Formative research on various existing international green/eco-labelling schemes

Switching on Green Economy Project (2022-2025) Report

Mildred Steidle, m.steidle@organic-services.com
Gerald A. Herrmann, g.herrmann@organic-services.com
Organic Services GmbH
www.organic-services.com

1. Abstract

The study analyzes Eco-labelling schemes with a focus on 'Environmental Labelling', 'Management Systems', and 'Environmental, Social, Governance' (ESG) schemes. Under each scheme the most important market proven applications are classified, and examples of the most relevant standards, labelling and reporting schemes described.

A classification matrix was developed that captures the most important aspects of each scheme for a quick and concise overview. The profiles (fact sheets) present a detailed analysis of each scheme.

The recommendations chapter presents a toolkit that comprises the most important elements of Eco-labelling schemes and their variances, followed by a description of the principles that guide the setup and development of a new scheme.

Three development options are collated serving as possible options for Mongolia. In case these options are not considered, the structure of the development options may serve as blueprint.

Finally, the stakeholder landscape is outlined and the roadmap and structures to be involved described that is the important stakeholder process without which a viable development of a national Eco-labelling scheme will not be successful.

2. Assignment and background

The Mongolian Sustainable Finance Association (MSFA) is implementing a project to support agri-food and beverage MSMEs and retailers in adopting sustainable practices through a market-based labelling system, capacity building and green finance.

The theory of change of this project is that
   1) **if labelling and green certification are mainstreamed and linked with existing digital platform, this will increase interest of agri-food and beverage MSMEs and retailers to adopt circular economy practices and eco-labelling and**
   2) **if MSMEs are provided with the know-how and tools to introduce sustainable circular economy practices and have access to green finance opportunities**

THEN this will enhance their environmental performance and allow them to effectively contribute to faster transition to resource-efficient economy and poverty alleviation.

Mongolian's agricultural sector accounts for 16,7% of GDP and 30% of the total workforce and is one of the second largest industries after the mining sector. At the same time the agricultural sector accounts for 48,5% of total emission, highest after the energy sector (as of 2014) and is one of the most vulnerable sectors to climate change. The agri-food farming sub-sector shows vast potential both economically and ecologically, such as through providing solutions to land degradation and absorption of carbon dioxide emissions through vegetation. Thus, the agricultural and food sector has great development potential and at the same time is both a driver and a victim of climate change.

This is where the MSFA project comes in that aims to introduce green/eco labelling in the agri-food and beverage sector to support MSMEs **to increase environmental performance**.

The objective of this assignment is to perform formative research on various existing international and national **green/eco-labelling schemes** (including standards and its Standard Operating Procedures (SOP)), develop a stock take report and label matrix to recommend a roadmap for the eco/green labelling project from the standardization perspective.

The green/eco labelling projects targets agri-food and beverage MSMEs. Therefore, the focus should be to explain the approach from farm to shelf (supply chain) and the requirements for labelling of the (final) product as well as the procedures applicable to organizations and services.

The selection of Green/ Eco-labels analyzed in this study was made in consultation with the contractor. The following schemes are analyzed in the study:
- **Organic including Regenerative Organic Certified (ROC)**
- **Other sustainability standards: Rainforest Alliance**
- **Life-cycle assessment: The Carbon Trust, Eco-score and Planet-score**
- **Environmental management systems (report of declaration), ISO 14001:2005, EMAS**

- **Food Safety: GLOBALG.A.P., IFS Food**
- **Corporate Social Responsibility (CSR): Environmental Social Governance (ESG), We Care.**

3. The concept of green/eco-labelling schemes

3.1. Rationale for green/eco-labelling

"Ecolabelling is a voluntary method of environmental performance certification and labelling that is practiced around the world. An ecolabel identifies products or services proven to be environmentally preferable within a specific category."[1]

Eco-labelling informs of specific characteristics of products and is applied to market greener products. There are eco-labelling schemes to serve communication between business-to-business (B2B) or business-to-consumer (B2C), or both simultaneously. Eco-labelling schemes are designed and managed by public agencies, private companies, or non-profit organizations.

Eco-labelling is a comparative instrument of product information. Green/eco-labels are awarded to products or services that are more environmentally friendly than other products or services of the same category. Hereby the green/eco label provides *simplified information*, presented as symbol, about the **better environmental performance of a product or service**.

Eco-labelling schemes share the common assumption that purchasing behavior of buyers and end consumers is not just motivated by price and mandatory quality and health standards. Rather, product attributes considered by buyers and consumers relate to environmental objectives. A green/eco-label enables *informed* buyers and consumers to make a purchasing decision for a more environmentally friendly product, provided that the indicated eco-quality supports and promotes the purchase decision. *Informed* is italicized because a green/eco label will only serve its purpose if the label together with its associated quality promise is known, decisive for purchase, and trusted.

Eco-labelling in the food industry has yet been mostly focused on promoting organic farming.
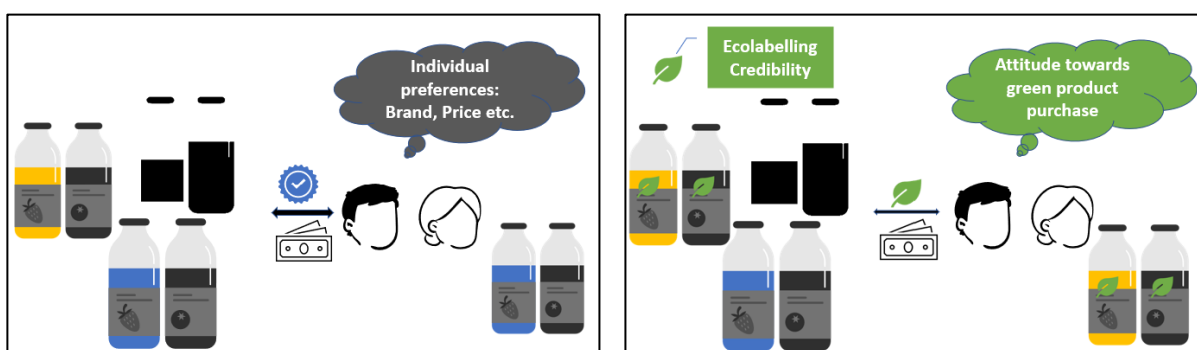

Figure 1: Purchase decision is influenced by supplementary eco-label information

Today eco-labelling is part of the public policy toolkit supporting the goal of improving the environmental sustainability of products and consumption patterns. There are the following intervention points and objectives:

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[1] (The Global Ecolabelling Network (GEN), 2022)

Targeting consumers to stimulate the market for environmentally friendly products:

- to provide consumers with reliable information, to make them aware of the environmental performance and benefits of the products and to develop environmental awareness of buyers and enable them to make an informed choice, and finally to promote the consumption of the most environmentally friendly products.

Targeting the industry to stimulate environmental production:

- to encourage processors to improve their products from an environmental point of view (especially through innovation), offering the opportunity to see that the excellence of products is officially affirmed by a third party and communicated via a common corporate or product label.

Objective of an environmental label

General
- as an incentive for the environmentally oriented design of the food offer
- Raising awareness for sustainability (staff, clients, supplier, buyer, purchaser)
- Prevent greenwashing and consumer deception
- Fair competition and comparability

Consumer
- Creating transparency concerning the environmental impact of purchasing decisions
- Support environmentally friendly food choice
- Developing an environmentally friendly food style

Agrifood sector
- Communicating environmental performance
- create transparency about the environmental impact of the company's activities
- Stimulate the development environmentally friendly food supply

Financial institutions
- Support investment decisions

Figure 2: Objectives of an environmental label

These objectives apply across sectors of consumer goods and of food.

3.2. The environmental impacts of food product production

Figure 2[2] breaks down where food system emissions come from. Most emissions – over two-thirds – come from land use change and the on-farm production of the food itself. The remainder result from supply chain emissions and consumer cooking and waste.

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[2] https://ourworldindata.org/environmental-impacts-of-food#breakdown-of-where-food-system-emissions-come-from

One-third of global greenhouse gas emissions come from food systems

Global Emissions (2015)
53.3 billion tonnes of carbon dioxide equivalents

Non-food: 66%

Food: 34%

End-of-life (waste) 8.6% of food emissions — Post-retail 11%
Consumer prep: 2.5% of food emissions
Retail: 4% of food emissions
Packaging: 5.5% of food emissions — Supply chain 18%
Transport: 4.8% of food emissions
Food processing: 3.5% of food emissions

Transport emissions by mode
– Road: 3.9%
– Rail: 0.7%
– Shipping: 0.17%
– Aviation: 0.02%

Agricultural production 39% of food emissions
Emissions from fertilizer application
Methane from cattle's digestion ("enteric fermentation")
Methane from rice
Emissions from manure management
Emissions from pasture management
Fuel use from fisheries and on-farm machinery
Energy for fertilizer production
Burning of agricultural waste

Land use 32% of food emissions
Land use change (e.g. deforestation)
Cultivated soils
Drainage and burning of soils, including peatlands

Data source: Crippa, M., et al. (2021) Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*.
OurWorldinData.org – Research and data to make progress against the world's largest problems.   Licensed under CC-BY by the author Hannah Ritchie.
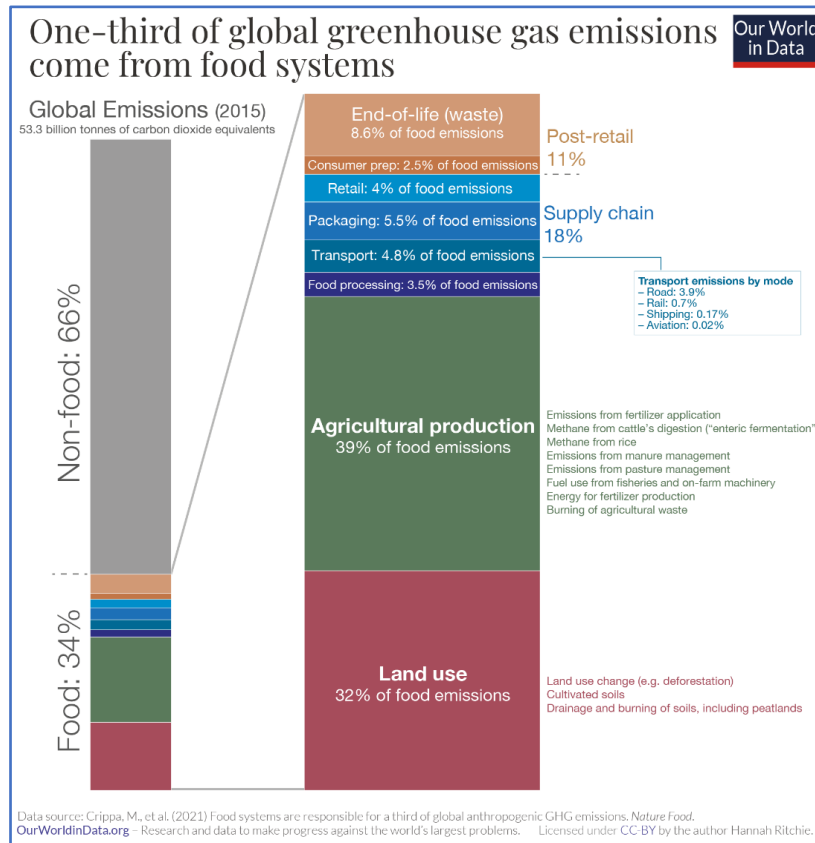
Figure 3: The environmental impact of food product production

Environmental impacts arise in the following stages:
- **Raw material (inputs)**
- **Agriculture**
- **Production/processing**
- **Transport**
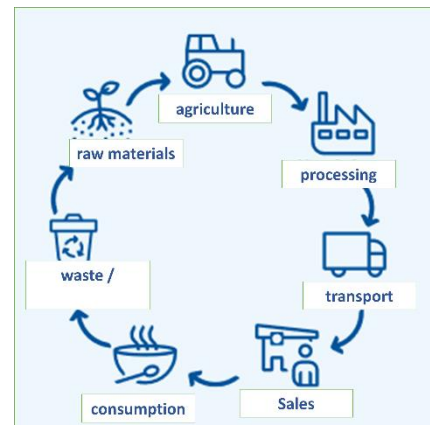- **Retail/sales**
- **Consumption/use**
- **Waste**

Figure 4: Production cycle

Eco labelling schemes may either label individual stages of a production chain considering single or several environmental impact indicators or calculate the environmental impact comprehensively across the life cycle of a product. Alternatively, standards describe the process of production considering that meeting the production standards result in greener products.

Environmental standards and environmental impact indicators refer to
- **Soil**
- **Fertilizers and pesticides**
- **Climate**
- **Biodiversity**

- **Water**
- **Health**
- **Waste**
- **Animal Welfare**
- **Energy**

On a corporate level environmental standards and indicators may include
- **Reducing the environmental footprint: to measure impact on the environment such as carbon neutrality, emission reduction of the processing facility including a view on the agricultural value chain**
- **Environmental Social Governance (ESG), to be integrated into business strategy**
- **Promotion of the circular economy (reduce, reuse, recycle)**
- **Biodiversity preservation: to raise awareness of and support initiatives to protect ecosystems**

The "**ESG & Sustainability Reporting Guidance for Mongolian Companies**"[3] provides six core Environmental Indicators[4]
- **Energy**
- **GHG Emissions**
- **Climate change**
- **Water**
- **Waste**
- **Biodiversity**

    Plus, three additional *sector specific indicators* (for Agriculture & food production)
    - **Pesticide use**
    - **Sustainable land**
    - **Products recalled**

The consideration and evaluation of environmental impacts using environmental indicators to calculate the environmental footprint were developed mainly by the consumer goods industry. Environmental balancing is less common in the food industry because it is highly complex to calculate the environmental impact of a food product that relies on natural production factors (soil, water, air). The assessment depends on local conditions and production systems and is therefore difficult to standardize. The development and application of generally valid indicators in the food sector to simplify balancing is highly complex and therefore its validity is disputed.

Eco-Labelling schemes in the food industry mostly provide best practice-based standards that require producers to implement better management practices according to criteria specified in the standard (e.g., organic standards, Rainforest Alliance).

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[3] https://www.undp.org/mongolia/publications/esg-and-sustainability-reporting-guidance-mongolian-companies
[4] In terms of ESG reporting, these indicators relate to the activities of the company itself and do not include the environmental impacts that occur upstream or downstream in the agricultural value chain.

3.3.   A brief history of eco-labelling and its spreading in the agri-food sector

A proliferation of voluntary eco-labelling programs for various products and sectors, many of which were initiated by NGOs, the private industry as well as governments can be observed. The importance of Eco-labelling schemes has achieved international consensus as part of the global push towards sustainable development. The 1992 United Nations Conference on Environment and Development in Rio de Janeiro is considered a milestone.

- **Regulatory eco-labels**

One of the first eco-labels is the Blue Angel, which was introduced in 1978. **The Blue Ange**l is the German Government's label for environmentally friendly products and services. The label is awarded to various products and services that are deemed environment-friendly by an independent panel of relevant stakeholders (environmental experts, trade union representatives, NGOs, etc.). Today, more than 20,000 products and services from over 1,600 companies have been awarded the Blue Angel.

The **EU Ecolabel** was launched by the European Commission in 1992.
Around 90,000 environmentally friendly products and services in various product categories were awarded the EU Ecolabel.

Neither the Blue Angel nor the EU Ecolabel are awarded to food products.

- **Private eco-labels**

In addition, eco-labels have been developed by companies themselves (self-declared) or with certificates awarded by private institutes and bodies indicating that the product was produced and processed 'environmentally friendly', mostly *single criterion labels* such as recyclable product, CFC-free refrigerator.

In the agri-food sector this approach has no specific relevance; of course, packaging for example, is labelled as recyclable accordingly.

- **Environmental labelling based on a single environmental impact category**

With growing awareness of the environment and climate more advanced schemes have been developed. Among them is carbon foot printing, that is applied across sectors, **including food**. Carbon labelling informs on the carbon footprint throughout the **life cycle of the products**. The only impact category balanced are greenhouse gas emissions.

The Carbon Trust label is shown here as an example.

- **Environmental labelling based on predetermined production standards**

Organic is the dominating Eco-labelling in the Agri-Food sector, providing predetermined production and processing standards. Organic schemes provide practice-based standards which require producers to implement better management practices. The assumption is that products produced according to these predetermined production standards are environmentally preferable compared to products not meeting the organic standards. Organic for example bans external inputs, especially mineral fertilizers, and pesticides. Studies show that only the emission reduction potential by an absence of synthetic fertilizer use is around 20% of the global annual agricultural GHG emissions[5]. Economically, dependence on synthetic fertilizers is also a major risk. Due to the sharp rise in energy prices, the prices for fertilizers have exploded or their availability has been severely restricted.

The organic signs shown from China, Europe, Japan, USA, and Korea, stand for regulatory organic labels and markets in the respective countries (with global market relevance).

- **Life Cycle assessment**

Only recently have the first approaches to food product assessment emerged that are based on a comprehensive consideration of the respective production cycle and its environmental impact calculation. Initiatives are new or even still in the pilot or test phase and are critically disputed. Two prominent examples shall be named here, each assigning food products a score depending on their environmental footprint.

Eco-Score applies a five-level product label. Launched at the beginning of 2021 by a dozen players (online shops, associations, mobile applications, recipe sites, etc.)

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[5] Scialabba, N. and Müller-Lindenlauf, M., 2010. Organic agriculture and climate change. Renewable Agriculture and Food Systems, 25(2), 158-169.

Planet-score launched mid of 2022 is also a five-level product label, providing sub-indicators regarding pesticides, biodiversity, and climate, plus animal welfare rating. Planet-score is an initiative of 16 French consumer protection and environmental organizations. It was developed, among others by the French research institute for organic agriculture and Food ITAB (Institute de l'agriculture et de l'alimentation biologigue). The German Association of Organic Processors, Wholesalers and Retailers BNN for example just recently adopted Planet Score over Eco-Score.

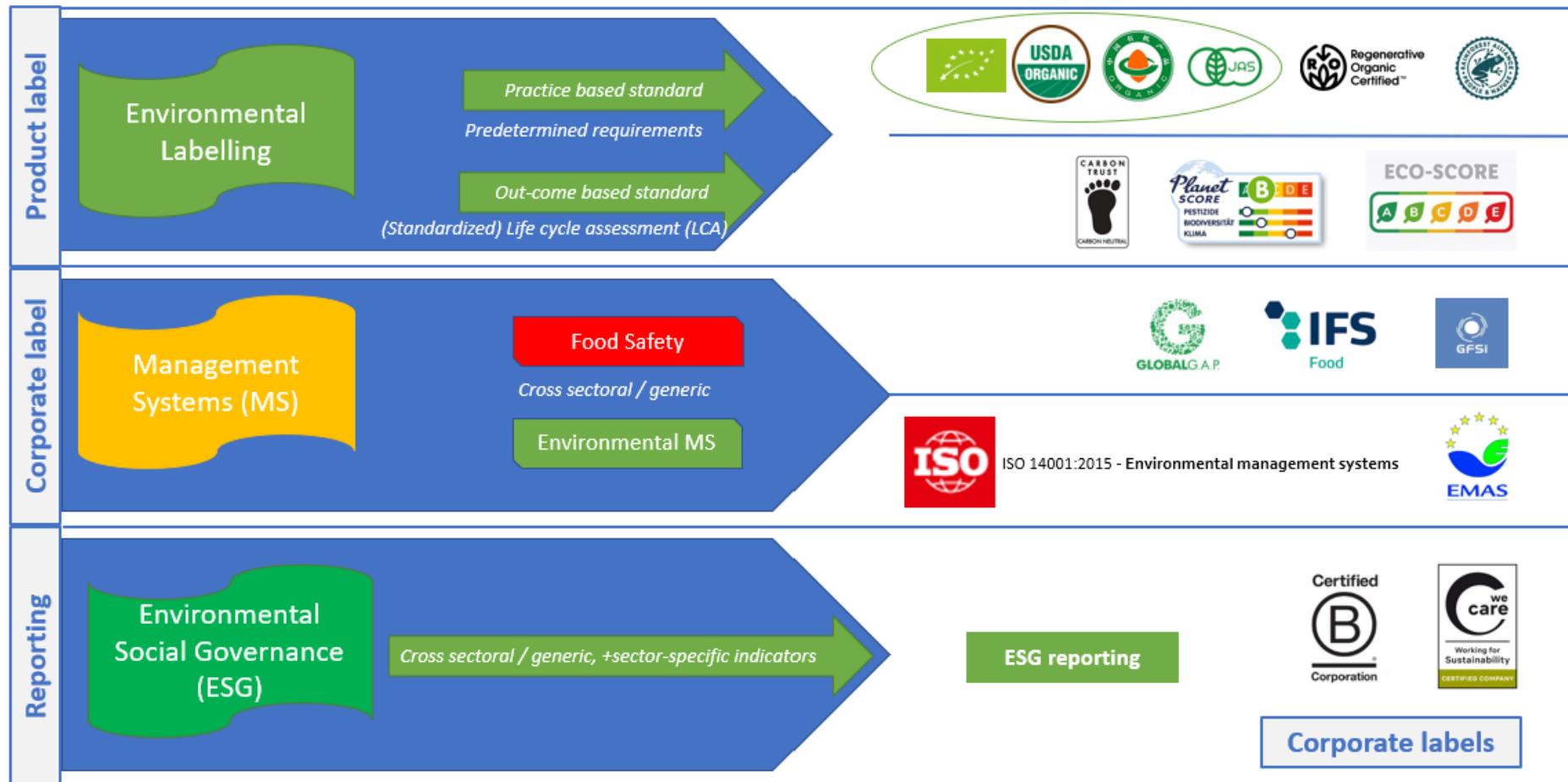# 4. Classification/introduction and systematic overview

Figure 5: Eco-label classification: overview

4.1. Environmental Labelling - product label

Green/eco-labelling schemes are systematically defined. The International Organization for Standardization (ISO) distinguishes three types of environmental labelling based on criteria type and monitoring process[6].

