BIODIVERSAMENTE CASTAGNO

CASTANI-CO

CHESTNUT – BUS

InnovAction

Itinerant cooperative journey carrying ideas into the chestnut-growing Lands of Emilia-Romagna
15th September 2020

An initiative created within the scope of the Regional Rural Development Programme RDP 2014-2020 - Operation Type 16.1.01 – Operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability
Focus Area 5E – Project CASTANI-CO
Focus Area 4A - Project BIODIVERSAMENTE CASTAGNO

AZIENDA TIZZANO DI FOGACCI STEFANO

SOCIETA' AGRICOLA MONARI & C. S.S.

SOCIETA' AGRICOLA TERRA AMICA DEI MENETTI S.S.

Programma di Sviluppo Rurale dell'Emilia-Romagna 2014-2020

L'Europa investe nelle zone rurali

CHESTNUTS, CUSTODIANS OF THE MOUNTAIN AND RESOURCES IN THE STRUGGLE AGAINST CLIMATE CHANGE

Press release: https://agricoltura.regione.emilia-romagna.it/notizie/2020/settembre/il-castagno-custode-della-montagna-e-risorsa-nella-sfida-al-cambiamento-climatico (16 September 2020)

Chestnutbus begins in Zocca, in the province of Modena. "A valuable crop for our agricultural tradition to protect and relaunch" Lori-Mammi.

Chestnuts are strategic allies in the struggle against climate change and custodians of biodiversity.

For the regional councillors Barbara Lori (Mountain) and Alessio Mammi (Agriculture), the day in Modena revolves around chestnut cultivation, a resource for the Apennines, both economically and environmentally. At Zocca they are the guests of Chestnut-bus, the annual event inaugurated today, which is concerned with relaunching this fruit.

Councillor Lori took part in the inaugural ceremony with the Mayor, Gianfranco Tanari and President of the Agro-Silvo-Chestnut Consortium of the Modenese Apennines, Guglielmo Garagnani. In the afternoon she was joined by councillor Mammi, on a visit to the Chestnut Museum and other places connected with chestnut cultivation.

The councillors decided to constitute a regional working Table together with the territory, to find technical solutions and future prospects for the chestnut sector. This is a strategic moment for planning, also at a European level, considering the scheduling of the new Rural Development Plan.

"Chestnut cultivation is of great value for the agricultural and cultural tradition of our Region and in particular the Apennines" explained Barbara Lori. "Being aware of the problems this sector faces and the important role chestnut farmers play as "custodians" of the territory, the Region has actively supported the development of innovative techniques to back the work of maintaining and defending chestnut orchards, but also salvaging them, economically, environmentally and for the development of specific training courses, convinced that new technologies can help the agricultural world and the Apennines to be competitive in the 21st century."

"The world of chestnut cultivation has been able to bring together territories and share objectives, a strategic, collective way of working which has produced important results" added Alessio Mammi. "Chestnut-bus is an important event because it is able to create a network of all the entities revolving around chestnut cultivation and the need to protect and develop our Apennines. For this reason, I believe it is important to underline the strategic choice of Stefano Bonaccini, president of the Emilia-Romagna Region, to constitute a department of Mountains, to give visibility to a fundamental part of our territory, which should be promoted and must rediscover its central position."

The projects carried out: from carbon sequestration to the protection of biodiversity.

Two regional projects focusing on chestnut cultivation were the work of Innovative Operational Groups (IOG). The first, 'Castani-co,' funded with 198 thousand euros, promotes chestnut orchards as a semi-natural system particularly suitable for carbon sequestration and productive source of high-quality food. The task is to calculate how much carbon is sequestrated in the soil and plants, depending on the pedological environment and chestnut orchard management, and to produce guidelines for good agronomic and cultivation practices. Another objective is to create a "network" and share strategies for quality and sustainability in the chestnut sector.

The second, 'Biodiversly Chestnut' funded by the Region with 155 thousand euros, came into being in response to the need to to be aware of the biodiversity of chestnuts and their agro-ecosystem, as well as to promote the role of chestnut farmers as "custodians" of biodiversity and the territory. These objectives gave rise to the partnership between researchers, farms producing chestnuts, consortiums and associations of chestnut farmers, who created the official constitution of the operational group BIODIVERSLY CHESTNUT together before a notary.

Finally, councillor Mammi visited the Verucchia ham factory and the Rosola Dairy, where Parmigiano Reggiano cheese is produced with milk from Modenese White dairy cows, a practice rooted in the typical cultural and food-farming traditions of Emilia-Romagna.

