



LIFE CLIMATREE - A novel approach for accounting & monitoring carbon sequestration of tree crops and their potential as carbon sink areas

LIFE14 CCM/GR/000635



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Project description:

Background

Climate change mitigation is a crucial objective of the Kyoto Convention, and is oriented towards reducing GHG emissions. By 2013, the EU reduced its greenhouse gas (GHG) emissions by 11%, a progress achieved through multidisciplinary strategic planning and applying measures in numerous EU policies. However, only forests' capacity as carbon sinks were taken into consideration in the calculations, while agricultural land and farming practices were not acknowledged in GHG accounting for storing carbon in soil. This may have possibly resulted in incorrect estimations of the carbon dioxide balance in the atmosphere.

Accurate monitoring and accounting of carbon stocks and fluxes is a serious challenge, which will result in an improved assessment of climate change and its impacts. The main indicator for measuring agricultural land and farming practices with regard to securing carbon stored in soil is the carbon dioxide balance with respect to CO<sub>2</sub> capture and storage capacity through the application of land use, land use change and forestry.

In the EU, the agricultural sector has been embedded in a consistent strategic framework in the form of common agricultural policy (CAP) since 1954. In its latest reform (2013), the CAP acknowledged the significance of agriculture for climate change policy.

GHG emissions from stock breeding have been found to contribute significantly on a global level. On the other hand, agriculture is also a significant factor for carbon capture. The assessment of this capture and consequent storage of

carbon in the form of plant tissues relates to the production of GHG during cultivation and to the annual life cycle of most crops.

## Objectives

The ClimaTree project aims to contribute to the development of a new methodology and provide policy-makers with an innovative tool for the quantification of carbon storage in permanent tree-crops. The primary objectives are to:

- Improve and update the estimated carbon sink accounting within the EU by including the calculated tree-crop capacity;
- Estimate the socioeconomic benefit of tree crops for carbon storage and evaluate the economic dimensions in different climatic and economic scenarios;
- Improve the design and efficacy of EU environmental and climate policy and legislation;
- Act as a catalyst for, and promote, the integration and mainstreaming of carbon sink objectives into the agricultural sector;
- Provide a more accurate and increased baseline for carbon sink capacity and improve the knowledge base for the monitoring and evaluation of effective climate change mitigation actions and measures; and
- Improve agricultural and environmental policies at the micro-level and provide a tool for supporting the evaluation of investments related to tree crops.

Expected results: The main expected results of ClimaTree are:

- Development of a new methodology for the accounting of carbon storage from permanent tree crops, contributing to a more accurate estimation of carbon sinks in EU;
- Demonstration of best tree-crop practices regarding the increase of carbon sink capacity and their related socioeconomic benefits;
- Development of a guide for the suggestion of climate change mitigation policies and their incorporation into the CAP;
- Estimation of carbon balance of tree-ecosystems for the following years;
- Development of a software application for the accounting of carbon sequestration by tree crops; and
- Evaluation of the economic benefits arising from tree crop sequestration.

## Results

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Environmental issues addressed:

## Themes

Climate change Mitigation - Carbon sequestration

Climate change Mitigation - GHG reduction in non EU ETS sectors

## Land-use and Planning - Forest management

### Keywords

agricultural method, forest ecosystem, forestry, greenhouse gas accounting

Natura 2000 sites

Not applicable

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### Beneficiaries:

Coordinator	Institute of Urban Environment and Human Resources, Panteion University
Type of organisation	University
Description	The Institute of Urban Environment and Human Resources (UEHR) is part of the Panteion University in Athens and has wide experience in the implementation of European and national environmental research projects.
Partners	AUA(Agricultural University of Athens), Greece CSIC(Agencia Estatal Consejo Superior de Investigaciones Cientificas.), Spain UNIBAS(University degli Studi Basilicata), Italy TERRA NOVA(TERRA NOVA ENVIRONMENTAL ENGINEERING CONSULTANCY Ltd), Greece UOWM(Research Committee - University of Western Macedonia), Greece

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### Administrative data:

Project reference	LIFE14 CCM/GR/000635
Duration	16-JUL-2015 to 28-JUN -2019
Total budget	1,931,447.00 €
EU contribution	1,158,868.00 €
Project location	Anatoliki Makedonia, Thraki,Kentriki Makedonia,Dytiki Makedonia,Thessalia,Ipeiros,Ionia Nisia,Dytiki Ellada,Stereia Ellada,Peloponnisos,Attiki,Voreio Aigaio,Notio Aigaio,Kriti

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