

TopSeries Plastic Neutro stopper carbon footprint

Amorim Top Series

July 2020

Disclaimer

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

Agenda

1. About the study

2. Carbon footprint

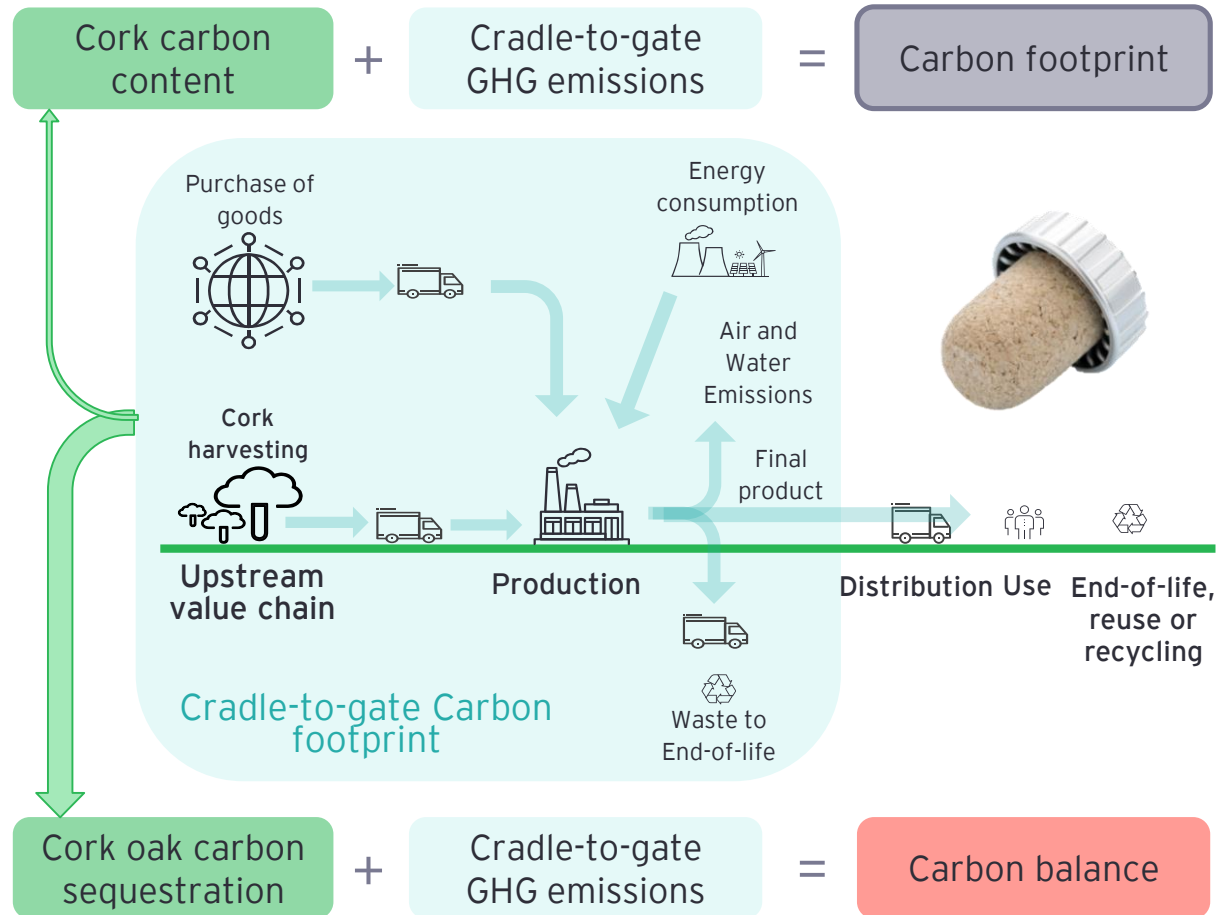
Cradle-to-gate

+

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 TopSeries Plastic Neutro(average dimensions of stopper 27 mm x 20 mm; average dimensions of capsule 29 mm x 9 mm average weight: 5g; average composition: 41% cork, 43% high impact polystyrene (plastic capsule), 17% customization products), stopper produced by Amorim Top Series, 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**

TopSeries Plastic Neutro stopper production data

Amorim Top Series activity (local data),
for the year 2019, using questionnaires

General data (raw materials production, energy,
transport and waste management)

