The importance of cultural practices and biodiversity in the Mediterranean Basin

Mediterranean landscapes have been shaped by human presence for centuries. Numerous species in these landscapes depend on agrosilvopastoral practices to different degrees, however, the cultural practices in these systems are being lost as a result of different social and economic pressures. These pressures are threatening the biodiversity that is associated with the cultural practices. The culture and relationship between agricultural, pastoral and silvicultural practices that maintain or enhance the elements of biodiversity and, which currently persist, should be enhanced/protected to contribute to biodiversity preservation in the Mediterranean Basin.

KEY FACTS

- There are a wide range of cultural practices present in the Mediterranean agricultural systems. Many of these practices are proven to benefit biodiversity.
- The positive impact of traditional agricultural practices is found across many countries in the Mediterranean basin (Fig. 1).
- The Northern Mediterranean basin provides greater evidence of the positive effect that traditional agricultural practices have on biodiversity.
- The full effects of several cultural practices on biodiversity still need to be further explored.
Cultural practices in the Mediterranean Basin that have a nexus with biodiversity and are subsequently supported by scientific evidence are detailed below.

### PRACTICE-BIODIVERSITY NEXUS

#### GENES

Local livestock breeds and selection of land varieties add important genetic diversity to the livestock species which allows them to adapt to the local landscape and climatic conditions allowing for traditional management.

#### SPECIES

Pruning and thinning maintains Q. ilex, Q. pyrenaica and Castanea spp. presence within their habitat while increasing landscape diversity.

Shrub management favours seedling recruitment of Q. ilex.

#### ECOSYSTEMS

Transhumance and transstermitance: seed dispersal enhances plant diversity, avoids secondary succession and thus increases landscape diversity. Summer grazing in particular areas contributes to the diversity of mountain grassland.

Herding by shepherds: sustains N. stricta communities, hay meadows, alpine pastures, bird and insect diversity. It also fertilizes soils and contributes to soil diversity.

Governance norms and rules: if overstocking is avoided, stocking can increase plant diversity by avoiding secondary succession (i.e. dominance of C. oromediterraneus).

#### REGIONS

| GENES | Liguria, Morocco Anti-Atlas Réserve de biosphère de l'arganeraie, Sierra Nevada, Central System, Dehesas/Montados, Menorca, Lemnos and Al Shouf |
| SPECIES | Menorca, Central System, Dehesas/Montados |
| ECOSYSTEMS | Sierra Nevada, Central System, Dehesas/Montados, Morocco Anti-Atlas Réserve de biosphère de l'arganeraie |

### RELATIONSHIPS BETWEEN BIODIVERSITY AND CULTURAL PRACTICES TO EXPLORE FURTHER

- **Stone Management**: Drystone walls were highlighted as important habitats for plants, insects, birds and reptiles. The importance for endemic species of reptiles has been evidenced in the literature, but research is required to fully comprehend these relationships.
- **Water Management**: Water is a key factor that is managed differently in the Mediterranean. Water ditches and semi-permanent ponds are habitats for amphibians or insects that are tailored to local conditions in which connections to biodiversity are not fully understood.
- **Soil Fertility and soil biodiversity**: Mediterranean landscapes include cultural practices to increase soil fertility. For example, there are potential positive effects of redileo and rotational grazing on soil diversity and increasing plant diversity, however these links require further scientific research.
- **Governance practices**: In certain areas (Dehesas Boyales; Anti-Atlas Réserve de biosphère de l’arganeraie) it is evidenced that communal governance of pastoral systems has positive impacts on biodiversity, but it needs to be studied for other areas.