LIVINGAGRO

Cross Border Living Laboratories for Agroforestry

ENI CBC Med Programme 2014 – 2020, first call for standard projects
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Photo by Cristian Mascia, Regional Forest Agency for Land and Environment of Sardinia (Fo.Re.S.T.A.S.)

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LIVINGAGRO: Innovation, *transfer of* ***knowledge*** *and* ***technology*** *for Mediterranean* ***agroforestry***

LIVINGAGRO CAPITALIZATION I – Building on ENPI CBC Med legacy: LIVINGAGRO and NETKITE met towards the establishment of practical and effective synergies

On 14th and 16th December 2020 the **informal capitalization and networking meeting between LIVINGAGRO and NETKITE project** took place virtually within LIVINGAGRO project activity 2.3.2 with the attendance of JTS officers Khaled ElSaadany & Zied Kbaier having the aim to share achieved results and best practices by the two concerned projects and identify possible collaboration opportunities.

In addition to some representatives of the Leading Beneficiary and of some of LIVINGAGRO project partners, the former project manager and communication manager of the Leading Beneficiary (Consorzio Arca) of NETKITE project did participate to the meeting. **Shared contents and discussion points of the webcall included a general overview of the two projects** during which the LIVINGAGRO technical team illustrated key outputs and results to be achieved by the project such as the two Living Labs (LLs), the project ICT platform, the partnership agreements between economic operators and research institutes, the B2B events and the innovations in terms of products and services, the economic stakeholder analysis, the policy analysis for LL1 at European and Lebanon level as well as the definition of innovations for LL 1 and 2. **Starting from the presentation of results and outputs of the two projects and from the open**

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discussion which followed the introductive part of the meeting, **several similitudes were identified**, among which:

- the objective of **transferring innovation in research Labs**;
- the establishment of an **open-innovation platform**;
- the foreseen **coaching and training services**;
- the achievement of **Public-Private Partnerships (PPPs)**;
- the achievement of **patents concerning innovative products and services**.

In addition, the **final session of the meeting was devoted to share experiences and identify possible collaboration opportunities** such as the involvement of entrepreneurs, universities and stakeholders in reference to sharing of their entrepreneurial and innovative ideas with consequent possible trust problems; the establishment of the ICT open-innovation platform which, in the case of NETKITE project, was developed internally by the LB; and patents to be achieved concerning innovations developed within LIVINGAGRO project for which the process will have to be initiated with the submission request to the competent authorities at national and European level before the end of the project.

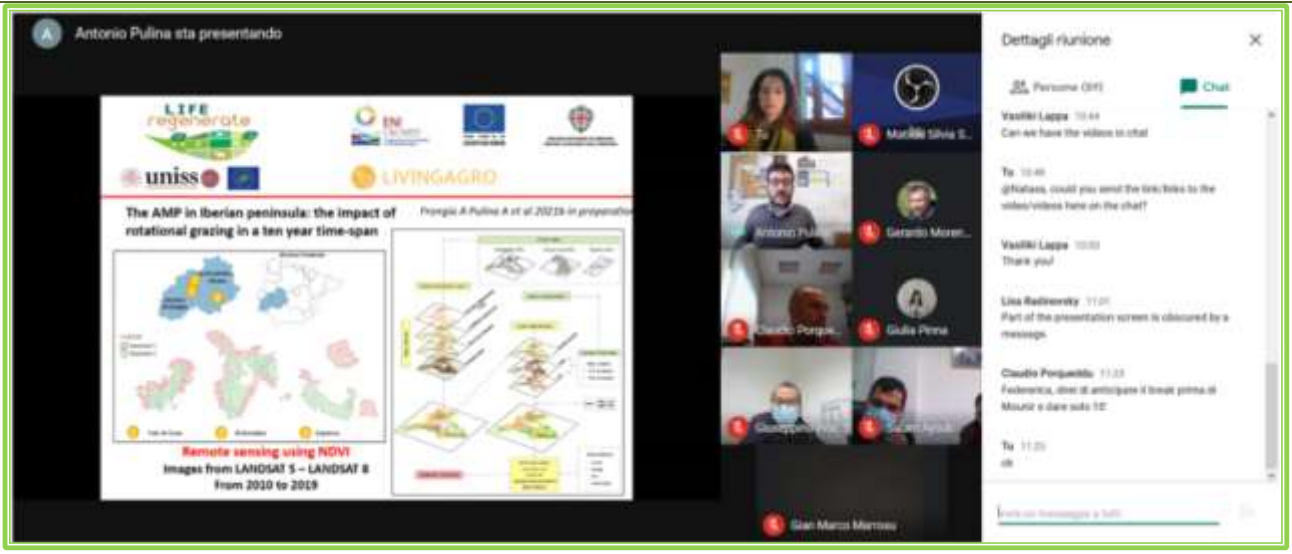
LIVINGAGRO CAPITALIZATION II - Webinar highlights importance of research and innovation for management of silvopastoral systems in the Mediterranean

