



## **European Food SCP Round Table: Working Group 1**

### **Working paper: Data: needs, the role of the Protocol, and Round Table governance**

**Target audience: European Food SCP Round Table Steering Committee**

**October 2013**

#### **Summary**

It is recommended that the Food SCP Round Table adopts the option to support the provision of coherent, quality assured data in a cost effective manner for the implementation of the Food SCP Round Table Guiding Principles and ENVIFOOD Protocol. The Food SCP Round Table constituents are asked to play a crucial role in the provision of data that best reflects the environmental performance of their products; including through the European Commission's International Reference Life Cycle Data System (ILCD) Data Network and the European Reference Life Cycle Database (ELCD). The Food SCP Round Table would have a strong administrative/advisory role in relation to data needs e.g. in the context of the European Commission's Environmental Footprint guides and other international initiatives.

#### **Overview**

The voluntary principles<sup>1</sup> of the European Food SCP Round Table represent the collectively-agreed position to derive efficient and correct environmental assessments and communication for food and drink products. Building on these principles, the Round Table's ENVIFOOD Protocol provides practical guidelines for conducting such environmental assessments; both for business-to-business and for business-to-consumer. The Protocol, compliant with the European Commission's (EC) Product Environmental Footprint (PEF)<sup>2</sup> Guide, complements more general methodological guidance provided in e.g. ISO 14040/44 and the PEF Guide; as well as acting as a potential umbrella for further product-category<sup>3</sup> specifications. At the same time, implementing these principles and guidelines will be decided by the availability of appropriate data. Business can have a critical role in the provision of such data in a robust, coherent and cost-effective manner that best reflects the environmental performance of their products. This briefing document provides an overview of the related data needs, the current situation

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<sup>1</sup> European Food SCP Round Table, 2010 . *Voluntary environmental assessment and communication of environmental information along the food chain, including to consumers - Guiding Principles.*

<sup>2</sup> Annex II to the 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

<sup>3</sup> As defined in section 4 of Food SCP RT (2013), ENVIFOOD Protocol, Environmental Assessment of Food and Drink Protocol. European Food Sustainable Consumption and Production Round Table (SCP RT), Working Group 1, Brussels, Belgium

in relation to food and drink product assessments, as well as governance recommendations to the Round Table for further necessary developments.

## **1. Introduction**

The Guiding Principles and ENVIFOOD Protocol of the Food SCP Round Table (RT) require that an environmental assessment of food and drink products accounts for all relevant emissions, resources consumed, and associated pressures at all stages of their life cycle. These environmental assessments will be as good as the data that they are based on; thus appropriate data are crucial to implementation of the Protocol and to achieving these Principles in practice. Costs of conducting an assessment, including for large numbers of products and by SMEs, are equally strongly driven by the availability of appropriate-quality data.

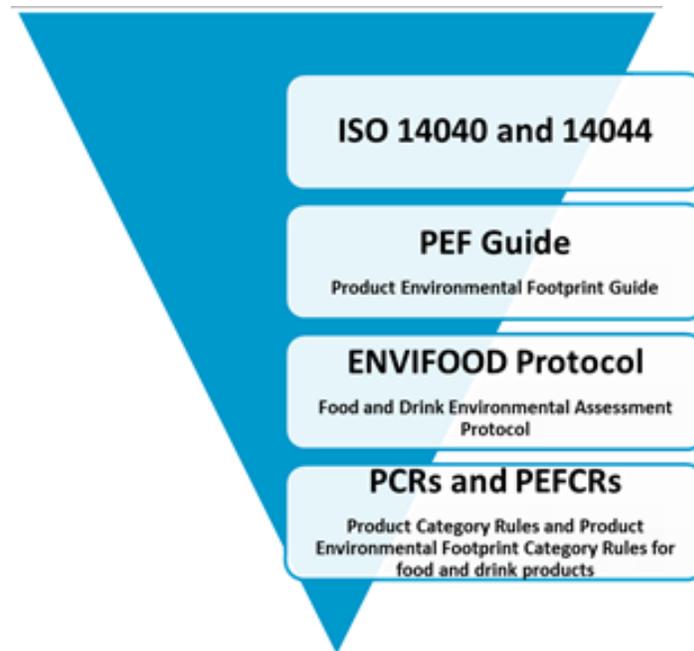
The European food chain shares the responsibility of ensuring that production and consumption of food and drinks, including products sourced from outside the EU, not only meet consumers' needs for food safety, nutrition, health, affordability and product choice and contribute to the generation of economic growth, but that they are also environmentally sustainable, respecting the Earth's eco-systems' capacity over the long term. The objective of the RT is to establish the European food chain as a major contributor towards sustainable consumption and production in Europe.

