cat-Krause (both senior project managers for sustainability) lead the board's work and its projects.

THEMA1

THEMA1 is an independent think-do-tank with just one goal: to speed up our progress towards becoming a truly sustainable society. THEMA1 was founded in Berlin in 2006 by Guido Axmann, Jacob Bilabel and Rasmus Priess. Its activities (numerous projects, initiatives and platforms) are divided across three areas:

1. Sustainable consumption and product carbon footprints
2. Renewable energies and grid expansion
3. A sustainable music/entertainment industry, and popularising green alternatives for actions and lifestyles

In 2008, as part of its work on sustainable consumption, THEMA1 initiated and ran the globally recognised Product Carbon Footprint pilot project[33] in collaboration with the Institute for Applied Ecology, the Potsdam Institute for Climate Impact Research, WWF, and ten companies (BASF, dm-Drogeriemarkt, Deutsche Telekom, DSM, Frosta, Henkel, REWE Group, Tchibo, Tengelmann Unternehmensgruppe and Tetra Pak). It was also during this time that THEMA1 set up the PEF World Forum[34] (then the PCF World Forum). Its aim is to encourage participants to share their experiences of measuring and communicating environmental footprints, and to help harmonise different approaches.

Authors Rasmus Priess (lead author), Jan Christian Polanía Giese and Guido Axmann have all, in various functions and on different committees, been involved in the development of sustainability standards (e.g. the Greenhouse Gas Protocol) and have moderated numerous harmonisation processes and stakeholder consultations. They actively support GS1 Germany's Sustainability Advisory Board with their personal expertise and extensive networks.

[33] PCF Project Germany: www.pcf-projekt.de.

[34] PEF World Forum: www.pef-world-forum.org/.