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Itinerant cooperative journey carrying ideas into the chestnut-growing Lands of Emilia-Romagna

On 15th September the third edition of CHESTNUTBUS took place in the chestnut-growing territory of Zocca. It was organized by the IOGs CASTANI-CO "Sequestration of carbon in the chestnut orchards" and BIODIVERSLY CHESTNUT "Guidelines for the preservation and promotion of chestnut biodiversity in Emilia-Romagna". The Bologna-based cooperative I.TER, which studies the soil, coordinated the project partners: Bologna University, the Consortium of Chestnut Growers in the Apennines of Bologna, the Consortium of Chestnut Growers in the Apennines of Reggio, the National Association City of the Chestnut Tree, six farms (Daniele Canovi's Antico Bosco Farm, Stefano Fogacci's Tizzano Farm, Andrea Degli Esposti's La Martina Farm, S.S Menetti's Terra Amica Farm, Marco Picciati's Teggiolina Farm and Monari & C.S.S. Farm).

The objective of the day was to discuss the instruments and activities to adopt in order to implement and promote traditional chestnut cultivation in the region.

Representatives of some of the regional chestnut growers' consortiums from Castel del Rio, and the Apennines of Bologna, Modena, Reggio and Piacenza were also present. Councillors from the Emilia Romagna Region took part on behalf of Innovation, Promotion of Quality and Internationalization of the Agro-Food System Service, Market and Industry Sinergy Organization Service, Farm and Agro-Food Companies Competitiveness Service, Plant Health Service, Soil Seismic Geological Service and

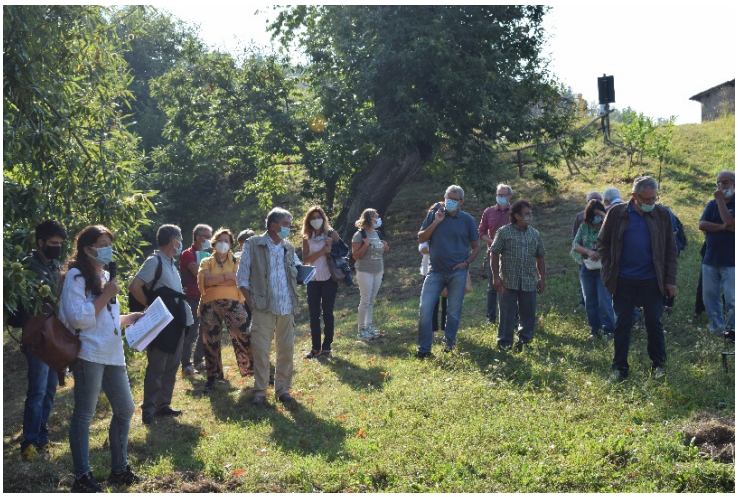
the Agriculture, Hunting and Fishing Territorial Service of some provinces.