To facilitate its aims, the RT established a set of Guiding Principles and the ENVIFOOD Protocol. The voluntary principles represent the collectively-agreed position of the RT to derive efficient and correct environmental assessments and communications for food and drink products. Building on these principles and to make them operational, the ENVIFOOD Protocol provides practical guidelines for conducting environmental life cycle assessments of food and drink products; both for business-to-business and for business-to-consumer.

The Protocol is complementary to general requirements established for good practice for the environmental assessment of products in line with the RT's Principles, for example, by ISO 14044 on life cycle assessment (LCA). The Protocol is equally compliant and complementary to the EC emerging PEF Guide; a recommendation of the EC contained in annex II of the 2013 EC Single Market for Green Products Communication<sup>4</sup>. The Protocol, hence, does not duplicate these general methodologies. It provides added value through further practical guidance in the context of assessing food and drink products.

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<sup>4</sup> COM(2013) 196, April 2013. Communication from the Commission to the European Parliament and the Council: *Building the Single Market for Green Products Facilitating better information on the environmental performance of products and organisations*



**Figure 1.** Inputs to the ENVIFOOD Protocol and its potential developments

The environmental assessment of food and drink products requires consideration of all key stages and all key environmental burdens that are associated with a product. Emissions and resource consumption data need to be compiled for each stage in the product’s life cycle (supply, use, and end-of-life). These are then combined in an inventory. This inventory is then assessed in an impact assessment phase. Data are, hence, required at both the inventory and the impact phases. The quality of these data will decide the robustness of the assessment; as well as e.g. the cost.

This document examines what data are available to support the assessment of food and drink products, business needs, government support, and the options for the role of the Food SCP Round Table. Focus is on ensuring necessary data are both available, of sufficient quality, and provided in a cost-effective manner to support the appropriate environmental assessment of food and drink products, as foreseen in the Round Table’s Principles and Protocol.

## **2. Foreground and background data needs**

Data are required at both the inventory and the impact phases.

Data in the impact assessment phase are used to calculate indicators of the pressures and burdens that can be associated with the emissions and resources consumed in a product’s life cycle. These data, called characterization factors in LCAs, are needed because resources and emissions are responsible for environmental burdens to different extents. For example, methane (CH<sub>4</sub>) is more efficient in trapping radiation than carbon dioxide (CO<sub>2</sub>) and thus methane is attributed a greater impact factor on global warming. To calculate the cumulative or overall contribution to global warming that can be associated

with a product, all greenhouse gases are thus usually accounted for in terms of kg of carbon dioxide (CO<sub>2</sub>) equivalent identified as Global Warming Potential.

Data used for the impact assessment phase are usually generic and provided by international bodies such as e.g. the IPCC or the World Meteorological Organization (WMO) or published research results. The EC Platform on Life Cycle Assessment through the International Reference Life Cycle Data System (ILCD) has extensively reviewed available selected methods and provides a repository for characterization factors which is updated periodically. Hence, while not always the case, such impact assessment data generally do not need to be collected and provided by constituents of the Food SCP Round Table. Focus is therefore in this briefing on the emissions and resource consumption data needs at the inventory level and on the role of the Round Table in facilitating these needs.

