

Natural Cork Stopper carbon footprint

Amorim & Irmãos, SA

December 2019

Disclaimer

EY carbon footprint analysis follows a life-cycle approach based on ISO Standard 14040 and on Amorim & Irmãos, SA data and business assumptions. These results are not third-party verified.

Agenda

1. About the study

2. Carbon footprint

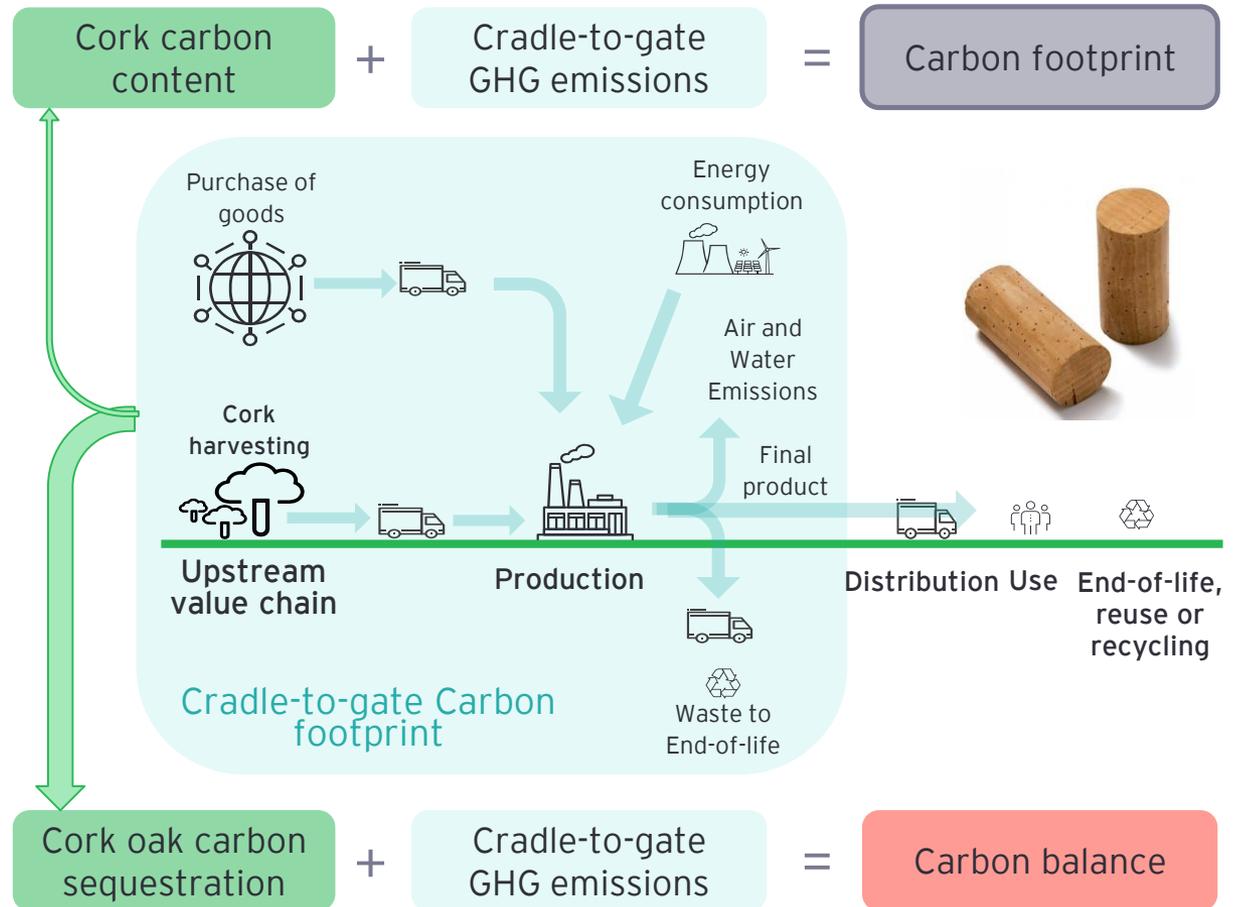
Cradle-to-gate

+

Expedition to UK

3. Carbon balance

Scenario analysis with carbon sequestration at the forest stage



1

About the study

About the study

- ▶ The **main purpose** is to quantify the potential environmental impacts of the Natural cork stopper produced by Amorim & Irmãos, SA (average dimensions 45mm x 24 mm; average weight: 3,8g; average composition: 99,7% cork, 0,3% customization products) produced by Amorim Cork, through a life cycle approach.
- ▶ **Guidelines** : The study was based on ISO 14040/44 series of standards, complemented with the guidelines from the International Reference Life Cycle Data System (ILCD) Handbook - General guide for Life Cycle Assessment - Detailed guidance
- ▶ **Approach**: *cradle-to-gate* (from raw material extraction to the finished product at the factory gate)
- ▶ **Functional unit** : 1000 stoppers
- ▶ **Modelling software and database** : SimaPro 9 with ecoinvent 3.5 database
- ▶ **Method** : Midpoint characterization factors recommended by the International Reference Life Cycle Data System (ILCD).
- ▶ **Data collection procedure**