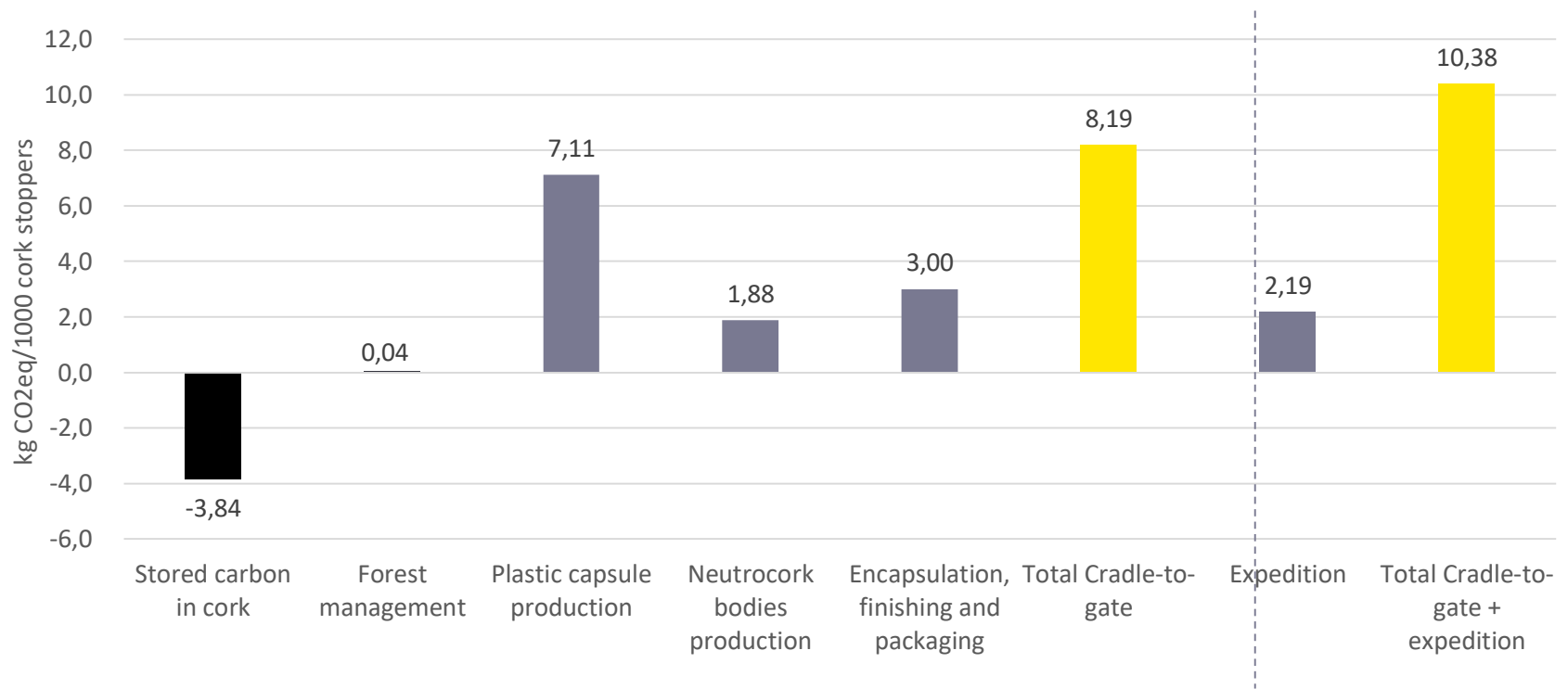
Ecoinvent 3.5. database,
compiled in 2018

