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Challenges of In Situ Conservation of Crop Wild Relatives

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Abstract: Crop wild relatives (CWRs) will gain in importance as changing climates put both traditional and advanced cultivars under increasing stress, leading to a need for plant breeding to produce new varieties able to grow under the new climate regimes. Traditionally, the approach to the conservation of CWRs has been ex situ - the collection and maintenance of seed accessions in national, regional, and international germplasm banks, supplemented by field genebanks for species with recalcitrant seeds. More recently the need to maintain CWRs in their natural habitats (in situ) has been advocated. This is very different from on-farm conservation of traditional land races and is a complex multidisciplinary process. Particular problems that have to be addressed include the adoption of a workable definition of what is a CWR, application of priority-determining mechanisms because of the large number of candidate species of CWRs, assessment of the effectiveness of conservation approaches, the relative costs of in situ and ex situ approaches, integration of CWR in situ conservation into national programmes, and the challenges posed by global change. CWRs may be conserved in both protected and non-protected areas. Presence in the former is no guarantee of their survival and in most cases some degree of management intervention is required. Experience derived from recent EU- and GEF-funded CWR conservation initiatives will be drawn upon.

Key Words: Crop wild relatives, conservation, in situ, global climate change

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