For inventory data, there is an increasing degree of harmonization and guidance in relation to methodology for the assessment of food and drink products; at the general level through ISO 14040/44 and the PEF Guide, at the sector level through the ENVIFOOD Protocol, as well as somewhat at the product category level from different stakeholders. At the same time, assessments are reliant on emissions and resource consumption data for every stage in the life cycle of a food and drink product. The ability to conduct an assessment, the quality, and the cost will all be dependent on the availability of such data.

In most cases, so-called foreground data are directly available for a given facility and to a given organisation. These will need to be collected and compiled by an organisation to provide an assessment of its product. Background data typically include, for example, energy, transport, and other inputs necessary in a product's life cycle.

A wide range of commercial, academic, business, and government sources of background inventory data are becoming increasingly available that may support assessment needs for food and drink products. Efforts are also underway, such as the EC-led International Reference Life Cycle Data System (ILCD) Data Network and the European Reference Life Cycle Database (ELCD), to facilitate greater coherence and quality assurance.

Sometimes literature provides data of quality higher than the one an organisation can ensure if requested to directly collect data (e.g. methane emissions from enteric fermentation). Efforts are underway on these aspects as well; where the RT could play a role in relation to underlying common data needs for food and drink product assessments.

### **3. Policy background and support**

At national, European, and global levels, governmental authorities have issued various guidelines for the environmental sustainable assessment of products. These usually provide guidance in relation to different types of data, data collection, and data quality.

The EC Integrated Product Policy Communication<sup>5</sup> highlighted the importance of environmental assessments of goods and services from a life cycle perspective. It outlined the key role of life cycle data, including the necessity for actions to further facilitate quality and availability. This Communication also gave the mandate to establish the European Platform on Life Cycle Assessment. The necessity for quality assured data was then further iterated in the EC's Sustainable Consumption and Production/Sustainable Industrial Policy Action Plan<sup>6</sup>. Data requirements, including for quality, are now further specified in the EC's Single Market for Green Products Communication in the Annex II on PEF Guide to the related EC Recommendation<sup>7</sup>.

Working closely with stakeholders, the EC's European Platform on Life Cycle Assessment established the International Reference Life Cycle Data System (ILCD)<sup>8</sup> as well as the European Reference Life Cycle Database (ELCD)<sup>9</sup>. The ELCD aims to provide quality assured data that are core to many assessments. Working as far as possible with business, these include life cycle inventory data for e.g. energy, transport, and bulk raw materials. Iterative steps are being taken together with key stakeholders to facilitate coherence, including e.g. to move towards compliance with the ILCD entry-level requirements. The up-coming ILCD Data Network complements the ELCD by providing a common data infrastructure to facilitate the availability of coherent, quality assured data. The only requirements on participants are to ensure compliance with the network's entry-level specifications.

For data quality, ISO 14040/44 requirements are generally advocated in common practice; although adherence to these requirements frequently remains unclear. The PEF guide similarly advocates these ISO requirements, but provides further guidance and specifications to facilitate more coherent interpretation and implementation. These PEF Guide quality guidelines are applicable to both background and foreground data.

In the development of PEF Category Rules (PEFCRs), it is worth to note that benchmarks are foreseen. These would be based on representative data for a given product category that organisations will need to compile. Such underlying data could be made available via e.g. the ILCD Data Network; facilitating more widespread, cost effective, and comparable studies to use them. The RT could equally have a coordination role in the data context for food and drink products.

#### **4. Business perspective**

Currently, customers and consumers are increasingly demanding information and products with lower environmental impact. The RT Principles and ENVIFOOD Protocol were developed to provide business

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<sup>5</sup> COM(2003) 302, June 2003. Communication from the Commission to the European Parliament and the Council: *Integrated Product Policy: Building on Environmental Life-Cycle Thinking*

<sup>6</sup> COM(2008) 397, July 2008. Communication from the Commission to the European Parliament and the Council the European Economic and Social Committee and the Committee of the Regions on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan

<sup>7</sup> 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

<sup>8</sup> Wolf M. et al, 2012. *The International Reference life Cycle Data System – ILCED Handbook – JRC Reference reports*. European Commission Joint Research Centre

<sup>9</sup> Available at <http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm>

with a harmonised basis for the provision of such information. Data are crucial. Business has a key role in relation to the provision of appropriate data that best reflects the environmental profile of their products; as opposed to current high reliance on 3<sup>rd</sup> party data.