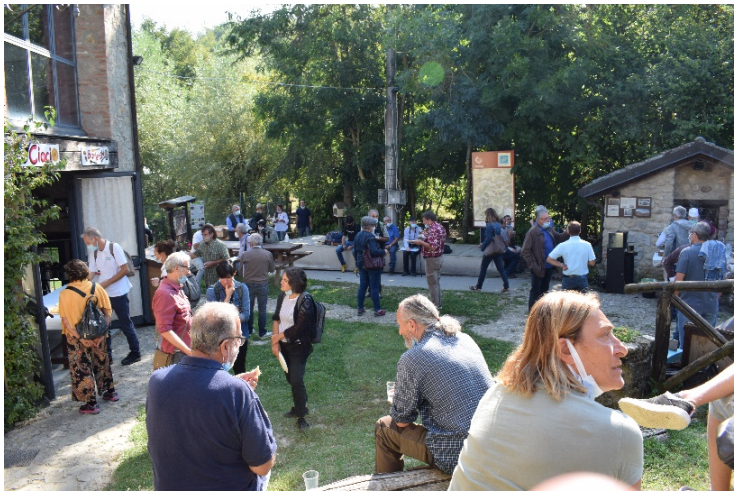
CHESTNUTBUS

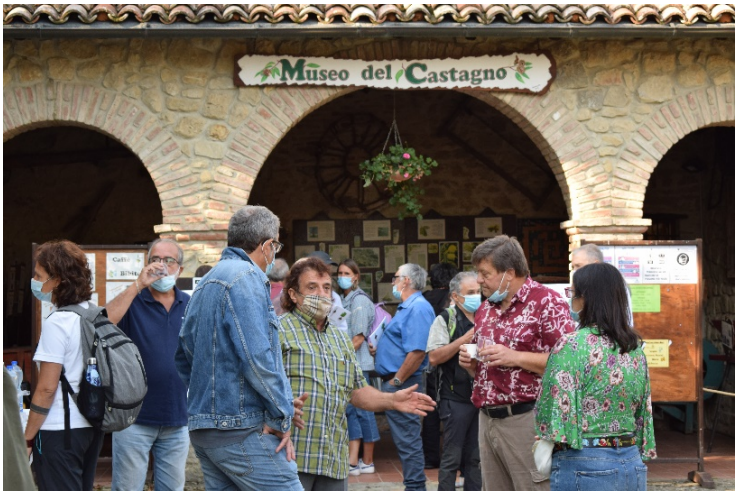
Concentrating the attendees together on the BUS from Bologna meant that the time taken to arrive at the Chestnut and Borlengo Museum in Zocca was spent profitably, encouraging an exchange of experiences and opinions on chestnut cultivation in the region. The first considerations were addressed during the journey, with the beginning of a proactive, constructive discussion between researchers, chestnut grower partners of the IOGs and regional councillors.

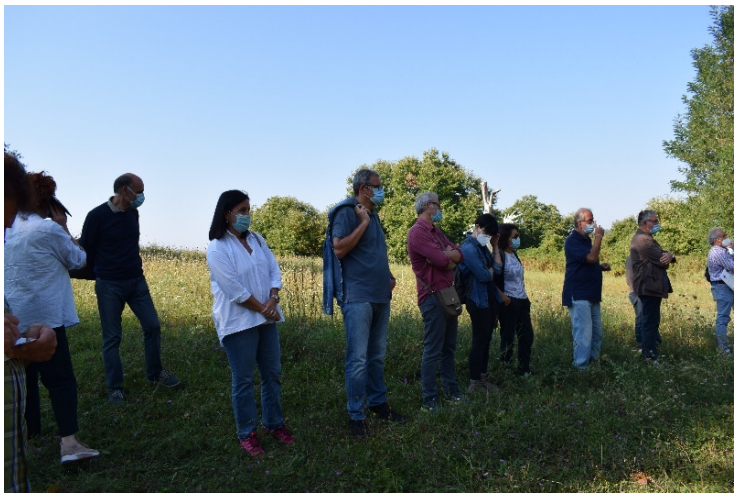
FIRST STOP Chestnut and Borlengo Museum

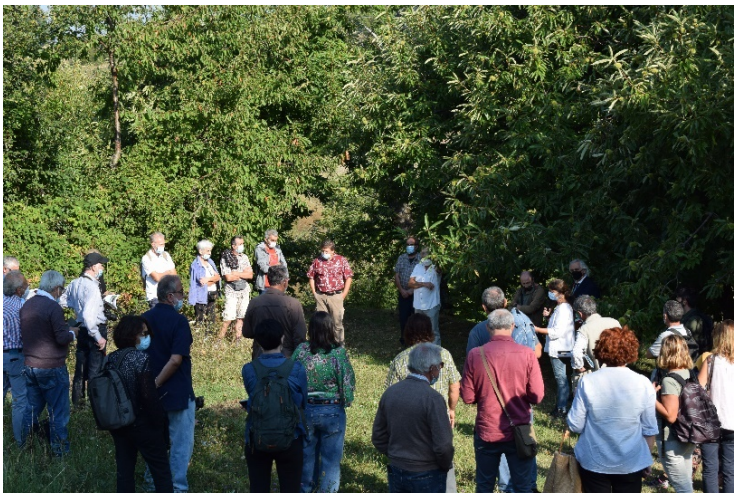
The first contribution was made by **Barbara Lori, Councillor for Mountains, Inland Areas, Territorial Planning, and Equal Opportunities** at the Chestnut and Borlengo Museum of Zocca, in the hundred-year-old chestnut orchard next to the square of this small hamlet. This was followed by refreshments organized by the Museum, based on local specialities: borlenghi and ciacio made from chestnut flour.











