

AMORIM CORK

# CARBON FOOTPRINT

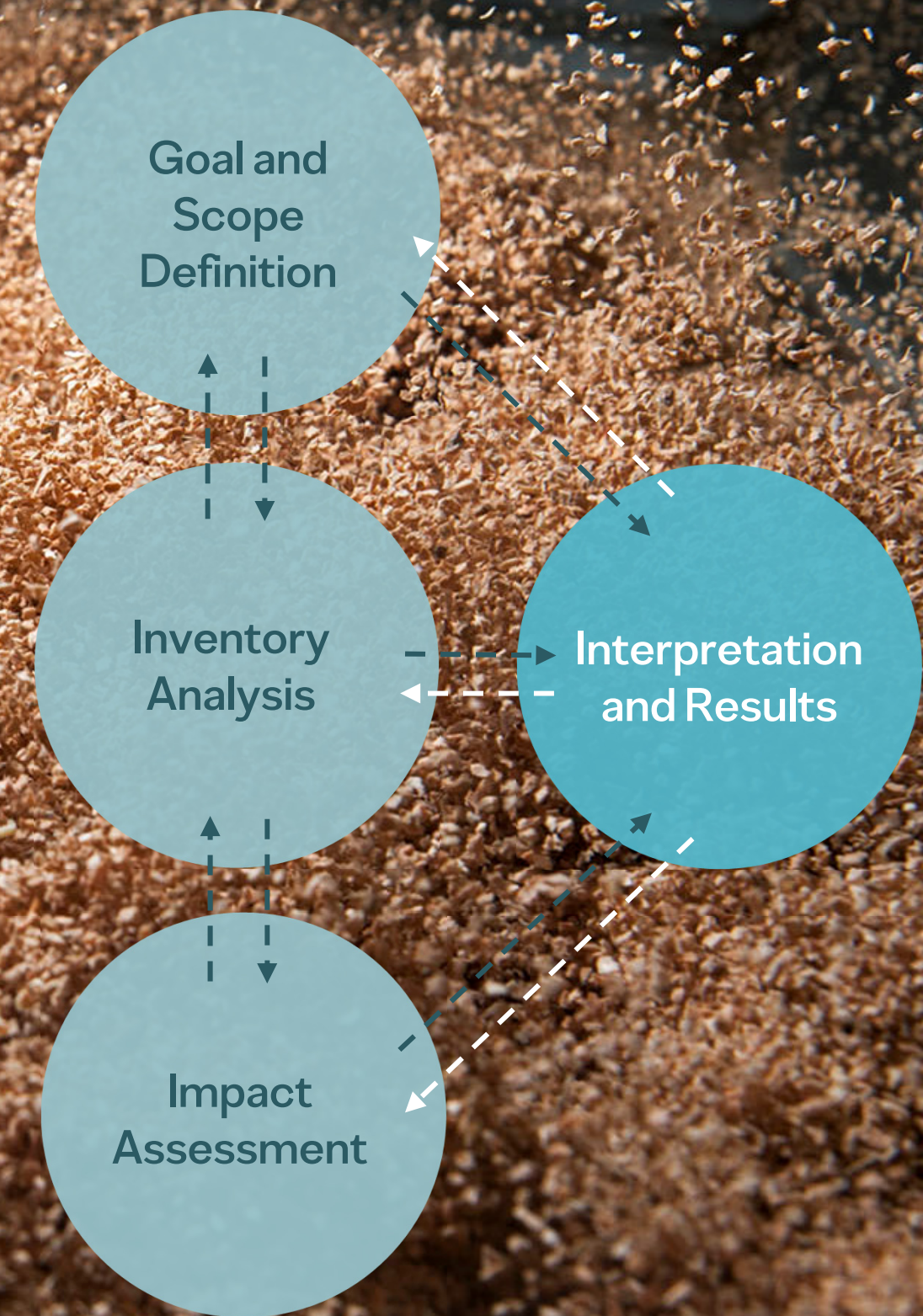
Acquamark®

Executive Summary

02-13-2025, v1



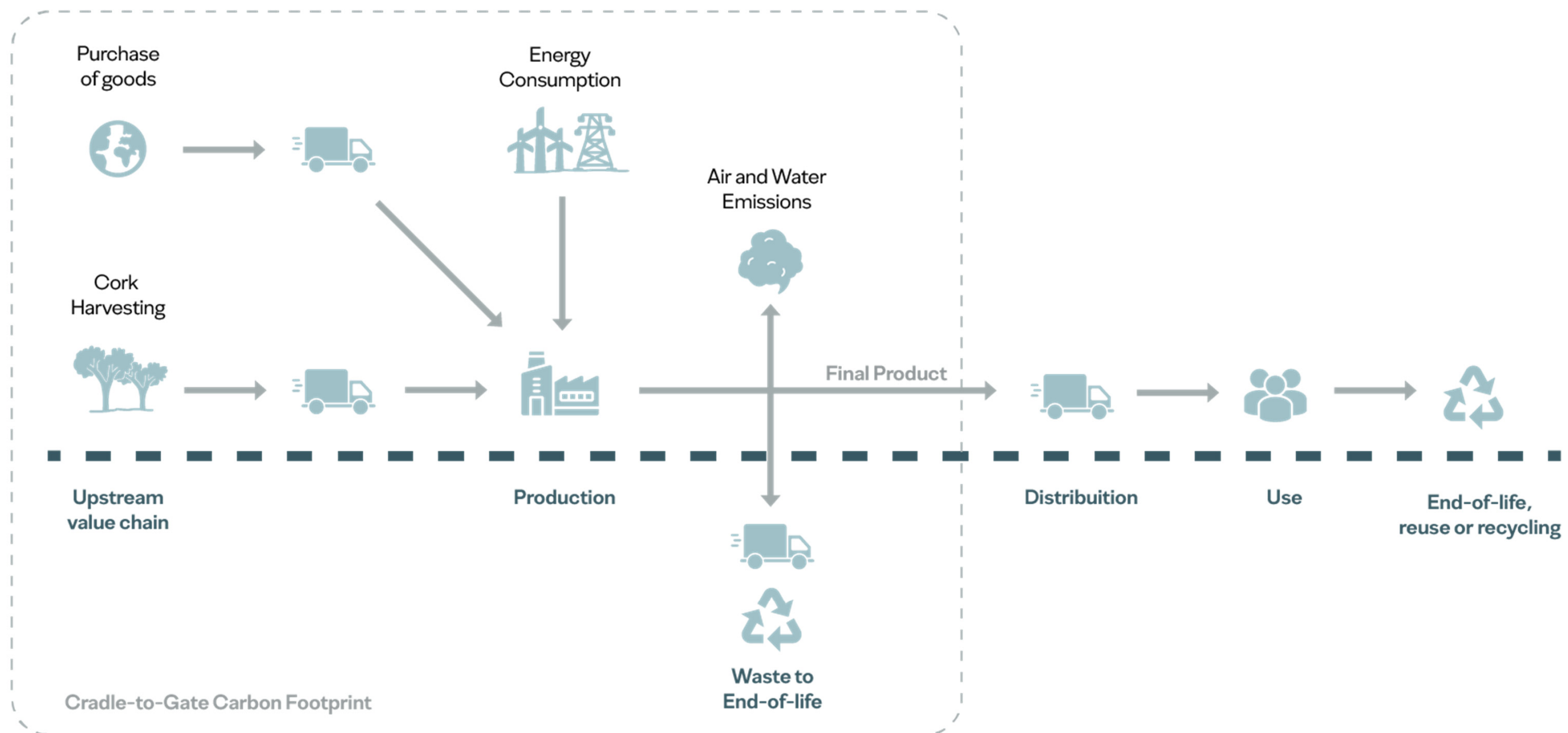
# 1. Study



**1.**  
**Study**

**2.**  
**Carbon  
Footprint**

**3.**  
**Conclusions**



$$\begin{array}{c}
 \text{Cork Carbon Content} \\
 \text{+} \\
 \text{Cradle to Gate GHG Emissions} \\
 \text{+} \\
 \text{Soil Carbon Retention} \\
 \text{=} \\
 \text{CARBON FOOTPRINT}
 \end{array}$$

# 1. Study



# Context



**Corticeira Amorim has been a market leader in the cork industry since its founding in 1870.** The company, a global leader in the production and supply of cork stoppers, has its own distribution network, giving it a unique competitive advantage in offering the perfect stopper for any segment and type of wine and spirits, everywhere in the world.

**Amorim Cork is the world's leading producer, supplier, and distributor of cork stoppers.** The most advanced production techniques, unmatched quality control, and extensive know-how ensure unrivalled security in the supply of cutting-edge products.

Cork is an ecological, sustainable and **100 % natural raw material**.

The main goal of this study is to quantify the greenhouse gas emissions generated by the **Acquamark®** stopper produced by Amorim Cork, using a life cycle approach.

The **Acquamark®** stopper is a natural stopper coated with a water-based solution with superior sealing and wine preservation capacity. Its coating is produced through a high-tech structural process, based on an aqueous solution that fixes the cork extracts to the surface of the stopper, enhancing the product's sealing potential.

