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CROP WILD RELATIVES IN LEBANON, TOWARDS LONG-TERM CONSERVATION OF THEIR DIVERSITY

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Lebanon is a part of the Fertile Crescent recognized for plant species concentration but also for its agrobiodiversity wealth in terms of both rich diversity of cultivated plants and of wild relatives; the country is characterized by a Mediterranean-type climate that works in favor of its high diversity. Conservation of Crop Wild Relatives (CWR) is essential both to prevent the loss of CWR genetic diversity and to facilitate their use in crop breeding. Towards a long-term CWR conservation in the country, in this study we aim at the identification of high priority locations for collecting CWR in Lebanon to fill the gaps in genebank collections. To the purpose, we compared data on the distributions of some priority species belonging to *Triticum*, *Hordeum*, *Pisum*, *Lens* and *Cicer* genera with the locations where different populations of the same species have already been collected. Priority species (see below) were selected based on the results of a taxonomical review of the CWR present in Lebanon and of analysis of their relatedness to the domesticated species; to the purpose, the Gene pool concept established by Maxted et al. (2006) was used.

First a desk analysis of Lebanese CWR species was performed, followed by a validation for the synonymous relying on POWO (https://powo.science.kew.org/), WFO (http://www.worldfloraonline.org/) and Euro+Med (https://www.emplantbase.org/home.html). Accordingly, starting from the 40 Lebanese CWR species belonging to the previously mentioned

genera a list of 12 priority species was developed including: *Triticum monococcum* subsp. *aegilopoides* (Link) Thell., *Triticum urartu* Thumanjan ex Gandilyan, *Triticum dicoccoides* (Asch. & Graebn.) Schweinf., *Triticum timopheevii* (Zhuk.) Zhuk., *Hordeum spontaneum* K.Koch, *Pisum sativum* subsp. elatius (M. Bieb.) Asch. & Graebn., *Lens culinaris* subsp. *odemensis* (Ladiz.) M. E. Ferguson & al., *Lens culinaris* subsp. *orientalis* (Boiss.) Ponert, *Lens ervoides* (Brign.) Grande, *Cicer judaicum* Boiss., *Cicer pinnatifidum* Jaub. & Spach and *Cicer incisum* var. libanoticum (Boiss.) Bornm. Occurrence data of selected priority species were then retrieved from GBIF, GENESYS and ICARDA's genebank database.

The query of GBIF, Genesys, and of the ICARDA's genebank database resulted in a collection of 1,315 ex situ records while, for the in situ, 874 records were obtained from Genesys. Produced datasets were then filtered according to Rubio Teso et al., 2020; 213 occurrences survived for the ex situ, while only 24 for the in situ. An in situ GAP analysis was then performed comparing the distribution of: i) sites hosting CWR populations in situ and ii) sites of collection of population conserved ex situ using QGIS software.

Results of this study will contribute to the localization of areas in Lebanon suitable for new collection missions so that contributing to a long-term conservation of the Lebanese agrobiodiversity.