4.1.1. Practice-based standards

Figure 6: Product label based on practice-based standard

Reference is made to "ISO 14024:2018 Environmental labels and declarations — **Type I environmental labelling — Principles and procedures**" (considered as standard for standard setters), which has been adopted by The Global Ecolabelling Network (GEN) as a benchmark for environmental labels and hereby defines the internationally accepted Eco-Labelling framework.

Type I environmental labelling programs award the respective environmental label to products that meet a set of predetermined requirements. The label identifies products that are determined to be environmentally preferable within a particular product category.

The Global Ecolabelling Network (GEN), the international federation of ecolabelling bodies, provides the following eco-labelling definition[7]:
"Ecolabelling is a voluntary method of environmental performance certification and labelling that is practiced around the world. An ecolabel identifies products or services proven to be environmentally preferable within a specific category."

4.1.2. Outcome based Standards

Figure 7: Product label based on out-come based standard

Life Cycle Assessments (LCA) often also called **Product Environmental Footprint (PEF)**, examine the environmental impact of a product throughout its entire life cycle, i.e., from raw material extraction through production and use to recycling. Material and energy flows during all steps of the life cycle are calculated: what raw materials and how much go into production, how much energy is consumed, what waste and emissions are produced? A life cycle assessment indicates the main areas of environmental impact and aims to support the

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[6] https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100323.pdf
[7] https://globalecolabelling.net/

process of improving a product from an environmental point of view. LCAs may be used as product related environmental information. ISO 14040 and ISO 14044 specify the LCA procedure whereby these standards do not specify the scope of a life cycle assessment. Norms support the implementation through minimum requirements regarding the process and the necessary elements (phases).

There are data bases which provide LCA data for common materials and energy sources. The use of already existing LCA data can significantly reduce the workload for product-related data collection. The global LCA Data Access network (GLAD) is the largest directory of LCA datasets, from independent LCA database providers around the world[8].

Carbon Footprint of Products (CFP) is also a life cycle assessment but restricts calculation on greenhouse gas emissions as single impact category. According to ISO 14067:2018, the carbon footprint of a product is the sum of the greenhouse gas emissions and removals in a product system, expressed as CO_2 equivalents[9].

CO_2 footprint vs. environmental footprint of products:
A product CO_2 footprint (or product carbon footprint) informs how much global warming a product causes throughout its life cycle. Environmental footprints do the same but measure all other environmental impacts of a product too.
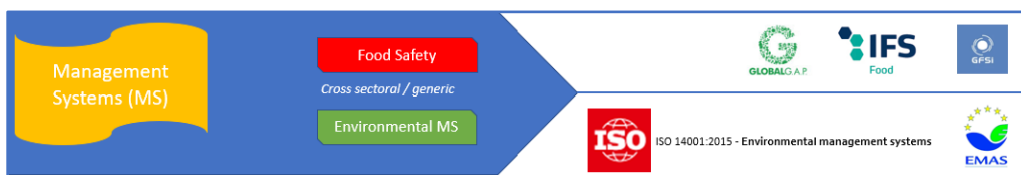
4.2. Management System Standards (MSS)

Figure 8: Management system labelling

This research considers **Management System Standards (MSS)** in addition to environmental labelling. MSS are classified by ISO as well. They include standards such as quality management, environmental management, energy management, and food safety management:

- **ISO 9000 family: - Quality management, standards for companies and organizations of any size**
- **ISO 14000 family - Environmental management, helping organizations to improve their environmental performance**
- **ISO 50001 - Energy management systems, helping organizations to manage their energy performance.**
- **ISO 22000 – Food safety management, supporting organizations on how to increase food safety.**

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[8] https://www.globallcadataaccess.org/about
[9] https://www.iso.org/obp/ui/#iso:std:iso:14067:ed-1:v1:en

MSS are generic and applied cross sectoral. They are drafted following a harmonized structure and a similar approach, **Plan-Do-Check-Act (PDCA)** *to achieve continuous improvement.* MSS therefore can work together. Companies that have already implemented one MSS can build on their experience and implement a further MSS.

Implementation results in a report/declaration e.g., a company's environmental (annual) report and declaration. MSS certification is not required. A product label is not issued, still the company may refer in communication and advertising to its engagement of improving its environmental performance. The statement is individual and depends on the company-specific management goals.

The outcome of applying a MSS is company specific and thus not comparable in terms of the companies' (environmental)-performances. Even if two companies of same industry each issue an environmental declaration in accordance with ISO 14001, no comparative statement can be made about the respective environmental performance of the two companies. What can be stated is that both companies are on their way to improve their environmental performances.

> **ISO 14001:2015 - as well as GLOBALG.A.P. and IFS are management system standards, the two latter with a focus on Food Safety - are only partially referring to environmental issues.**
> **The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed by the European Commission for companies and other organizations to evaluate, report, and improve their environmental performance.**

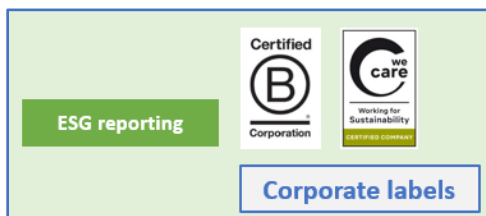## 4.3. Environmental Social Governance (ESG) Reporting

Figure 9: Environmental Social Governance labelling

Corporate Social Responsibility (CSR) comprises the overarching social, environmental, and economic concerns of a company's policies, practices, and decision-making. Concerns (indicators) may vary widely, therefore the qualitative nature of CSR makes it difficult to compare companies with each other.

Environment, Social, Governance (ESG)[10] on the other hand uses environmental, social, and governance indicators to evaluate and measure sustainability practices within a company.

To date, ESG reporting is mainly driven by investors and stakeholders calling for more transparency. Therefore, in addition to financial information also sustainability factors have

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[10] https://www.lexology.com/library/detail.aspx?g=8obbe258-a1df-4d4c-88fo-6b7a2d2cbd6a

evolved as a critical component of the financial decision making across all asset classes. Companies are requested to disclose information about their sustainability and environmental, social and governance strategies. In this field of tension between corporate social responsibility and the capital market, other actors such as rating agencies, analysts, international institutions, and NGOs operate alongside investors and banks.

The most relevant NGO is the Global Reporting Initiative (GRI). GRI is a not-for-profit organization founded in 1997, celebrating its 25th anniversary in 2022. GRI provides standards for sustainability reporting – the GRI standards for the preparation of sustainability reports by companies, governments, and non-governmental organizations. GRI's framework for sustainability reporting helps companies to identify, gather and report information on environmental, economic, and social impacts in a clear and comparable manner. The GRI Reporting schemes with its standards and guidelines are widely used and are relevant to many stakeholders – including investors, policymakers, capital markets, and civil society.

GRI Standards are non-mandatory and non-binding; however, the proposed Corporate Sustainability Reporting Directive (CSRD) and the forthcoming mandatory European Sustainability Reporting Standards (ESRS) are based on the GRI structure.

While financial disclosure is mandatory in many parts of the world, the non-financial reporting (ESG) is still a voluntary measure even though there are legislative initiatives, which mostly concern only (very) large companies. In the European Union legislative documents requiring companies to disclose non-financial information are currently being prepared or have become effective:

- **EU Taxonomy: REGULATION (EU) 2020/852 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June 2020 on the establishment of a framework to facilitate sustainable investment (EU Taxonomy Regulation, in force since July 2020)**
- **Corporate Sustainability Reporting Directive (CSRD, draft)**
- **Directive on Corporate Sustainability Due Diligence (CSDD, draft)**
- **Legislative proposals of the European Commission for sustainable products (draft)**

A similar direction however, with a different focus takes the European Commission Initiative to lay down rules for companies to respect human rights and the environment in global value chains. In February 2022, the Commission adopted a proposal for a "**Directive on corporate sustainability due diligence**"[11]. The proposal aims to foster sustainable and responsible corporate behavior throughout global value chains to address negative human rights and environmental impacts.

The same scope has been covered already in several European countries, where national rules on due diligence were already adopted. Germany has passed the "Act on Corporate Due Diligence Obligations in Supply Chains"[12] in July 2021, which enters into force in January 2023

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[11] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145

[12] https://www.bmas.de/SharedDocs/Downloads/DE/Internationales/act-corporate-due-diligence-obligations-supply-chains.pdf;jsessionid=899E9449E38388B358B119CE836481BA.delivery1-replication?__blob=publicationFile&v=3

being applicable for companies that have more than 3,000 employees respectively 1,000 from 2024 onwards.

ESG reporting is not only capital market driven. There are many companies that adopted sustainable strategies to be part of their business model. ESG and respective reporting and documentation tools have also emerged in the private sector with own characteristics. The objective is to know and improve the environmental and social impacts of corporate activities and to communicate ESG credibly to the public.

> B Corp and the "We Care standard" are examples of such private initiatives.

4.4. *Supplementary info*: Labelling of packaging material

Environmental labelling of packaging material is an important <u>cross-sectoral instrument for reducing packaging waste and returning "valuable materials" to the processing cycle through recycling.</u> Behind this is the basic idea of the **circular economy** (Rethink, Reduce, Reuse, Recycle ...) and the associated waste hierarchy:

- **The highest priority is to avoid waste.**
- **When waste is generated, it should be prepared for reuse or recycled.**

The prerequisite is the existence of a collection system with recycling companies to process the recyclables and put them to a new practical use. At the same time, consumers must receive practical information about the nature of the packaging material and recyclability to facilitate collection, reuse, utilization, and recycling of packaging.

Recycling labelling ranges from the simple graphic logo "recyclable" to differentiated information on the packaging about the correct waste separation of recyclable materials such as paper, glass, plastic, or metal.

	Graphical Symbol (B2C communication)
	Recycling instruction (B2C communication) The infographic informs to which recyclable material group the packaging material belongs to: paper, plastic, metal. (Example taken from Italy (BARILLA brand)
	Recycling label program (third party certified). This FSC label supports responsible forestry; with this label use of 100 percent recycled materials are labelled. https://fsc.org/en/what-the-fsc-labels-means

5. Classification Matrix

The classification matrix can be found in a separate Excel file that forms an integral part of this report. Due to its complexity and size, it is not worthwhile to integrate it into this document.

6. Recommendations

6.1. Toolkit

The "Switching on Green Economy project" leverages on agri-food and beverage MSMEs (and retailers). Therefore, the scheme must especially fit processors and at the same time generate an impetus for increased sustainability. The analysis of the different eco-labelling systems has shown the diversity of implementation possibilities. These especially concern scope, definition of eco-quality expressed in requirements/standards and compliance criteria, as well as the monitoring mechanism. But even within these areas, there are options to combining criteria to design a scheme adapted to the specific needs of this project. When looked at the essential components of an eco-labelling scheme, the following options and tools emerge.

6.1.1. Definition of scope/objective

Scheme user in the chain of custody:
- **The eco-labelling scheme may cover the entire food chain from cultivation to the final product. For each stage in the production chain production/processing, standards are defined.**
- **Alternatively, a scheme may focus on one production stage to define standards/ requirements for more sustainability related only to the specific production stage.**
- **The processor has direct influence on the production processes of its company but only limited influence on the conditions of e.g., raw material production. Even if there are product specifications defined in supply contracts, these are usually limited to easily verifiable quality criteria monitored at goods delivery. However, considering a "development approach" the scheme scope can first be restricted to one production stage, for example processing, and then gradually integrate other sectors of the production chain by including additional requirements that define e.g., raw material quality.**
- **In general, the scope of application must ensure product integrity. This means that a labelled product complies with the standards and that there is no commingling.**

Scope of environmental indicators
There is the one-dimensional approach considering a single indicator (e.g., greenhouse gas emissions) vs. the multi-dimensional approach that considers indicators simultaneously.

Process vs. management related impact
- **The scheme provides for process specific standards/requirements. The process to produce a product is certified, and a (process-related) certificate issued.**
- **The scheme provides for standards concerning the management of processes. These are not product specific. A company-specific management certificate is issued.**

- The scheme provides for a combination of process-related and management-related requirements.

Target group of the certificate/label
- There are schemes and labels designed and used for business-to-business Communication (B2B)
- Others are focusing business-to-consumer communication (B2C)

6.1.2. Shaping standards/requirements

- The scheme is built on "meet or fail" requirements only.
- A scheme provides for entry requirements and additional requirements that must be met over a defined period only. It starts with the fulfillment of entry requirements. Gradually, more requirements must be complied with or the requirements for a specific area become more demanding step by step (scheme with development approach)
- The scheme provides for minimum requirements plus a series of additional requirements the scheme user may select. This means that the entry level consists of mandatory requirements plus a certain number of selected additional requirements. This either applies from the beginning or only from a date 'x' after the certification contract has been signed, after which requirements must be completely complied with (scheme with development approach)
- The guidelines and the program permanently define different certification levels e.g., from one to three, five stars, or bronze, silver, gold level
- A scoring system, weighting standard compliance, is applied and a minimum score must be reached to get certified. A scoring system is also suited to apply a development approach or for the application of different certification levels (gold, silver, bronze)
- The scheme has its own requirements and combines compliance with other schemes as requirement

6.1.3. Monitoring mechanisms

Control audits conducted:
- The way an audit is carried out: on-site, remote
- Purpose: Certification audit, surveillance audit, renewal audit, sample audit, (announced, unannounced)
- Level of independence: self-assessment, second-party audit, third party-audit
- The length of period during which procedures and monitoring mechanisms are implemented from initial assessment until renewal of certification is requested.
- Besides that, there are additional tools that support monitoring (e.g., providing digital support, databases to monitor product flow and hereby product integrity)
- Risk based approaches are applied to increase monitoring efficiency. This does not mean the monitoring effort is reduced in total, but more targeted. Companies with a high risk of non-compliances are monitored more often compared to those with low risk

Control bodies involved:

It is common practice to delegate monitoring to qualified control bodies which are accredited according to internationally accepted norms. Qualification concerns control body structure and auditor competency and training. Depending on scheme users and the scheme requirements, it must be evaluated whether there is a control body competent to perform the control.

6.2. Hypothesis and guiding principles

Based on the working hypothesis that an eco-label is useful, which means it can contribute to enhance the environmental performance and thus the implementation of sustainable development and the analysis of eco-labelling schemes performed in this study, five "guiding principles" for implementing an eco-labelling scheme can be derived, which are elaborated in the following:

Guiding Principle 1: The goal and purpose of the program must be clear and transparent and supported by all stakeholders.

Clearly defining the goal and purpose are central to the development of the eco-labelling scheme. They are the foundation and provide the framework for developing the requirements/standards and mechanisms for implementation. If the objectives are not clearly defined, there is a risk that misunderstandings will arise, which would have a negative impact on the acceptance, the willingness to participate, and the credibility of the scheme.

Guiding principle 2: Standards/requirements are in line with goal(s) and purpose of the scheme and fit to the stakeholders involved. Standards/requirements are clearly defined. The quality promise associated with the label must be unambiguous compared to conventional products that are not labelled.

The predominant programs for environmental labelling (Organic, RA, ROC) focus on agricultural production. The standards have been developed with a focus on agriculture and only at a later stage include processing with less concrete requirements as well. These are primarily aimed at safeguarding the flow of goods and product identity up to the sold product.

In this project, the drive for more environmental performance is to be established at the level of the processors, therefore criteria for the companies are to be defined in the first place.

Whether and to what extent the environmental impact of the agricultural production chain (upstream) should be included must be considered.

The criteria of the program, its standards and requirements must be based on the objective on the one hand and on the available opportunities on the other. They must be adapted to local conditions, know-how and practical circumstances. The challenge is to develop workable standards/requirements that are practical, whose implementation is traceable and verifiable, and that support the goals of the program. Which standards/requirements can be implemented, what is the effort behind it and how can they be monitored (practicability). The

eco-labelling examples analyzed consider environmental impacts and, in some cases, go beyond these by including other dimensions of sustainability (social and economic aspects) in addition to the environmental aspect.

There is also the option of focusing on one indicator only, for example, greenhouse gas emissions (one-dimensional approach) as opposed to a multidimensional approach where different factors are considered simultaneously (for example greenhouse gases, water, biodiversity, toxic substances, etc.). This means that the standards/requirements for an eco-labelling program may vary in their ambition and comprehensiveness, and standards are never static; they continue to evolve and are to be adapted to changing conditions.

Specifically, the type, number of requirements and their accuracy (depth) must be considered. Distinguished are:
- **Management systems with criteria on management practices to ensure and support the achievement of a specific goal in the company**
- **Process-based standards with predetermined, descriptive process requirements**
- **Out-come based requirements that define accounting and calculation of impacts**

In addition to the type of requirements, a distinction can be made between minimum and maximum requirements, mandatory and voluntary and selection criteria. In addition, there are requirements with a development approach, which can be fulfilled step by step over a longer period.

Of course, the different requirement types can be combined and used in the same program.

Guiding principle 3: Label design and communication depends on scheme goal(s) and purpose, and target groups. The communication is unambiguous. The Eco-label promise and limits of what the label covers are clearly identifiable.
Label design and communication encompass all aspects of communication and represent the interface between label users and the end audience. The end audience may be companies (B2B communication) or end consumers (B2C Communication).

In B2B communication, expert knowledge is available. Communication can therefore be more comprehensive and differentiated. The situation is different when communicating with the end consumer. The label communication must be distinctive, highly simplified, symbolic, easy to understand and at the same time truthful.

In addition to simple labels, there are product labels that communicate graded evaluation categories (traffic light system; bronze, silver, gold). There are even labels that additionally highlight individual impact categories. The background to this is differentiated consumer expectations and interests (see Planet Score and separate animal welfare communication).

In addition to product-related labels, there are corporate certificates that are used as such for communication (EMAS) but are not used on product labels. Here too, the approaches are mixed and there are examples in which corporate certification is communicated via a product label (We Care).

The Carbon Trust example shows the variances in the implementation of Carbon Footprinting for which various labels are issued. Even progress levels are expressed and shown by a label (see 7.4.2).

Label design and communication must be consistent with the purpose of the program. If the purpose is to raise awareness and educate, communication must be more comprehensive. This refers less to the label design and more to the accompanying communication measures that explain the label content and promise.

Guiding principle 4: The scheme is viable and practicable
Practical implementation must be ensured, effort and benefit must be in proportion. The framework is again provided by the objective of the program, but at the same time the external circumstances and conditions must be considered:

- **Which practices dominate and lead to what negative or positive environmental impacts.**
- **How much effort is required to calculate environmental impacts?**
- **How can existing positive practices be supported and strengthened?**
- **What level of effort is required to bring practices into compliance with the requirements?**
- **What are the additional benefits for the label user?**

It is important to find a balance between the requirements to comply with the standards and the resulting challenges for the companies. The challenges are manifold and concern, among other issues: knowledge, implementation effort, financial resources, but also soft factors such as the willingness to take risks and break new ground. Whether additional measures can be taken to lower the hurdles for the participation of companies, to set incentives or to create additional benefits must be examined. An Eco-Labelling Program regularly is aimed at end customers and therefore assumes that the label is understood and that the attributes communicated by the label are decisive for the purchase or have a positive influence on the purchase decision. The prerequisite is the existence of a positive environmental awareness of the end consumer with the attitude that "it is worth it" to buy the labelled product and to favor it over a similar product without a label. This is even more critical in case the labelled products will be offered on the market at a higher price than comparable products.