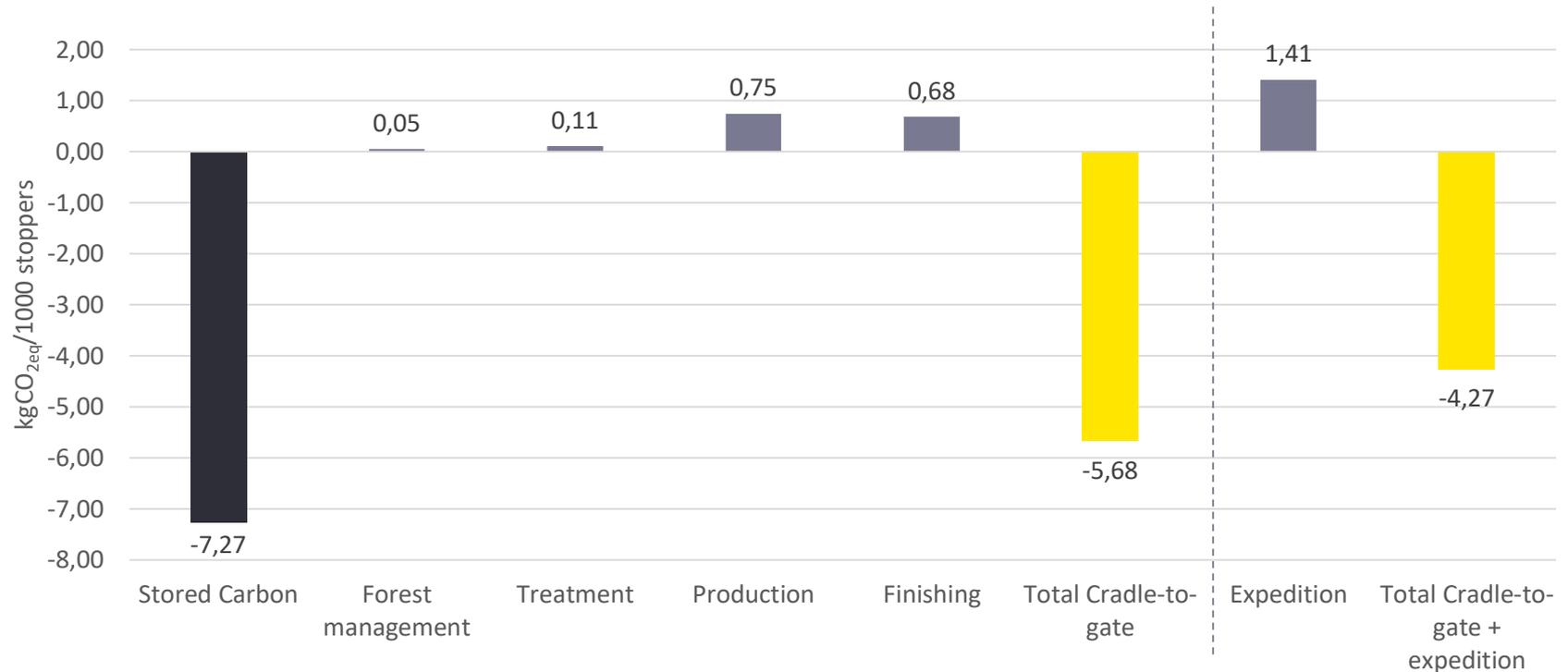


- ▶ Carbon stored in the final product is included
- ▶ Additional scenario analysis of the potential carbon sequestration at the forest stage