On January 28th 2021 from 9.30 a.m. to 1.00 p.m. (CET), the ***webinar "Research and Innovation for the Mediterranean Silvopastoral Systems***" took place. The event was organized in the framework of LIVINGAGRO capitalization activities.

The **main positive outputs** of the webinar are represented by the **given visibility and capitalization of many interesting innovations and initiatives and related results linked to silvopastoral systems in the Mediterranean** facilitating sharing of best practices and the creation of a stakeholders' network to be enhanced within LIVINGAGRO project including researchers, farmers, economic operators and institutional representatives.

Silvopastoral systems are the main agroforestry systems in the Mediterranean Basin that strongly contribute to supporting local economies, providing both plant and animal products. Furthermore, their role in providing a wide range of ecosystem services is well recognized. Today, there is a strong demand from farmers for an integrated system of good practices that guarantee the sustainability of production, the transfer of innovation and the increase in profitability for the territories/actors involved.

The webinar was opened and moderated by ***Federica ROMANO***, LIVINGAGRO communication manager on behalf of the Regional Forest Agency for Land and Environment of Sardinia (Fo.Re.S.T.A.S.), LIVINGAGRO Leading Beneficiary, Italy), followed by ***Sara MALTONI***, team leader of the LIVINGAGRO technical team at Fo.Re.S.T.A.S. and ***Claudio PORQUEDDU***, Senior Researcher at the Institute for Animal Production in the Mediterranean Environment of the Italian National Research Council (CNR ISPAAM), LIVINGAGRO Partner 1, Italy), for an introduction on LIVINGAGRO project and on the webinar topics. In the first part of the meeting, the role and current trend of the agrosilvopastoral systems were discussed with a focus on the four countries of LIVINGAGRO project: Dr. ***Claudio PORQUEDDU*** of CNR ISPAAM reported about the situation in Italy, Prof. ***Anastasia PANTERA*** of the University of Athens spoke about Greece, Dr. ***Chadi MOHANNA*** of the Lebanese Ministry of Agriculture discussed the Lebanese context and Dr. ***Nizar OBEIDAT*** of the Jordan Ministry of Agriculture showed the main challenges related to silvopastoral systems in Jordan.



The second part of the meeting was dedicated to the capitalization of the two projects "Agforward" and "Regenerate" funded, respectively, by the European Commission under the Seventh Framework Programme and LIFE Programme, whose activities, outcomes and expected results were illustrated by Dr. ***Gerardo MORENO*** of the University of Extremadura (Spain), and Dr. ***Antonio PULINA*** of the University of Sassari (Italy) respectively revealing several points in common with the LIVINGAGRO project and its milestones. A last intervention presented a successful site restoration case study from Tunisia to the "virtual table" by Dr. ***Mounir LOUHAICHI*** of the International Center for Agricultural Research in the Dry Areas (ICARDA). At this point the debate was opened during which participants had the opportunity to interact with speakers, express their point of view and report about their experience on issues linked to the webinar focus. Finally, the concluding remarks of the webinar were made by ***Alberto MANTINO*** of the Scuola Superiore Sant'Anna di Pisa (Italy) who analysed vulnerability of Mediterranean silvopastoral systems, reporting about sector-related research and research outcomes as well as main future challenges, to end with the final reflections on how to combine food security, farm sustainability and natural capital conservation.