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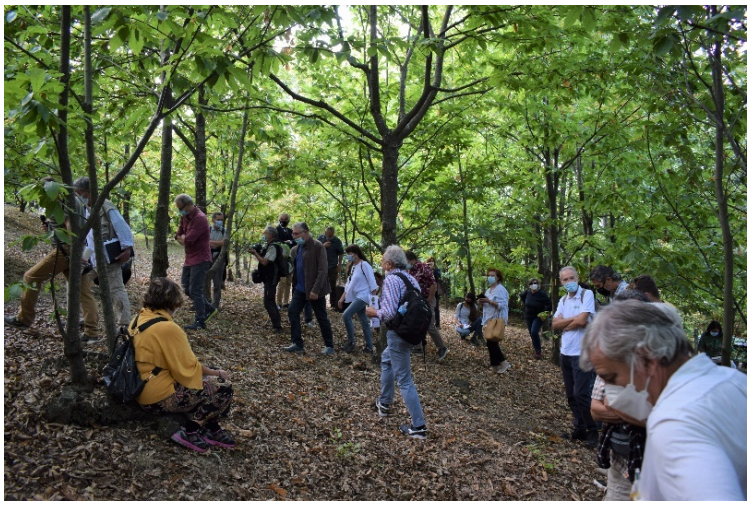
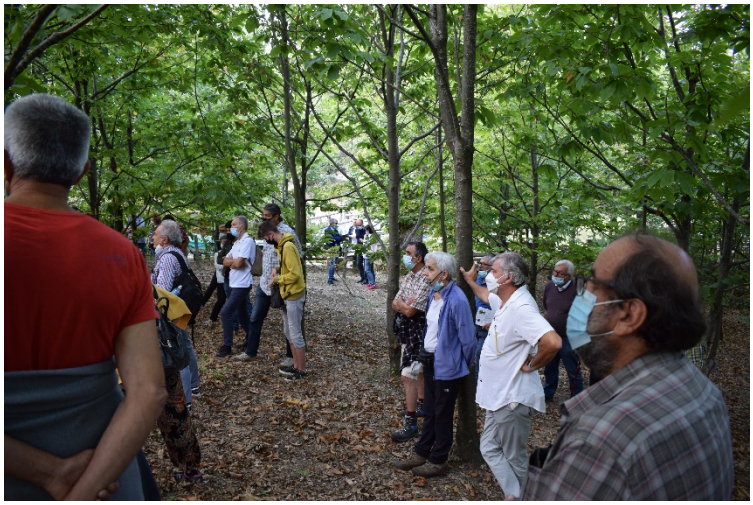
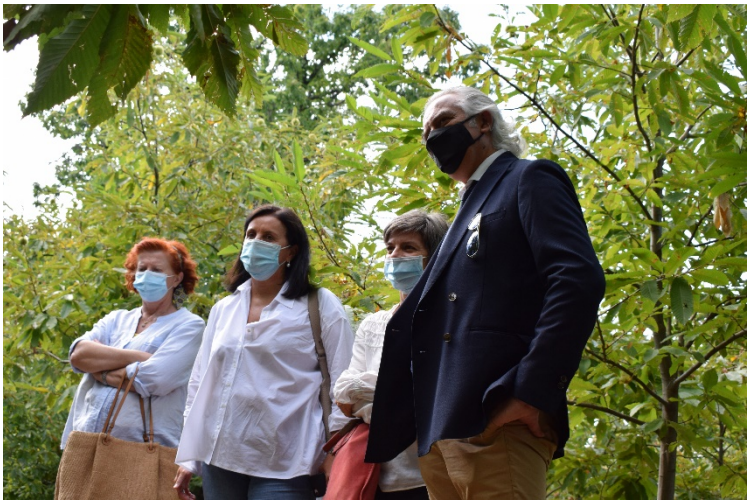
The **Field Collection** of the Municipality of Zocca, next to the Museum conserves the principal varieties of chestnuts and marrons. The extent of the chestnut orchards in Emilia-Romagna was described, taking into account the dynamics currently underway. The discussion highlighted the critical issues related to distinguishing chestnut orchards from wood-producing chestnut forests by interpreting photographs and cartography, as this has implications on requests to salvage abandoned chestnut orchards.

