Improving access to FORest GENetic resources Information and services for end-Users

Deliverable D7.6

Conference report and guidelines for scalability of the pilot action

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TABLE OF CONTENTS

1 Summary

This report presents the results of a pilot action that aimed at incorporating forest genetic resources (FGR) into regional funding schemes, specifically in the Veneto region of Italy. The initiative sought to raise awareness among policymakers and civil servants of the importance of FGR for local forest management and to incorporate these resources into funding mechanisms. The pilot project focused on *Quercus robur* (English oak), an important species for local reforestation efforts, and was supported by scientific research which formed the basis of a new funding measure under the Rural Development Programme (RDP).

The Veneto Agricoltura (VA) team, in cooperation with regional authorities, designed a specific RDP call (SRA31) to promote the conservation and sustainable use of FGR. This measure provides support for the *in situ* and *ex situ* conservation of forest reproductive material (FRM). The initiative also included a final conference where knowledge was shared with stakeholders and experts from other EU countries. The event facilitated discussions on best practices, with case studies from Spain highlighting successful models of centralized funding for FGR.

The main result of the pilot is the establishment of the RDP measure SRA31, aimed at increasing seed production and plant health while enhancing the genetic variability of forest plantations. This approach will be a key case study for future forest management strategies in Italy.

2 Introduction

FGR and FRM are not among the top priorities for policy makers in Italy. Funding measures are lacking and research and support to forest managers is limited to sporadic initiatives usually linked to EU funded projects. VA, within task 7.5 of Forgenius had two primary objectives.

1) Foresee and design a more structured procedure within regional funding schemes, backing the diffusion of adequate forest genetic resources for restoration and mitigation measures. The aim of the pilot is to include the measure in the RDP framework that at Italian level is managed at Regional level, with Veneto Region being the authority in charge of this pilot.

2) Organize a conference to present the pilot action to stakeholders and to promote exchange of best practices with other EU countries that have implemented similar funding initiatives.

It is worth noting that the Regione Veneto, thanks to its operative branch VA, has always been a dynamic entity for what concerns the research on FGR and FRM. VA has promoted and funded genetic research relying on FORGENIUS methodologies and approaches. Several studies and research activities were funded by regional authorities using national financial resources and conducted by the geneticists involved in the Forgenius technical WPs with the aim of creating a strong knowledge

for the upcoming RDP measure object of this deliverable. In a first phase, *Quercus robur* local populations were studied providing the basis on which the RDP measure was designed. This research-based approach is intended to continue beyond the end of the FORGENIUS project and in 2026 additional funds will be allocated to VA to continue genetic investigations for conservation and reforestation purposes. The genetic investigations will be conducted using the genomic resources developed in Forgenius for *Quercus robur* (e.g. identification of hybrids, origin of progenies, introgressions with adaptive significance with other species of the *Quercus* genus), and developed ex-novo for *Carpinus betulus, Tilia cordata* and *Acer campestre*.

3 Results

Thanks to several meetings between VA and the regional authorities responsible for financing measures in the forestry sector (Regione Veneto), it was possible to:

- Design the RDP call for proposals with the specific objective of producing high-quality genetic seed for a species of particular importance for local afforestation (English oak, *Quercus robur*). The measure within the RDP aims to promote the in situ and ex situ conservation of forest GenRes.
- Organize a final conference to promote the exchange of knowledge and to learn from international experience to gain knowledge and lessons learnt.