LIVINGAGRO CAPITALIZATION III - SCIENCE TO LAW: LIVINGAGRO meets the Jean Monnet "RIGHTS & SCIENCE" Excellence Centre of the Perugia University for establishing an effective theme-related partnership

On last **17th of February 2021 the informal capitalization and networking meeting** between LIVINGAGRO and the Jean Monnet "Rights & Science" Excellence Centre took place virtually within LIVINGAGRO project activity 2.3.2 having the aim to share achieved results and best practices by the two concerned projects and identify possible collaboration opportunities with particular reference to issues related to law applied to science and research.

In addition to some representatives of the Leading Beneficiary of LIVINGAGRO project and of two representatives of the "**Rights & Science**" **Excellence Centre of the Perugia University**, the meeting saw the attendance of JTS officers Khaled ElSaadany & Zied Kbaier. Shared contents and discussion points of the webcall included a general overview of the two projects in addition to a **deepening of**

technical and theme-related issues referred to the legal and societal aspects of science and innovation which will directly affect the development and delivery of some LIVINGAGRO outputs and, this fore, the achievement of expected results.

As a result of the open discussion, the **representatives of the two involved projects identified several points of convergence and agreed**, in particular, **to collaborate on** the following issues:

- ✓ **Intellectual property rights linked to innovations** to be developed within LIVINGAGRO project;
- ✓ **Patents to be achieved** within LIVINGAGRO project (LIVINGAGRO activity 4.4.1 and 4.4.2);
- ✓ **Rights-based and legal aspects related to** the establishment of the open-innovation **ICT platform** (LIVINGAGRO activity 3.1.3);
- ✓ **Legal and ethical issues linked to** sharing and exchange of **personal/sensitive data** (privacy issues) and other data;
- ✓ **Development of the e-learning modules**, some of which could be devoted to deepening legal and rights-related aspects linked to research, intellectual property etc. (LIVINGAGRO activity 3.1.8);
- ✓ **Formalization of research agreements** (LIVINGAGRO activity 3.3.1) **and of Public-Private Partnership agreements** (PPPs, LIVINGAGRO activity 3.1.11).

A **first practical collaboration opportunity** will be realized thanks to the **joint organization of a dedicated capitalization workshop** among the three foreseen within LIVINGAGRO project activity 2.3.2 to be held at the **beginning of April 2021**, which will focus on Public Private Partnerships (PPPs) addressing, among others, sustainability of the LIVINGAGRO Living Labs to be established (olive multifunctional system and grazed woodlands).

FROM THE PROJECT PARTNERS – In this edition: news from the National Agricultural Research Center (NARC) PP2, Jordan

Research as a basis for developing innovations concerning Living Lab 1 (multifunctional system) - Phylogenetic analysis revealed Jordan as one of the centers of origin for olive trees' cultivation throughout ages

Below we propose an **article** by LIVINGAGRO partner n.2 (NARC) which reports about a research that could conduct to the detection of interesting **innovations in reference to the establishment of LIVINGAGRO Living Laboratory n. 1** (olive multifunctional system).

In a scientific breakthrough achieved by a research team from the **National Agricultural Research Center (NARC) and two Jordanian Universities**, Dr. Nizar Haddad, the Director General of NARC and the leader of the research team, declared that the historical olive cultivar ***Mehras***, from Maysar area in Hashemiya town of Ajloun, is considered **one of the oldest genetic olive genotypes in the Mediterranean region**. According to the NARC study results, the phylogenetic analysis showed that ***Mehras* was genetically the closest to be a source of origin for the cultivated olives in Spain, Italy, and Cyprus** and was included in the same genetic group. This research comes as part of a national plan led by NARC in partnership with many researchers in Jordanian Universities to **document the genetic maps of several species and breeds of crops and animals with agricultural importance**. NARC has been able to decode and publish the genetic map of Levant honey bees, and register the genetic code of improved Jordanian "Awassi sheep", making NARC as the only reference for this sheep.

Dr. Hussein Miqdadi, a senior researcher of genetics and biotechnology at NARC, reports that *Mehras* is a genuine ancient ancestor that has preserved its existence through the ages, and its genetic fingerprint has proven its rich and unique genetic diversity between available olive

genotypes around the Mediterranean basin, with genetic features of significant implications on the **ability of *Mehras* to adapt to climate changes and harsh environments maintaining a distinctive olive oil quality**.

