Towards a shared strategyfor the conservation of genetic resources in European and Mediterranean forests

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Since its adoption by a majority of countries following on the Earth Summit at Rio de Janeiro (Brazil) in 1992, the Convention on Biological Diversity (CBD) has formed the guidelines for both international and national strategies and efforts for sustainable development. The CBD recognises expicitly that if no protection is given to biodiversity, the sustainable management of the environment, which is so beneficial to human societies, will be impossible. This is equally true for forests and is recognised as such by political processes like Forest Europe or cooperative undertakings like the FAO's Silva Mediterranea, two examples which respectively involve 46 and 26 countries from around the Mediterranean Rim and from Europe.

The diversity of forests - of their species and the populations that make them up – represents a considerable resource for humankind. This resource has acquired even more significance in the light of climate change. Over the last few decades, European countries have devoted considerable effort to conserving the genetic diversity of the tree species that make up their forests; the programme EUFORGEN (http:/www.euforgen/) is the effective result of their efforts.

The conservation strategy adopted by the European countries is based essentially on the establishment of a network of forests in situ which represent the genetic diversity of the species of greatest importance for these countries. These forests, the building blocks that make up the network, are termed units of dynamic conservation (UC) of the genetic diversity. In these UCs, the processes favouring adaptation and natural selection and the flow of genes can operate, hence the description "dynamic". As of 15 July 2019, the EUFGIS database (http:/portal.eufgis.org/), which monitors the efforts for the conservation of biodiversity throughout Europe, had recorded 3,590 UCs for 107 forest tree species in 35 countries.

These species ignore all political barriers: their distribution areas do not stop at a country's borders, nor those of Europe. Many species enjoy a worldwide distribution which also includes the Mediterranean countries. Populations in Mediterranean countries often form the southernmost stands of a species. Otherwise known as rear-edge populations, these stands have great importance for the conservation of the genetic diversity of a species and its evolving dynamic. Such populations represent a reservoir of diversity that can be called upon as the forests adapt to climate change.

Indeed, the Mediterranean region is considered to have been one of the main zones of refuge at the time of the climatic upheavals during the Pleistocene age. The Mediterranean stands of the great European forest tree species that can be found on the northern, southern and eastern slopes of the Mediterranean Rim are the descendants of those refugee populations. With each increase in temperature of 1°C, the potential habitat of these species in the Northern Hemisphere moves roughly 100 km northwards. Thus, the species and populations currently present in Mediterranean Africa and Asia but absent from Europe could well encounter in a century's time conditions favourable to their development.

Consequently, a commonly-held European – Mediterranean strategy for the conservation of genetic resources needs to see the light of day. Additional units of conservation straddling migratory routes, refuge zones and contact areas should be incorporated into the European network of forest units of conservation.

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