RESOLUTION OIV-VITI 640-2020

MULTI-CRITERIA ASSESSMENT OF ENVIRONMENTAL IMPACT IN VITIVINICULTURAL SECTOR- Life cycle assessment (LCA): GENERAL PRINCIPLES FOR CONDUCTION AND COMMUNICATION OF RESULTS

THE GENERAL ASSEMBLY,

IN VIEW OF THE ARTICLE 2, paragraph 2 b) i of the Agreement of 3rd April 2001, establishing the International Organisation of Vine and Wine,

CONSIDERING the resolutions:

CST 1/2004 providing the definition, objectives and implementation steps of sustainable vitiviniculture,

And OIV-CST 518-2016 defining the five general principles of sustainable vitiviniculture while considering equally environmental, social, economic and cultural aspects,

CONSIDERING the publications of international organizations such as ISO[1] (International Organisation for Standardisation) and the JRC[2] (Joint Research Center); the works and achievements of the European Platform on life Cycle Assessment, as well as the work carried out in the wine sector within the framework of the Product Environmental Footprint Category Rules (PEFCR) wine project[3],

CONSIDERING the scientific studies and proposals that highlight the multifactorial environmental footprint of vitiviniculture and the need to respond to these issues,

CONSIDERING the need to evaluate and assess the progress made by wine sector stakeholders in the management of environmental impact,

CONSIDERING the need to inform producers on the environmental impacts inherent to their activities and allow them to implement eco-design actions,

CONSIDERING the progress achieved by the OIV in establishing methodologies for accounting of greenhouse gases in vitivinicultural sector through the resolutions OIV-CST 431-2011 "General principles of the OIV greenhouse gas accounting protocol for the vine and wine sector" and OIV-CST 503AB-2015 "Greenhouse gases accounting in the vine and wine sector – recognised gases and inventory of emissions and sequestrations"),

CONSIDERING the need to formulate public policy strategies with quantitative and qualitative objectives,

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020

CONSIDERING the need to provide consumers with transparent and understandable information on the environmental quality of vitivinicultural products on the basis of scientific information,

To achieve this goal,

DECIDES:

TO RECOGNISE the importance of assessing the overall environmental footprint of vitivinicultural production in order to develop appropriate action plans.

TO RECOMMEND to the Member States to promote in the vitivinicultural sector the use of the Life Cycle Assessment methodology (LCA) as the most successful tool in the global and multi-criteria assessment of environmental impacts of product systems.

The LCA, consists of an evaluation of potential environmental impacts of a good/service/system through its life cycle. It is based on the inventory of inflows and outflows during the life cycle, followed by the characterization of their environmental impact

A "flow" is considered as any movement of matter and energy that goes in or out of the production system. Among the inflows we can list for a vitivinicultural product: water, electric energy, fossil fuels, raw materials, input for vineyards and wineries (fertilisers, phytosanitary products, oenological products, supplementary material, etc.). Examples of outflows include waste, gaseous emissions, effluents, by-products, dissipated energy, direct releases[4] from the field, etc.

LCA in the context **of a vitivinicultural product** is characterized by:

- A "life cycle" approach

All the stages of the life cycle of the product are taken into account in the inventory of the flows: energy, water, carbon, all the necessary inputs (raw materials, inputs for vineyard and winery), as well as the waste and emissions generated during raw material extraction for inputs, fuels and equipment manufacturing, transportation, production, distribution, consumption and end of the product's useful life.

Through such a systematic overview and perspective, the shifting of a potential environmental burden between life cycle stages or individual processes can be identified and possibly reduced or avoided.

- A multi-criteria approach

LCA is based on several criteria for analyzing inflows and outflows and which are

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020

called impact categories.

Material and energy flows are quantified, aggregated and are then multiplied by characterization factors specific to each substance and each category of impact in order to obtain the quantification of potential impacts. The complexity of the phenomena involved and their interactions is a source of uncertainty about the real value of the impacts, which is the reason why they are called "potential".

In particular, the quantification of direct releases from the vineyard requires the use of specific calculation models.