One of the main barriers for business, especially for Smaller Enterprises, is the availability of reliable data to support on a wide variety of business operations: develop a robust communication about their environmental performance, make informed choices for the business itself, develop a business strategy, and design its own logistics. A robust, homogeneous, coherent and harmonized database/network offers the possibility to provide clarity and transparency to this process, especially on secondary data. In order to allow for a coherent and reliable secondary data network, an option could be that leading companies and trade associations for each sector develop and maintain their own database. Databases may benefit from coherence with e.g. allocation rules to be defined amongst PCRs. Similarly, coherent product category tools to support e.g. SMEs could be readily developed using e.g. benchmark data provided in PEFCR activities.

Developing a reference database and calculation tools requires consideration to ensure all actors along the food chain, have equal opportunity to assess their products and to communicate environmental information. Reproducibility across similar assessments is similarly dictated primarily by the usage of the same secondary data (i.e. basically those data relating to processes on which the organization under concern has no or limited control, or data relating to those processes on which tools and literature may ensure higher quality – e.g. methane emissions from enteric fermentation) by different organisations. Such data must, hence, be available and of sufficiently high quality to ensure that business' can efficiently achieve the RT's Principles.

In order to satisfy these needs, the following list illustrates in detail what are the technical specifications and requirements to increase the availability of data in line with the identified principles of the RT:

- collection of foreground data of sufficient quality and in an appropriate format for stages owned by and operated by an organization; guidance given generally in e.g. ENVIFOOD Protocol and PEFCRs.
- background data related to materials and energy from suppliers, as well as for subsequent/upstream operations (unless providing only business-to-business information for a product with non-specific use; see Protocol); general background data e.g. provided by ELCD but may be further food/drink specific needs not currently addressed.
- emission profiles related to specific processes (e.g. methane emissions from enteric fermentation in animal husbandry, pesticide emissions from field application to the different environmental compartments) could be facilitated by RT

## **5. Standards**

In relation to the Principles and ENVIFOOD Protocol, ISO 14040/44 provides general guidance for data collection and data quality. The establishment of product category rules (PCR) as prerequisite for Type III Environmental Declarations – generally called Environmental product Declarations (EPD) – is covered by ISO 14025.

## **6. Guidance**

The series of environmental standards which are established under ISO are complemented by e.g. the EC's PEF Guide to provide further specifications. Additional food/drink general guidance is given in the ENVIFOOD Protocol.

## **7. The ENVIFOOD Protocol and Data**

The ENVIFOOD Protocol facilitates the practical implementation of the Round Table's Principles. It provides guidance at the food and drink sectorial level. This complements more general guidelines provided by standards (e.g. ISO 14040/44) and the EC's PEF Guide. The Protocol acts as an umbrella for more product category specific rules. In each case, increasing levels of detailed guidance are given in relation to data required to conduct assessments in a quality assured and coherent manner. This includes for both foreground data, such as data collected by a given organisation in relation to its own operations, as well as background data. Preferential background data sources, for example, can be specified; as e.g. in the PEF Guide at the general level.

Other key developments in the context of food and drink include the World Food LCA Database; links to e.g. the ILCD Data Network are still to be established.

## **8. Current Availability**

Data are provided by a variety of sources. Annex 1 presents an overview of some databases containing life cycle inventory data related to food and drink products. The European Platform on Life Cycle Assessment's Resource Directory provides information on available databases worldwide. The Platform also provides the European Reference Life Cycle Database (ELCD), as well as facilitating the International Reference Life Cycle Data System (ILCD) Data Network.

## **9. Round Table Governance Options**

Achieving the Principles of the Round Table requires appropriate data. Quality assurance, coherence and cost-effectiveness are important aspects to consider in addressing this core requirement. Data can come from a variety of sources including from RT constituents and benchmarks related to Product Environmental Footprint Category Rules (PEFCRs). Some of these data will be specific to mainly the food and drink sector; where the Food SCP Round Table could have a significant role. The RT, hence, has a crucial potential role if it is to facilitate practical and cost-effective implementation of its Principles.