Furthermore, the crucial factor for the cost-benefit ratio of a program are program costs themselves. Ideally, a high benefit is achieved (many label users), with low administrative costs. This is a challenge, especially in the initial phase, when a lot of development work and awareness building must be carried out. The costs to maintain a scheme concern:

- **Governance structures, administration, and management incl. costs for employees**
- **Registration and defense of the label**
- **Standard development**
- **Committee work**
- **Communication and promotion**
- **Control and certification, accreditation**

If there is no other funding, all costs including overhead must be passed on to the label users, for example as a license fee.

To keep costs low, the approach should be built as much as possible on what already exists to use synergies (see ROC where USDA certification establishes the minimum level). Existing programs can be used and defined as a minimum requirement (for example, GAP as a basic requirement for raw materials), or existing structures can be used to implement the program, such as inspection bodies.

Guiding principle 5: Program structures involve stakeholders (e.g., including consumers and science). Responsibility for monitoring the scheme lies with independent structures to ensure credibility.
This concerns the setup and structure of the program and the work on developing the standards. On the one hand, the users and end buyers of the labelled products must be involved in the development of the standards, and the respective interests must be balanced. This also increases the acceptance of the scheme by the stakeholders. In addition, expert, and independent support, for example from the scientific community, is required.

The implementation of control and certification must be organized independently. Whereby the present analysis of the programs has shown that there are different (independent) monitoring mechanisms, which in different combinations represent a credible and effective control (see the monitoring mechanism RA applies). Recently, the Corona pandemic has driven a paradigm shift away from mandatory annual on-site inspections to risk-based monitoring that provides for different types of surveillance and frequencies.
Rainforest Alliance combines the following types of controls in one control cycle:
- **CB certification audits (remote and on-site)**
- **CB surveillance audits (remote and on-site), with less effort**
- **Review audit or automated check conducted by RA (this represents second party assessment)**

The implementation of the various monitoring forms and frequency is based on the company's self-assessment and a risk analysis conducted by RA.

6.3.   Development options

Consistent with the Green Economy Project and the focus on Agri-food and beverage MSMEs, the following approaches are proposed.

6.3.1.   Option 1: Environmental Care codex/Eco-Care codex (EC codex)

Codex is used here as another word for a set of standards. An environmental care codex is developed that is directly aimed at improving the environmental performance of processors. To make implementation directly possible, the codes should, in the first step, only concern criteria that are within the direct sphere of influence of the processing company. In this context, various environmentally relevant areas are to be covered in a multi-dimensional manner. These are to be specified in the standards aligned with the six core environmental

indicators included in the ESG & sustainability reporting guidance for Mongolian companies: Energy, GHG emissions, Climate change, water, waste, biodiversity (plus pesticide use, sustainable land, products recalled). Since processes used are different and technology-dependent, there are different starting points for improvement, depending on the company.

EC codex (minimum-) components may include for example:
- **The company is committed to compliance with all environmental laws**
- **The goal of reducing negative environmental impacts is integrated into the corporate objectives as a guiding principle**
- **Both newly introduced and existing procedures and processes are reviewed and improved regarding their impact on the environment**
- **Employees at all levels are trained and invited to make suggestions for improvement**

Since agricultural production has many negative environmental impacts, within a period to be defined, processors should only purchase raw materials that come from farms that can prove to operate in accordance with good agricultural practices (GAP verified). Long-term supply relationships are to be maintained and strengthened as far as possible. Together, measures are to be taken to reduce negative environmental impacts at the agricultural production level. Goals and verifiable measures are defined by the processor to support farms to implement GAP and improve environmental performance.

The long-term goal should be defined as converting as many products as possible to organic (see 6.3.3).

Also, service providers contracted by the processor (transport, storage etc.) shall be invited to improve their environmental performance. Goals and verifiable measures are defined.

The EC codex following this path introduces an environmental management system (inspired by ISO 14001:2015 and EMAS). An EC codex company shall disclose an environmental report following a structure defined by EC codex. The effectiveness of the environmental management system and environmental report must be externally verified and certified. A certificate is issued, and label use authorized.

The EC codex label may be used in B2B communication, in corporate communications (advertising material, websites). The label may be also used on products in connection with the statement: *produced by an Environmental Care codex company* (*Eco-Care codex company*).

For those including organic products, the codex statement label is supplemented by the applicable organic label. In addition, the Eco-Care codex company statement shall be distinguished by color when combined with organic.

The core challenge in this approach is that certified environmental management systems are different and not directly comparable. A processor that is just beginning to improve its environmental performance has the same communication opportunities as a company that has evolved and has had environmental measures in place for some time. This is less of a

problem when introducing such a scheme. The more who join, the faster the program gains awareness and relevance. But later there will be no possibility to differentiate "champions" from "beginners". Still, this could be healed by an additional claim: Eco-Care codex company develops to become an Ambassador of Eco Care or by a scoring, bronze, silver, gold.

These descriptions and ideas, only give a first indication of a possible concept and program elements. The details need to be developed with the participation of the stakeholder groups to establish acceptance and attract processors to participate.

6.3.2. Option 2: 'Environmental champion' program

In contrast to the Eco-Care codex program, which is comprehensive, an Environmental champion program would recognize a single environmental performance referring to a single environmental indicator. For example: Champion in reducing GHG emissions. The Eco-labelling/claim could then be related to a specific environmental indicator e.g.,
- **Champion in reducing GHG emissions**
- **Champion in reducing waste**
- **Champion in reducing water-use**
- **Champion in reducing energy consumption**

The scheme requirements to assess the performance could address specific targets: For example, to reduce energy consumption by a certain share. The challenge is to define an evaluation method that can be implemented in a simple and comprehensible way. For example: calculation of current consumption value, compared with benchmark value, provides the basis to define x% reduction target and establishes comparability.

6.3.3. Option 3: Organic value chain

Conversion of farms would most probably create the highest environmental impact, compared to all other measures to develop, and implement an eco-scheme. Against the background that developing and sustaining an eco-labelling scheme is costly and takes time, the question is why not relying on the existing organic scheme. There is an eco-labelling scheme already developed, which provides for organic standards and assessment mechanism.

In the case of organic, the obstacles to conversion must first be analyzed on the farmer side, as well as on the processor level. Measures to overcome the obstacles, be they technical or in terms of markets, must be analyzed together with the actors in the production chain to effectively counteract them.

Common for all is that each program must be tested in pilot studies, adapted to practice, and prepared for roll-out.

All options also have in common that sales potential and consumer interest are uncertain. Is there consumer demand for products that are labelled with an environmental claim, and if

so, at what price? The introduction of an eco-labelling scheme alone will not raise consumer awareness. Supporting measures, e.g., communication campaigns are necessary too.

6.4. Stakeholder landscape

Analysis and involvement of the affected stakeholders and interests is very important to increase acceptance and readiness for implementation. Opportunities for participation are therefore essential and must be implemented through various measures. Involvement helps to increase awareness regarding environmental issues.

There are internal stakeholder and external stakeholder:
- **Internal stakeholder:**

Producer, processor, consumer, trade, certification bodies, accreditation bodies
- **External stakeholder:**

Initiatives and NGOs, policy makers, trade organizations, policy makers, representatives of other schemes, science, consultants, and others.

6.5. Roadmap and structures involved

The following roadmap shows the development process and timelines and sets out roles and responsibilities during the development process. Appropriate responsibilities must be defined for development and committees be formed to support technical development.

6.5.1. Secretariat and Steering Committee

The necessary structures must be created for the development and implementation of the planned Eco-labelling scheme. These include the working level that coordinates and controls the processes, referred to here as the secretariat. It is recommended to set up an overarching steering committee that defines the basic objectives and methods in a strategic plan and adopts Terms of References for the development of an Eco-labelling scheme.

Based on the strategic plan, the secretariat prepares a project plan. This is adopted by the steering committee after submission.

The project plan defines budget planning, work steps, working groups involved, the processes for involving stakeholders, and processes for decision-making.

The secretariat reports to the steering committee on the progress of implementation.

Members of the steering committee come from the project executing organization, control bodies and processors or are delegated by a corresponding umbrella organization.

ToR Eco-Labelling Scheme and important content:
- define the objective and scope
- include justification and priority topics in the scope
- define the results
- analyze risks and how to counter the risks
- define the nature and process of stakeholder involvement processes up to the adoption of the program.

Expert committee:

A panel of experts (Eco-Labelling Standards Committee) supports the work of the Secretariat and provides technical input.

Consultation process:
Includes the participation of the bodies and the public in the relevant work steps. The participation processes are used to obtain additional stakeholder feedback, create transparency, and increase acceptance.
Consultations shall at the minimum include:
- Feedback regarding the Terms of Reference
- Version V0: For commenting on version V0, stakeholder events are organized.
- Version V1: For commenting on version V1, webinars will be organized, an online survey will be conducted, offering the possibility to provide additional feedback.
- The implementation of V1 will be tested in a pilot project.
- Based on this, a Consultation Synthesis Report will be prepared, which will be made public and will be the basis for the drafting of V2.
- If there are no significant changes between the first and second draft, the version can be adopted, otherwise it may be necessary to subject V2 for a second public consultation to subsequently adopt the final version.

Public relations:
- Development and design of labelling claim and logo
- Development of an accompanying information campaign to raise awareness among the target groups (label users and end customers)

6.5.2. Responsibilities during the development process

Working stages	Steering Committee	Secretariat	Expert Committee	Stakeholder
Planning	R			
Scheme development process (workplan) Terms of Reference	R	E		I
Stakeholder Consultation	R	E		C
Development Launch Version V0 and ToR	R	E		I
Establish Expert Committee	R	E		I
Develop Version V1	I	R / E	R/ E	I
Public Consultation	R	E	I	C
Pilot	R	E	I	I
Develop V2	I	R / E	R / E	C
Approval*	R*	E	R*	I
Public Relations	R	E		

Figure 10: Roles and Responsibilities during the Development Process

R: responsible, E: execute, C: consulted, I: informed

*Steering Committee approves the scheme on Expert Committee recommendation.

6.5.3. Timeline

Nr.	Stage	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	2025
1	Planning and project management	■	■	■	■	■	■	■	■	■
2	Develop Terms and References	■								
3	**Public Consultation**		■							
4	Development Draft Vo		■							
5	Development Launch: Vo and ToR			■						
6	Establish Expert Group		■	■						
7	Develop V1				■					
8	**Public Consultation**					■				
9	Pilot project					■				
10	Develop V2*						■	■		
11	Approval								■	
12	Implementation								■	■
13	Public Relations	*Planning* (Q1–Q4 2023)				*Implementation of Communication measures* (Q1 2024 – 2025)				

Figure 11: Implementation Timeline

*Allows for second round of public consultation, if necessary

7.   Fact sheets

Review of environmental labelling schemes:

Environmental Labelling	Practice based Standard	Organic
		Regenerative Organic Certified (ROC)
		Rainforest Alliance
	Out-Come based Standard	Carbon Trust
		PEF: Eco-Score / Planet Score
Management Systems	Environmental MS	EMAS / ISO 14001:2015
	Food Safety	GLOBALG.A.P.
		IFS Food
Environmental Social Governance		GRI / We Care standard

7.1.   Organic

7.1.1.   Objective

Standards and regulations on organic provide a clear structure how to produce organic goods and how to safeguard organic quality from farm to fork.

This is to **satisfy consumer demand for trustworthy organic products** whilst providing a **fair marketplace** for producers, distributors, and marketers.

7.1.2.   Scope (target group, value chain)

Organic standards apply to agricultural products (food and feed, including collection of wild plants), and to processed products originating from those agri-products. The organic production process is defined by (descriptive) **production and processing standards**.

The standards define production and further processing and ensure that products are separated along the production chain so that the integrity of the organic products is maintained (separation of goods, avoidance of mixing with products not produced in accordance with organic standards).

7.1.3.   Core characteristics

- **practice-based**
- **descriptive**
- **certification of process quality as opposed product certification**

7.1.4. Standard Operating Procedure (SOP)

Operators (farmers, processors, or traders) who want to market their products with reference to "Organic", "Öko", "ECO" or any other reference indicating that the product is produced organically are subject to control. Conversion periods apply for farm operations (field and animals). Control/certification is mandatory within regulators schemes and for private label use (e.g., Demeter logo).

Farmers, processors, and traders must be checked by a control body <u>before</u> they can market their products as organic (third party certification, ISO Type I-like label).

The process in brief includes five stages:
1. application and preparation of documentation including (farm)- description to be submitted by the operator to the control-body, including contract to be signed between operator and control body
2. review of the submitted operator documentation at the control body
3. on-site inspection = evaluation by the inspector
4. final evaluation at the control body
5. certification issued by the control body

Controls are repeated at regular intervals (at least annually) to maintain certification.

Procedural steps in detail:
1. Every interested company (operation) must apply for certification to an approved control body. A control contract must be signed with the control body selected. The appointed control body officially registers the farm with the competent authorities for the control procedure. The operator submits the application documentation to the control body including (farm)-description, field map and buildings, cultivation planning and use of any external resources e.g., seed material, fertilizers, plant protection, animals.

2. The control body checks the documents for completeness and plausibility and provided that the documentation is credible, a control visit will be arranged.

3. During the initial inspection, a comparison is made between the farm description submitted and the conditions found. It is checked whether the measures planned by the operation are suitable for fulfilling the certification requirements. If necessary, further measures are agreed to ensure compliance with the standards.

4. The results of the on-site inspection are documented by the inspector and submitted to the inspection body for evaluation.
The control body finally determines whether the certification requirements have been fulfilled, if necessary, by imposing conditions.

5. After all requirements (including imposed conditions) have been fulfilled and the fees have been paid, the required organic certificate is issued. However, the operation may only label products 'organic' after the defined conversion deadlines have been met.

Maintaining certification:
The operator informs the control body about important changes (ongoing and timely), the (farm) description is updated.
Controls are repeated at regular intervals (annually); in addition, there are announced and unannounced (sample) control visits. Residue analyses are carried out on a suspicion-related basis and are a supplementary control element.

7.1.5. What is processor specific?

The standards for processing companies are limited to ingredients of agricultural origin. These must come from organic production. In addition, organic food should be "as natural as possible". Artificially produced colorings and preservatives or flavor enhancers are not permitted. The use of additives is severely restricted (positive lists). Processing should be carried out with care, preferably using biological, mechanical, and physical methods. Irradiation or the use of genetic engineering are excluded.

7.1.6. Environmental impact

The environmental performance improvement results from the change in cultivation methods. Organic farming is generally expected (and scientifically proven) to have limited impact on the environment because it favors:
- enhancement of soil fertility
- maintenance of biodiversity
- responsible use of energy and natural resources
- preservation of regional ecological balances
- maintenance of water quality

Organic farming rules also request and encourage a high standard of animal welfare and require farmers to meet the specific behavioral needs of animals.

The use of inputs such as pesticides, fertilizers, feed, and processing additives are highly restricted and defined by positive lists. Only those inputs listed may be used. The latter also applies to processors. In addition, there are soft criteria (recommendations) concerning the environmental performance of processors (environment and climate protection, economical and careful use of resources (energy, water, air, soil).

7.1.7. Unique scheme elements (model-like)

See core characteristics.

7.1.8. Monitoring mechanism

Operators are controlled and certified by control bodies (third party certification); control/certification bodies are accredited or follow ISO/IEC 17065 and must be registered and supervised by public authorities.

7.1.9. Implementation effort

Single farm: depends on current production system and dependence on external inputs (fertilizers and pesticides) but can be highly beneficial because the farm becomes independent of costly external resources and more resilient to weather extremes and climate change.

Processor: depends on the availability of raw materials and the possibilities to store and process goods separately. In case of emerging organic markets dependence is high because raw material supply must be developed.

External control and certification add costs bureaucracy. Adapting consumer communication with reference to environmental commitment is necessary and rewarding.

7.1.10. Drivers / success factors

Related to the initial situation:
- Low or moderate use of pesticides and chemical fertilizers
- Knowledge and tradition of use of manure and/or compost
- Existing diversified production system, especially if it includes animals
- Good level of education and know-how by farmers
- Interested farmers, successful examples
- Comparably good farm economy already before the conversion
- Processors who want to improve their environmental performance
- Market participants with a common interest in building the organic supply chain: Producers, buyers, processors, traders (collaborative approach)
- Market in a competitive situation in which environmental services represent an opportunity for differentiation.

Supporting measures:
- Special support for "early adopters" creating good examples to overcome cultural and policy barriers
- Facilitating peer support (village, farmers' association etc.)
- Increasing consumer awareness regarding environmental issues, supported by communication measures
- Increasing demand and developing organic markets
- Support from the public sector (conversion support, market development, measures to raise consumer awareness)
- Fostering environmental performances is part of the political agenda
- A society and policy environment that values, prioritizes, and rewards environmental performance and therefore creates a supportive framework.

7.1.11. Barriers/ Obstacles

Technical barriers:
- Changing the production process takes time and resources, and there is a risk of failure
- Specific production problem (e.g., a pest in a major crop)

- Reduction of yield (if system was intensive before)
- Lacking knowledge: there are neither conversion services nor other practitioners who share experience and expert knowledge.
- Lack of local and application-related research to address specific problems.

Economic barriers:
- Costs for converting a conventional to organic operation can be a major barrier including certification costs and administration effort
- No risk balancing options
- Increased need of labor
- Lacking access to financial capital that could support a transition
- Lacking purchasers – lacking supply; there is neither an organic market (yet) nor structures to build up and organize the market.

Cultural barriers:
- Environmental issues, health and sustainability are not on the public agenda.
- Consumer interest is lacking.
- Codes, regulations, trade agreements, powerful lobbies, and public policy can either incentivize or obstruct a new approach.

7.1.12. Key lessons

Strengthening the development of organic markets and introduction of an organic labelling scheme requires:
- Fair market conditions and protection against fraudulent labelling
- Convinced market participants who integrate sustainability and environmental protection equally to profit orientation into their corporate strategy.
- A cooperative approach between farmers and processors to establish long-term supply contracts and price agreements that create planning security for both parties.
- Public subsidies to support conversion and market development are recommended: Financial incentives on farm level to compensate for lower yields during the conversion period until a premium for organically produced products is paid. Depending on the price level retention funding after conversion may be useful to support farmers.
- Conversion advice to technically support farmers to change cultivation practices; farmers need region-specific knowledge from trusted sources.
- Communication measurements to increase consumer awareness and hereby demand for organic products.

7.1.13. Feasibility /practicability

Organic farming is practiced worldwide and is the most recognized form of sustainable agriculture. With the organic law, Mongolia has laid the foundation for market development and fair competition. Still implementation is a long-term effort of actors along the supply-chain and requests certain structures and competency:

- Convinced and engaged processors who want to develop in the direction of sustainability. This is a long-term process, as the raw material supply base needs to be developed.
- A cooperative approach between farmers and processors to develop the organic market (long-term supply contracts and price agreements that create planning security for both parties
- Sufficient raw material supply: therefore, support for farmers willing to convert (advice, financial) is needed.
- Control bodies with the competency to conduct organic control and certification
- Measures to raise consumer awareness

7.2. Regenerative Organic Certified (ROC)

 Regenerative Organic Certified

Regenerative agriculture is the new "buzzword" compared to "worn out" terms like greener, sustainable agriculture even though the idea behind intention behind it is correct. So far regenerative farming is an "ideal", applied under differing (often undefined) concepts and actors. Compared to organic it misses the concrete structures that will bring it to life: commonly accepted definition, certification, and defined methods of measurement and monitoring.

One initiative that reached reputation in the USA is the US based Regenerative Organic Certified (ROC) launched in 2017 as a joint project by the Rodale Institute, Patagonia, and Dr. Bronner's.

7.2.1. Objective

As ROC adds criteria to the USDA organic seal it is referred to as an "add-on" label. The motivation was "to keep organic strong and add the critical social requirements, along with more robust soil/land management and animal welfare practices." ROC adds additional criteria on top of USDA organic to ensure farmers are actively building soil health, using animals in concert with nature to enhance the land, caring for animal welfare, and treating their workers fairly. The goal is to implement organic with greater liability in terms to
- Soil health
- Animal welfare
- Social fairness

7.2.2. Scope (target group, value chain)

ROC covers requirements for farming and ranching operations, transportation, slaughter, and certain processing facilities.

