BULGARIA– IRON CURTAIN TO GREEN BELT

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: Two scenarios with interventions over **1,680ha** or **7,180ha** of **810,000 ha** total area

Assessment timeframe: **2022-2042**

Project lead: **Bulgarian Society for the Protection of Birds**

Key activities:

- Assist natural succession of pine plantations by native woodland
- Reforest burned areas
- Support the local farmers with agro-environment scheme

Total mitigation potential: **between -221,886 tCO_2e** and **-336,981 tCO_2e**

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

This region is located along the border between Bulgaria, Greece and Turkey. It consists of grasslands, shrublands, and riverine forests, hosting high biodiversity.

The area has historically been impacted by agriculture and the conversion of woodland to non-native pine plantations. Degrading plantations have high incidence of fires.

This project aims to reforest burnt areas, speed-up natural succession by native tree species, and encourage farmers to join agri-environment schemes to create grasslands on unproductive farmland.

Assessing the climate change mitigation potential of this project

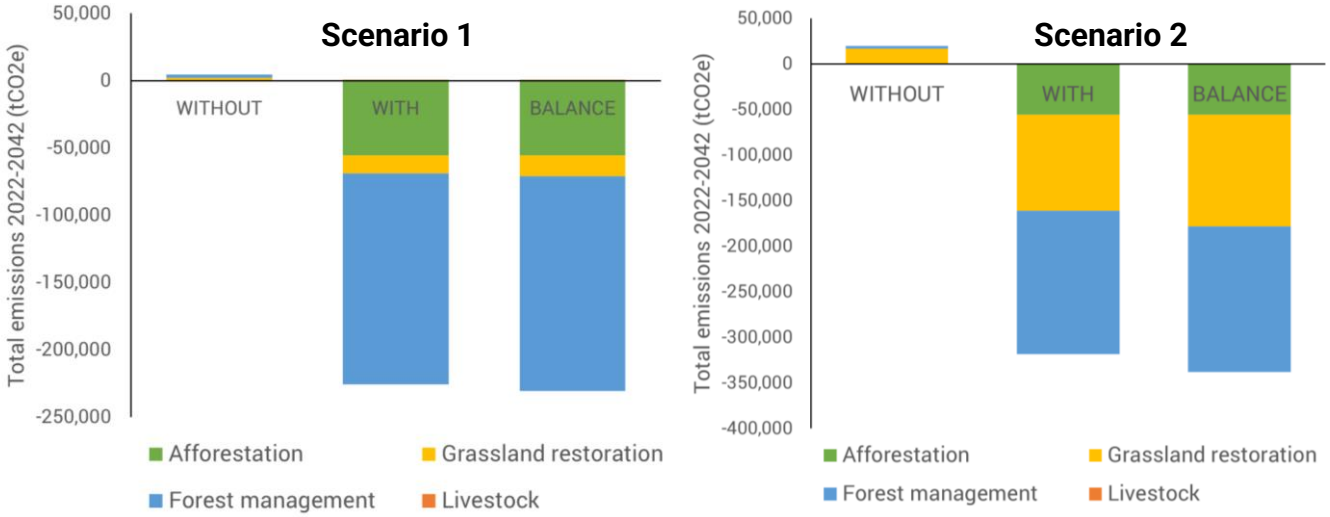
To determine the contribution of these actions towards climate change mitigation, their impacts on carbon stocks and GHG emissions need to be calculated. The most applicable tool for doing this is the EX-ACT carbon assessment tool, developed by FAO.

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.

Carbon benefits in this project are achieved by reforesting burned areas, restoring grasslands and reducing forest degradation by encouraging native oak forest growth.

Climate change mitigation results



Assessed total emissions (tCO_2-e) over 20 years in the baseline scenario (without), project scenario (with), and the resulting emissions difference due to the project (balance)

Project outcomes

The project envisions two future scenarios. In the first, programs will be established to convert 500ha of cropland to grassland. In the second, 4,000ha of grassland will be created from cropland.

Forest management and planting will have the mitigation potential of **-215,093 tCO_2e** under both scenarios. Converting cropland to grassland will have the mitigation potential of **−14,603 tCO_2e** under scenario 1 and **-121,888tCO_2e** under scenario 2. In both, grazing livestock will contribute to **723 tCO_2e** emissions.

Over the 20-year period of this assessment, the EX-ACT tool predicts a net emissions reduction of **-229,696 tCO_2e** to **-336,981 tCO_2e.**

Limitations

The results shown here are rough estimates, because only Tier 1 values are available for the area.

The tool does not allow to account for forest management interventions that change the type of forest from planted to native, or to customize the type of fires that occur in different forest types.

It is impossible to predict how many farmers will join the grassland scheme or how they will manage the grasslands.

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

Associated benefits

- Natural forest habitats made more resilient to fires
- Grasslands created that host diversity of species
- Farmers rewarded for supporting grassland habitats

More information:

ELSP– Iron Curtain to Green Belt

EX-ACT tool

ELSP– Natural Climate Solutions

ARCADIA
A CHARITABLE FUND OF LISBET RAUSING & PETER BALDWIN

UN environment programme WCMC

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