The Calouste Gulbenkian Foundation is a Portuguese private institution of public utility, which was created in 1956 in accordance with the last will and testament of Calouste Sarkis Gulbenkian. It actively pursues its statutory aims in the fields of the arts, charity, education and science in Portugal and abroad, including through its UK Branch and Paris Delegation. The Foundation promotes a wide range of direct activities and grants supporting projects and programs.

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In partnership with

Transtejo

BCSD Business Council for Sustainable Development

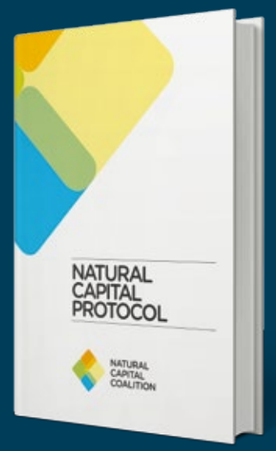
NATURAL CAPITAL COALITION

THE NATURAL CAPITAL PROTOCOL CHALLENGE **TRANSTEJO**

USED THE NATURAL CAPITAL PROTOCOL TO ASSESS
THE NEGATIVE IMPACT OF THE COMPANY'S AIR EMISSIONS

CALOUSTE GULBENKIAN FOUNDATION

GULBENKIAN OCEANS INITIATIVE



The Natural Capital Protocol is a standardized framework that enables companies to understand their relationships with nature in a systematic way. It is designed to generate trusted, credible and actionable information that can inform risks and opportunities and ultimately, help realize significant business benefits, such as reducing production costs, optimizing risk management, enhancing brand image and increasing revenue streams. On top of this, companies are able to provide significant benefits to communities and to the environment.

THE COMPANY IN BRIEF

Transtejo is a ferry company that operates in the Tagus River, Portugal; it transports passengers and vehicles between the river's northern margin (Lisbon) and its southern margin (Almada, Seixal, Barreiro and Montijo). There are two major environmental impacts resulting from the company's activities: water and air pollution. Air pollution has, at this point, no specific regulation or enforcement; it is a direct consequence of Transtejo operations and has higher impacts on nearby populations of the Tagus River. Water pollution is minor and occurs mostly in case of a malfunction or in case of an emergency. This assessment values the negative impacts of air pollution on society and on business and aims to integrate the results into the company's strategic and investment decisions.

How and **why** was the Natural Capital Protocol used?

The Protocol provided the framework and guidance to conduct this natural capital assessment. The objective of this assessment was to measure and value the negative impacts of Transtejo air pollution and to use the results obtained to identify specific measures that aim to reduce carbon and non-carbon emissions. This will provide benefits to local communities around the Tagus River, to the environment and to the company.

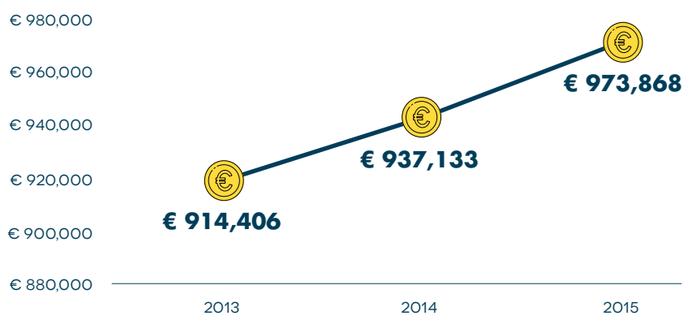
What were the **outcomes** of the assessment?

Based on the application of the **Natural Capital Protocol (NCP)**, Transtejo has considered three forms of (negative) impact: i) GHG (greenhouse gas) emissions impact on society; ii) Non-GHG emissions impact on society; and iii) Emissions impact on Transtejo.

GHG Emissions Impact on Society

Based on the **Shadow Price of Carbon**[i] and on Transtejo's internal data for fuel consumption and CO_2 emission factor for diesel suppliers, the company's activities in 2015 imposed a cost on society (e.g. health costs) of **€973,868**. This (negative) impact has been growing at an annual rate of approximately 3% since 2013 (Figure 1).

Figure 1 /
GHG emissions impact on society



Non-GHG Emissions Impact on Society

Based on the air quality of six different locations[ii] – three on the northern margin and three on the southern margin of Tagus, **Transtejo non-GHG emissions**, in particular NO_X, SO_2 and $PM_{2.5}$, **were found to have increase on average 2,6% per year between 2013 and 2015**. It was also observed that the mortality rate by respiratory diseases (lung cancer, bronchitis, asthma) increased by approximately 5% in the same period of time in nearby towns.[iii] This is caused by many factors and possibly the majority of them are not related to Transtejo operations; however, the increase of local pollutants caused by the company's operations is enough to call for action.

Non-GHG and GHG Emissions Impact on Business

- Cost of technological improvements: Since Transtejo has a very heterogeneous fleet and several types of ships, any technological improvement would have to be considered for each type. A gross estimate of this value would be around €600,000.[iv]
- Cost of replacing the fleet: The cost of replacing the fleet would apply to the older ships on the fleet. A gross estimate of this value would be around 30 million euros.

What were the main **benefits** identified by Transtejo?

The NCP application resulted in **four major benefits** (business and societal):

- Operational: The direct and short-term effects of reduced air quality to the business are minimal, but changes in regulation could require expensive upgrades of the fleet.
- Legal and regulatory: Anticipate new regulation that might limit air pollution.
- Reputational and marketing: Positions the company as providing a sustainable form of transport, which enhances its brand image.
- Societal: Emissions reduction will greatly benefit local populations by lowering health costs. Also, carbon shadow pricing is an explicit way to proactively commit to climate change mitigation and to benefit the environment.

Next steps

After the NCP application, Transtejo will act upon the results, improving its energy performance through low carbon solutions, and by strengthening the assessment of the company's impact on local communities.

NOTES

[i] The Shadow Price of Carbon (SPC) is based on estimates of the lifetime damage costs associated with greenhouse gas emissions, known as the social cost of carbon (SCC). This study uses a SPC of 33,48€/ton of CO_2 which is based on DEFRA estimates at www.defra.gov.uk

[ii] The analysis was made using national air quality data at six different locations (Barreiro, Almada, Seixal, Lisbon L - Liberdade, Lisbon R - Restelo, Lisbon O - Olivais); all of them within the geographic area of Transtejo activities. The data was retrieved from APA – Agência Portuguesa do Ambiente at www.apambiente.pt

[iii] INE – Instituto Nacional de Estatística (Statistics Portugal) at www.ine.pt.

[iv] Considering a unit cost of €30,000 and the implementation of technology in 20 ships.

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The Calouste Gulbenkian Foundation works towards a more sustainable world, where human pressures on the environment must inevitable be accounted for. By considering that companies, in general, exclude natural capital from decision-making, the Foundation attempted to reverse this trend. More specifically, it promoted several initiatives that aimed to **raise awareness** on the importance of taking into account natural capital in business management, it promoted the **Natural Capital Protocol Training Program**, which was attended by 55 participants from 36 large Portuguese companies; and it offered all companies the opportunity of participating in the **Natural Capital Protocol Challenge**, whose main goal was to demonstrate the business application of the Natural Capital Protocol. These trainings and all technical contents were facilitated and provided by the Natural Capital Coalition.

This case study was developed in the context of the **Natural Capital Protocol Challenge**, a project led by the Gulbenkian Oceans Initiative in partnership with the **BCSD Portugal – Business Council for Sustainable Development** and the **Natural Capital Coalition**.

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