<i>Size</i> (mm x mm)	<i>Weight</i> (g)	<i>Composition</i>
45 x 24	4.03	100% cork

# Methodology

The carbon footprint outlined in this report has been assessed based on the ISO 14067:2018 standard. This assessment employs a life cycle analysis methodology to measure the potential environmental effects of a product throughout its several stages. The specific strategy used is specified in the ISO 14040/44:2006 standard.

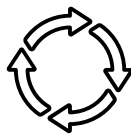
This study was verified by an external, accredited entity which issued a verification opinion based on the emissions, removals and storage of greenhouse gases presented in the GHG statement “Acquamark® Carbon Footprint, 02-13-2025, v1” and its summary “Carbon Footprint - Acquamark® Executive Summary 02-13-2025, v1”. The summary is available at: <https://www.amorimcork.com/en/sustainability/studies-and-certificates/>

Using standard 14067:2018 as a basis, and in order to standardize the calculation of the carbon footprint of its products, Amorim Cork has drawn up an internal procedure for this process PG.GR.DSI.012.0 - Carbon footprint of products.



## Approach

*Cradle-to-gate* (from the extraction of raw materials to the finished product when it leaves the factory).



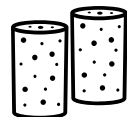
## Life Cycle Stages Assessed

Cork production and harvesting, cork boiling, punching, steam treatment, mechanical finishing, imports, VSR, electronic sorting, washing, Acquamark, branding, surface treatment and packaging.



## Method

The impact of CO2 emissions over a 100-year period was calculated using the 'IPCC 2021 GWP100 (v.1.02)' method from the SimaPro v9.5 program. The GHG calculation relies on conversion factors sourced from the Ecoinvent v3.9 database, which is derived from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) published in 2023.



## Functional Unit

1000 stoppers

# Data Collection and Quality

## Annual Production Data



Raw material consumption  
Secondary material consumption  
(chemicals, packaging materials)  
Water and energy consumption  
Annual cork stopper production



## Management control

## Secondary Data



Transport related factors  
Emission factors linked to steam production  
Forestry Management



## Ecoinvent v3.9 data base

\*It was assumed that all the cork raw materials entering the system possess a similar amount of stored carbon. The estimate of the enclosed CO<sub>2</sub> is determined by the atomic weights of carbon (12) and carbon dioxide (44). The calculation considers the carbon fraction of 55% (dry basis) and the moisture fraction of 6% present in cork (Dias et al., 2014b).

Emissions from biomass energy production are considered neutral because it is assumed that the CO<sub>2</sub> released during the process was previously captured and therefore results in a neutral net balance of CO<sub>2</sub> emissions.