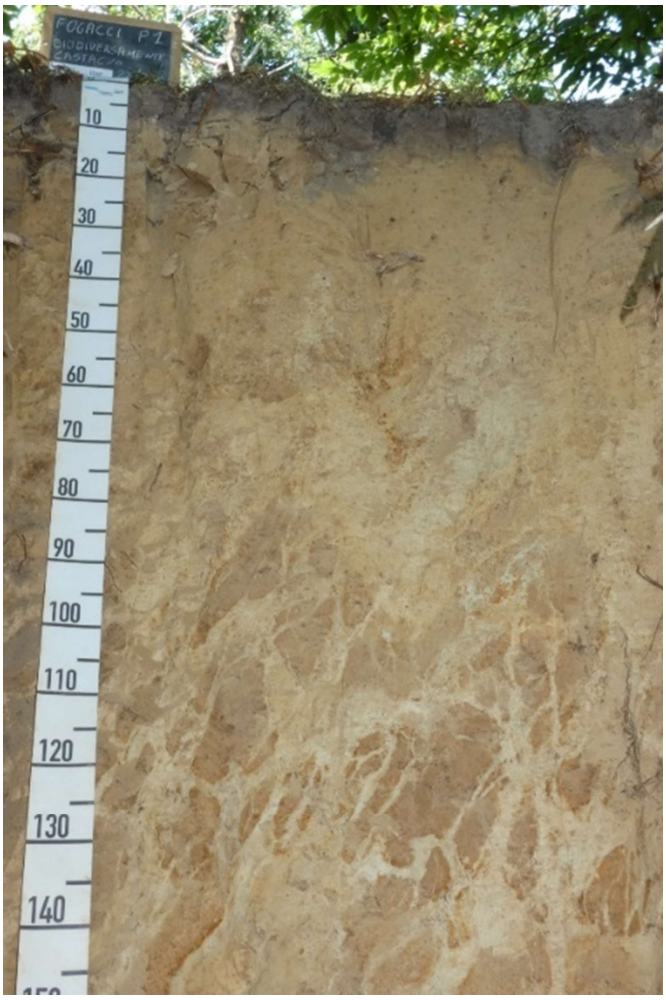






SECOND STOP Fogacci Stefano's Tizzano Farm

The group got back on the bus and moved to the sites where I.TER and UNIBO studied and monitored carbon sequestration in the soil and the biodiversity of the chestnut orchard ecosystem.
Carla Scotti (I.TER) illustrated the soil profile opened and studied in the chestnut orchard: a "paleosol" with evident signs of a long history of pedogenetic processes that determined a strong leaching of carbonates and then iron, manganese and the clay contained in the soil by rainwater running through it and the climate. It is therefore "ancient" soil, which has been able to evolve protected from erosion or working of the land. This highlights the fact that the soil of traditional chestnut orchards has never been ploughed, which turns the layers of soil over. Furthermore, the foliage and turfing of chestnut orchards protects the soil from erosion phenomena. This "paleosol" is indicative of the high sustainability of chestnut orchards.



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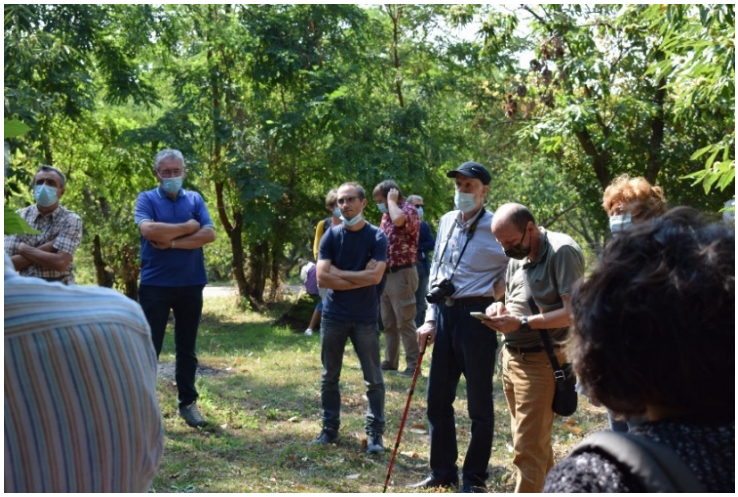
Morphology: paleosurfaces slightly tilted
Slope varies from 0.5 to 5%
Altitutde: 680 m MAMSL
Use of the soil: chestnut orchards for centuries
Geological formation: Pantano Formation, stratified stony material (the layers do not significantly influence the resistance characteristics of the rock mass).
Avaliability of oxygen for plants: good
Depth usable by roots: very deep
Depth of lithic contact: very deep

Soil texture loam or sandy loam, very deep, not calcareous, from moderately to strongly acid; skeleton absent. The substrate is made up of silty sandy stratifications of the Pantano Formation.
The first 10-15 cm are a dark colour where organic matter, and therefore carbon, has accumulated. This is followed by a light eluvial horizon which has been impoverished by leaching. Marbling of the underlying deep horizons (80-140 cm) bear witness to the leaching processes carried out by the water which has passed through the soil probably for thousands of years. The paler layers highlight the impoverished more sandy areas, while the reddish zones are where leached clay and iron hygroxides have accumulated.
The soil was affected by intense pedogenetic processes.
The soil has evolved over a long period of time thanks to the soil morphology and the drainage conditions which promoted washing away of the bases. The fact that the soil has been used for chestnut orchards for centuries, has protected it from erosion.



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THIRD STOP Municipal Council Chamber of Zocca

The programme proceeded with the arrival at the Municipal Council Chamber of Zocca, where lunch was served, organized by Condotta Slow-Food of Vignola-Valle del Panaro and Stefano Fogacci with typical products. Finally, all the participants were invited to a debate on the work of chestnut producers, regional councillors, and researchers. Everyone tried to answer the **"Big Question"** posed at the beginning of the day.

