



Conserving Crop Wild Relatives (CWRs) *in situ*

The role of Genetic Reserves

Introduction

Crop wild relatives are a great source of diversity to develop new crop varieties. Farmers and plant breeders have used them for centuries, but their potential has not been fully exploited yet. Because many of their populations are currently threatened in their natural habitats, it is paramount that they are properly known, secured, and monitored in situ in Genetic Reserves, and that they are made readily available to end-users.



Objectives

Crops need to constantly adapt to new challenges and demands due to climate change, consumer's preferences, or market product innovation. To address those, plant breeders need access to the broadest range possible of traits diversity. Here, *in situ* conservation of CWRs plays a key role. The COUSIN project contributes to conserve CWRs *in situ* in Europe with the establishment of Genetic Reserves (GRs), i.e. public or private areas designated for the long-

term active conservation of crop wild relative populations in their natural habitats. GRs are low-input areas which require a set of minimum standards for their establishment, a management and monitoring plan in place, and a long-term conservation agreement signed by the landowners or land managers. Moreover, to ensure overall success it is important to build a strong network of stakeholders that support, promote, encourage, and contribute to the management of the GRs.





Results

Thanks to the COUSIN project, five genetic reserves are being established in Greece, Italy, Switzerland and Spain. They directly contribute to building a European network of GRs, whose data will be added to Europe's plant genetic resources conservation database platform (EURISCO). Greece, Italy and Switzerland will be establishing pilot GRs that will be critical to disseminate their purpose and facilitate the establishment of national networks. The two new GRs in Spain add to the initiated national network, therefore contributing to achieving Target 7 of its National Strategy to conserve CWRs. COUSIN also opens a new opportunity to connect people and institutions at both local and national level as stakeholders with an interest and impact on CWR conservation and use are identified, informed, and engaged.

Recommendations

Farmers, local stakeholders (e.g. conservation managers, environmental educators, citizens), policy makers (e.g. town council), and any other institution directly involved in the establishment of a Genetic Reserve will benefit from gaining new knowledge and skills on CWRs identification and *in situ* conservation and management. These will be of great value to get new perspectives when planning local conservation activities or strategies, to increase local plant diversity knowledge or to encourage nationwide *in situ* CWRs conservation.

Plant breeders and researchers will have species and population data available and accessible through EURISCO providing a bridge between *in situ* conservation and use.

Further readings

- COUSIN project website, <https://cousinproject.eu/>
- Maxted, N., Avagyan, A. Frese, L., Iriondo, J.M., Magos Brehm, J., Singer, A. and Kell, S.P. (2013). Preserving diversity: a concept for in situ conservation of crop wild relatives in Europe. Rome, Italy: In Situ and On-farm Conservation Network, European Cooperative Programme for Plant Genetic Resources, Rome, 14 pp.
- Maxted, N., Hunter, D., Ortiz Ríos, R. (2020) Plant Genetic Conservation. Cambridge University Press.
- Molina, A., Torres, E., Rubio Teso, ML., Álvarez, C., De la Rosa, L., Rincón, V., Tardío, J., Guasch, L., Iriondo, JM. (2022). Estrategia Nacional de Conservación y Utilización de Parientes Silvestres de los Cultivos (PSC) y Plantas Silvestres de Uso Alimentario (PSUA). Ministerio de Agricultura, Pesca y Alimentación.