Head of Horticulture and Crop Science Department at the University of Jordan, Prof. Monther Sadder, stated that **one of the most important results of this project is to maximize the utilization of Jordanian genetic ancestors through the geographical indicators of documented *Mehras* olive oil**. He also mentioned that the results of the nucleotide sequence of the *Mehras* genome showed that it has a unique genetic diversity at the molecular level. According to the study, significant mutations exceeded 15 million Single Nucleotide Polymorphism (SNP) affected olive trees; nearly half a million are evident in the genetic coding regions with great influence by altering amino acids.

On the other hand, Dr. Mohammad Brake, a specialist in biotechnology at the University of Jerash, assured the **strong linkage of the study outputs with the archaeological discoveries which proved that the oldest human settlement ever known olive trees was in the Jordanian "Hadib Al Reeh" village in Wadi Rum**, which dates back to 5400 years BC; a fact that can be employed by NARC for the benefit of the Jordanian olive sector according to the permaculture researcher, Eng. Yahya Abu Sini, through enhancing the comparative advantage and added value of the Jordanian *Mehras* perennial olives.

The Director of the Horticulture Research Directorate at NARC, Dr. Salam Ayoub, clarified that the **results of studies carried out by NARC proved the high percentage of oil of *Mehras* olives which reaches 30%, considered one of the highest percentages among olive varieties in the world**. "A distinctive composition of fatty acids also characterizes *Mehras* oil, with one of the highest percentages of Oleic Acid reaching 70% compared to other varieties, in addition to the sensory properties and the distinctive fruity flavor of *Mehras* oil in particular". Ayoub added.

On the reason for choosing the name *Mehras* instead of "Romi olives", Dr. Nizar Haddad explained that **the cultural heritage, especially in Ajloun, distinguishes between the sizes of olive trees**; the name "Oud" is used for the young tree, the name "Al Qaroud" is used for the medium-sized perennial olive tree, while the name "*Mehras*" is used for the large-sized old olive tree, whose trunk

can be surrounded by the arms of three men. For distinguishing the complete genome from other entries, the international Gene Bank demands giving local names or symbols for the complete genome. In this context, NARC seeks to enhance the comparative advantage in the economic value chain of olive trees, oils and products, and their employment in agro-eco-tourism.

Dr. Haddad further explained that **NARC has developed a national plan to establish three Gene Banks for *Mehras* olives as an important source of origin for olive cultivars in the Mediterranean region** and, in cooperation with nurseries of the Ministry of Agriculture, **seedlings of *Mehras* olives will be produced to be disseminated among farmers due to their superiority in a number of characteristics** even compared to the *Nabali* variety that is widespread in Jordan. Furthermore, statistics of the Ministry of Agriculture estimate the number of olive trees in Jordan at about 18 million trees. Dr. Haddad also stated that **NARC is conducting several applied research projects to improve productivity, efficiency, quality and competitiveness of Jordanian olive oil globally** and that NARC provides free olive oil analysis services to farmers.

Ten Jordanian researchers in different scientific specializations and expertise took part in this research. To **read the scientific publication entitled "Complete chloroplast genome sequence of historical olive (*Olea europaea subsp. europaea*) *cultivar Mehras*, in Jordan**" in the peer-reviewed journal 'Mitochondrial DNA', kindly visit the following links:

https://www.tandfonline.com/doi/full/10.1080/23802359.2020.1860712

https://www.facebook.com/752999061741462/posts/1338928909815138/?sfnsn=mo

https://www.facebook.com/752999061741462/posts/1338927419815287/?sfnsn=mo

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The ***2014-2020 ENI CBC Mediterranean Sea Basin Programme*** *is a multilateral Cross-Border Cooperation (CBC) initiative funded by the European Neighborhood Instrument (ENI). The Programme objective is to foster fair, equitable and sustainable economic, social and territorial development, which may advance cross-border integration and valorize participating countries' territories and values. The following 13countries participate in the Programme: Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Malta, Palestine, Portugal, Spain, Tunisia. The Managing Authority (JMA) is the Autonomous Region of Sardinia (Italy). Official Programme languages are Arabic, English and French. For more information, please visit: www.enicbcmed.eu.*

The ***European Union*** *is made up of 27 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development whilst maintaining cultural diversity, tolerance and individual freedoms. The European Union is committed to sharing its achievements and its values with countries and peoples beyond its borders.*

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