- A Relative approach structured around a functional unit

The LCA evaluates potential environmental impact of a product. LCA is structured around a functional unit that translates the main functions of the studied good/service/system. This functional unit defines what is being studied. All subsequent analyses are relative to that functional unit. In the vitivinicultural sector the functional unit frequently used is the standard bottle of wine (0.75L), but depending on the objectives of the study, it can also be the hectare of surface area planted with vines during a specified period, or the kilogram of grape, etc..

- A Multi-step approach

LCA is an iterative method. The individual phases of an LCA use results of the other phases. The iterative approach within and between the phases contributes to the comprehensiveness and consistency of the study and the reported results.

- A Process standardized by international standards

The ISO 14040: 2006 “Environmental Management - Life Cycle Assessment - Principles and Framework” describes the principles and framework of Life Cycle Assessment (LCA), while ISO 14044:2006 “Environmental management — Life cycle assessment — Requirements and guidelines” specifies requirements and provides guidelines for life cycle assessment (LCA), both including the following aspects:

- the goal and scope definition of the LCA,
- the life cycle inventory analysis (LCI) phase,
- the life cycle impact assessment (LCIA) phase,

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020

- the life cycle impact interpretation phase,
- reporting and critical review of the LCA,
- limitations of the LCA,
- relationship between the LCA phases, and
- conditions for use of value choices and optional elements.

TO CONSIDER in an LCA approach the following range of potential environmental impacts[5] as being most relevant[6]:

- Climate change
- Ozone depletion
- Respiratory inorganics
- Human toxicity
- Ionizing radiation
- Ecotoxicity
- Formation of tropospheric Ozone
- Acidification (land and water)
- Terrestrial eutrophication
- Aquatic eutrophication
- Land use
- Resource consumption
- Water consumption and pollution
- Biodiversity loss[7]

TO RECOMMEND, in order to allow accurate evaluation based on scientifically validated results, to promote:

- research on the methodological aspects of assessing environmental footprints for each type of impact categories

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020

- the accumulation of knowledge concerning the values observed for these footprints for the representative products of the sector
- development of tools that allow application of the methodology in a practical way in the vitivinicultural sector (development and dissemination of databases, calculation tools, etc.).
- results achieved by current and future scientific studies.

TO RECOMMEND to apply the following principles while conducting a Lyfe Cycle Assessment of a vitivinicultural product:

- The system scope and boundaries should be as vast and inclusive of the value chain as possible as well as technically feasible
- Grape and wine product categories should be treated, in accordance with the objectives of the study and the defined functional unit
- Functional units need to be defined in accordance with the particularities of the product studied.

TO RECOMMEND to follow the rules specified by the ISO 14026 and ISO 14040 for communication of results of an LCA

---

[1] ISO 14040:2006 Environmental management – lyfe cycle analysis – principles and framework
ISO 14044:2006 Environmental management – lyfe cycle analysis - requirements and guidelines (and its amendment ISO 14044:2006/AMD:2017)

[2] ILCD Handbook

[3] PEFCR Wine Project. Rules for evaluating the environmental footprint of a wine. Based on international methodology (ILCD Handbook)

[4] Direct Release: outflow of pollutants emitted directly from the studied system. For a cultivated field like a vineyard these are for example nitrogen compounds (N_2O, NO_3-, NOx and NH_3), heavy metals (Cu, Zn, Hg, Cr, ...), Phosphorus, pesticide active ingredients and emissions from fuel combustion occurring in the field, etc.

[5] ILCD Handbook. Analysis of existing Environmental Impact Assessment

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020

methodologies for use in Life Cycle Assessment. Joint Research Center (JRC).

[6] Product Environmental Footprint Category Rules (PEFCR) for still and sparkling wine (table 4, date of publication 4/2018) identified the following impact categories as being most relevant based on normalised and weighted results, excluding toxicity impact categories:

for wine production: climate change; resource use - fossils; ressource use – mineral and metals; particulate matter; land use; acidification terrestrial and freshwater

for sparkling wine: climate change; ressource use – fossil; water use; ressource use – mineral and metals; particulate matter; land use

[7] Methodologies available for quantification of impact on this parameter are not sufficient yet.

Certified in conformity Paris videoconference, 26th November 2020
The Director General of the OIV
Secretary of the General Assembly
Pau ROCA

© OIV 2020