ROC is an organic certification for food, fiber, and personal care ingredients that builds on organic standard (USDA or equivalent) and adds requirements for
- **animal welfare and**
- **social fairness (farmer and worker fairness)**

7.2.3. Core characteristics

- **practice-based**
- **descriptive**
- **certification of process quality as opposed product certification**

ROC is based on USDA organic certified and combines it with recognized certification for social fairness and animal welfare or requests operators to undergo an additional audit covering those areas. Additional standard requirements involve building soil health and sequestering carbon. Hereby ROC combines existing certifications to avoid duplicative audits or burdensome paperwork.

ROC provides **three certification levels (from bronze to gold)**. Gold represents the highest achievable level in regenerative organic production. Within the Bronze and the Silver Level there is the requirement to increase the certified fiber or food producing land from 25% to 50% (bronze level) and from 50% to 75% (silver level) within 5 years.
While there is no obligation to "improve" the certification from bronze to silver, increasing the share of certified fiber or food producing land within the bronze and silver level is mandatory.

Finally, certification levels distinguish criteria that are
- **Required Practice (R) (minimum requirements)**
- **Optional practices (O)**

For example, "Carbon reporting" (by using computer-based modeling tools) is obligatory for gold level but not for achieving bronze or silver level.

For products to be sold with the ROC Gold claim, at least one stage in the post-producer supply chain must also be certified to ROC. For ROC Bronze and Silver levels only the farm or ranch is required to be certified to the ROC standard[13].

Supply Chain Actor registration (SCA)[14] covers chain of custody requirements for supply chain actors who do not take ownership of or market ROC products to ensure that products carrying a ROC claim are sourced from certified producers and are not mixed with non-certified products. ROC Supply Chain actors must register and adhere to the Supply Chain Guidelines. The Supply Chain guideline document provides the minimum requirements for SCAs to maintain an auditable management system that sufficiently documents the chain of custody of the product.

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[13] https://regenorganic.org/wp-content/uploads/2021/02/ROC_QMS_PM_v1.pdf

[14] https://regenorganic.org/wp-content/uploads/2022/02/SupplyChainGuidelines_v3.2.pdf

All organizations that handle or process ROC claimed products must be USDA Organic certified or be certified to an approved international organic equivalent standard.

7.2.4.   Standard Operating Procedures

To achieve ROC certification, operations must be USDA certified (or equivalent) and meet the minimum ROC requirements.

The steps to ROC certification include:
1) Submission of initial application (including USDA certificate and signed ROC license contract
2) Submission of a Regenerative Organic System Plan (ROSP). *Note: USDA certification requests to submit an Organic System Plan (OSP). The ROSP therefore follows the same structure adding ROC specifics.*
3) Control body conducts an audit to ROC Framework. *Note the control body must be approved by ROC to conduct ROC certification; The ROC audit can be performed simultaneously with the USDA audit.*
5) Final review by the control body
6) ROC certificate is issued by ROA

Audits are repeated at regular intervals (annually) to maintain certification.

7.2.5.   ROC criteria specific for processing facilities

In general processors must demonstrate that they do not contribute to pollution of waterways or air or use any substance prohibited by ROC.

Specific criteria are provided for[15]:

Environmental aspects:
- **Wastewater: Facilities producing more than 50 cubic meters of wastewater per day shall have evidence of compliance to the prevailing authority.**
- **Waste: The goal of ROC is to minimize waste whenever possible. Operation does not illegally dump, bury, or burn waste. Operation documents that any hazardous waste is identified, isolated, and properly disposed.**
- **Synthetic Chemicals: If used, organically approved pesticides that are highly toxic to pollinators, as defined … shall not be applied within 50-100 feet of a waterbody or applied when pollinators are in flight. They shall be applied at the lowest efficacious rate and all effort shall be taken to find alternative controls.**
- **Genetically modified Inputs & Cloning: Operation does not use any genetically modified additives or processing aids such as fertilizers, pesticides, herbicides, seeds, or crops derived from genetically modified sources, including emerging**

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[15] Criteria here are not completely listed but summarized to show the areas regulated.

technologies that edit or regulate genes such as RNAi, CRISPR, and TALEN. Cloned animals are not eligible for ROC

Farmer & Worker Fairness
- Required is a Social Fairness Affidavit with an application for ROC registration
- Brands must complete a ROC worker fairness audit at one or more major stages of manufacturing or processing in order to be eligible for a Gold ROC label claim.
- Labor Laws, Legal and International Conventions Compliance covers the following: Operations must research and adhere to all applicable laws related to labor conditions, health, and safety terms of employee; compliance with ILO Freedom of Association and Collective Bargaining laws; workers understand and are trained on their rights.
- Further on there are criteria to cover Child labor, forced labor& hiring practices including contracted labor. Criteria to prevent harassment, abuse and discrimination and ensure equal pay.
- Criteria to ensure freedom of association & collective bargaining, fair employment relationship (at eye level)
- Regarding payment: operations must demonstrate a commitment to pay a living wage and an intent to progress towards paying a living wage (gold level operations must demonstrate that a living wage is paid to workers
- Hours of Work
- Health
- Pricing (based on Fair Trade pricing structures)
- Capacity Building

https://regenorganic.org/wp-content/uploads/2021/02/ROC_ROC_STD_FR_v5.pdf

7.2.6. Environmental impact

The same as organic (see 6.1.6) but improved, because the standards for soil fertility, animal welfare and social justice are more descriptive and binding. Producers must implement several regenerative farming practices that go beyond USDA organic (depending on certification level three up to five, practices are listed in the ROC standard). Same as organic but improved. This applies also downstream for food processing (provided processing facilities are ROC certified).

7.2.7. Unique scheme elements (model-like)

- ROC builds on widespread organic certification (USDA organic) as a minimum.
- ROC is positioned to compete with Organic claiming to be the real organic
- ROC is a private scheme owner which combines the following functions:
  - Standard setter: providing the standards and program manual to implement certification
  - Certifier: issuing the final ROC certificate
  - Accreditation body: control is delegated to ROC approved control bodies.
- Differentiates three certification levels (bronze, silver, gold)

- **Standard requirements provide for required and optional practices. The latter are not binding for certification.**

7.2.8. Monitoring Mechanism

- **Operators are controlled by ROC approved control bodies (third party certification);**
- **Control and certification procedures are aligned with applicable organic certification procedures to avoid double audits. Control audits for organic and ROC can be performed simultaneously by one control body (inspector) authorized.**
- **ROC certification is issued by ROC based on the audits performed by authorized control body.**
- **Existing certifications can be recognized as evidence for one of the ROC areas (animal welfare, social fairness)**

7.2.9. Implementation effort

Comparable to the implementation of a regulatory organic scheme (see 7.1.9)
For a successful implementation the private scheme owner must be able to sustain the program including:
- **Standards development**
- **Certification**
- **Accreditation**
- **Public Relations: to publicize the program, attract customers for certification, and create the market for the labelled products.**

7.2.10. Drivers /success factors

Stakeholder motivation:
- **Strong self-interest of actors.**
- **Dissatisfaction with existing organic system,**
- **The desire to distinguish positively**
- **New market positioning in distinction to organic**
- **In case of ROC, started by three organizations — Patagonia, Dr. Bronner's and Rodale Institute - that are market-relevant and have influence.**

Structural: Use of existing structures (control bodies) and procedures (control system)
See case study report "Food brands seeking our Regenerative Organic Certified ingredients (March 2022) here
https://non-gmoreport.com/articles/food-brands-seeking-out-regenerative-organic-certified-ingredients/

7.2.11. Barriers/ obstacles

ROC is (to date) a very small niche within the organic niche market.

If the organic market is growing and demand is greater than supply, only those companies that are dissatisfied with organic and want to make a more qualified (label) statement will seek additional ROC certification. This is only true if the organic label is not discredited. If, for example, a scandal would discredit the organic label, this could in turn increase the interest in ROC.

7.2.12. Key lessons

Even if there are established environmental labelling programs, there is room for new developments to differentiate and set a new standard. Implementation based on and using existing structures is helpful to establish the new scheme.

7.2.13. Feasibility / practicability

A system comparable to ROC is not feasible in a just emerging Mongolian organic market. Even in the US where ROC has been developed the question is whether the scheme is financially feasible long term. Further success crucially depends on consumers buying the labelled products, giving them preference over conventional and organic products.

7.3. Rainforest Alliance (RA)

7.3.1. Objective

The Rainforest Alliance was founded 1986 as an answer to the progressive rainforest deforestation. The green frog label, a 2020 relaunch[16], can be found on agricultural products, forestry products (such as paper and cardboard packaging) and tourism businesses. Following the merger with UTZ Certified, RA has developed new criteria for awarding its seal. The program focuses on coffee, cocoa, tea, bananas, and other important commodity sectors facing environmental and social challenges. The seal means that the certified product or ingredient was produced using methods that support the three pillars of sustainability: social, economic, and environmental as expressed in the sustainable standard and assurance system.

7.3.2. Scope (target group, value chain)

The 2020 Certification Program applies to farmers as well as supply chain actors applying the following elements:
- **Sustainable Agriculture Standard: Farm requirements and Supply Chain Requirements**
- **Assurance System**
- **DATA Systems and Tools (Rainforest Alliance Certification Platform (RACP)**

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[16] https://www.rainforest-alliance.org/wp-content/uploads/2020/05/RA_seal_A4_200514.pdf

The latter is a new element targeting operations (and control bodies involved) to manage audit processes and to better track and manage sustainability performance against the requirements of the Sustainable Agriculture standard.

The 2020 Sustainable Agriculture Standard has two constituent parts:
- **Farm Requirements**
- **Supply Chain Requirements**

The Supply Chain Requirements go beyond traditional traceability rules. The aim is to foster responsible business practices and shared responsibility by companies throughout the supply chain. Buyers in certified supply chains must provide increased support to farmers to work more sustainable. This is reflected in **new mandatory financial requirements for the buyers** of Rainforest Alliance certified commodities:

A) **Sustainability Differential (SD), an additional monetary payment to individual certified farmers, on top of the market price of the commodity, intended to reward farmers for implementing more sustainable agricultural practices.**
B) **Sustainability Investments (SI), cash or in-kind investments to farm certificate holders that directly support farmers to implement sustainable farming practices. These payments also help farms reach compliance with the Sustainable Agriculture Standard. Investments may fall under the following categories: administrative management, agriculture, social (such as farmworker housing, working conditions, and health & safety), or environmental. Thus, companies can directly contribute to farm improvements.**

7.3.3. Core characteristics

- **practice-based and more inclusive (includes social, economic, and environmental requirements)**
- **descriptive; there are core requirements to comply with for the first certification audit, as well as mandatory "Smart Meters" and improvement requirements to comply with <u>over time</u>.**
- **certification of process quality as opposed product certification**
- **database supported traceability: RA applies traceability rules and requests to document commodity flow in a data base.**

The RA 2020 introduced the following new elements:
Contextualized approach: All standard requirements potentially apply, however based on set-up information submitted by operators, only the requirements relevant to the context will apply.
On Farm level: Context-specific targets using "Smart Meters". Instead of a pass/fail approach, farmers are asked to measure their performance against their own goals and build up better data to support their progress. As a result, Smart Meters then provide producers with a way of setting targets that fit their context.
Risk-based assurance: Operators (farm level and supply chain actors) are requested to conduct a risk assessment including to decide and implement on mitigation measures to

reduce the risk. Data is submitted via the Rainforest Alliance Certification platform at several stages of the certification process. The supply chain risk assessment is related to human rights, social issues such as child labor and work safety.

This risk-based approach has been introduced
- **to enhance data basis and determine the type and frequency of verification required (certification).**
- **to provide companies with a checklist of mandatory requirements to identify risks and make timely adjustments still before finalizing the certification process.**

Shared responsibility approach:
Supply Chain Requirements cover following chapters[17]:

1. Management	
1.1	Management
1.2	Administration
1.4	Internal Inspection and Self-Assessment
1.5	Grievance Mechanism
1.6	Gender Equality
2. Traceability	
2.1	Traceability
2.2	Traceability in Online Platform
2.3	Mass Balance
3. Income and Shared Responsibility	
3.2	Sustainability Differential
3.3	Sustainability Investments
3.4	Supply Chain Contributions for Living Wage Payment (Self-selected)
5. Social	
5.1	Assess-and-Address Child Labor, Forced Labor, Discrimination, Workplace Violence and Harassment
5.2	Freedom of Association
5.3	Wages and Contracts
5.5	Working Conditions
5.6	Health and Safety
6. Environment	
6.6	Wastewater Management

See chapter 3; income and shared responsibility introducing "Income and Shared responsibility requirements:
These consist of mandatory financial requirements for buyers of Rainforest Alliance certified commodities:
- **Payment of a Sustainability Differential (SD) on top of the market price. To reward farmers for implementing more sustainable agricultural practices.**
- **Sustainability Investments (SI) paid by buyers to farmers to support investment and reaching compliance.**

Only chapter 6 covers environmental issues applicable for supply chain actors. Currently only wastewater management is specified (as a starting point). According to RA other relevant

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[17] https://www.rainforest-alliance.org/wp-content/uploads/2022/01/2020-RA-Sustainable-Agriculture-Standard-Supply-Chain-Requirements.pdf

environmental topics are intended to be gradually introduced to the supply chain requirements.

The following pictures provides an overview of the Farm requirements[18]

OVERVIEW OF THE FARM REQUIREMENTS

1. Management		
1.1	Management	Smart Meter
1.2	Administration	
1.3	Risk Assessment and Management Plan	
1.4	Internal Inspection and Self-Assessment	
1.5	Grievance Mechanism	
1.6	Gender Equality	Smart Meter
1.7	Young Farmers and Workers	Self-selected
2. Traceability		
2.1	Traceability	
2.2	Traceability in the Online Platform	
2.3	Mass Balance	
3. Income and shared responsibility		
3.1	Production Costs and Living Income	Self-selected
3.2	Sustainability Differential	
3.3	Sustainability Investments	
4. Farming		
4.1	Planting and Rotation	
4.2	Pruning and Renovation of Tree Crops	Smart Meter
4.3	Genetically Modified Organisms (GMOs)	
4.4	Soil Fertility and Conservation	Smart Meter
4.5	Integrated Pest Management (IPM)	Smart Meter
4.6	Agrochemicals Management	
4.7	Harvest and Post-Harvest Practices	

5. Social		
5.1	Assess-and-Address Child Labor, Forced Labor, Discrimination, Workplace Violence and Harassment	Smart Meter
5.2	Freedom of Association and Collective Bargaining	
5.3	Wages and Contracts	
5.4	Living Wage	Smart Meter
5.5	Working Conditions	
5.6	Health and Safety	
5.7	Housing and Living Conditions	
5.8	Communities	
6. Environment		
6.1	Forests, other Natural Ecosystems and Protected Areas	
6.2	Conservation and Enhancement of Natural Ecosystems and Vegetation	Smart Meter
6.3	Riparian Buffers	
6.4	Protection of Wildlife and Biodiversity	
6.5	Water Management and Conservation	Smart Meter
6.6	Wastewater Management	
6.7	Waste Management	
6.8	Energy Efficiency	Smart Meter
6.9	Greenhouse Gas Reduction	Self-selected

Please note that RA does not ban the use of agrochemicals as it aims to achieve lesser use of artificial fertilizers and pesticides. Regarding pest management it promotes sustainable agriculture based on the concept of Integrated Pest Management (IPM)

Definition[19]: "*Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human and animal health and/or the environment.*"

Due to their highly harmful effects on the environment RA excludes pests considered highly hazardous according to the definition of the FAO and WHO as well as agrochemicals prohibited by applicable local law.

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[18] https://www.rainforest-alliance.org/wp-content/uploads/2022/01/2020-RA-Sustainable-Agriculture-Standard-Farm-Requirements.pdf

[19] https://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/Code_ENG_2017updated.pdf
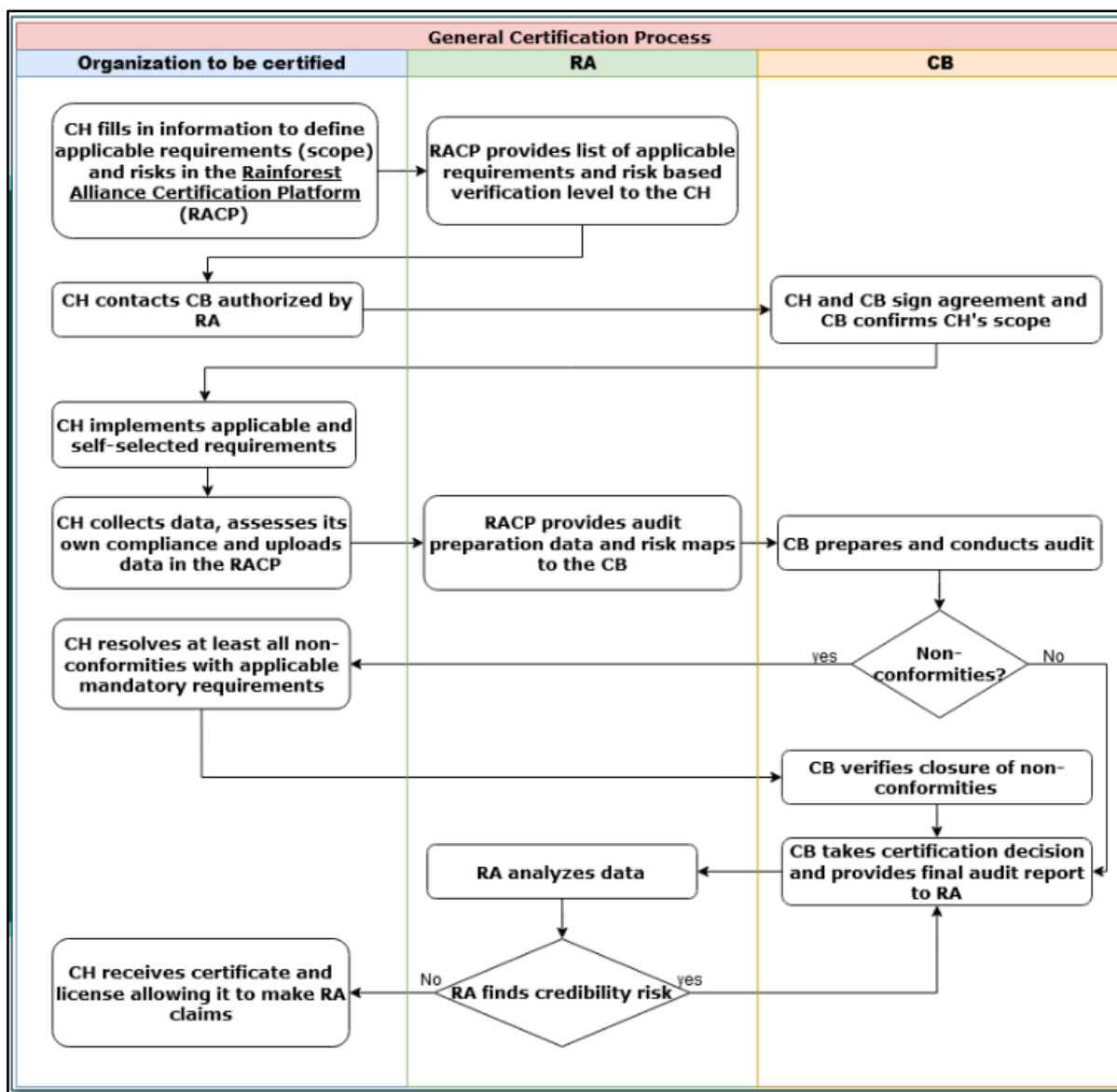
7.3.4. Standard Operating Procedures

Since the 2020 program relaunch RA manages the RA certification process via the new Rainforest Alliance Certification Platform (RACP). A company that either owns or physically handles RA certified commodities must register at RACP. Documents can be uploaded; the process is managed via the certification platform RACP.

