

Twin Top Evo stopper carbon footprint

Amorim Cork

July 2020

Disclaimer

EY carbon footprint analysis follows a life-cycle approach based on ISO Standard 14040 and is based on Amorim Cork data and business assumptions. The results presented are not third-party verified.

Agenda

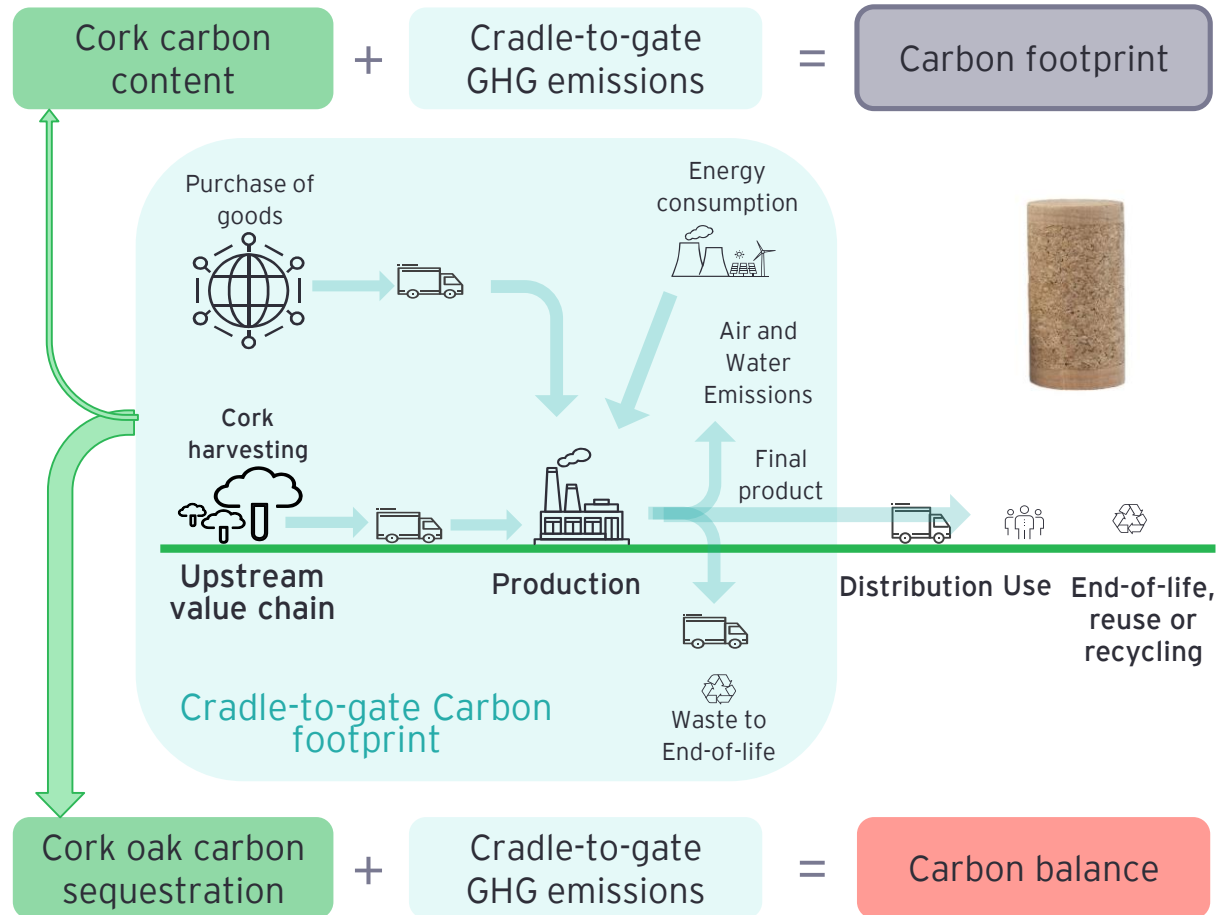
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2. Carbon footprint

Cradle-to-gate
+
Expedition to UK

3. Carbon balance

Scenario analysis with carbon sequestration at the forest stage



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About the study

About the study

- ▶ The **main purpose** is to quantify the potential environmental impacts of Twin Top Evo stopper (average dimensions 44mm x 24 mm; average weight: 5,2g; average composition: 77,4% cork, 22,6% 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**