3.1 The RDP measure

As it can be seen, the scientific studies have made it possible to support the design of the RDP measure pilot case that is identified with code SRA31 – "Support for the conservation, use and sustainable development of forest genetic resources". RDP SRA31.1 (in situ conservation), in the sub-actions a) and b); is designed according to the following criteria:

- publication of a call addressed to owners (private and/or public) of the stands/woods/seed sources (i.e. regional register of forest reproductive material sites) of the locally most important species in forest restoration (i.e. *Quercus robur*);
- using a simple and inclusive description in the call details. An issue with the RDP funding schemes is the bureaucratic complexity, so regional civil servants preferred a text with brief description, to leave more flexibility to potential beneficiaries and the possibility of financing proposals tailored to specific local contexts;
- actively searching for potentially interested owners, relying on registered seed collection sites for forest reproductive material (FGR);
- select a specific pilot site to test *in situ* conservation with the following specific characteristics: a) target species *Quercus robur*; b) genetic characterization done with genetic markers developed under FORGENIUS. The expected improvements are: a) increased seed production and plants health status and b) increased genetic variability of future seeds.

The SRA 31 finances, for the same beneficiary and in the same site:

- targeted silvicultural interventions (e.g. identification of plants particularly productive for pollen and seed production, targeted thinning) and
- the expansion of forest areas through the planting of seedlings

The field pilot case

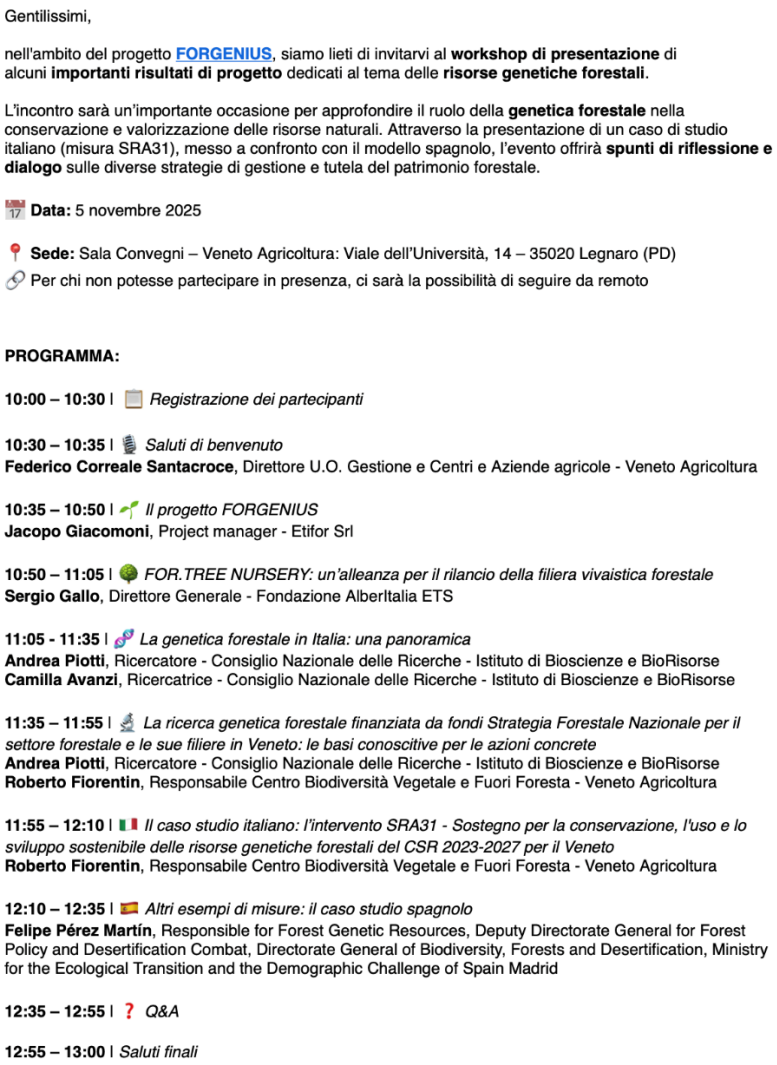
Specifically, the selected pilot stand was planted about 25 years ago on a former arable land and now is a good seed collection site. The genetic structure of the oaks was studied by geneticists and the results allowed this site to be included in the regional book of forest reproductive material (FRM). This is because the genetic variability found is similar to that of the populations of origin of the seeds used to produce the seedlings. VA will provide the beneficiaries with the seedlings of the correct genetic mix, specially prepared for this purpose. This is based on the results of the research conducted by geneticists on the neutral and adaptive dynamics shaping the genetic diversity of the species.