The process follows 6 steps[20]:
- **Registration: receive an account ID at RACP**
- **License Agreement: A License Agreement with RA is mandatory hereby agreeing to abide by the rules of the program.**
- **Risk Assessment: submit information about companies' activities, crops, and volumes in the Rainforest Alliance system: the Supply Chain Risk Assessment (SCRA) considers the organization's activities, location, information on the certified product or products, compliance, and social risks, among others. Based on this information the company is assigned a verification level which determines if it will require an audit or endorsement to get certified.**
- **Verification process/audit process: companies to assign a Control Body (authorized by RA); RA Supply Chain team reviews information and coordinates further process.**
- **License to trade: once steps 1 to 4 are completed, RA reviews the information and takes the decision to grant a license to trade.**
- **Trade certified volumes/Traceability: all purchases and sales of Rainforest Alliance Certified volumes between certified organizations must be recorded in the designated RA platform to ensure compliance with RA traceability rules. The objective is to provide transparency and accountability to consumers of certified products.**

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[20] https://www.rainforest-alliance.org/business/certification/how-to-get-supply-chain-certification-a-guide-for-companies/

General RA certification process (CH: Certification holder; CB: Certification Body)[21]

7.3.5. RA criteria specific for processing facilities

Environmental aspects concern wastewater management only:
See RA supply chain requirements, 6.6. WASTEWATER MANAGEMENT

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[21] https://www.rainforest-alliance.org/wp-content/uploads/2020/06/2020-Rainforest-Alliance-Certification-and-Auditing-Rules.pdf

6.6 WASTEWATER MANAGEMENT	
6.6.1	Tests for processing wastewater are conducted at all discharge points during the representative period(s) of operation, and results are documented.
	For farm groups, this is done at all group-managed (collective) processing facilities and at a representative sample of member processing operations including the different types of treatment systems.
	Wastewater from processing operations discharged into aquatic ecosystems meets legal wastewater quality parameters. In absence of these, it meets the wastewater parameters.
	Wastewater from processing operations may not be mixed with clean water to meet the parameters.
6.6.2	Human sewage, sludge, and sewage water is not used for production and/or processing activities.
	Sewage is not discharged into aquatic ecosystems unless it has been treated.
	Not applicable to small farms: Treated discharge is demonstrated to meet legal wastewater quality parameters or, in the absence of these, the wastewater parameters.
6.6.3	Wastewater from processing operations is not applied to land unless it has undergone treatment to remove particulates and toxins.
	If treated wastewater is used for irrigation, in addition to the wastewater parameters, it must comply with the wastewater parameters for irrigation.

"Tests for processing wastewater are conducted at all discharge points during the representative period(s) of operation, and results are documented.
For farm groups, this is done at all group-managed (collective) processing facilities and at a representative sample of member processing operations including the different types of treatment systems.
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Wastewater from processing operations may not be mixed with clean water to meet the parameters
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Not applicable to small farms: Treated discharge is demonstrated to meet legal wastewater quality parameters or, in the absence of these, the wastewater parameters.
Wastewater from processing operations is not applied to land unless it has undergone treatment to remove particulates and toxins. If treated wastewater is used for irrigation, in addition to the wastewater parameters, it must comply with the wastewater parameters for irrigation."

Buyers in certified supply chains must provide increased support to farmers to work more sustainable.

This is reflected in **new mandatory financial requirements for the buyers** of Rainforest Alliance certified commodities:
    A) **Sustainability Differential (SD**
    B) **Sustainability Investments (SI)**

Risk based approach requests supply chain actors to conduct a *Supply Chain Risk Assessment (SCRA).*

Traded volumes must be recorded in the designated RA platform.

See 7.3.3. core characteristics providing an overview on the supply chain requirements.

7.3.6. Environmental impact

The assumption is that the descriptive RA Sustainable Agriculture Standard promote healthier soils, cleaner water, reduced use of synthetic fertilizers and pesticides, biodiversity conservation, and climate change adaptation and mitigation.

Regarding fertilizer and pest control, the RA requirements are weaker than organic standards. Still, chapter 5 of RA Sustainable Agriculture Standard includes "environment" requirements aiming for farms to have a positive impact on **forests, biodiversity, water, and climate**. Find details here https://www.rainforest-alliance.org/wp-content/uploads/2022/01/2020-RA-Sustainable-Agriculture-Standard-Farm-Requirements.pdf

7.3.7. Unique scheme elements (model-like)

- **Certification Platform (RACP), a digital platform for managing the application and verification process as well as traceability.**
- **Contextualized approach**
- **Risk-based assurance (self-assessment)**
- **mandatory financial requirements for buyers to support farmers**
- **database supported traceability: RA applies traceability rules and requests to document commodity flow in a data base.**

see details under 7.3.3.

7.3.8. Monitoring Mechanism

RA combines self-assessment and third-party assessment. Self-assessment refers to risk assessment to be conducted by the operators as preparation for the further auditing process. In addition, operators annually must conduct internal audits with a focus on topics identified in the risk assessment or earlier inspections.

RA applies a three-year risk-based audit cycle which may include:
- **CB certification audits (remote and onsite)**
- **CB surveillance audits (remote and onsite)**
- **Reviews and automated checks (performed by RA)**

The type of yearly external verification depends on **risk-status (= Verification level).**
There are 5 risk-levels from A, very-low to E, very high. Based on the information provided through risk assessment in the RACP when registering (see 7.4.3 General RA certification process), RA assigns a Verification level, which defines the type and frequency of verification.

Verification level	Verification method		
	Year 1: certification	Year 2: surveillance	Year 3: surveillance
A-very low	Rainforest Alliance review	Rainforest Alliance automated check	Rainforest Alliance automated check
B-low	CB remote certification audit	Rainforest Alliance review	Rainforest Alliance automated check
C-medium	On site CB certification audit	CB remote surveillance audit	Rainforest Alliance review
D-high	On site CB certification audit	On site CB surveillance audit	CB remote surveillance audit
E-very high	On site CB certification audit	On site CB surveillance audit	On site CB surveillance audit

Table CR 5: Verification Levels

Detailed 2020 certification and auditing rules are defined in the 2020 RA Certification and Auditing rules[22].

7.3.9. Implementation effort

Like the conversion to organic (and ROC), farms and companies are required to change their (management) practices and must put more effort into documentation.

New are the requirements to use the digital RA Certification platform. Even if this could reduce the documentation effort in the long term, the documentation system must first be introduced, or existing systems adapted to the requirements to avoid duplicate documentation effort.

In addition, RA requires that the flow of goods be entered into a database designated by RA.

Scheme owner: RA has a long history and the growing organization demonstrated that there is a market for environmental labelling. It has become one of the dominating sustainable labelling programs in the world. Work is mainly financed by companies which pay a royalty fee for label use and grants from governments.

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[22] https://www.rainforest-alliance.org/wp-content/uploads/2020/06/2020-Rainforest-Alliance-Certification-and-Auditing-Rules.pdf

2021 Revenue, Support by Source, and Expenses

REVENUE & SUPPORT

1	Royalty Revenue (62%)	US$ 61,699,361
2	Government Grants and Contracts (15%)	15,428,525
3	Foundations and Corporate Grants (7%)	7,159,897
4	Major Donors and Individuals (5%)	4,740,675
5	Other Contract Revenue (4%)	4,109,112
6	Special Events – Net (0%)	58,393
7	In-Kind Contributions (1%)	887,010
8	Other (6%)	5,663,006
	TOTAL REVENUE & SUPPORT	**US$ 99,745,979**
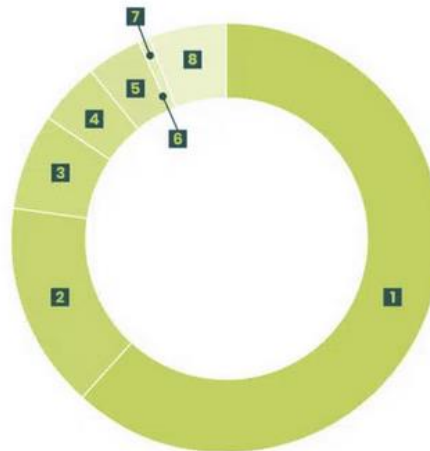
EXPENSES

1	Program Services (77%)	US$ 59,824,118
2	Management and General (19%)	15,369,278
3	Fundraising (4%)	2,898,548
	TOTAL EXPENSES	**US$ 78,091,944**
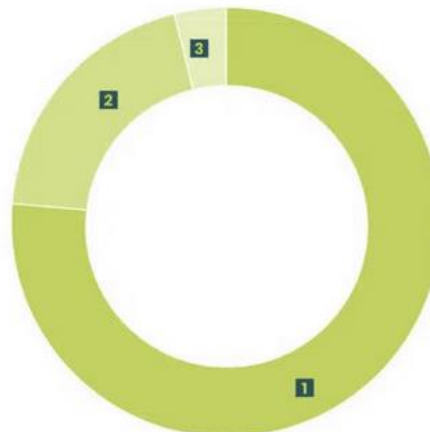
RA 2021 Revenue[23]

7.3.10. Drivers /success factors

In the case of RA, market dominance and label prominence are the main drivers. The label is widely used because the requirements for farm conversion and changes in the agricultural production system are less demanding than for conversion to organic farming.

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[23] https://www.rainforest-alliance.org/audited-financial-documents/

RA global reach in the Fruit & Vegetables category[24]: certified farms (blue):
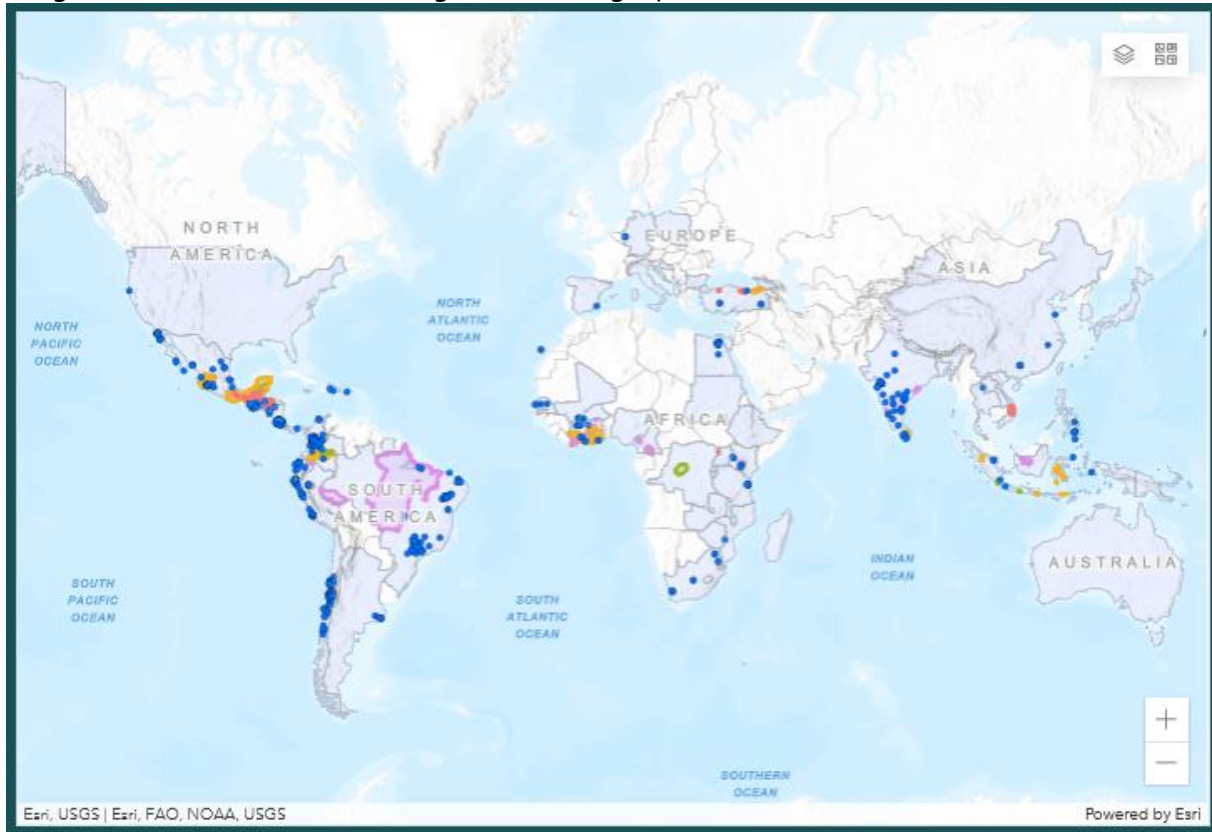
7.3.11. Barriers/ obstacles

Compared to organic (6.3.11) technical barriers might be easier to overcome, same applies for the identified economic barriers.

The requirements in terms of digitization are high and could represent an additional barrier. The application of RA more inclusive requirements (social, economic, and environmental requirements) could also represent a higher barrier compared to organic

The fact that the requirements are more inclusive concerning includes social, economic, and environmental requirements constitutes a barrier in areas where:
- **Environmental issues, health and sustainability are not on the public agenda.**
- **Consumer interest is lacking.**
- **Codes, regulations, trade agreements, powerful lobbies, and public policy can either incentivize or obstruct a new approach.**

7.3.12. Key lessons

The 2020 relaunch and previously occurred merger with UTZ demonstrates that sustaining a scheme and further development needs constant attention and investment. A scheme must be adapted to changing interests and consider new developments. The political agenda on

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[24] https://www.rainforest-alliance.org/impact/

the one hand, as well as transformation processes, societal change and changing consumer interests set impulses for continuous development.

7.3.13. Feasibility / practicability

RA is too big and successful to be copied, it has proven its practicability and relevance. In product categories such as coffee or cocoa RA certification is the dominating sustainable labelling program.

7.4. Carbon footprint / The Carbon Trust

7.4.1. Objective and scope

Life Cycle Assessments are a standardized tool. They measure the environmental impact of a product from cradle to grave and may be used in product related environmental information.

Carbon footprint (CFP) of products is also a life cycle assessment, accounting only a selected environmental impact: Greenhouse gas emissions (GHE). Recorded are all greenhouse gas emissions caused over the entire life cycle of products. The basic objective is to obtain reliable information for minimizing the climate impact of the manufacture, use and disposal of products for internal purposes and to make environmental statements to customers, business partners and other stakeholders.

Guiding documents:
- **ISO 14067:2018 which specifies principles, requirements and guidelines for the quantification and reporting of the carbon footprint of a product (CFP), in a manner consistent with International Standards on life cycle assessment (LCA) (ISO 14040 and ISO 14044).[25].**
- **ISO 14064-3:2019: which specifies principles and requirements and provides guidance for verifying and validating greenhouse gas (GHG) statements. It is applicable to organization, project, and product GHG statements**
- **The PAS 2050, published by the UK national standards body (bsi). It provides a widely recognized, method for assessing product life cycle GHG emissions.**
- **The Product Life Cycle Accounting and Reporting Standard, published by The Greenhouse Gas Protocol (GHG Protocol)[26].**

There is also "**Organizational carbon footprint**" which measures the GHG emissions from all the activities across the organization, including energy used in buildings, industrial processes, and company vehicles.

GHG Protocol categories emissions into three groups or 'Scopes':

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[25] https://www.iso.org/standard/71206.html
[26] https://ghgprotocol.org/product-standard

- **Scope 1:** Direct emissions that result from activities within your organization's control. This might include onsite fuel combustion, manufacturing and process emissions, refrigerant losses, and company vehicles.
- **Scope 2:** Indirect emissions from any electricity, heat or steam you purchase and use. Although you're not directly in control of the emissions, by using the energy you are indirectly responsible for the release of CO2.
- **Scope 3:** Any other indirect emissions from sources outside your direct control. Examples of Scope 3 emissions include purchased goods and services, use of sold goods, employee commuting and business travel, outsourced transportation, waste disposal and water consumption.

Under the GHG Protocol, all organizational footprints must include Scope 1 and 2 emissions. There is more flexibility when choosing which Scope 3 emissions to measure and report, and you can tailor these to reflect your environmental and commercial goals.

Source: GHG Protocol
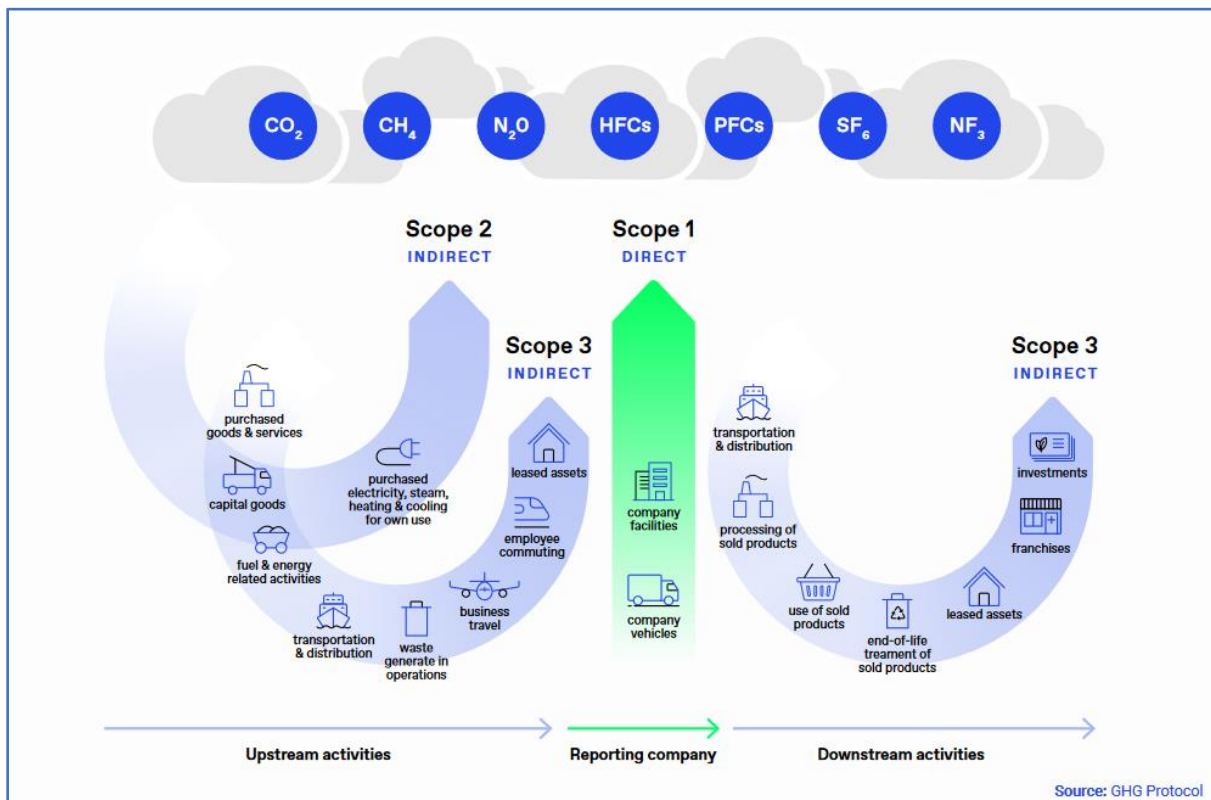
7.4.2. Core characteristics

Carbon Footprinting is either the organizational or product related life cycle assessment considering only one environmental impact: Greenhouse gas emissions.

The Carbon Trust is a limited company (by guarantee by the UK government) founded 2001 to accelerate the UK's move to a low carbon economy. Since 2004, Carbon Management Programs are offered; since 2007, the world's first carbon footprint label was offered. Today

there are Carbon Trust offices in the UK, China, Singapore, Amsterdam, Mexico, and South Africa.

It is a service provider who offers amongst other services the verification of the accurateness of carbon Footprinting to ensure robust and credible analyses. It has certified over 27,000 individual product footprints, in more than 40 countries.

	Organizational Carbon Footprinting, label issued by The Carbon Trust
	Reducing Co2: The label shows that the product's carbon footprint is reducing year by year (x%) , and that the company has committed to achieving ongoing reductions.
	In addition, The Carbon Trust offers a label for Reducing Co2 Packaging (only applicable for packaging manufacturers)
	Carbon Neutral shows that the product footprint is achieving ongoing reductions, and any outstanding emissions are offset*, in accordance with the international PAS 2060 standard.

The Carbon Trust Footprint Label categories

Route to Net Zero Standard[27]

The latest Carbon Trust program launch is the "Route to Net Zero Standard" to guide and support organizations towards Net Zero. Respective certification recognizes progress by offering three levels, which qualifying requirements to become more challenging and cover more aspects of carbon management:

	Taking action
	Advancing
	Leading

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[27] https://ctprodstorageaccountp.blob.core.windows.net/prod-drupal-files/documents/resource/public/Route-to-Net-Zero-Standard-Flyer-RGB-4.pdf

7.4.3.   Standard Operating Procedures

Procedures follow international norms as specified above. Further explanations take The Carbon Trust as an example.

