



Adapting agriculture to environmental change through improved use of wild species and local varieties in Europe

Our future depends on the continued availability of sources of novel genes to breed new varieties of crops which will be able to thrive in the environmental conditions we now face as a result of climate change. Wild plant species closely related to crops (crop wild relatives) and traditional, locally adapted crop varieties (landraces) contain vital sources of such genes, yet these resources themselves are threatened by the effects of climate change, as well as by a range of other human-induced pressures and socio-economic changes. Further, while the value of these resources for food security is widely recognized, there is insufficient knowledge about the diversity that exists and precisely how that diversity may be used for crop improvement.

PGR Secure is addressing these issues by developing:

- » A Europe-wide systematic strategy for the conservation of the highest priority crop wild relatives and landraces
- » Fast and economic approaches to identify and make available genetic material for crop improvement

THE CHALLENGE

Environmental change threatens food security in Europe

THE CONCERN

Only a fraction of the total genetic resources available are used in breeding for crop improvement

THE GOAL

Strengthened food security through increased conservation of genetic resources and diversification of options for crop enhancement

PROJECT INNOVATION

PGR Secure is identifying and facilitating access to a broader range of crop wild relative and landrace genetic diversity that can be used to increase resistance to new strains of pests and diseases and tolerance to extreme environmental conditions such as drought, flooding and heat stress—pressures that are rapidly increasing in their detrimental effects on crop productivity.

PROJECT APPROACH

PGR Secure is implemented using four interrelated approaches:

- » **Novel characterization techniques:** Utilization of genomic techniques and predictive tools to develop new approaches to expedite plant breeding
- » **Conservation of crop wild relatives and landraces:** Development of a Europe-wide conservation strategy for these high priority genetic resources
- » **Improved use by breeders:** Promotion of the use of crop wild relatives and landraces by the European plant breeding sector
- » **Information management:** Production of a web-based information system to improve access to trait and conservation data about these crop wild relatives and landraces

ANTICIPATED IMPACTS

- » Improved access to knowledge on crop wild relatives and landraces in Europe
- » Wider take-up of genetic resources in crop improvement programmes
- » Strengthened cooperation in Europe on the conservation and use of crop wild relatives and landraces
- » Increased capacity and options for crop improvement to support European farming and food security

CONTACT

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