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

2

Carbon footprint

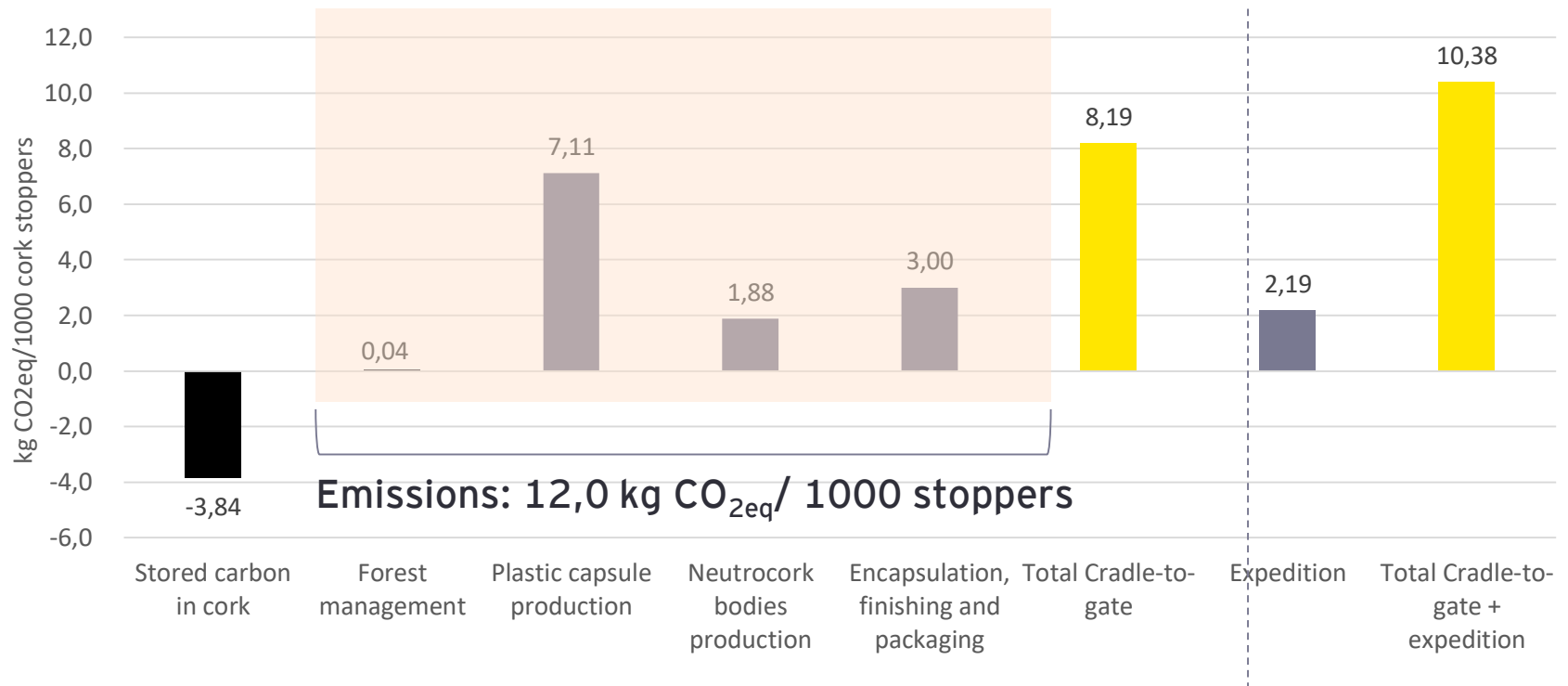
Carbon footprint: results



TopSeries Plastic Neuro carbon footprint:

- ▶ Cradle to gate: **+8,2** kg CO₂eq /1000 stoppers
- ▶ Cradle to gate with expedition to UK: **+10,4** kg CO₂eq /1000 stoppers

Carbon footprint: results



59% emissions associated with processes occurring in the plastic capsule production stage

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



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:

- 150

kg CO₂/1000 stoppers

Therefore, the carbon balance reaches up to

-138

kg CO₂/1000 stoppers



scenario analysis based on well-managed cork oak montado

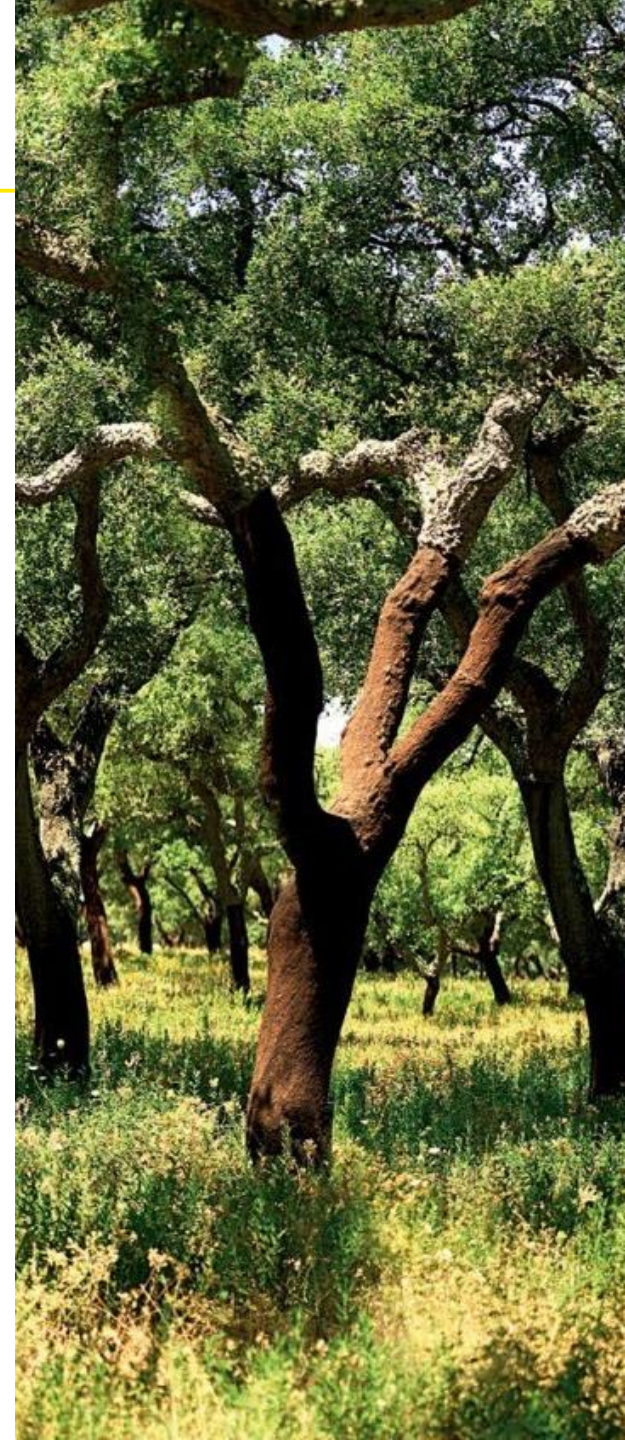
- 73 t CO₂/t cork

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

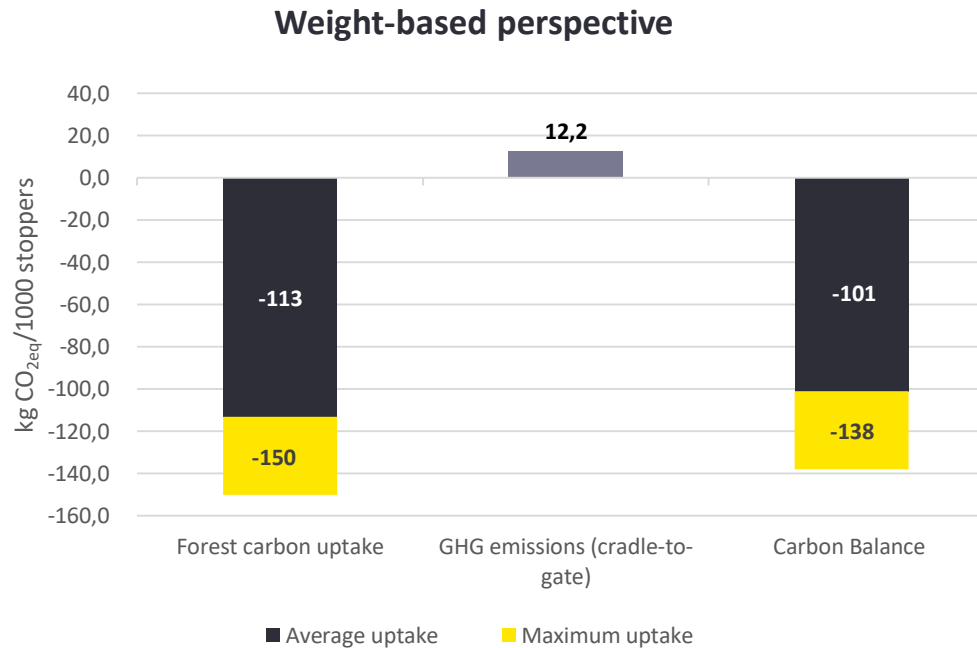
with the average ecosystem CO₂ uptake being - 55 t CO₂/t cork, considering wet and dry years in well managed forests (11 t CO₂/ha).¹

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:

-138 kg CO₂eq/1000 stoppers

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

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit [ey.com](https://www.ey.com).

About EY's Climate Change and Sustainability Services

Governments and organizations around the world are increasingly focusing on the environmental, social and economic impacts of climate change and the drive for sustainability.

Your business may face new regulatory requirements and rising stakeholder concerns. There may be opportunities for cost reduction and revenue generation. Embedding a sustainable approach into core business activities could be a complex transformation to create long-term shareholder value.

The industry and countries in which you operate as well as your extended business relationships introduce specific challenges, responsibilities and opportunities.

Our global, multidisciplinary team combines our experience in assurance, tax, transactions and advisory services with climate change and sustainability knowledge and experience in your industry. You'll receive tailored service supported by global methodologies to address issues relating to your specific needs. Wherever you are in the world, EY can provide the right professionals to support you in reaching your sustainability goals.

<https://www.ey.com/sustainability>

© 2020 Ernst & Young, Audit & Asociados - SROC, SA
All Rights Reserved.

[ey.com](https://www.ey.com)