Calculating an **organizational carbon footprint** includes six steps:
- **Define methodology and approach: must be consistent to ensure an accurate result, especially if several people are involved in data collection and interpretation.**
- **Define the control approach and organizational boundary: parts of the organizations to be included are to be defined. This can be complex if there are many subsidiaries, joint ventures, or leased assets (= operational boundary). The operational boundary determines which emission sources will be quantified and whether these will be included as Scope 1 and 2, or Scope 3.**
- **Collect and collate the data: e.g., for gas and electricity, collect data in kilowatt hours (kWh) from meter readings or bills. For transport emissions, collect fuel consumption by fuel type, or estimate consumption based on the mileage of the vehicles and fuel economy assumptions. In case there are any data gaps and assumptions are made, these assumptions must be documented and made transparent.**
- **Apply emissions factors: the carbon footprint is calculated based on collected data multiplied by standard emissions factors[28].**
- **Verify and certify the results (by an independent party e.g., The Carbon Trust): Verification is not mandatory; however, it is adding credibility. It is highly recommended if disclosure of footprint calculation is planned.**
- **Plan for emissions reduction: Once data is collected and emissions are calculated, findings should be used to draft a plan to reduce emissions.**

The Carbon Trust verifies an organizational carbon footprint through an audit in accordance with ISO 14064-3. Based on an audit, The Carbon Trust issues an independent assurance statement for the chosen 12-month footprint calculations and an internal assurance report including a summary of the approach, findings and data check/recalculations, and opportunities for improvement. Organizations having successfully achieved verification can then use the above verification mark.

The assurance statement is related to the company and cannot be used as product label, still communication is possible in general communications, business reports, etc. This is to demonstrate the organization's commitment to reduce GHG emissions particularly if it includes a carbon reduction plan.

Steps to calculate product carbon footprint

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[28] Governments usually publish updated emissions factors yearly, which can be used by organizations to calculate/update their footprints.

Step 1: Building a process map: the goal is to identify all materials, activities and processes that contribute to the chosen product's life cycle.

Step 2: Determine the boundaries: the system boundary defines the scope for the product carbon footprint, i.e., which life cycle stages, inputs and outputs should be included in the assessment.

Common material/activities to include within a product's life cycle boundary[29]:

Common materials/activities to include within a product's life cycle boundary
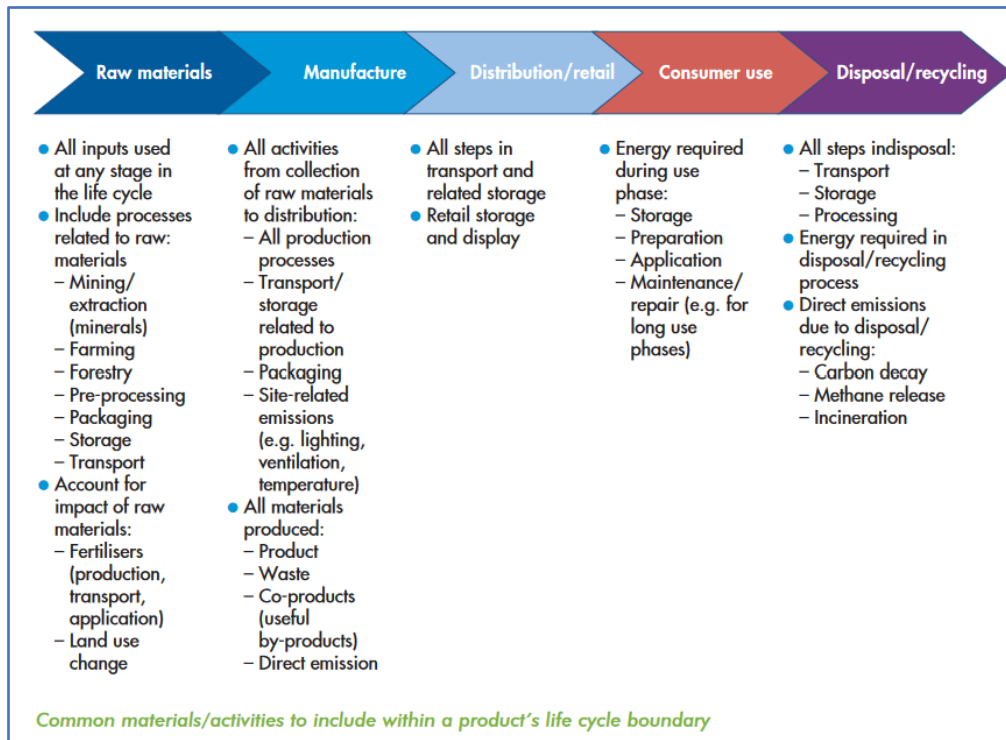
Step 3. Collect data: where possible primary data shall be used based on actual meter readings or records rather than estimates.

Step 4. Calculate the footprint: calculate the GHG emissions (kgCO2 e per product unit) from each source by multiplying the activity data **by the emissions factors** for each life cycle stage of the product.

Step 5: Product footprint verification may be conducted in three ways:
- Self-verification
- Verification by another party, such as another company
- Accredited independent third-party verification

The Carbon Trust Product Footprint label appears on a product or its packaging. Consumers can find out if the product's carbon footprint is:
- Reducing year-on-year
- Carbon neutral
- Lower than other best-known products

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[29] https://www.fao.org/sustainable-food-value-chains/library/details/en/c/266040/

For further information and research on Carbon Footprint, view the "Guide to PAS 2050 - How to Assess the Carbon Footprint of Goods and Services", published by British Standards Institution (BSI). It can be downloaded from the FAH website:
https://www.fao.org/sustainable-food-value-chains/library/details/en/c/266040/

7.4.4. Unique scheme elements (model-like)

See 7.4.2
The Carbon Trust issues a corporate and a product label with different design.
The Carbon Trust product label shows different scopes on an explanatory right-hand panel showing the specific scope (CO_2 measured, reducing CO_2, Carbon Neural, Lower CO_2, Reducing CO_2 packaging Carbon Neutral packaging.

7.4.5. Monitoring Mechanism

It is up to the company to decide whether the carbon footprint calculation shall be verified. If yes, there are internationally agreed standards how the validation shall be conducted. The Carbon Trust verifies footprint and offers organizational footprint certification as well as product footprint certification.

7.4.6. Drivers /success factors

The Carbon Trust is a pioneering organization funded with the support of the UK Government. It has developed and significantly influenced the todays accepted Carbon Footprint systematic as expressed in commonly accepted norms such as PAS 2050, Greenhouse Gas Protocol. It was founded to accelerate the UK's move to a low carbon economy.

For companies carbon footprint calculation offers several benefits. Certification is only a means and provides qualified information to improve resource efficiency often resulting in cost savings. It may support innovation and product development opportunities and may have a positive impact on stakeholder relationship including employees, suppliers, customers and investors.

7.4.7. Barriers/ obstacles

The systematic of accounting requires a deep dive into the organization to collect and document data. It takes time and is an ongoing process that requests constant attention. The biggest obstacle is to get started. Once started and gone through the calculation and certification process, results are entered into a data basis to be developed further. There will be qualified information to reduce emissions. This will foster continuous improvements and support following certification processes.

7.4.8. Key lessons

Calculating a carbon footprint is like an inventory, once started there is a benchmark against which progress can be measured.

7.4.9. Feasibility / practicability

Implementation and calculations are demanding; specific know-hoc and expertise is requested; which creates a huge barrier. Carbon Footprinting and labelling may only be an option for companies competing in the international arena; it is not suited for the regional or national market.

7.5. Product Environmental Footprint (PEF): Eco-Score and Planet-Score

7.5.1. Objective and Scope

The **PEF** methodology for life cycle assessment (LCA) was developed by the EU Commission back in 2013 as an alternative to conventional life cycle assessments. Like the Carbon Footprint the PEF is intended to promote "Green Businesses" by making the environmental performance of companies measurable and communicable according to a uniform procedure. PEF is used to calculate and compare the environmental impact of products (providing product related environmental information). PEF takes a life cycle perspective but follows further product category specific requirements and standardized specifications ("rulebook") which create a higher comparability of the results. This makes PEF more suitable, for instance, for benchmarking **products** or services. Basis are **PEF Category Rules (PEFCRs)** that have been developed by the European Commission in collaboration with companies representing the various sectors which include product specific benchmarks. Like an LCA, PEF quantifies all environmental impacts over the life cycle of a product, including emissions to water, air, and soil, resource use and depletion, and impacts from land and water use.

7.5.2. Status in a European policy context

PEF is related to the European Green Deal (December 2019), which pursues a climate-neutral Europe by 2050. Several initiatives were published to support the Green Deal, amongst others the Farm to Fork (F2F) strategy (May 2020) which aims to address sustainable food systems. One F2F objective is to adopt a sustainable labelling <u>framework</u> to empower consumers to choose sustainable food and avoid greenwashing. Hereby consumers shall receive information about nutritional, climate, environmental and social aspects of food products.

Now, the PEF is in the "transition stage". The European Commission is evaluating where to use the PEF methodology in their policy and how to facilitate the implementation in practice. A Regulation on substantiating green claims is expected to be published by the Commission end of November this year, as well as a Regulation on sustainable food systems, including a section on sustainability labelling, at the end of 2023.

There is a lot of criticism to apply the PEF methodology to food products by civil society. An increasing number of food retailers and brands have started testing alternative methods to the pure PEF approach, allowing for a meaningful differentiation of the diverse environmental impacts of food products.

7.5.3. Criticism and challenges

Main criticism is that the PEF methodology does not adequately account for externalities. Biodiversity conservation, soil protection, impact of pesticides and animal welfare are either not or not adequately reflected in the PEF methodology. As a result, foods from extensive agriculture such as organic systematically score worse on the PEF than food products from more intensive practices. While PEF works well for manufactured goods, like electricals, this product-focused tool is not capable, as per its conception, to account for the environmental impact within the complexity of agri-food systems. When applied to more complex agri-food systems, the LCA methodology, and therefore also the PEF, tend to favor more intensive systems, which may have higher yields but also higher impacts per unit area. For instance, smaller fields, surrounded with hedges and high crop diversity favor biodiversity and ecosystem services while increasing agricultural resiliency. These settings score worse compared to highly intensive monoculture agricultural systems.

Reasons for PEF shortcomings are:
(1) a lack of operational indicators for three key environmental issues; land degradation, biodiversity loss and pesticide effects
(2) a narrow perspective on functions of agricultural systems; and
(3) inconsistent modelling of indirect effects.
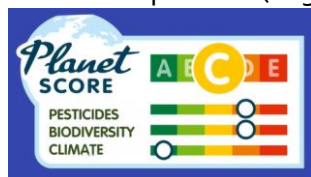
7.5.4. Eco-Score and Planet-Score (adapted PEF)

Both scoring labels provide product related environmental information.

Eco-Score[30] classes food products from A (low) to E (high) according to their impact on the environment.

A ➜ to E

Planet-Score[31] also informs about the environmental impact of the respective food product and scores from A (low) to (E) high. In addition to the general scoring, the label scores also major environmental issues related to food: pesticides, biodiversity, climate, and animal welfare.

Processed product (vegetable)   Meat (free-range farmed)

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[30] https://docs.score-environnemental.com/v/en/#registration
[31] https://www.planet-score.org/en/

Eco-score and Planet-score are both French initiatives, where the strongest development impetus has been set by the political objective of making environmental labelling mandatory in 2023.

Eco- Score and Planet-Score both are based on the Product Environmental Footprint (PEF) but apply **adapted PEF analysis and scoring**. The data basis for both scores is the French Agribalyse database, an LCA database based on PEF.

Because of the limitations of PEF, Eco-Score and Planet-Score complement the LCA data with a reference system of external indicators to transparently inform consumers about all positive and negative environmental impacts of food production, however, are taking different path:

Planet-score

The Planet-Score corrects and expands the LCA to include missing indicators to map the environmental impacts in a meaningful and complete manner (*extended life cycle analysis*). Thus, the data basis of the Planet-Score is significantly more differentiated than that of the Eco-Score.

The following indicators, the PEF lacks, are covered by the Planet Score:
- **Impact of synthetic nitrogen fertilizer and pesticides on biodiversity.**
- **Human health (impact of pesticides)**
- **Impact on animal welfare**
- **Impact on climate (e.g., the indicators of aviation transport, regionality, carbon capture and storage)**
- **Decline in soil fertility**
- **Consideration of planetary boundaries (for nitrogen, phosphorus and biodiversity already reached limit**
- **Impact of pollutants on the ecosystem (marine and terrestrial ecotoxicity)**
- **Systemic approach to agriculture (e.g., malus for intensive form of agriculture)**

In contrast, **the Eco-score** only differentiates the Agribalyse data retrospectively by bonuses and maluses such as organic/fair trade quality, packaging, or origin (*LCA adopted without modification*). However, the weighting of the added bonuses and maluses of the Eco-Score appears unbalanced. For example, the Eco-Score awards a disproportionately high bonus for an existing HVE certificate (HVE: Haute Valeur Environnementale), although the HVE is criticized for greenwashing as a less substantive sustainability certificate. Other significant bonuses are awarded by the Eco-Score for "French origin" and for perceived sustainable packaging. Intensive production systems are unilaterally favored by the Eco-Score.

The following graphic illustrates the more differentiated scoring of the Planet-score compared to the Eco-score, using the example of the different types of egg farming.

All three types of farming receive Eco-score B, whereas the Planet-score is graded from A to C for organic eggs to caged eggs; in addition, a scoring of pesticide use, biodiversity and climate is provided; and scored differently depending on the production system[32].

Several initiatives were published to support the Green Deal of the EU Commission, amongst others the Farm to Fork (F2F) strategy (May 2020) which aims to address sustainable food systems. One F2F objective is to adopt a sustainable labelling framework to empower consumers to choose sustainable food and avoid greenwashing. Hereby consumers shall receive information about nutritional, climate, environmental and social aspects of food products.

The EU Commission plans to adopt this framework for sustainable food labelling before 2024 Therefore both initiatives are particularly timely to meet the European Commissions' Farm to Fork Strategy and it is not unlikely that one of the systems could be chosen as the model at EU level. And the reason why Eco-score and Planet-score are both French is, that in France the strongest development impetus has been set by the political objective of making environmental labelling mandatory in 2023.

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[32] https://www.planet-score.org//public//uploads/2022/07/DP-Planet-Score-VF-22-07-2022.pdf

7.5.5.   Feasibility for SMEs

Even if PEF is more standardized than LCA assessment, data collection remains complex and most probably constitutes the main barrier for SMEs to use LCA/PEF methods. This assumption is supported by a project interim report which amongst other has the objective to assess whether PEF can realistically be implemented for SMEs.

7.6.   EMAS (based on ISO 14001:2015)

7.6.1. Objective

The EU Eco-Management and Audit Scheme (EMAS) is a management instrument developed for companies and other organizations to evaluate, report, and improve environmental performance.

EMAS has been introduced 1993 by the European Commission. EMAS is defined by law, participation is voluntary: Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organizations in a community eco-management and audit scheme (EMAS)[33].

It targets companies and other organizations that want to systematically improve energy and material efficiency, reduce harmful environmental impacts and environment-related risks, and increase their legal certainty.

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[33] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009R1221

The EMAS logo may be used in general corporate communications (letterheads, annual report, advertising material). EMAS is not an environmental product label. It may therefore not be used on products or their packaging.

The ISO 14001 management standard is an integral part of EMAS since 2001. EMAS registered organizations commit themselves to evaluate, manage and improve their environmental performance.

EMAS starts with an inventory, the so-called environmental audit, and leads to the establishment of an environmental management system (processes, organization, responsibilities) with appropriate documentation and the preparation of an environmental statement.

EMAS does not set absolute requirements for environmental performance. Thus, two organizations that carry out similar activities but show different environmental performance can still both in line with EMAS.

EMAS facilitates the communication of organizations' environmental performance in a clear and credible manner. It requires companies to publish an annual public environmental statement that is independently validated.

Companies may use the EMAS logo for marketing purposes. The EMAS logo offers a visual communication and marketing tool designed to highlight an organization's dedication to continually improving its environmental performance. The Corporate label may only be used by EMAS registered organizations.

Some regions and Member States have started to include specific regulatory reliefs and incentives for EMAS-registered organizations.

7.6.2. Scope (target group, value chain)

EMAS is not sector-specific and can be used by a wide range of organizations, from small businesses to large companies, including government agencies.

As part of the environmental management system, environmental aspects are systematically recorded for all activities, products and services and incorporated into the operational structures and procedures. For this purpose, environmental guidelines or the "environmental policy" of an organization are adopted, improvement goals are agreed upon and the measures required to achieve them are taken. Employees are involved in the process of continuous improvement.

The requirements of the international environmental management standard ISO 14001 are an integral part of an EMAS environmental management system.
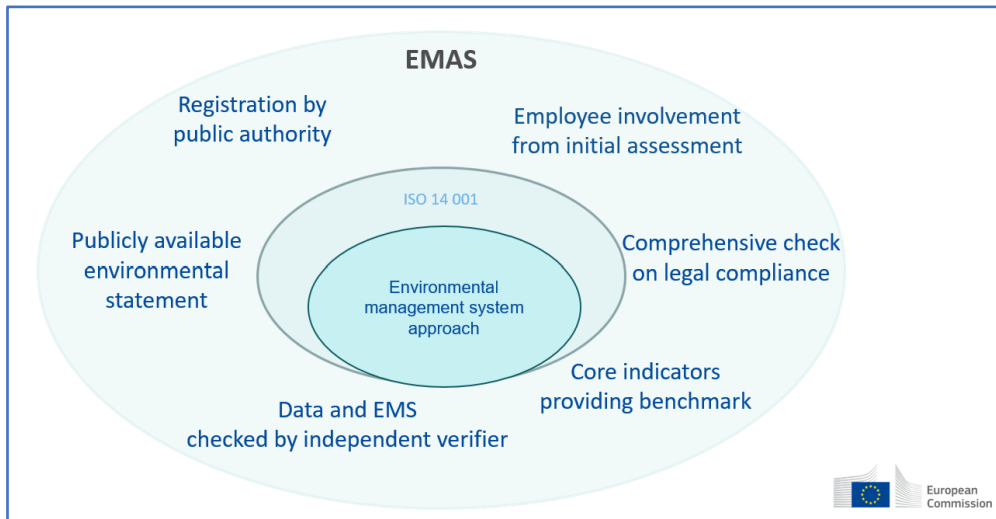
EMAS relation to other tools[34]

EMAS focuses on measurable improvements, internal and external transparency, and legal certainty. The introduction of EMAS is intended to continuously improve environmental performance, for example by increasing energy or material efficiency and reducing emissions, wastewater, or waste at the site. In addition to such "direct" environmental aspects, the "indirect" environmental aspects, for example the environmental compatibility of products and services, procurement, the behavior of subcontractors or the working routes of employees are also recorded and evaluated. Further on, EMAS organizations demonstrate that they know and comply with applicable environmental legislation.

The environmental declaration is the reporting instrument of EMAS. The environmental declarations show the extent to which the organization has fulfilled its obligation to make appropriate improvements in environmental protection and what it intends to do in the coming years. The declaration must be disclosed and updated annually.

EMAS-registered organizations are required to report on nine generic core indicators in the following key areas:
- **Energy efficiency**
- **Material efficiency**
- **Water**
- **Waste**
- **biodiversity**
- **Emissions**

EMAS environmental management systems are verified for compliance, adequacy, and accuracy by an independent, accredited environmental verifier.

7.6.3. Core characteristics

- **EMAS is performance-oriented: The goal is continuous improvement.**

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[34] https://ec.europa.eu/environment/emas/pdf/other/EMAS%20presentation%20for%20organisations_2022.pptx x

- It can be implemented by any company (including companies outside the EU).
- EMAS does not set absolute requirements for environmental performance. Thus, two organizations that carry out similar activities but show different environmental performance can still both in line with EMAS.
- The implementation of EMAS follows the typical plan-do-check-act cycle for management systems (applied also according to ISO 14001 or ISO 50001).
- Unlike other environmental management tools external reporting is mandatory that must be validated by an independent verifier.
- Companies may use the EMAS logo as corporate label in their communication, provided registered by the appropriate competent authority
- EMAS is used for regulatory reliefs and incentives for EMAS-registered organizations in the food and beverage manufacturing sector. See

7.6.4. Standard Operating Procedures

EMAS implementation steps[35] follow the key principles: Plan-Do-Check-Act and in addition requires external verification.

