CROP DIVERSIFICATION IN A CHANGING WORLD
Mobilizing the green gold of plant genetic resources
Le Corum, Montpellier, France, 8–11 May 2017

Workshop 1: Valuing plant genetic diversity – what are the costs and benefits of PGR conservation and use?
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Problem statement
The economic value of PGR [in this context, crop wild relative (CWR) and landrace diversity] is unknown and difficult to quantify. Thus, the costs of conserving them cannot easily be justified by evident conservation benefits. Can we, the PGR community, contribute to methodologies to assign economic values to PGR as a means of promoting conservation value and thus potentially increasing resources for complementary PGR conservation? To achieve this we need to clarify and estimate: a) the costs of conserving PGR; and b) the benefits we may derive from PGR.

The costs of conserving PGR ex situ are relatively easy to quantify and figures have previously been suggested1, 2, 3. However, the costs of conserving PGR in situ are less easy to quantify4. How much for example would it cost to monitor CWR populations in existing protected areas, how much to manage the populations (e.g., grazing management, removal of invasive species), and how much to collect germplasm samples for complementary conservation ex situ? How much would it cost to provide incentives to farmers to cultivate landraces that might otherwise be abandoned and lost?

In terms of assigning value to PGR, it is of course possible to assign economic value to crops in terms of their value at the farm gate or their overall value to a national or local economy based on income from sales. In terms of the economic value of landraces, this means that their direct economic value could be quantified given access to the necessary data. The economic value of a wild species from which a trait has been derived and used for crop improvement could be quantified through association with the gain in revenue through the release of the new variety. However, is this value attached to the trait, the population or the species, and can such values be scaled out to estimate the potential value of conserving representative samples of CWR species both in situ and ex situ? Likewise, can we assign values to CWR of economically important crops simply through their relative genetic association to those crops and thus their potential value as gene donors?


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Building blocks
A growing number of studies on CWR have estimated their significant value based on their potential to improve crop productivity. Some studies have placed their value in the order of US$ 115–120 billion per annum in increased income generation. Even this figure underestimates their true value as currently CWR diversity use is limited by its availability. CWR values are also not reflected in efforts to estimate ecosystem services values, but there is a strong movement and wide body of work on the valuation and financing of ecosystem services in general.

Recently, one of the first studies to investigate the cost effectiveness of in situ conservation options was carried out in Zambia and estimates for the establishment and management of a global CWR in situ conservation network were given as US$ 19.3 million for the first ten years, with recurrent costs on a ten year cycle of US$ 4.5 million.

In terms of promoting and financing landrace conservation, perhaps the most prominent work in this area has been carried out by Adam Drucker at Bioversity International through the implementation of payments for agrobiodiversity services (PACS).

Can we build on these initiatives to gain consensus on methods to value the costs and benefits of PGR conservation and use?

Workshop objectives
- Review and discuss options for valuing PGR (CWR and landraces)
- Outline approaches to valuing PGR
- Suggest ways of using such values to promote and support the conservation of PGR

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9 [www.ipbes.net/work-programme/values](http://www.ipbes.net/work-programme/values)
12 [www.bioversityinternational.org/pacs/](http://www.bioversityinternational.org/pacs/)