

Towards a global approach to the conservation of wild relatives of cultivated plants

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Abstract

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The multidisciplinary nature of the conservation of the wild relatives of crops requires considerable efforts of organization so that the different partners involved can work effectively together. Stake holders need to be identified and some body or organization is mandated to ensure coordination. It is also important in view of the enduring nature of conservation is to ensure a long-term commitment from those responsible.

Introduction

The conservation of wild relatives of cultivated plants is a complex field of activity, involving a wide array of different disciplines. In particular it lies at the interface between genetic resources and nature conservation, two distinct and well-established sectors which have only recently started to come together under the broader framework of biodiversity.

Technical and scientific activities only make sense if some form of *ad hoc* organization is established, allowing dialogue and exchange of information between people who have different backgrounds and different objectives.

Organization as a crucial task

Interest in wild relatives comes from geneticists and breeders who have looked at the genetic relationships between cultivated plants and their wild or weedy relatives. Their research has allowed us to identify quantitative genetic characters that have been incorporated into improved cultivars after long-term programmes.

On the other hand, agencies charged with nature conservation have concentrated on setting up the legal and technical basis for the protection of habitats. When they consider the protection of target species, it is usually for large vertebrate animals. Usually the only

plants that are considered for protection are those that are very rare or threatened or are showy. This approach is mainly concerned with species and subspecies.

In the case of wild relatives, we deal with plants that are not necessarily rare or prestigious, and we need to consider the genetic diversity within species – something that is very difficult to express in legal terms. In many cases the strategy will be to define a sample of representative populations in the area of distribution, and to implement management plans in areas that are not currently protected. This leads to the need for development of links with the managers of agricultural and forestry areas.

Identifying stake holders and giving them a mandate

The objectives mentioned above can only be reached within the framework of national strategies, using specialized networks. The networks, involving all the stake holders, would have the role of defining priorities, sharing out the tasks involved, identifying legal tools if necessary, seeking funding and ensuring the monitoring of all activities. It should be added that such network can only develop if someone or some organization is mandated to coordinate it.

Involving users and researchers

There are many reasons for preserving biodiversity, starting with ethical and aesthetic considerations. In the past decade, due to the influence of the Convention on Biological Diversity, emphasis has been placed on the significance of biodiversity as genetic resources. This is especially true of wild relatives of crops and we now have a good opportunity to raise the awareness of plant breeders of the importance of conservation. The importance of involving researchers and breeders is not limited to obtaining their support: on the contrary, they are the right people to provide advice and help define priorities and management guidelines.

Conservation networks must prove useful to users by making samples available for their characterization and evaluation. Another, highly innovative, activity would be to promote research programmes such as dynamic conservation of artificial metapopulations as described elsewhere in this volume.

Ensuring long term commitment

Perhaps the most difficult task is to ensure the long term commitment of the various partners. Information is one of the most important tools to help maintain the interest of the people who are currently or potentially involved in such conservation programmes. It helps give them recognition for their efforts and they see the results.

On the other hand, networks for the conservation of wild relatives must be properly incorporated and recognized in national strategies for plant genetic resources as well as in national biodiversity strategies.

Coordination through regional and international networks is also essential since many species have a wide distribution area, and moreover methodologies are best established using all the scientific expertise available world wide.

Conclusion

The importance of wild relatives and of *in situ* conservation is now well recognized by the international community. The time has now come to implement activities in this area. Two approaches can be combined: the first is to gather and publish all the available information on the biology and distribution of wild relatives, taking in to account especially the populations that exist in protected areas. We need to undertake protection measures as a matter of urgency, even on the basis of the limited information we possess at present. The second approach is to define a set of research and conservation programmes on pilot species so as to strengthen the scientific basis of conservation strategies, and also improve the network organization. Both approaches are necessary since limited funding will never permit in-depth studies to be carried out for all species, and in many cases the limiting factor is not so much scientific knowledge but rather our capacity to mobilize the stake holders.

In France three pilot programmes have been planned. The first deals with selected forest trees, taking advantage of the network of state-owned forests managed by the Office National des Forêts; the second one covers forage crops of meadows in collaboration with the Conservatoire régional d'espaces naturels; and the third one, involving *Beta* and *Brassica* species that are mainly coastal, involves the Conservatoire du littoral.

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