Traditional chestnut cultivation is characterized by trees which are often hundreds of years old, mainly grafted with native varieties of chestnut and marrons, as well as stable, untilled soil. It is a true stronghold of tradition, culture and food. In fact, it plays a fundamental role in the management and conservation of the territory and the hilly and mountainous landscape of Emilia-Romagna, as well as in the production of a high-quality fruit which is rich in nutritious properties.
The essential elements for the promotion and recovery of traditional chestnut cultivation are:
- Identity recognition;
- the definition of management modalities;
- the simplification of procedures to salvage areas of traditional chestnut orchards;
- identifying shared development and planning strategies.

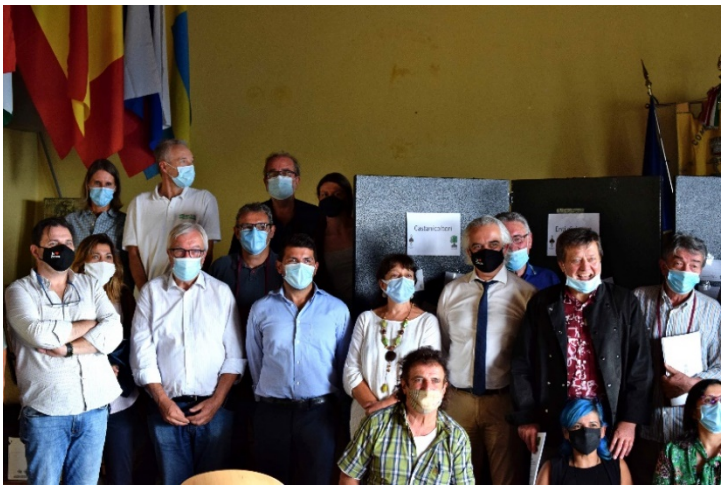
<u>Which instruments and key strategies should Chestnut producers, the Emilia-Romagna Region, Universities and Advisory Bodies adopt to reach this objective?</u>

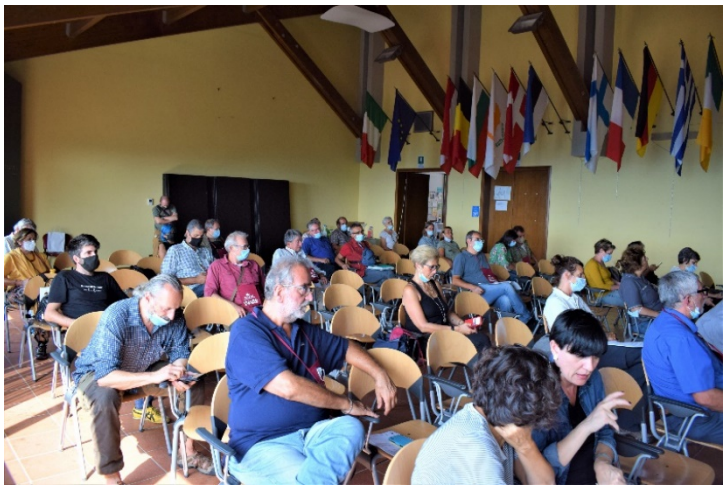
Each participant wrote their keywords on special notes, explained them briefly to everyone else, then placed them on the relevant boards. A lively discussion followed, full of passion and interest, which brought to light the importance of cooperation between various figures to work towards a shared strategy, and the need to work as a team, and the added value of research.

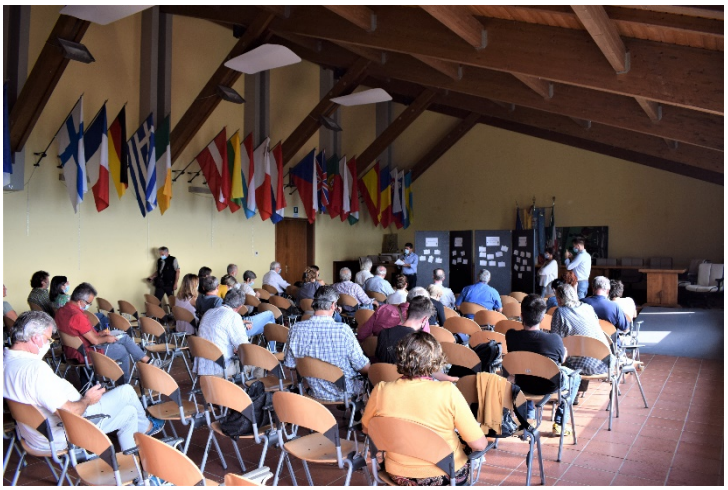
Summary of Keywords and comments:

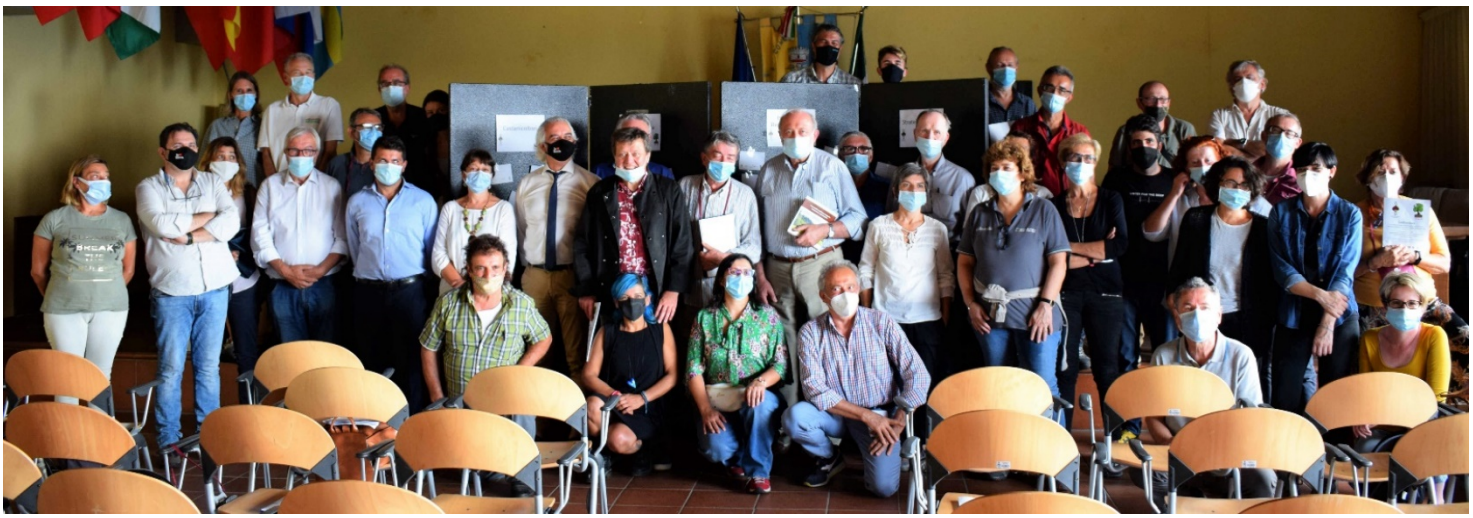
	Keywords	Comments
Research Institutions	Plant Health Problems	Improve awareness and solve some plant health problems (Gnomoniopsis, chestnut gall wasp, conservation)
	Genetics, ecology, carbon	New stimuli to continue, from research
	Research	Research on physiology, soil and plant management, disease and biodiversity
	Promoting awareness	Promoting awareness to support producers
	Motivation and self-esteem	Research provides motivation and self-esteem, showing what the phenomenon "chestnut" means (the results of the IOG are an example)
Chestnut Producers	Role	Consider the role of the chestnut producers which are not farms
	Growth	Increase chestnut cultivation/production by 10% in 3 years
	Chestnut Orchards	Chestnut orchards are where there are chestnut producers
	Priorities and strategies	Decide which path to take. What are the priorities? Choose a strategy
	Common Structures	Find the path and the place to develop the chestnut producers' business and make it profitable, in a common group (consortium/association)
	Organic	Transition -> organic
	Managerial Aggregation and Productivity	
	Sustainability	Organic struggle and soil management. Cultivation without chemicals, an agroforestry ecosystem
	Regional Chestnut Working Table	A venue for solving problems thanks to the expertise of the participants

Institutions, Emilia-Romagna Region	Agrarian Questions	Promote the aggregation of small areas and properties
	Aid	Aid to sustain and maintain century-old chestnut orchards. Grafts and new plants in empty spaces in the wood
	Aid	Aid for the conservation, maintenance and use of the chestnut orchards
	Dream	Profitability combining passion and work, everyone's dream
	Grants	Grants for the restoration of abandoned chestnut orchards
	Common Base	Common documentary basis for chestnut orchards between local government / institutions
	Promotion of Information	
	Salvage Costs	Introduce standard costs for forestry procedures necessary to salvage chestnut orchards
	RDP and NSP	Make chestnut cultivation a priority of the RDP and act as spokesperson for inserting chestnut cultivation in the National Strategic Plan.
	Identity	Bottom-up approach in the definition of the chestnut orchard identity
Common Strategies	Education	Take dietary education back into schools, products from the mountains
	Aggregation	
	Ecosystem Services	
	Clear legislation	Today Chestnut fruit is neither flesh nor fowl
	School of Chestnut cultivation	A small school of chestnut cultivation to train workers in the field
	Which chestnut cultivation?	Resolve the age-old problem: salvage or innovation, beginning to also think about planting new chestnut orchards in abandoned agricultural land
	Museums and access	Chestnut orchards as open-air museums for families and the younger generations
	Aggregation	Absolutely indispensable, also nationally: Piemonte, Emilia-Romagna, Calabria
	Brown Rot	Solve the brown rot problem, without quality there is no future