1. Conduct an Environmental review: initial environmental review, considering all environmental aspects.
2. Adopt an environmental policy: EMAS commits a company to compliance with all relevant legislation and to continuous improvement.
3. Develop an environmental program: it contains the information on specific environmental objectives and targets.
4. Establish an Environmental management system (EMS): The EMS defines responsibilities, objectives, means, operational procedures, training needs, monitoring, and communication systems to achieve the policy objectives as expressed in the environmental policy (see step 2).
5. Internal Environmental Audit: It assesses whether the EMS is in place and in conformity with your organization's policy and program.
6. Prepare an environmental audit = a public statement of your environmental performance.
7. Independent verification and validation by an environmental verifier: He/she examines and verifies the environmental review, the EMS and the internal audit procedure and finally validates the environmental statement.
8. Register with the competent body of the member state: the company is assigned a registration number and is allowed to use the EMAS logo.

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[35] https://ec.europa.eu/environment/emas/pdf/other/Brochure_3x3_Good_reasons_for_EMAS.pdf
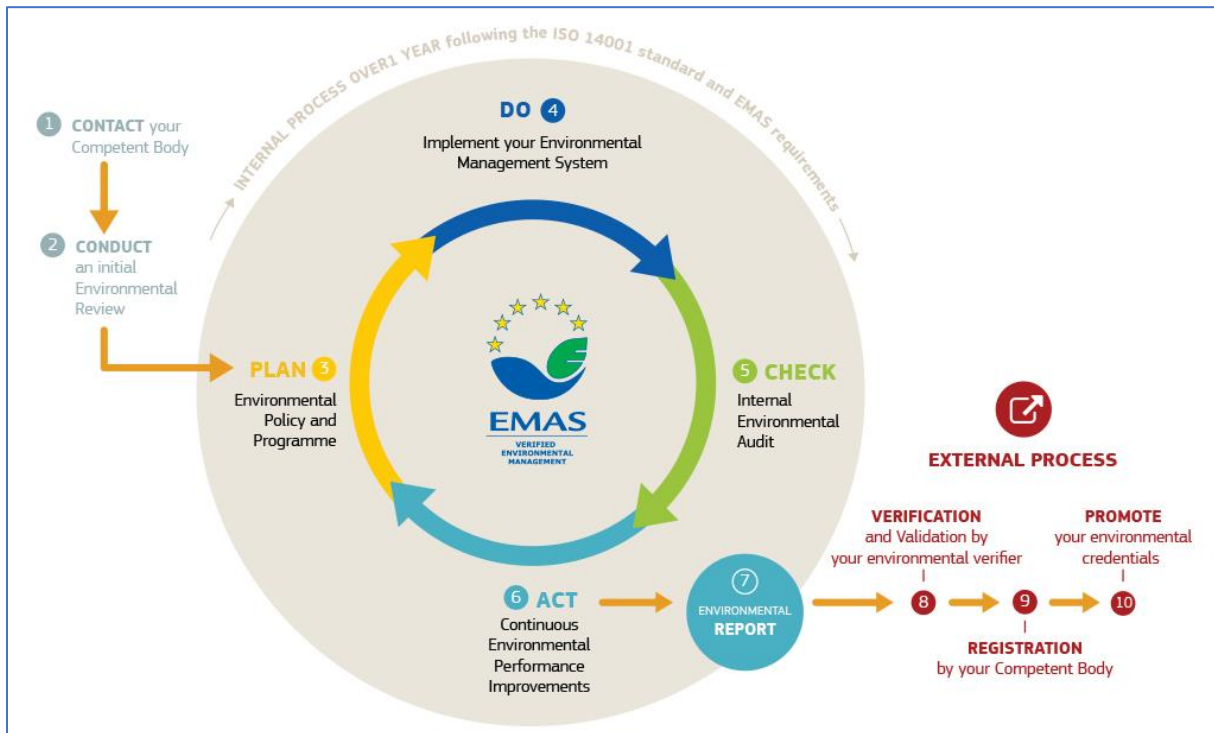
How EMAS works?[36]

7.6.5. EMAS main requirements

Organizations shall assess and report on their significant direct and indirect environmental impacts addressing core environmental performance indicators calculated per input/ output. These indicators shall

- **give an accurate assessment of the organization's environmental performance**
- **be readily understood and unambiguous**
- **allow for a year-on-year comparison (to observe improvement)**
- **allow for comparison with sector, national or regional benchmarks (if possible)**
- **allow for comparison with regulatory requirements as appropriate.**

EMAS provides for six core environmental performance indicators[37]:

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[36] https://ec.europa.eu/environment/emas/join_emas/how_does_it_work_step0_en.htm
[37] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R2026&rid=2

Core indicators	Impact
Energy efficiency	Direct energy consumption
	Total renewable energy consumption
	Total renewable energy generation
Material efficiency	Annual mass-flow of key material used (excluding energy carriers and water)
Water	Total annual water used
Waste	Total annual generation of waste
	Total annual generation of hazardous waste
Land us regarding biodiversity	Total use of land
	Total sealed area
	Total nature-oriented area on site
	Total nature-oriented area off site
Emissions	Annual emission of greenhouse gases (CO_2 eq.)
	Annual air emissions

In addition, EMAS requests organizations to observe **specific environmental performance** indicators. Specific indicators are related to the core business activities, that are measurable and verifiable, and not covered already by the core indicators.

7.6.6. Unique scheme elements (model-like)

See 7.6.3, core characteristics.

7.6.7. Monitoring Mechanism

EMAS combines internal auditing to monitor the implementation of the EMS and external verification to check the internal audit by a third-party environmental verifier, accredited by competent authority (of the EU member state).

7.6.8. Implementation effort

the barrier to entry is low, as the program does not prescribe specific metrics or targets. It is an approach to improving management according to a method that is commonly used in other areas (plan-do-check-act approach) EMAS can be implemented by any company by beginners just starting to care about environmental issues as well as by companies who have improved already and pay constant attention to environmental aspects.

7.6.9. Drivers /success factors

EMAS does not apply definite environmental limits or performance indicators. EMAS can be implemented by any company. By beginners just starting to care about environmental issues as well as by companies who have improved already and pay constant attention to environmental aspects.

EMS applies a management system which implements the Plan-Do-Check-Act approach. Companies already implementing any other Management Systems easily can implement EMAS. It proved to deliver lower environmental impact, better efficiency, and credible information about environmental topics.

EMAS is well established and gained reputation in B2B as well as B2C communication.

There are sectoral reference documents and supporting tools to implement EMAS as well as guidance documents, fact sheets, case studies and Helpdesk to support implementation. see http://ec.europa.eu/environment/emas/emas_publications. See EMAS and the food and beverage sector, Case study.

7.6.10. Barriers/ obstacles

The 2009 study on "Study on the Costs and Benefits of EMAS to Registered Organizations[38]" Identified lack of consumer awareness, poor feedback, and a lack of recognition by public institutions as most important external barriers.

Internal barriers identified included a lack of human resources, specific skills and capacities, and low motivation.

According to this study the most important barriers to EMAS uptake are:
Cost of implementation, unclear or insufficient benefit.
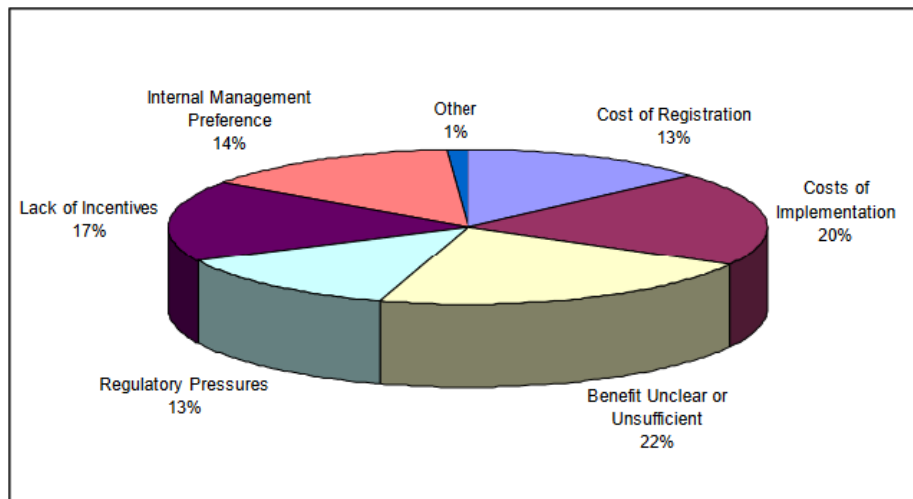
7.6.11. Key lessons

EMAS has been successfully introduced and implemented because it is politically desired and supported. EMAS is a successful eco-labelling program, which applies a management approach to evaluate and improve environmental performance, requests companies to

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[38] https://ec.europa.eu/environment/emas/pdf/other/costs_and_benefits_of_emas.pdf

disclose a report and environmental declaration verified by a third party. It offers a corporate label for B2B and B2C communication.

7.6.12. Feasibility / practicability

Depends on know-how and capacity; compared to LCA data collection should be less burdensome. The differences between EMAS and ISO 14001 are summarized in factsheets[39] issued by the European Commission. Supplementary info: Global Food Safety Initiative (GFSI)

The Global Food Safety Initiative (GFSI)[40] launched 2000 is a corporate initiative to improve food safety management systems to ensure confidence in the supply of safe food to consumers worldwide organizing more than 500 members. GFSI is an organization of 'The Consumer Goods Forum'.

GFSI is focusing on benchmarking and harmonizing (globally) applied food safety systems. The GFSI Benchmarking Requirements are designed for certification program owners to benchmark and align their standards with GFSI to become a GFSI recognized program. Hereby GFSI through its benchmarking program and recognition process is setting the worldwide accepted scene for food safety assurance.

GLOBAL.G.A.P. as well as IFS Food (further analyzed in the following) are recognized against 2020 Version of the GFSI Benchmarking Requirements.

Note: the scope of the programs is different: GLOBALG.A.P. targets producers and covers production processes to ensure product safety at farm level, whereas IFS requirements cover processing downstream ensuring food safety there.

View the complete list if recognized programs [here.](here)

7.7.   GLOBALG.A.P.

7.7.1.   Objective

GLOBALG.A.P.[41] goes back to 1997. It has developed from EUREPGAP (started 1997), an initiative by British and European supermarkets (retailers) to harmonize internal food safety and sustainability requirements and develop an independent certification system for **G**ood **A**gricultural **P**ractice (G.A.P.). The EUREPGAP standards helped producers comply with Europe-wide accepted criteria for food safety, sustainable production methods, worker and animal welfare, and responsible use of water, compound feed and plant propagation materials. In 2007, the name was changed to GLOABLG.A.P. to reflect worldwide relevance and implementation. GLOBALG.A.P. certification is GFSI internationally recognized for agricultural production and guarantees safe and sustainable production of food.

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[39] https://www.emas.de/fileadmin/user_upload/4-pub/UGA_Infosheet_From-ISO-14001-to-EMAS.pdf; https://ec.europa.eu/environment/emas/pdf/factsheets/EMASiso14001_high.pdf
[40] https://mygfsi.com/
[41] https://www.globalgap.org/uk_en/

Integrated Farm Assurance (IFA) is GLOBALG.A.P.'s main standard. It takes a holistic approach to responsible farming and is audited annually by accredited, independent third-party certification bodies (CBs). IFA is made up of several documents:

- **Rules providing general regulations on how to implement the standard as well as guidelines for its verification**
- **Checklists, which define the requirements to comply with. They consist of "Control Points and related Compliance Criteria (CPCC)" against which a producer's performance is measured. Compliance criteria are categorized in Major Must, Minor Most (one per control point may be failed), and Recommendation.**

The **GLOBALG.A.P. Chain of Custody (CoC)** standard ensures that any product sold with a GLOBALGG.A.P. claim is sourced from a GLOBALG.A.P. certified production process. CoC is specifying requirements for segregation, handling, and tracing of products in the supply chain.

The GLOBALG.A.P. trademark is a B2B label. It may only be used in business-to-business communication, and for traceability, segregation, or identification purposes. It is not designed as label to be affixed directly on product packages.

7.7.2. Scope (target group, value chain)

GLOBALG.A.P. certification system targets the production level (producers) and further on includes downstream food supply chain actors to safeguard certification status throughout the supply chain.

GLOBALG.A.P. is available for 3 scopes of production: Crops, Livestock, Aquaculture and covers more than 40 more detailed standards.

Certification includes the following aspects:
- **Food safety and traceability**
- **Environment (including biodiversity)**
- **Workers´ health, safety, and welfare**
- **Animal welfare**
- **Integrated crop management (ICM), Integrated Pest Control (IPC), Quality Management System (QMS), and Hazard Analysis and Critical Control Points (HACCP)**
-

IFA plants certification[42] scope covers hundreds of products and all types of production systems in six product categories, from preharvest activities through to post-harvest handling:
- **Fruit and vegetables**
- **Flowers and ornamentals**

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[42] https://www.globalgap.org/uk_en/for-producers/globalg.a.p./integrated-farm-assurance-ifa/crops/

- **Combinable crops**
- **Tea**
- **Hops**
- **Plant propagation material**

IFA plants standard is recognized by GFSI.

GLOABALG.A.P. applies **add-on standards**[43] to customize specific circumstances and needs. These standards are called GLOBALG.A.P. + Add-on and apply stronger quality assurance in specific aspects of agricultural production and the supply chain to enhance GLOBALG.A.P. certification. There are add-ons developed by national GLOBALG.A.P. stakeholders or by GLOBALG.A.P. itself.

Amongst others:
- **BioDiversity add-on, developed on the initiative of the German retailer LIDL.**
- **SPRING - Sustainable Program for Irrigation and Groundwater Use, developed by Swiss retailer Coop in collaboration with GLOBALG.A.P.**
- **SIZA Environmental, an add-on to the GLOBALG.A.P. Farm Assurance (IFA) standard for fruit and vegetables sub-scope. It focusses on environment: soil; water; energy, materials, and waste; and biodiversity and ecosystems to improve input efficiencies, and to manage and mitigate environmental risks on farm and packhouse levels. The SIZA Environmental Standard is rooted in South African legislation.**
- **The GLOBALG.A.P. Harmonized Produce Safety Standard (HPSS) is about robust food safety. The HPSS control points support producers in identifying US FSMA requirements. It is available for US fruit and vegetable producers, and those selling into the US market. HPSS is recognized by GFSI.**

localg.a.p.[44] is the lowest/entry level of the GLOBALG.A.P. family of products. It is not covered under certification but follows an assessment approach. It has been designed with the key purpose of capacity building. It offers **P**rimary **F**arm **A**ssurance (PFA), which consists of different levels. Each of these levels is a subset of requirements of the GLOBALG.A.P. standards, therefore, producers can start at the lowest level and gradually progress to the next level to finally reach GLOBALG.A.P. IFA.

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[43] https://www.globalgap.org/uk_en/what-we-do/globalg.a.p.-certification/globalg.a.p.-add-on/
[44]
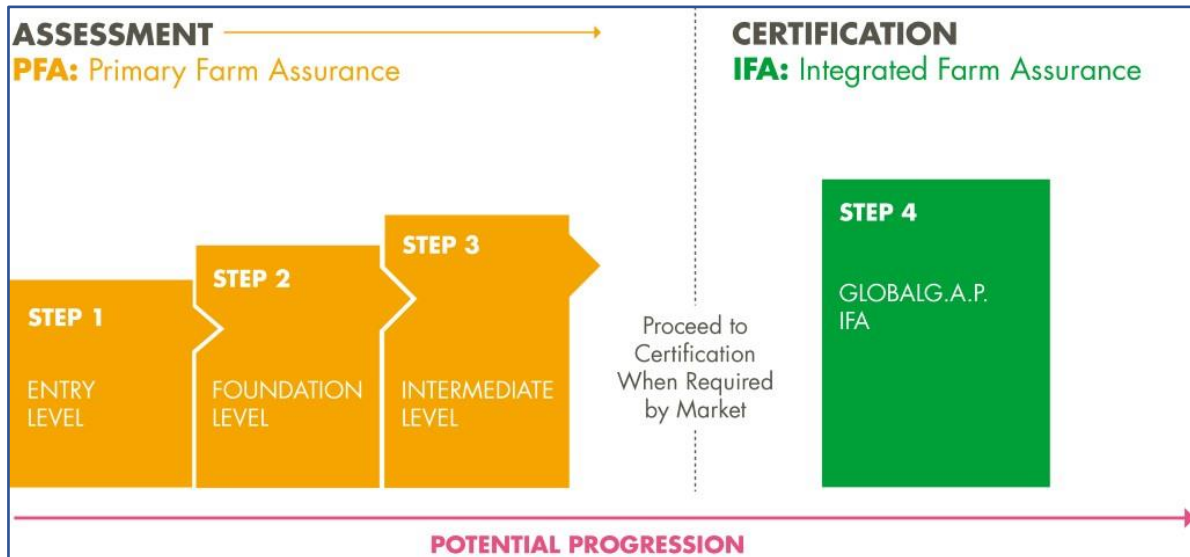
7.7.3. Core characteristics

GLOBALG.A.P. applies
- product certification based on Good Agricultural Management Practices and Chain of Custody requirements.
- third party certification
- a corporate label which may not be used on end consumer packaging.
- certification documents that consist of control points and the related compliance criteria, which are distinguished: Major Must, Minor Most (one per control point may be failed, and Recommendation
- additional standards which are customized: GLOBALG.A.P.+Add-on
- an entry level (localg.a.p.) for emerging markets targeting local farmers for regional or national supply (not with local or national local markets (not suitable for export markets).

GLOBALG.A.P. is on its way to increase digitalization of processes and documentation. From 2024 the first standard (IFA v6) requires mandatory use of Audit Online Hub. CBs will process the certification process fully digitalized through the Audit Hub.

7.7.4. Standard Operating Procedures

To get certified, producers must go five steps:
- familiarize themselves with the certification documents. All documents are available in the GLOBALG.A.P. document and can be downloaded without any restriction.
- register with the certification body selected (approved by GLOBALG.A.P.) and receive individualized GLOBALG.A.P. Number (GGN).
- carry out a self-assessment using the checklist, in case the producer identifies a non-compliance, it should be resolved to reach compliance.

- **First inspection audit is scheduled by the producer with the selected inspection body, the auditor performs the inspection.**
- **In case all standard requirements are complied with, the producer will receive a GLOBALG.A.P. certificate for the relevant version and scope. The certificate is valid for one year.**

7.7.5. GLOBALG.A.P. criteria specific for processing facilities

See The GLOBALG.A.P. Chain of Custody (CoC), which mainly covers requirements for segregation, handling, and tracing of products in the supply chain, hereby reducing fraud.

CoC briefly[45]:
- **Identifies products originating from GLOBALG.A.P. certified production processes and safeguards this status throughout the entire process, from farm to retailer.**
- **Lays out strict requirements for the handling of products originating from certified production processes, including the proper segregation of products that originate from GLOBALG.A.P. certified production processes from those which do not.**
- **Obligatory for companies that label products with a GLOBALG.A.P. identification number (e.g., GGN, CoC Number) or participate in the GGN label initiative.**
- **Enhances supply chain transparency and product integrity, providing added value and customer reassurance.**

7.7.6. Unique scheme elements (model-like)

See 7.8.3. Core characteristics

7.7.7. Monitoring Mechanism

It is a third-party certification conducted by GLOBALG.A.P. approved certification body. The certificate is valid for one year.

7.7.8. Implementation effort

Depends on the standards and the entry point. To lower the barrier, GLOABAL.G.A.P. introduced localg.a.p.

7.7.9. Drivers /success factors

- **Collaboration with retailers striving for improved safety**
- **Pressure of the purchasers**
- **Technical support, and comprehensive information in the national language**
- **Implementation of piloting programs**
- **Low entry through localg.a.p.**

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[45] https://www.globalgap.org/uk_en/for-producers/globalg.a.p./coc/

7.7.10. Barriers/ obstacles

- **Lack of internal food safety management capacity, no food safety awareness among the agri-food market participants.**
- **Trade is restricted to local/regional markets, therefore lacking knowledge regarding import processes to international markets and the applicable retail requirements.**
- **Lacking technical experts that could train and support producers.**

7.7.11. Key lessons

GLOBALG.A.P. has become the world's leading system because retailers want it (pressure from buyers). Producers who want to access international markets can't get around the scheme. GLOBAL.G.A.P. is the standard.