2

Carbon footprint

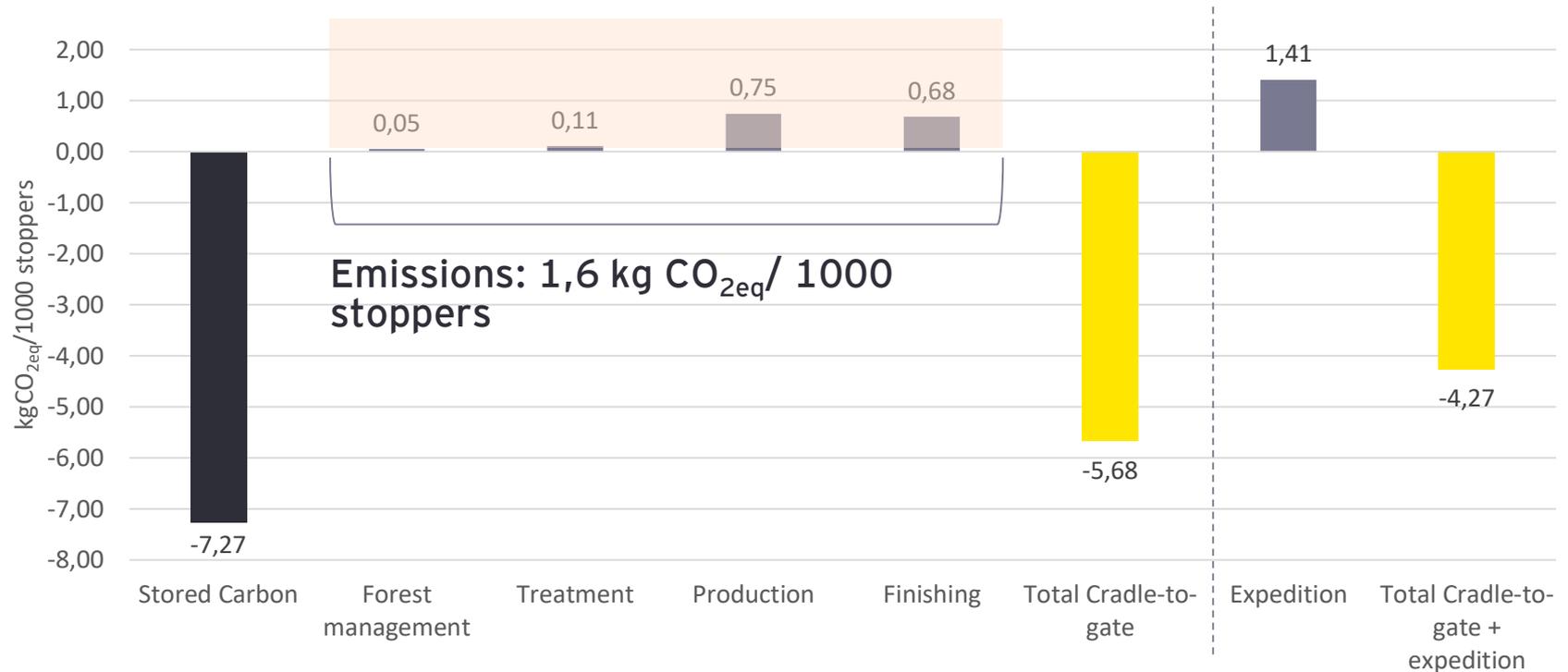
Carbon footprint: results



Natural cork stopper carbon footprint:

- ▶ Cradle to gate: **-5,7** kg CO_{2eq}/1000 stoppers
- ▶ Cradle to gate with expedition to UK: **-4,3** kg CO_{2eq}/1000 stoppers

Carbon footprint: results



47% emissions associated with processes occurring in the natural cork stopper production stage

- ▶ Higher energy consumption (indirect impacts of electricity production)
- ▶ Raw materials transport



3

Carbon balance

Carbon balance: results

Scenario analysis with carbon sequestration in the cork oak montado

For the average stopper when considering carbon sequestration in the cork oak* montado:

There is a forest storage up to:

- 311

kg CO₂/1000 stoppers

Therefore, the carbon balance reaches up to

-309

kg CO₂/1000 stoppers

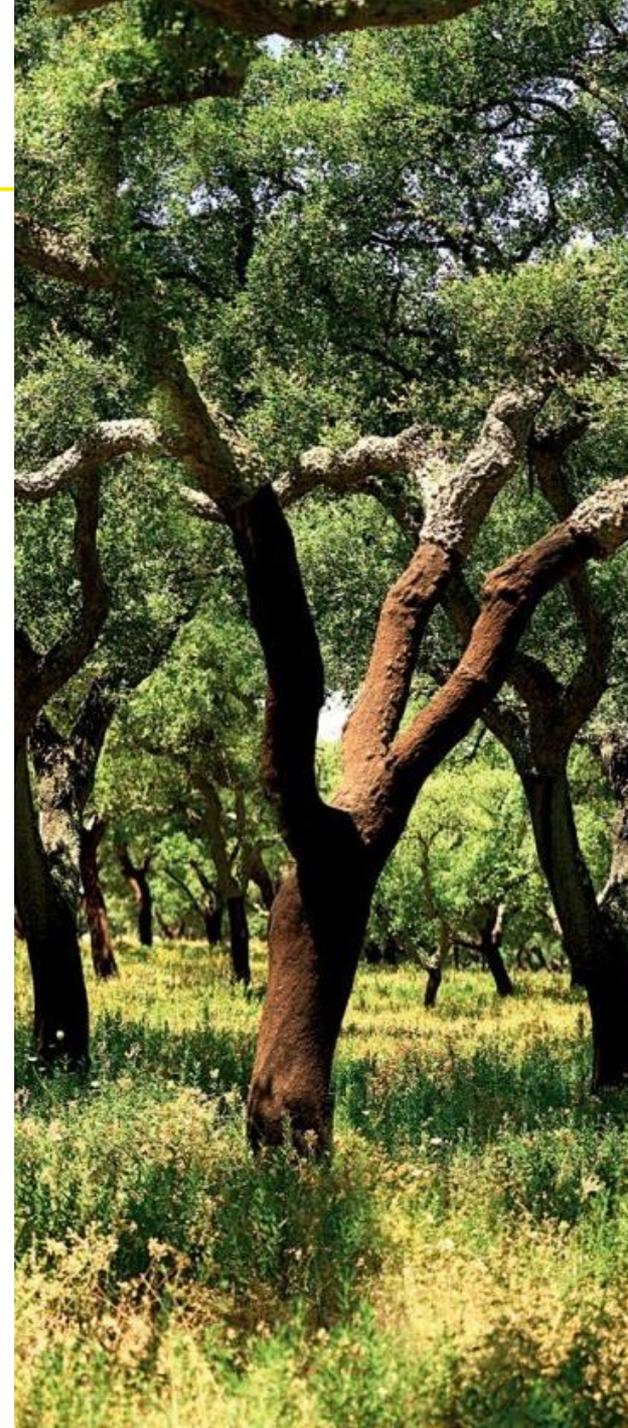


scenario analysis based on well-managed cork oak montado

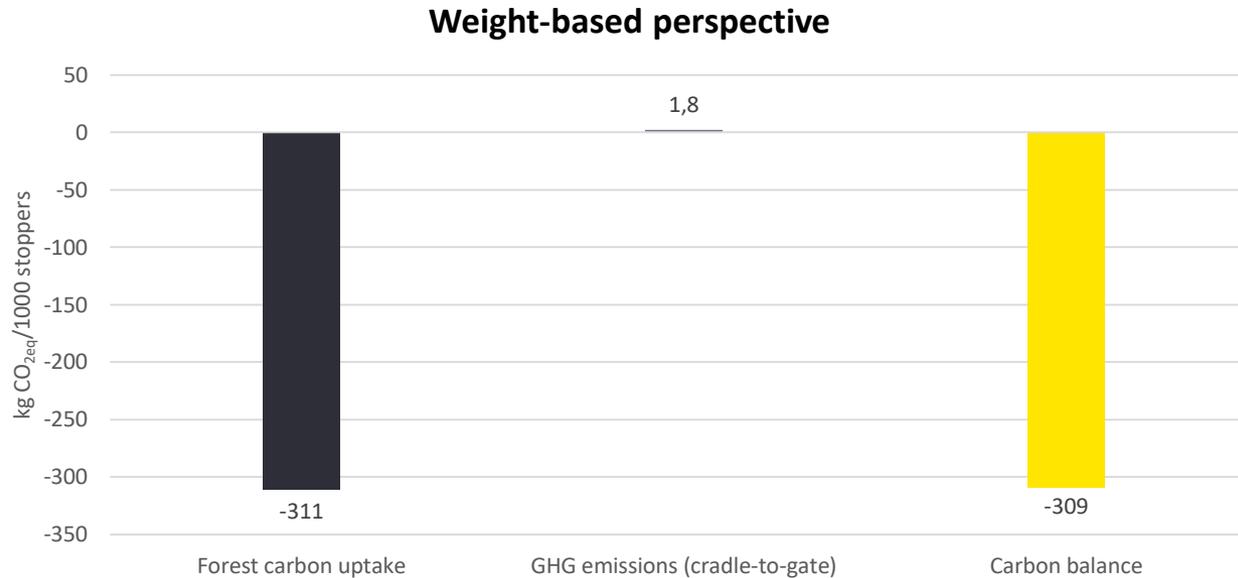
- 73 t CO₂/t cork

Maximum ecosystem CO₂ uptake registered (14,7 tCO₂/ha) (Costa-e-Silva et al., 2015).

The PEFCR for the wine sector states that carbon stored at cork oak trees shall be included in the analysis as additional environmental information, if carbon storage goes beyond 100 years, which is the case for cork.



Carbon balance: maximum weight stopper



Carbon balance reaches up to:

-309 kg CO_{2eq}/1000 stoppers

considering maximum ecosystem CO₂ uptake registered in a well managed cork oak montado **-73 t CO₂/t cork**

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