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BIODIVERSLY CHESTNUT "GUIDELINES FOR THE PRESERVATION AND PROMOTION OF CHESTNUT *BIODIVERSITY IN EMILIA-ROMAGNA"*

Regional Rural Development Programme RDP 2014-2020 - Operation Type 16.1.01 – Operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability – Focus Area 4A - Project BIODIVERSAMENTE CASTAGNO

This three-year project was funded by the Emilia-Romagna Region for the purposes of Measure 16 of the RDP 2014-2020. BIODIVERSELY CHESTNUT came into being in response to the need to be aware of the biodiversity of chestnuts and their agro-ecosystem, as well as to promote the role of chestnut farmers as "custodians" of biodiversity and the territory. These objectives gave rise to the partnership between researchers, farms producing chestnuts, consortiums and associations of chestnut farmers, who created the official constitution of the operational group BIODIVERSLY CHESTNUT together before a notary. This is an important step towards better integration of the world of knowledge (Universities, research institutions) and the farming sector.

The project involves a collective study shared by the scientific community and chestnut producers to investigate the genetic variability of the chestnut germoplasm sampled at different sites in the Region. Soil from carefully selected sites which differed geo-pedologically, was studied using specific indices, such as biological quality (SBQ) and biological fertility index (BFI). Furthermore, this project aims to make the partner farms custodians of indigenous regional chestnut varieties, by grafting samples taken from field collections in Emilia-Romagna (Granaglione and Zocca) at their orchards. This is connected with the primary objective of the Operational Group, to test, identify and share the "guidelines for the study, preservation and promotion of chestnut biodiversity".

The working method envisages a shared participatory approach in order to bring the results of research and the needs of the chestnut farmers closer together: an important step towards a "territorial culture" which also means a greater awareness of the role chestnut producers play in protecting environmental biodiversity.

Project Start Date: 15/07/2017; End Date: 14/07/2020

FUNDING: RDP 2014-2020 EMILIA-ROMAGNA REGION Measure 16.1.01 – Operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability.

Web page:
http://www.pedologia.net/it/BIODIVERSAMENTE-CASTAGNO/cms/Pagina.action?pageAction=&page=InfoSuolo.47&localeSite=it

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CASTANI-CO: "CARBON SEQUESTRATION IN CHESTNUT ORCHARDS"

Regional Rural Development Programme (RDP) 2014-2020 - Operation Type 16.1.01 – Operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability – Focus Area 5E - Project CASTANI-CO

The cultivation of chestnuts is part of the typical traditional culture of mountainous areas of the Emilia Romagna Region, which undoubtedly plays a positive role in carbon sequestration and consequently in the range of strategies to mitigate climate change. Analogously to the situation all over Italy, a slow and constant crisis caused by the presence of parasites and repeated unfavourable meteorological events has led to chestnut cultivation being abandoned. Despite the marked reduction in the areas and the market, chestnut producers in the Emilia-Romagna Region are very active and have organised specific groups of producers to promote chestnut cultivation, cultivation techniques, specific local varieties as well as the territory which produces them.

CASTANI-CO, a three-year project funded by the Emilia-Romagna Region for the purposes of Measure 16 of the RDP 2014-2020, came into being in response to the need to learn more about the organic content and related carbon sequestration of soils in chestnut orchards, and to understand how cultivation techniques can improve the soil as a carbon sink.

The main objective of the project is therefore to monitor the carbon footprint of chestnut orchards by evaluating organic carbon sequestrated in the soil and the plants comparing different management practices. This will be performed by observations in the field, studying the soil, sampling and chemical analysis in the chestnut orchards of partner farms located in pedologically different environments. The results will be used to identify and share the "guidelines to improve chestnut orchard management in order to obtain a high-quality product and promote carbon sequestration".

The working method envisages a shared participatory approach in order to bring research results and the needs of the chestnut growers closer together: an important step towards a "territorial culture" intended to raise awareness and promote the role that chestnut growers play in the protection of the territory and safeguarding the environment by producing high-quality products.

Project start date: 15/11/2017; End date: 14/11/2020

FUNDING: RDP 2014-2020 EMILIA-ROMAGNA REGION Measure 16.1.01 – Operational Groups of the European Innovation Partnership for Agricultural Productivity and Sustainability.

Web page:
http://www.pedologia.net/it/CASTANI-CO/cms/Pagina.action?pageAction=&page=InfoSuolo.41&localeSite=it

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