

PORTUGAL– GREATER CÔA VALLEY

Climate Change Mitigation in the Endangered Landscapes and Seascapes Programme



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Project size: 979 ha assessed out of 318,000 ha total area

Assessment timeframe: 2022-2042

Project lead: Rewilding Europe/ Rewilding Portugal

Key activities:

- Reintroduce key species
- Protect forests and grasslands to enable their natural regeneration

Total mitigation potential: -31,651 tCO₂-e

The Endangered Landscapes and Seascapes Programme supports nature restoration across European land- and seascapes.

Why restore nature?

As well as providing benefits for biodiversity and ecosystem services, restoring natural landscapes also has the potential to contribute to climate change mitigation.

About the project

The Greater Côa Valley connects the Douro Valley with the Malcata Mountain range in Northern Portugal. This area largely consists of pastureland and oak forests, hosting high biodiversity.

The landscape is of particular importance for birds of prey and keystone species including the Iberian wolf. These species have been impacted by anthropogenic pressures, so the project aims to restore food chains in the area and restore the ecology.

This is done by reintroducing species and protecting habitat to enable natural regeneration.

Assessing the climate change mitigation potential of this project

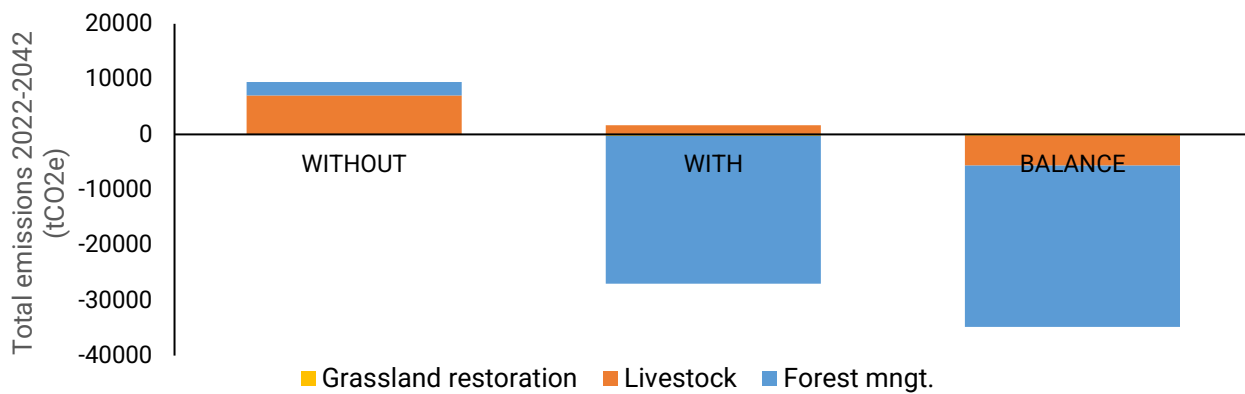
To determine the contribution of these actions towards climate change mitigation, their impacts on carbon stocks and GHG emissions need to be calculated. The most applicable tool for doing this is the EX-ACT carbon assessment tool, developed by FAO.

This tool uses the default 'Tier 1' emission factors, for the carbon sequestration of broad habitats and regions. Accuracy can be increased by more specific 'Tier 2' emission factors from the literature.

EX-ACT compares the 'project scenario' (the impacts of the restoration interventions) with a 'baseline scenario'. This determines the changes in greenhouse gas sequestration that are due to the project.

In this project, the approach to restoration is through passive rewilding. Carbon benefits are due to resulting improvements in the condition of ecosystems and reduced fire risk.

Climate change mitigation results



Assessed total emissions (tCO₂-e) over 20 years in the baseline scenario (without), project scenario (with), and the resulting emissions difference due to the project (balance)

Project outcomes

Over the 20 years of this assessment (2022-2042), the EX-ACT tool predicts there will be a total net emissions reduction of around **-31,651 tCO₂-e**.

Due to the rewilding approach of the project, carbon benefits have been estimated by the improvements in forest and grassland condition over this time period.

Improvement in grassland condition from the restoration interventions is only estimated to sequester **-236 tCO₂-e**. Improving the condition of forest is estimated to contribute a further **-25,997 tCO₂-e** to the mitigation potential. A further reduction of **-5,419 tCO₂-e** is also achieved by changes in animal numbers.

The estimates above exclude the impacts of reduction in fire frequency which was estimated to reduce the project's total net emissions to up to **-34,478 tCO₂-e**.

Limitations

Due to the uncertainties associated with Tier 1 and Tier 2 emission factors, the results shown here are estimates. To increase accuracy, on-site carbon flux measurements can be used for future assessments. The EX-ACT tool simplifies ecological processes and this adds further uncertainty.

The assessment timeframe of 20 years is relatively short in relation to ecological processes. Over longer timescales (beyond 2042) the mitigation potential is expected to be higher.

This method of assessing carbon sequestration is more suited to active restoration projects, due to the difficulties in predicting future land-cover change from natural regeneration.

The additional benefits of fire prevention could not be accurately captured due to difficulties in predicting the impact of rewilding on fire.

Associated benefits

- Increased biodiversity, through improved ecological connectivity
- Reduced fire incidence, from forest management and surveillance teams
- Enhanced local economy, through collaboration with ecotourism enterprises

More information:

[ELSP– Greater Côa Valley](#)

[Rewilding Portugal](#)

[EX-ACT tool](#)

[ELSP– Natural Climate Solutions](#)



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