Even if SRA 31.1 is a new and original approach in the Country, it is worth mentioning that in the same measure, regional civil servants included also SRA 31.2 (ex situ conservation), activating (subactions b) and c)) the creation of seed arboretums and species collection fields based on available genetic knowledge.

As of today (November 2025), this measure from the Veneto Region is one of the few in the Italian RDP specifically aimed at conserving GenRes.

3.2 Final conference with stakeholders and lesson learnt for scalability

The second objective was to organize a final conference and to promote knowledge exchange with similar initiatives at European level. The agenda of the conference is reported below; it was held in a hybrid form, online (56 participants) and in presence (15 participants) with 71 participants in the VA headquarter, Legnaro, on the 5th November 2025.



Gentilissimi,

nell'ambito del progetto **FORGENIUS**, siamo lieti di invitarvi al **workshop di presentazione** di alcuni **importanti risultati di progetto** dedicati al tema delle **risorse genetiche forestali**.

L'incontro sarà un'importante occasione per approfondire il ruolo della **genetica forestale** nella conservazione e valorizzazione delle risorse naturali. Attraverso la presentazione di un caso di studio italiano (misura SRA31), messo a confronto con il modello spagnolo, l'evento offrirà **spunti di riflessione e dialogo** sulle diverse strategie di gestione e tutela del patrimonio forestale.

📅 **Data:** 5 novembre 2025

📍 **Sede:** Sala Convegni – Veneto Agricoltura: Viale dell'Università, 14 – 35020 Legnaro (PD)
🔗 Per chi non potesse partecipare in presenza, ci sarà la possibilità di seguire da remoto

PROGRAMMA:

10:00 – 10:30 | 📋 *Registrazione dei partecipanti*

10:30 – 10:35 | 🎙️ *Saluti di benvenuto*
Federico Correale Santacroce, Direttore U.O. Gestione e Centri e Aziende agricole - Veneto Agricoltura

10:35 – 10:50 | 🌱 *Il progetto FORGENIUS*
Jacopo Giacomoni, Project manager - Etifor Srl

10:50 – 11:05 | 🌳 *FOR.TREE NURSERY: un'alleanza per il rilancio della filiera vivaistica forestale*
Sergio Gallo, Direttore Generale - Fondazione AlberItalia ETS

11:05 - 11:35 | 🧬 *La genetica forestale in Italia: una panoramica*
Andrea Piotti, Ricercatore - Consiglio Nazionale delle Ricerche - Istituto di Bioscienze e BioRisorse
Camilla Avanzi, Ricercatrice - Consiglio Nazionale delle Ricerche - Istituto di Bioscienze e BioRisorse

11:35 – 11:55 | 🔬 *La ricerca genetica forestale finanziata da fondi Strategia Forestale Nazionale per il settore forestale e le sue filiere in Veneto: le basi conoscitive per le azioni concrete*
Andrea Piotti, Ricercatore - Consiglio Nazionale delle Ricerche - Istituto di Bioscienze e BioRisorse
Roberto Fiorentin, Responsabile Centro Biodiversità Vegetale e Fuori Foresta - Veneto Agricoltura

11:55 – 12:10 | 🇮🇹 *Il caso studio italiano: l'intervento SRA31 - Sostegno per la conservazione, l'uso e lo sviluppo sostenibile delle risorse genetiche forestali del CSR 2023-2027 per il Veneto*
Roberto Fiorentin, Responsabile Centro Biodiversità Vegetale e Fuori Foresta - Veneto Agricoltura

12:10 – 12:35 | 🇪🇸 *Altri esempi di misure: il caso studio spagnolo*
Felipe Pérez Martín, Responsible for Forest Genetic Resources, Deputy Directorate General for Forest Policy and Desertification Combat, Directorate General of Biodiversity, Forests and Desertification, Ministry for the Ecological Transition and the Demographic Challenge of Spain Madrid

