

New techniques for monitoring the carbon balance and the state of health of wood and fruit chestnut trees

Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

Castagni Parlanti

Tematica

Impronta carbonica

Information

Time frame

2019 - 2022

Durata

36 months

Partners (no.)

5

Regione

Emilia-Romagna

Comparto

Forestale

Localizzazione

ITH52 - Parma

ITH55 - Bologna

Costo totale

€191.848,72

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP003: Italy - Rural Development

Programme (Regional) - Emilia Romagna

Parole chiave

Climate and climate change

Forestry

Sito web

<http://www.castagniparlanti.it/pagina-istituzionale.html>

Project status

completed



Objectives

Assessment of the ecological footprint of chestnut restoration to fruit cultivation within a forest matrix, in terms of carbon fixation and sequestration in the soil-plant system, water use and land cover. Obtainment of operational indications for an effective and sustainable chestnut forest management for combined wood and fruit production

Activities

Recovery of the chestnut grove into a cultivation state and selection of a subset of plants. The chestnut trees will be continuously monitored with the innovative TreeTalker system and, for validation, partly also with Monitoring PAM sensors. The great quantity of data received by the plants will be crossed with a set of climatic and environmental variables. Data analysis will lead to a deeper understanding of the interaction between chestnut growing, forest management and the environment. The contents will be made accessible to forest operators, experts and citizens through targeted media: workshops, web portal, downloadable app and training classes for technical operators.

Context

In most of the Italian Apennines the chestnut grove is evolving towards a mixed forest with an important presence of *Castanea sativa* Mill. lacking the structural characteristics necessary for the traditional production of fruit. Faced with this process of re-naturalization, the Emilia-Romagna Region recognizes the desirability of maintaining fruit-bearing chestnut growing in the Apennines, as a resource for the mountain economy and as a characterizing element of the landscape and tradition. The recovery of the chestnut grove to the topical crop is, however, expected only in the most suitable

conditions, considering not only the phytoclimatic zone but also the

appropriate micro-site conditions, thus proceeding with recovery interventions on small surfaces (<500 square meters) inside of a forest matrix (Art. 30, Emilia-Romagna Forest Regulation).

The aim of the project is to assess the ecological footprint of this recovery to the topicality of cultivation, in terms of carbon fixation and sequestration in the soil-plant system, water use and land cover.

The project therefore proposes to (i) disseminate methods of analysis of stational suitability (Land Suitability Analysis) for the identification of areas potentially suited to recovery in the current situation; (ii) apply smart and low-cost technologies to monitor the environmental impact and on the cycle of the recovery of the chestnut grove; (iii) apply the same methodologies to monitor the response of the chestnut to climate change.

Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	Open Fields	Strada Consortile 2 43044 Collecchio PR Italy	0521 803222	r.ranieri@openfields.it
Partner	Alma Mater Studiorum - Università di Bologna	Via Zamboni, 33 40126 Bologna BO Italy	051 2096210	livia.vittori@unibo.it
Partner	CENTOFORM SRL	Via Nino Bixio, 11 44042 Cento FE Italy	051 6830470	diego.succi@centoform.it
Partner	Cooperativa di lavoro e servizio per lo sviluppo agro-silvo-pastorale e per lo sviluppo agro-turistico Val Reno	Via Casona, 1064/C 40041 Gaggio Montano BO Italy	0534 23753	valreno@tin.it
Partner	Fondazione Centro Euro-Mediterraneo sui Cambiamenti climatici	Via Augusto imperatore, 16 73100 Lecce LE Italy	0832 288 650	antonio.bombelli@cmcc.it

Pratiche abstract

Description

Innovative, low cost techniques will allow chestnut growers to monitor the status of their plants (both wood and fruit chestnut growing), and the development of plants after interventions and facing environment changes, in a perspective of precision forest management (similar to precision farming).

Nuove tecniche di monitoraggio del bilancio del carbonio e dello stato di salute del castagneto da legno e da frutto

3/3

<https://www.innovarurale.it/pei-agri/gruppi-operativi/bancadati-go-pei/nuove-tecniche-di-monitoraggio-del-bilancio-del-carbonio>

Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	http://www.castagniparlanti.it/pagina-istituzionale.html	Sito web
Booklet Castagni Parlanti	http://www.castagniparlanti.it/documents/Booklet_Castagni_Parlanti_v4_rev_CMCC_...	Materiali utili
Scarica l'App	http://www.castagniparlanti.it/scarica-la-app.html	Materiali utili
Article in "Rivista di Divulgazione di Cultura Agraria"	https://www.accademia-agricoltura.it/pubblicazioni/	Materiali utili
EIP Agri Inspirational Ideas	https://ec.europa.eu/eip/agriculture/en/news/inspirational-ideastalking- chestn...	Link ad altri siti che ospitano informazioni del progetto
Il video del progetto	https://www.youtube.com/watch?v=XBGP8aaERDI	Materiali utili
Final presentation	https://www.openfields.it/convegno-castagni-parlanti/	Materiali utili
Pagina web del progetto sul sito Open Field	https://www.openfields.it/progetto/castagni-parlanti/	Link ad altri siti che ospitano informazioni del progetto