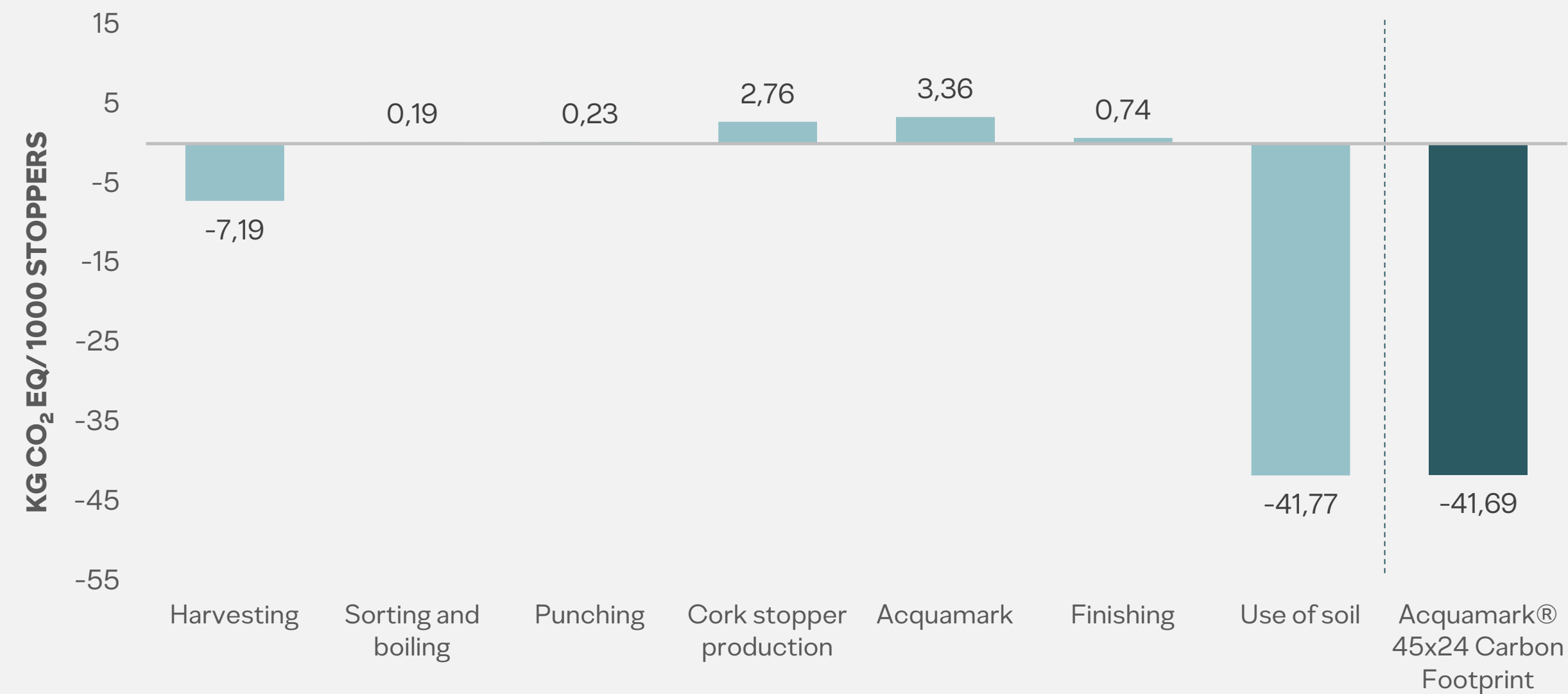
The land use estimate considered the cork yield potential of cork oak trees (Pereira and Tomé, 2014) and the typical extent of soil root occupation (which absorbs CO<sub>2</sub> over its lifespan) (Woodland Trust & IFN6). The carbon sequestration value resulting from the land usage of cork oaks was determined by considering the soil occupation required to manufacture 1000 stoppers (as indicated in the UF study) and the soil carbon storage per cork oak (as specified in Table 6-14 of the NIR, 2023).

# 2.

## Carbon Footprint



# Results



Aquamark® carbon footprint, according to standard 14067:2018: **-41.69 kg CO<sub>2</sub>eq/1000 stoppers.**

# Results



# 3.

## Conclusions



# Conclusions



The results, based on 2023 data, show that, according to a cradle-to-gate approach, the greatest impacts are associated with the **Acquamark** stage, which includes the processes of **coating** and **electronic selection of stoppers**. Emissions from this stage account for **46%** of production emissions.

Production emissions total an impact of **7.27kg CO<sub>2</sub>eq** per 1000 stoppers. Considering the carbon contained in the cork (**7.19kg CO<sub>2</sub>eq** per 1000 stoppers) and land use (**41.77 kg CO<sub>2</sub>eq** per 1000 stoppers), this results in a **product carbon footprint of -41.69 kg CO<sub>2</sub>eq** per 1000 stoppers, in a cradle-to-gate approach.



# Glossary

**GEE** Greenhouse Gases

**CO<sub>2</sub>eq** Carbon dioxide equivalents

**TCA** 2,4,6-Trichloroanisole

**IFN6** Sixth National Forest Inventory  
(Institute for Nature  
Conservation and Forests)

**INERPA** Inventário Nacional de Emissões  
por Fontes e Remoção por  
Sumidouros de Poluentes  
Atmosféricos (Agência  
Portuguesa do Ambiente)

**UF** Functional Unit

**UI** Industrial Unit

# Technical Data Sheet

**Title:**

“Carbon Footprint– Acquamark®: Executive Summary, 02-13-2025, v1”

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## ABOUT AMORIM CORK

Amorim Cork is the world's largest producer and supplier of cork stoppers, trusted by leading wine producers in an industry that is continually expanding and reinventing itself.

With subsidiaries in all the main wine-producing countries, from Europe to South Africa, Australia and South America, Amorim Cork sells to more than 22,000 customers, including some of the world's most renowned wine and Champagne brands.

The company offers a portfolio of high-quality solutions with impeccable sustainable credentials, from natural cork stoppers to technical stoppers. With over 150 years of history, the company demonstrates a comprehensive commitment to innovation. A strong investment in R&D has launched some of the most advanced sorting technologies on the market for still and sparkling wine cork stoppers, such as NDtech<sup>®</sup>, Naturity<sup>®</sup> or Xpür<sup>®</sup>.

Innovative production technologies, unbeatable know-how and excellent quality control are some of the reasons why the world's leading wine and sparkling wine producers trust Amorim Cork to protect their best wines.

**[www.amorim.com](http://www.amorim.com)**

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