12:35 – 12:55 | ❓ *Q&A*

12:55 – 13:00 | *Saluti finali*

Figure 1 Agenda of the Final conference to present RDP SRA31

At the conference, we presented For.Tree Nursery, an Italian-based project aimed at promoting the renaissance of the Italian nursery sector. The preparatory studies and research, which formed the scientific basis of the Veneto RDP measure, were presented by the CNR colleagues, together with an overview of the studies at Italian level related to the FGR and FRM sectors. It emerged that Italy has high genetic diversity but still lacks in forest genomics research. CNR studies reveal unique gene pools in species such as silver fir, which require conservation strategies that are not currently coordinated at a national level.

Figure 2 Presentation by CNR on the Italian FGR sector

The SRA31 measure was presented in detail by VA, highlighting the innovation brought by this new RDP measure, as discussed in the previous chapter.

In the final presentation, Felipe Pérez Martín presented the Spanish case study, highlighting several initiatives that have been funded in Spain to support the FGR sector.

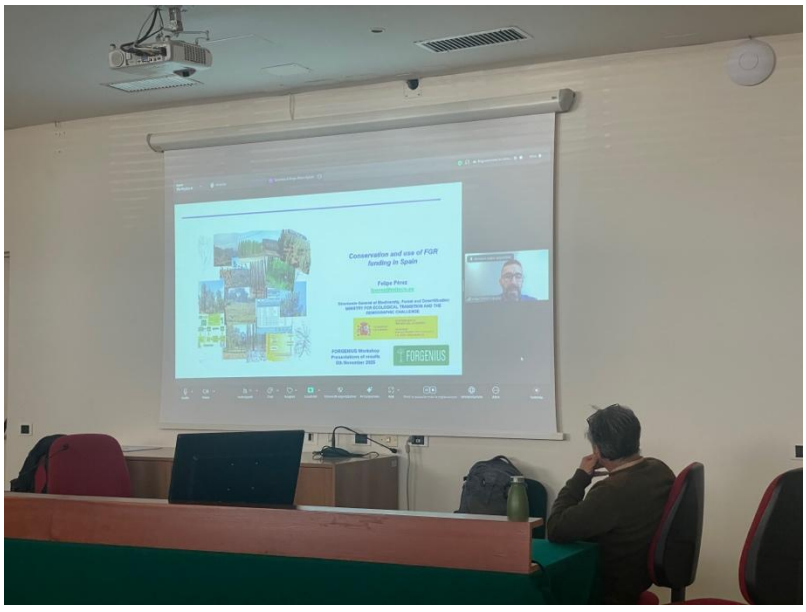


Figure 3 Presentation of the Spanish funding measures for the FGR sector

Figure 4 Examples of field activities funded under the Spanish measures

The Spanish experience brought a very important theme to the discussion: the need to scale up the funding initiatives to a national level. Indeed, Spain adopted a centralized approach relying on the Rural Development Funds (2014-2020) for Forest Genetic Resources (FGR). The following are the key success factors for the Spanish case study:

- **Centralized Budget**: having an annual dedicated budget for FGR activities ensures continuity.
- **Dedicated staff**: in Spain there was a competent full-time staff dedicated to the funding measures for the FGR sector.
- **National Coordination**: a national committee (central government + 17 regions) ensures a coherent strategy.
- **Strong link between policy makers and researchers**: formal agreements connect decision-makers with researchers to provide advice and support.

This structure allowed, among other results, a coordinated national genetic characterization effort, with 228 GCUs out of 327 characterized.

The key take home message is that **a national strategy and centralized coordination are crucial to overcome the limitations of fragmented regional funding**.

Following the conference, a working group led by VA, and including Regional authorities and Regional Agencies linked to the FGR sector, will be created (winter 2025). The main goal of the working group will be to promote a national coordinated approach to the FGR thematic, taking inspiration from the Spanish successful case study.