7.7.12. Feasibility / practicability

Barriers to overcome through localg.a.p., initiate piloting examples to set the stage

7.8. IFS Food

7.8.1. Objective

IFS Food Standard is a GFSI recognized standard for auditing food processors. It focuses on food safety and the quality of processes to safeguard product safety. It applies when products are "processed" and during primary packaging. Originally it was initiated by retail chain associations (Germany, France, Italy) to safeguard retailers' private brands product safety.

Today IFS food is one of the leading food safety standards.

The IFS logo is used in B2B communication and may not be used on product labels or packaging. It may not appear in any communication material targeting end consumers. It may be used in corporate communications only if the logo is related to quality assurance statements.

7.8.2. Scope (target group, value chain)

IFS food provides a standard for assessing product and process compliance in relation to food safety and quality. It applies where products are "processed" or where there is a risk of contamination of the product during initial packaging. Certification is open to food processors, brokers, logistics providers, manufacturers of household and hygiene products as well as wholesalers.

IFS Food certification puts the focus on main business areas:

- **Corporate responsibility:** Commitment of senior management to support food safety culture and quality assurance.
- **Systems for quality and food safety management** refers to legal and food safety requirements as well as customer specifications.
- **Resource management** concerning human resources, working conditions, hygiene, and sanitation to ensure product safety.
- **Processing processes:** production of safe quality products according to customer specifications.
- **Measurements, analyses, improvements:** internal audits, process validation, management of complaints and product recalls.
- **Food Defense** (protection of the food chain against terrorist influences) and quality issues.
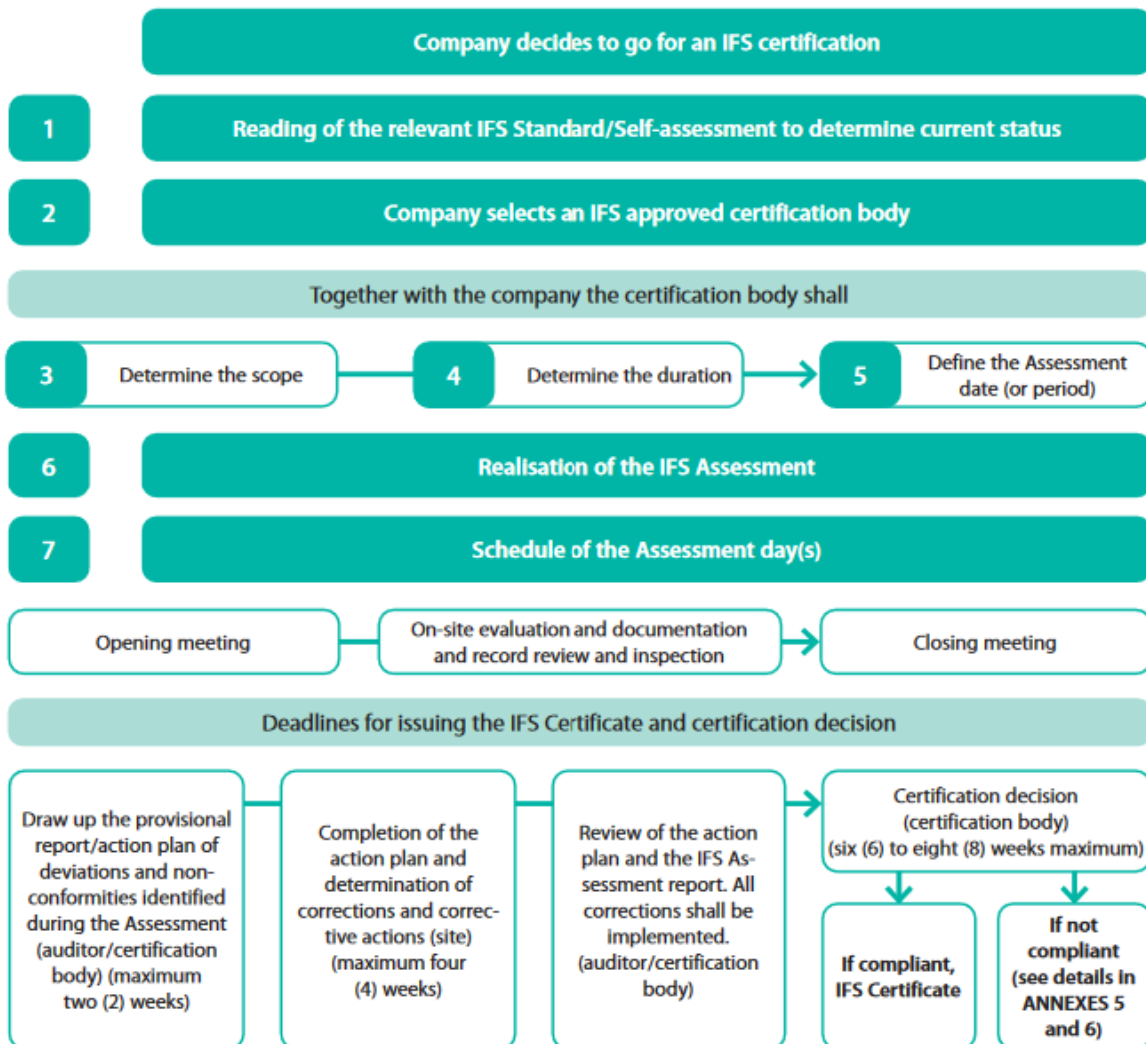
7.8.3. Core characteristics

- **IFS Food is a management standard.**
- **The logo may only be used in B2B communication and not for product labelling.**
- **IFS Food takes a risk-based approach and identifies company-specific risks and hazards.**
- **IFS food does not prescribe solutions but verifies that the customized solutions are suitable to meet the requirements (product safety).**
- **Companies can implement the methods to control risks that are best tailored to their specific conditions.**
- **The evaluation system identifies the potential for improvement to initiate a continuous improvement process.**
- **IFS food provides for Knock Out (KO) requirements; in case a KO is not met, no certificate can be issued.**
- **Focus on auditor qualification: IFS Food auditors must demonstrate qualification, undergo training, and pass an IFS exam as prerequisite for IFS approval.**

7.8.4. Standard Operating procedure

Annex 2 of IFS Food, Standard for assessing product and process compliance in relation to food safety and quality.[46]

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[46] https://www.ifs-certification.com/images/standards/ifs_food7/documents/standards/IFS_Food7_en.pdf

ANNEX 2: Certification process

Company decides to go for an IFS certification

1 Reading of the relevant IFS Standard/Self-assessment to determine current status

2 Company selects an IFS approved certification body

Together with the company the certification body shall

3 Determine the scope → **4** Determine the duration → **5** Define the Assessment date (or period)

6 Realisation of the IFS Assessment

7 Schedule of the Assessment day(s)

Opening meeting — On-site evaluation and documentation and record review and inspection → Closing meeting

Deadlines for issuing the IFS Certificate and certification decision

Draw up the provisional report/action plan of deviations and non-conformities identified during the Assessment (auditor/certification body) (maximum two (2) weeks)	Completion of the action plan and determination of corrections and corrective actions (site) (maximum four (4) weeks)	Review of the action plan and the IFS Assessment report. All corrections shall be implemented. (auditor/certification body)	Certification decision (certification body) (six (6) to eight (8) weeks maximum)

If compliant, IFS Certificate

If not compliant (see details in ANNEXES 5 and 6)

Preparation: The processing companies must get familiar with IFS standard. It may conduct as self-assessment (if wished, in cooperation with an external IFS food consultant) to check whether policies, processes, and measures taken are suitable to be in line with the standard. In case deviations are identified, steps are taken to bring policies, processes, and measures in line with the standards.

After that CB and responsible auditor (approved by IFS) are assigned.

On site audit: during the on-site audit, the nature and significance of each deviation from the requirements is assessed with different evaluation levels. Requirements, that are not met are assessed with a Knock-Out (KO) or Major. Ten requirements are defined as KO requirements in the IFS standard. A Major can be assigned for all requirements that are not defined as KO and results in a deduction of 15 percent from the total possible score. In case a KO requirement is not met, no certificate can be issued (back to the beginning). In case of other deviations an **action plan** is drafted.

Post audit assessment actions:
- **Implementation of correction measures according to action plan.**
- **Review of action plan and effectiveness of correction measures by the CB.**
- **Assessment report completed, verified by certification body.**
- **IFS Food certificate is issued.**

The IFS Food certificate remains valid for one year. In addition, IFS food applies **unannounced audits** (as a voluntary option); recommended to prepare for follow up audits. In case the certification scope shall be expanded (new products / processes), an **extension audit** may be carried out.

Audit duration (audit days) depend on the number of products and processes, as well of number of employees involved.
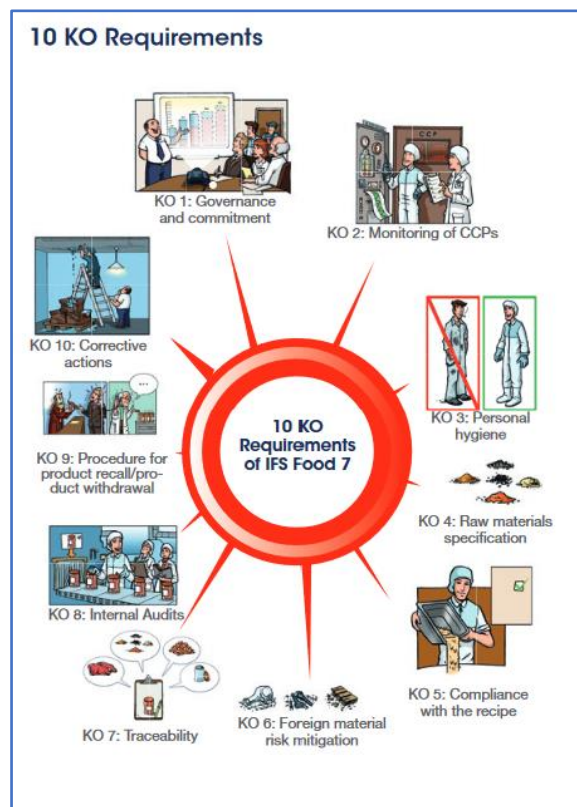
IFS Food KO requirements[47]

7.8.5. Unique scheme elements

See 7.9.3 Core characteristics.
IFS Food applies strict auditor qualification requirements (qualification requirements, regular training, exam).

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[47] IFS Food 7, Compact and understandable: Matthias Lehrke, Lehrke Verlag 2021

7.8.6. Monitoring mechanism

It is a third-party certification conducted by IFS Food approved certification body. IFS Food applies strict auditor qualification requirements (qualification requirements, regular training, exam).

IFS Food certificate is valid for one year; within this time the auditing process starts again to renew the certificate.

7.8.7. Implementation effort

Depends on the number of products and processes, locations and number of employees involved in the relevant processes. The introduction of the system and initial certification is demanding, thereafter reduced, provided that the maintenance of product safety becomes part of everyday life. Maintaining product safety becomes part of daily management practice.

7.8.8. Drivers / success factors

- **Pressure of the purchasers.**
- **Technical support, and comprehensive information in the national language.**
- **Implementation of piloting programs.**

7.8.9. Barriers / Obstacles

- **Lack of internal food safety management capacity, no food safety awareness among employees.**
- **Lacking technical experts that could train and support producers.**

7.8.10. Key lessons

Producers who want to access international markets can't get around the scheme.

7.8.11. Feasibility / practicability

See 7.9.9 Barriers and obstacles
However, IFS is a market driven scheme, therefore without alternative; those targeting IFS markets can't get around the scheme

7.9. We Care

7.9.1. Objective

We Care provides for a practice-oriented management system standard with a specific focus on the supply chain. *We Care* confirms that the company and its partners along the supply

chain, from cultivation in the countries of origin to the company site, are acting in a sustainable way and continuously and furthermore work on continuous improvement.

We Care and the German Act on Corporate Due Diligence Obligations in Supply Chains (see 4.3.) pursue comparable goals, but the *We Care* standard was developed independently.

The scheme provides a two-level certification:
- **Basis-Level (BL)**
- **Higher-Level (HL)**

The *We Care* Label may be used in corporate communications once the company is BL Level certified, HL-certified Agri-food companies may also use the *We Care* label on products as a product label.

7.9.2. Scope (target group, value chain)

We Care is targeting food companies. It focuses on the operation including the supply chain. Sustainable criteria are applied along the supply chain. Proof for implementing sustainability criteria along the supply chain is based on existing certifications or other reliable documentation of the supply chain actors.

The assessment/audit concerns the food company not the actors along the supply chain. The management approach is audited, not just individual products, product chains or isolated sustainability topics.

The *We Care* criteria cover 4 action areas, with 164 sustainability criteria in total:
- **Corporate Governance**
- **Supply Chain Management**
- **Employee responsibility**
- **Environmental management**

The action areas of environmental management and employee responsibility apply to the company's own site. Here, the focus is primarily on standard sustainability issues. For example, GMO-free product ranges, biodiversity and animal welfare, reduction of greenhouse gas emissions, measures to preserve biodiversity, or payment at least in line with the collectively agreed wage or minimum wage.

7.9.3. Core characteristics

We Care is a management standard. The seal confirms the systematic sustainable and partnership-based approach of companies along their supply chains.

It provides for management criteria to ensure targeted, systematic, and planned procedures to ensure sustainable performance of the company and continuous improvement.

New compared to other sustainability standards is the strong focus on the area of supply chain management. *We Care* specifies in detail how a company must take responsibility along the supply chain, formulate it, and document its implementation. This concerns rules for everyday procedures and, at the same time, the definition of immediate measures if social, environmental, or animal welfare standards are violated in the supply chain.

Example: It is mandatory to demonstrate that the company plans for long term partnership with its suppliers (long-term supply contracts, "fair" prices). In addition, companies must prove that they have committed their partners to compliance with recognized social standards and that checks are carried out to ensure that the requirement are met.

We Care integrates existing individual standards and recognizes environmental and social standards (e.g., EMAS) that are judged to be equivalent. The same applies to suppliers in the supply chain, who can use existing environmental or social certifications as proof. If recognized certifications are available, the effort required in the auditing time and effort can be reduced.

Each *We Care* action area comprises several implementation-oriented **sustainability subjects**. It is distinguished between **general and specific sustainability subjects**.

General subjects are always audited, and the corresponding criteria are considered in the audit with their full weight.

Specific subjects on a company level are distinguished to be:
- **relevant and of material importance: always audited and weighted.**
- **relevant but not of material importance: audited to a reduced extent and half weighted.**
- **not relevant: not audited not weighted.**

Criteria are assigned to each subject:
- **K.O. criteria: K.O. criteria at the basic level (K.O. BL) are minimum requirements for certification. If a K.O. criteria is non-compliant, no certification is possible, compliance must be evaluated and confirmed in a review-audit, conducted no later than three months after the audit to get certified.**
- **Major criteria: Major criteria are a serious deviation. Companies not meeting this criterion must take remedial measures before the certificate is issued and/or extended. The measures must be approved by the auditor to get certified. The implementation must be checked in the next audit.**
- **Criteria: to be implemented by the company if applicable.**

We Care Certification standard (March 2022) can we viewed here.

7.9.4. Standard Operating Procedures

Required audit components:
- Pre-assessment, preliminary document review approx. four weeks before audit date.

- On-site audit: for action field supply chain management, the auditor conducts e.g., interviews with purchasing management, and operational purchasing employees.
- Spot checks of suppliers.
- Annual surveillance audit e.g., in the supply chain action area.

Certification Procedure
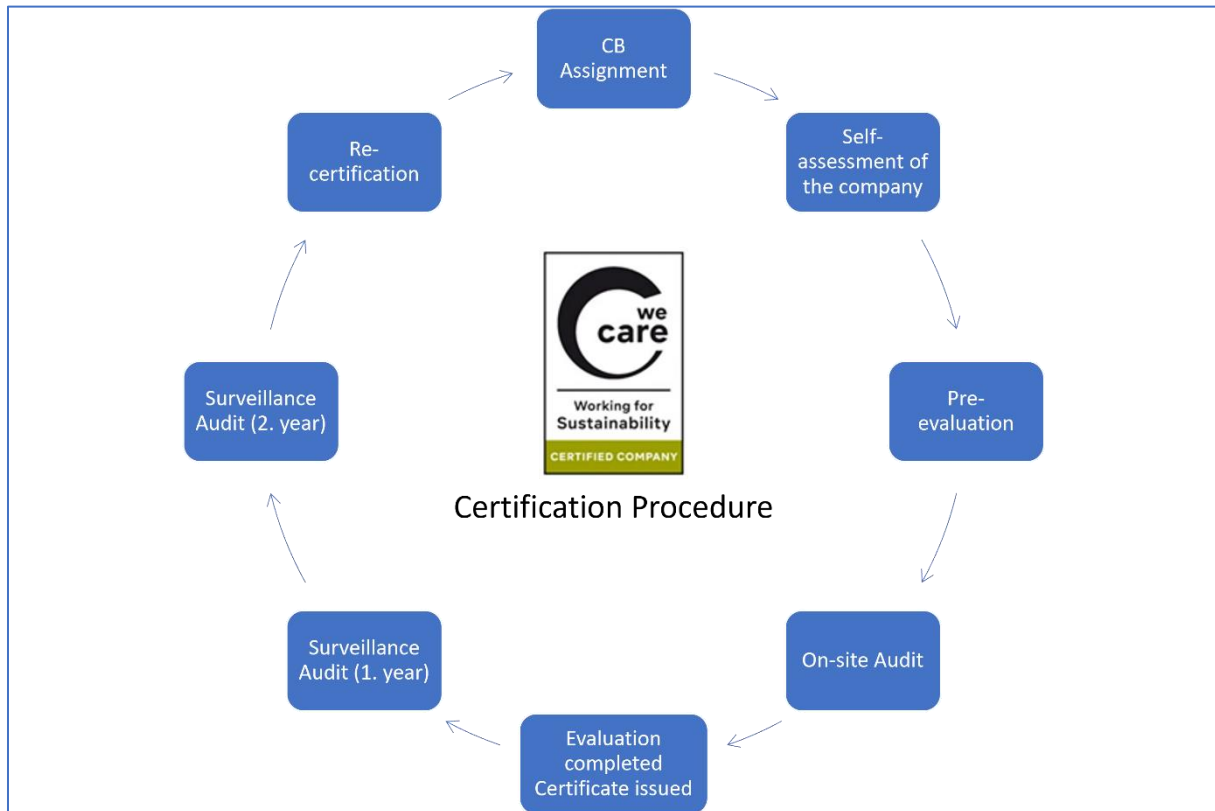
A complete certification audit is conducted for the initial certification and then at subsequent intervals of three years. Review audits are carried out to a reduced extent in between. In addition, there are re-view audits in case major or K.O. criteria are not met.

7.9.5.   *We Care* criteria specific for processing facilities

The *We Care* standard is fully applicable for food companies.

7.9.6.   Unique scheme elements (model-like)

See 7.10.3.

7.9.7.   Monitoring Mechanism

The company conducts a self-assessment to prepare the third-party assessment. Self-assessment documentation and findings are referred to determine length of audit visit.

Third-party audits: C**ertification audits** are conducted every three years; in between there are two **surveillance audits** to monitor the management system still to be in place.

In addition, producers **annually report** their indicator data.

In case of supply chain actors, surveillance audits are conducted depending on risk-status. Certificate is issued for three years.

7.9.8. Implementation effort

High at the beginning depending on experience but effort is decreasing in the long-term. The effort is expected to be less for companies that are experienced with management audits. In case companies and their suppliers can rely on other certifications the effort is reduced.

7.9.9. Drivers /success factors.

The *We Care* Standard was initiated and co-developed by a large food trading company that trades exclusively with organic products. The aim was to be able to present its comprehensive sustainability efforts in a credible and comprehensible way, less standards but an all-inclusive system.
At the same time, the aim was to develop a management standard that is transferable to others and that is comprehensible and verifiable.
During the pilot phase, organic processors, who supply their goods to the retailer, joined in.

7.9.10. Barriers/ obstacles

The effort in general; lack of knowledge of the supply chain. This especially applies for food processors who purchase their raw material on the spot market at favorable prices from several different suppliers.

7.9.11. Key lessons

The *We Care* standard is based on a private initiative and had been developed by market actors who are considered pioneering thinkers.

7.9.12. Feasibility / practicability

A food chain that is vertically integrated is suitable.