One option, Option 1, for the Round Table is to do nothing in the direct context of life cycle data provision related to food and drink products; letting the "market" take care of this issue. Guidance would be provided to e.g. facilitate data quality and to identify preferable data sources through the Protocol and product specific guidelines; possibly even providing some default values for specific activities/emissions of high relevance and also benchmark data. Nevertheless, there would be no

broader systematic coordination nor involvement in the collection of data or provision of e.g. reference databases. Cost effectiveness, capacity building, and coherence would be minimal. Availability including via e.g. the ELCD database or ILCD Data Network would be encouraged by e.g. the PEF Guide, but varied in practice. Cost-effectiveness, including for SMEs, to implement the RT Principles and Protocol would be low.

Another extreme, Option 2, would be for the RT to develop its own food and drink product life cycle database. Data could be e.g. provided by constituents. This option would require considerable human resources and infrastructure to be available to the RT to support such a centralized database.

Between these 2 extremes, Option 3 is that the RT could coordinate data needs and database development activities, including benchmarks and underlying data that are related to the food and drink sector. This could e.g. be facilitated by background databases provided by, or endorsed, by different constituents for the food/drink supply chain. The database coherence and availability could be facilitated through e.g. the EC-facilitated ILCD Data Network and using general background data such as for energy and bulk materials from the EC's ELCD database. Where ELCD does not provide appropriate background data to meet the RT principles other data sources might be coordinated as well. The RT would also have a key role in relation to ensuring stakeholder awareness and coherent use by constituents; as well as facilitating interaction in relation to meeting RT constituent's principle data needs.

## **10. Recommendations**

It is recommended that the RT adopts the 3<sup>rd</sup>, intermediate, option to support the provision of coherent, quality assured data in a cost effective manner for the implementation of the RT Principles and ENVIFOOD Protocol. Working Group 1, for example, would act as a technical forum to support related technical developments and debates. The Protocol would need to be maintained and updated in the context of foreground and background data developments. Close interaction would be required in relation to PEFCR and associated benchmarks. RT constituents would play a crucial role in the provision of data that best reflects the environmental performance of their products; including through the EC's ILCD Data Network, the ELCD Database and interfaces to other specific data collections. The RT would have a strong administrative/advisory role in relation to data needs of e.g. PEF Guide/PEFCRs in the context of EC and international data developments.

## Annex 1: Databases containing life cycle inventory data related to food and drink products

Disclaimer: The list is not complete and is only provided for illustrative purpose. Reference to specific databases does not entail endorsement by the RT. Quality of these data and compliance against the ENVIFOOD Protocol requirements have not been checked.

- Agribalyse. The database was developed in the context of the French eco-labelling initiative Grenelle II. The database is free of charge and contains 137 datasets for agricultural products (57 related to crops and 80 on animal productions). For more info: [www.ademe.fr/agribalyse](http://www.ademe.fr/agribalyse)
- World Food LCA Database (under development). The database will contain more than 200 datasets within 10 categories. For more info: <http://www.quantis-intl.com/wflldb/#!>
- GaBi LCA databases. The extension database XII on Renewable Raw Materials contains 132 datasets, many of which are key when assessing food and drink products. For more info: <http://www.gabi-software.com/italy/databases/gabi-databases/renewable-raw-materials/>
- The ecoinvent Database. Version 3 contains thousands of datasets, many of which are related to foods, drinks and their ingredients. For more info: <http://www.ecoinvent.org/>
- ESU life cycle inventory database. It contains hundreds of datasets on agricultural productions and food industry. For more info: <http://www.esu-services.ch/index.php?id=104>
- GEMIS. Several datasets related to foods and drinks are seemingly available free of charge. For more info: <http://www.iinas.org/gemis-de.html>
- IVAM LCA database. It contains several datasets on food productions. For more info: <http://www.ivam.uva.nl/>