4 Conclusions

We can conclude that, apart from the concrete and verifiable results listed above, the most significant outcomes for the RDP are:

- The increased awareness of the importance of forest genetic resources in guiding the use of public funds allocated to forestry, as evidenced by the unprecedented allocation of funds for this purpose. The results included:
  - the opening of a channel of communication between VA (the operative agency) and the regional authorities responsible for funding;
  - the identification by VA of the species to be researched, thanks to its direct contact with the end users of nursery material and the market and its expertise in restoration and reforestation;
  - the allocation to VA, a partner in the FORGENIUS project, of resources to be used for genetic research by the regional authority
- The genetic enhancement of plantations whose suitability as seed collection stands has been verified from a genetic point of view (a pilot approach that can be replicated in highly anthropized regions where natural forests are scarce and sometimes in critical condition)
- The comprehension that for scalability of the RDP action, **a national strategy and centralized coordination are crucial in overcoming the limitations of fragmented regional funding**.

5 Partners involved in the work

- VA

6 Annexes

- RDP measures (in Italian)
- signatures of the meeting with the Regional authorities

Improving access to FORest GENetic resources Information and services for end-Users

WP75.2 - Design a procedure backing the diffusion of adequate genetic resources as restoration and mitigation measure

name	organization	signature
Silvia Majer	Regione del Veneto	
SARA CODATO	Regione del Veneto	
ANDREA CASTALDI	Regione del Veneto	
DORIANA FERRI	Regione del Veneto	
ROBERTO FIORENTIN	VENETO AGRICOLTURA	

CONTENTS:

12.02.2025

CONTENTS:

Following previous contacts between VA and the regional authorities responsible for financing measures in the forestry, nursery and forestation sector, it will be possible to activate specific measures within the RDP aimed at promoting the in situ and ex situ conservation of forest GenRes. As a consequence of the contacts, the first general draft of the measures has been created (it is the subject of today's discussion), the points of which are summarized below (the codes are those of the measure called SRA31 – "Support for the conservation, use and sustainable development of forest genetic resources")

SRA31.1 (in situ conservation) activate subactions a) and b). The idea will be built up in the coming months (regional authorities in collaboration with VA) as follows:

- call addressed to owners (private and/or public) of the stands/woods/seed sources (regional register of basic material) of the locally most important species in forest restoration (Quercus robur), whose genetic structure has been studied using neutral molecular markers and is being studied with Forgenius methodologies for the exploration of genetic variability with potential adaptive value;
- the measure will prepare short and simple guidelines with the dual aim of maintaining/improving the genetic characteristics of the forest in the long term through the planting of plants of the same species (with origin of the seed, number of individuals, distance and methods to be defined with the support of the geneticists involved in the Forgenius technical WPs) and forest management aimed at conserving/improving seed production and the characteristics of the stand
- the regional authority through its VA operational agency will make available to the beneficiaries the seedlings of the correct genetic mix, specially prepared for this purpose, based on the results of the research conducted by geneticists on the neutral and adaptive dynamics that are shaping the genetic diversity of the species.
- the regional authorities will adapt their practice for issuing the main identity certificate for this purposes

SRA 31.2 (ex situ conservation) activate subactions b) and c) creation of seed arboretums and species collection fields based on available genetic knowledge.

Other funding sources (national forestry strategy, SFN) are national but managed by regional authorities, will be allocated in order to continue genetic investigations for conservation and reforestation purposes. The genetic investigations will be conducted using the genomic resources developed in Forgenius for Quercus robur (identification of hybrids, origin of progenies, introgressions with adaptive significance with other species of the Quercus genus), and developed ex-novo for Carpinus betulus Tilia cordata and Acer campestre).

At present, this of the Veneto Region is the only measure of the Italian RDP to be specifically aimed at the conservation of GenRes and therefore the process of writing the measure itself, in addition to the investigations that will be financed in the SFN, will be disseminated to the other regions as part of the event foreseen by WP7 of the Forgenius project, the organization of which will be handled by VA.

12.02.2025