Red Lists for Cultivated Species

why we need it and suggestions for the way forward


The world’s food basket is today shrinking at an alarming rate and most concerning is the reduction in the number of species and varieties used by humankind for food and nutrition, which raises serious concerns about the sustainability of feeding the world today and in the future.

Yet, whereas we deploy consistent efforts in monitoring the status of wild biodiversity, very limited is the research in monitoring diversity of plants used by farmers, assess threats of genetic erosion, understand how diversity is helping farmers in coping with climate change, etc...

Documenting and monitoring agrobiodiversity on-farm is fundamental for enhancing its sustainable use and prevent losses of both genetic diversity and indigenous knowledge to happen before it is too late. These actions are also consistent with the predication of important international conventions and agreements, such as the CBD (Art. 7), the ITPGRFA (Art. 5), and the FAO GPA for PGRFA (Activity 18).

However, except a few recent attempts of limited application, research on monitoring and Red Listing of cultivated species is still very poor. Reasons for that include the sheer number of crop species and varieties on-farm, the difficulty in assessing the diversity, the dynamic nature of cultivation deploying diversity in different ways, the absence of farmer-based mechanisms to which to anchor a monitoring system, and the lack of supportive policies such as those related to access and use of information generated from these efforts. Currently, an international UN Project supported by IFAD and the CCAFS Programme of the CGIAR is being implemented in Nepal, India and Bolivia.

Critical issues in on-farm conservation

• How much agrobiodiversity and associated knowledge is maintained on-farm?
• How is it distributed on the territory and how can it be best monitored?
• What is its use and relevance to people’s livelihood?
• What are the threats to its genetic diversity?
• How do people use and conserve agrobiodiversity and what are the challenges they face?

• How do institutional frameworks are needed to support on-farm conservation?

Why an IUCN Red List

Approach cannot be used for cultivated species

• Silver number of crop species and varieties present on-farm
• Need to capture also knowledge and culture associated with genetic diversity
• Diversity as a value should be viewed as a specific, useful combination of traits
• Diversity has a resource value, from large areas to small parcels of land and home gardens
• Dynamics of cultivation that deploy various crops and varieties in different ways
• Specialized knowledge needed for Red Listing resides with farmers and not scientists

Purpose of a Red List for cultivated species

Red lists are instruments to monitor biodiversity as well as to inform and alert decision makers and the public for key species conservation.

For cultivated species, the ultimate objective of monitoring is to see their effective use by people so as to sustain and meet their livelihood needs, as well as to prevent genetic erosion in order to ensure future options for the diversity present in locally cultivated varieties.

• This objective is quite different from that pursued through the IUCN Red List of Threatened Species, where attention is directed towards the conservation of the species, whose existence is threatened by a dynamic phenomenon not only caused by the extinction of species but also by the loss of genetic diversity.

The process of identifying which cultivated species are to be included in a Red List is the sphere, whereas for cultivated species the monitoring unit needs to be the variety, because its unique and distinctive combination of traits and associated knowledge is what needs to be conserved.

When use of a variety has declined drastically and its benefits are no longer reaching the local areas a large, such a variety in real terms is in fact already lost. Making it into a Red List of cultivated species would be very helpful to guide its rescue, promotion and effective use, in order to continue contributing to human well-being.

Other benefits

• Raise awareness on benefiting from Plant Genetic Resource
• Guide a sustainable agro-ecological landscape management
• Provide a means to support the implementation of CBD, ITPGRFA, GPA for PGRFA
• Allow for standardized and innovative strategies
• Provide a basis for allocating resources for sustainable conservation and use of agrobiodiversity, e.g., EU funds for promoting PGRFA
• Help to safeguard the identity of food culture around the world

Challenges in implementing a Red List for cultivated species

• Current absence of farmer-based mechanisms to which to anchor the monitoring system
• Lack of tools and methods to access and use the information gathered during the monitoring
• Maintaining the participatory approach across countries and regions
• Establishing and matching names/varieties

Proposed novel 5-cell approach

simple, community-based, participatory, flexible

The 5 CELLS

CELL A Large Area

Chief Concerns

• What is the use and relevance to people’s livelihood?
• What are the threats to its genetic diversity?
• How do people use and conserve agrobiodiversity and what are the challenges they face?

National Documentation

National PGR Conservation Strategy

National Documentation

National PGR Conservation Strategy

First Validation of Red List

ECOL B Large Area

Second Validation of Red List

Second Validation of Red List

End-use and use in research

Local Documentation

Community Documentation & Monitoring (CBD, CEA, others)

Regional Consolation

Why ‘on-farm’ conservation?

• Only in cultivation the evolutionary and dynamic processes are at play, which ensure adaptation of species and varieties to ever changing biotic and abiotic stresses.
• Many plant species simply cannot be listned to ex situ in gene banks, because they produce to seed at at high rates.

Financial considerations

• Concerning all species useful to human kind in situ gene banks are prohibitively expensive.
• Species of local importance may never command national or international attention.

Cultural considerations

• Only in cultivation will preserve the wealth of indigenous/traditional knowledge associated with them. This knowledge relates to their cultivation, harvest, use, and valorisation. It is the foundation of local food systems.

Ecological considerations

• Only in cultivation makes important contributions to the conservation of ecosystems and landscapes, which they are an integral and representative part of.

Social considerations

• Strengthening peoples’ capacities to safeguard agrobiodiversity and associated indigenous knowledge is also a strategic way to contribute towards their empowerment.

These considerations, along with others, form the basis of the current and future implications of on-farm conservation in order to promote it in the CBD (Art. 7), the ITPGRFA (Art. 5), and of the International Treaty for PGRFA (Art. 9).

References


FAO - GPA for PGRFA

FAO - GPA for PGRFA

FAO - GPA for PGRFA

FAO - GPA for PGRFA

FAO - GPA for PGRFA

FAO - GPA for PGRFA

Creative Commons Attribution 4.0 International License

http://creativecommons.org/licenses/by/4.0/