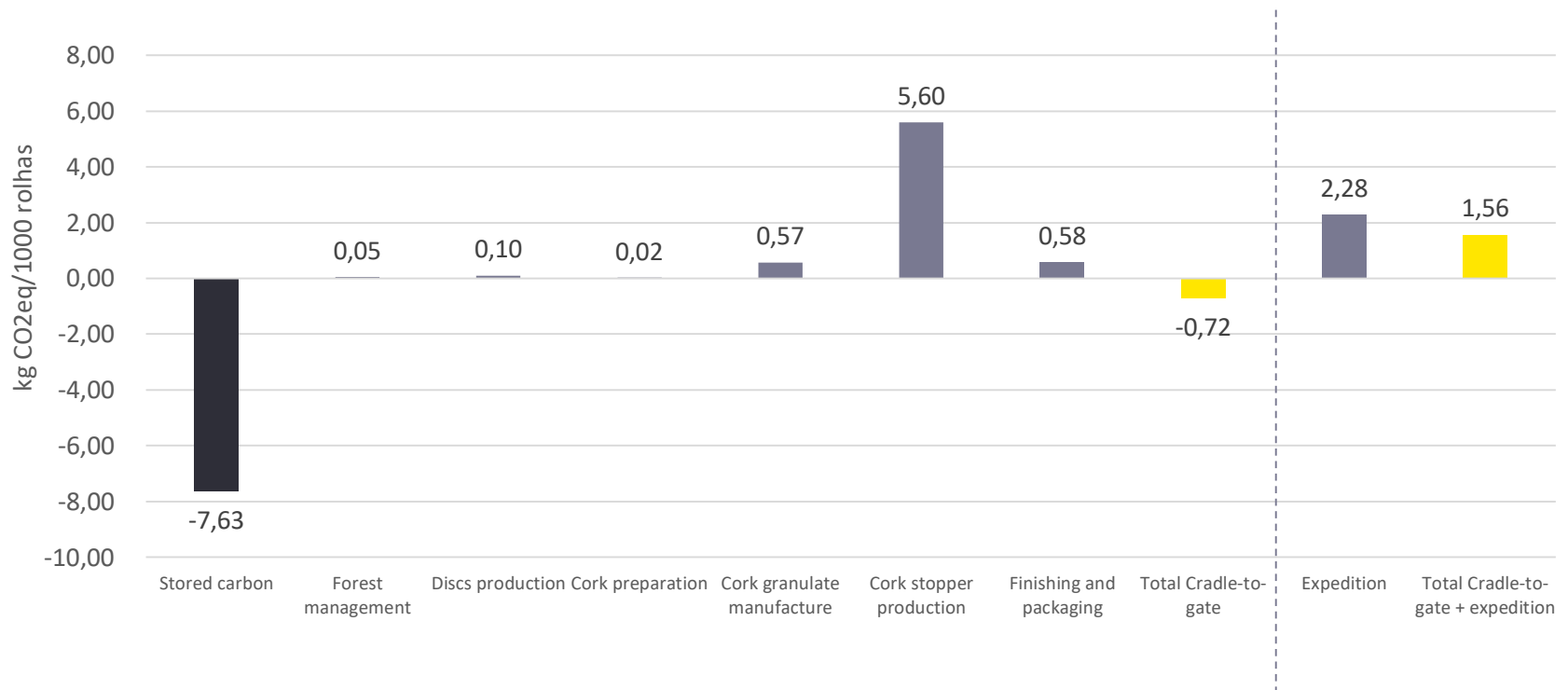


- ▶ Carbon stored in the final product is included
- ▶ Additional scenario analysis of the potential carbon sequestration at the forest stage

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Carbon footprint

Carbon footprint: results



Twin Top Evo carbon footprint:

- ▶ Cradle to gate: **-0,7** kg CO₂eq /1000 stoppers
- ▶ Cradle to gate with expedition to UK: **1,6** kg CO₂eq /1000 stoppers

Carbon footprint: results



81% emissions associated with processes occurring in the stopper production stage

- ▶ Most upstream value chain activities carbon impacts (e.g. production and purchase of chemical products are reflected in this stage)
- ▶ Higher energy consumption (indirect impacts of electricity production)



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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:

- 304

kg CO₂/1000 stoppers

Therefore, the carbon balance reaches up to

-297

kg CO₂/1000 stoppers



scenario analysis based on well-managed cork oak montado

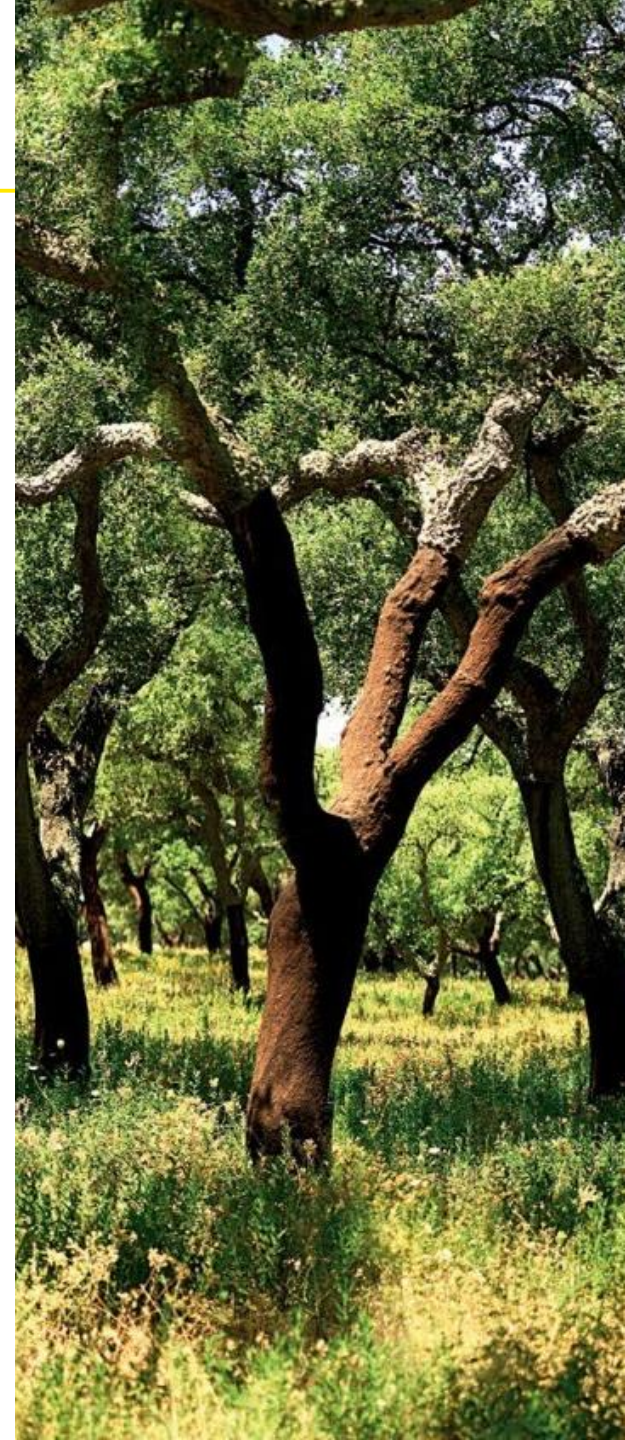
- 73 t CO₂/t cork

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

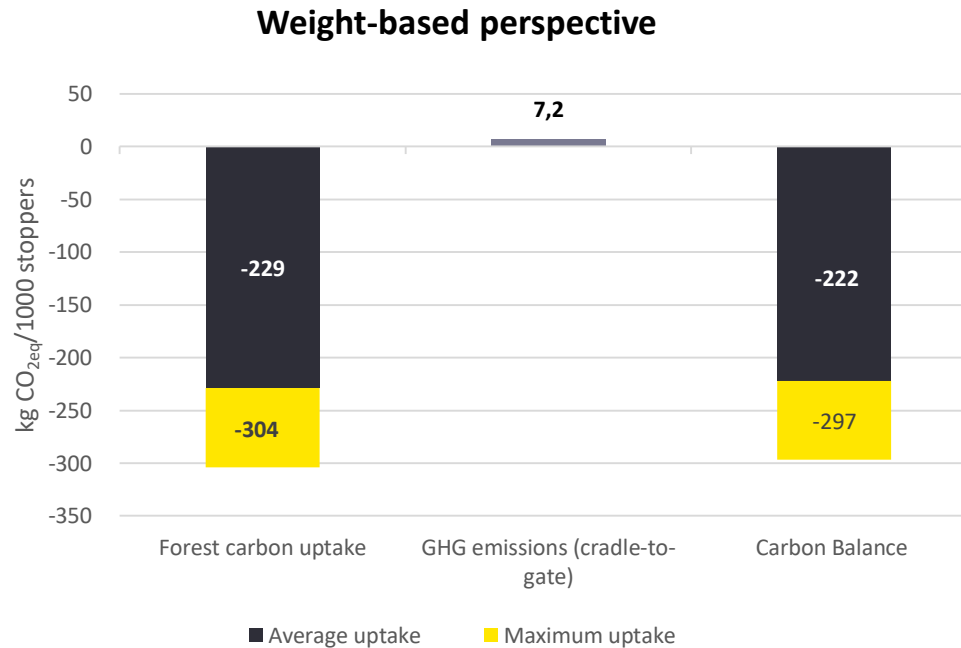
with the average ecosystem CO₂ uptake being - 55 t CO₂/t cork, considering wet and dry years in well managed forests (11 t CO₂/ha).¹

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.

¹ figures used in "The value of cork oak montado ecosystem services, EY 2019"



Carbon balance: maximum weight stopper



Carbon balance reaches up to:

-297 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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