



Incentives for in-situ conservation of crop wild relatives in Zambia

Final dissemination workshop

Southern Sun , Pretoria 23rd –25th November 2016

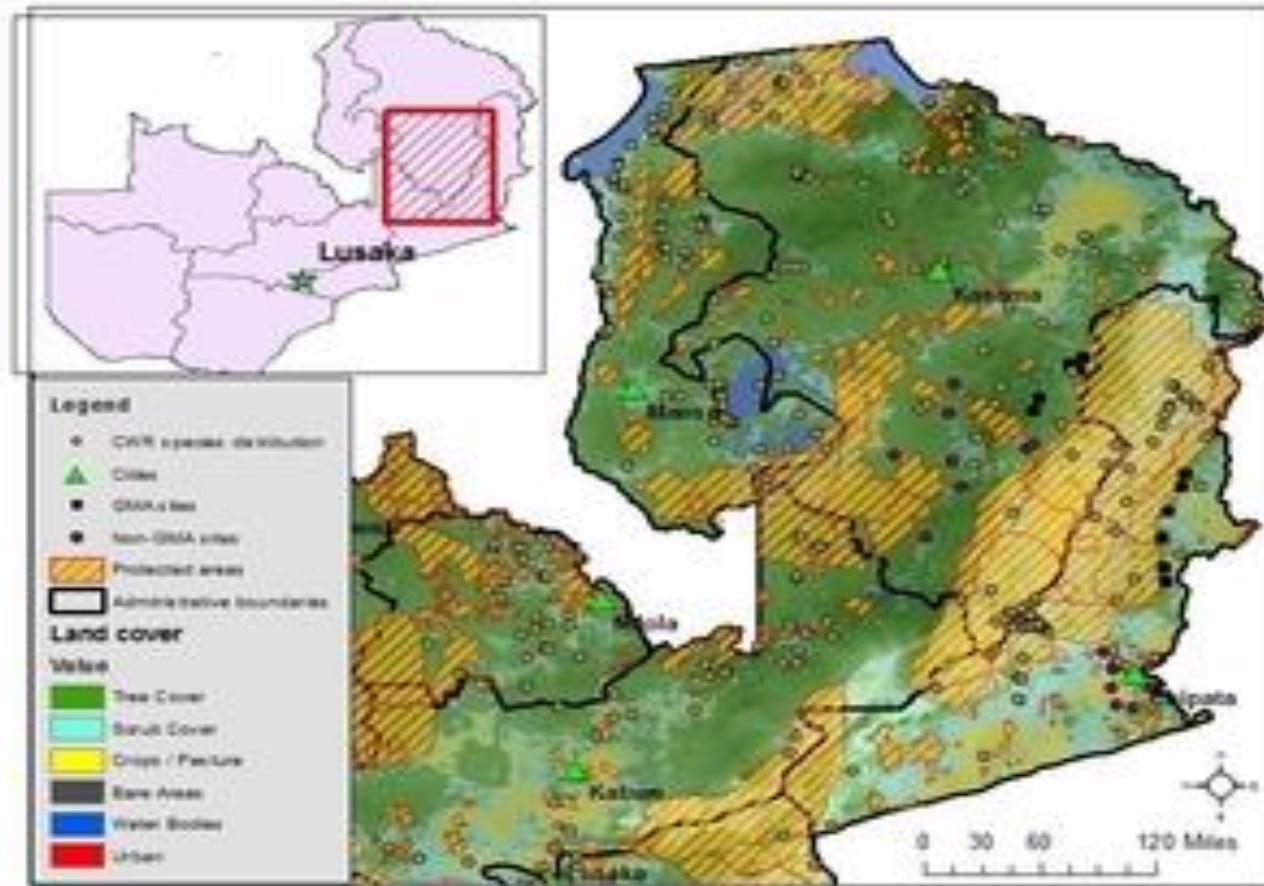
Introduction

- Crop Wild Relatives (CWR) are a plant group containing valuable genes for plant breeders but are threatened globally by climate change and agricultural intensification. This has led to increasing calls to increase conservation efforts, particularly in-situ.

Introduction

- However, little is known about the costs associated with in-situ conservation which hampers efforts to establish conservation sites.
- Competitive Tender for CWR conservation contracts with farmer communities in Zambia were undertaken to determine the costs associated with in-situ conservation at sites adjacent to Game Management Areas [GMAs] and sites far from Game Management Areas [non-GMAs]

Methodology



A map of Zambia demonstrating the fieldwork sites. Survey sites in non-GMA areas (red dots) and survey sites in GMA areas (black dots). CWR geo-referencing of species (yellow dots).

Methodology

A number of focus groups were conducted with farmers at different communities to determine:

- (i) existence and management of CWR and
- (ii) conservation activities and costs associated with their management.

Methodology

- The information from FGDs was also used to develop an instrument for CWR economic survey.
- 26 Tender workshops were conducted after the FGDs, in GMAs and Non GMAs in each district.

Methodology

- Within the competitive tender approach context, farmer members from communities at non-GMA and GMA areas had the opportunity to make a bid offer to enrol land in 3 Area Management Options (AMOs) which were identified as beneficial for CWR conservation:
 - i) AMO-Borders (conservation in field borders);
 - ii) AMO-Plots (conservation in crop lands)
 - iii) AMO-Common (conservation in community conservation areas).

Methodology

Using such an approach allowed evaluation of the following:

1. Estimation of in-situ conservation costs associated with CWR populations across study sites.
2. Appraisal of farmer opportunity cost associated with conservation at both non-GMA and GMA areas.
3. Ranking of community bid offers and assessment of bid offer performance under different scenarios across the different AMOs to identify least cost conservation providers.

Methodology

- The project also implemented a number of walking transects in each of the AMOs to identify CWR diversity and abundance counts. This was used to measure the per-unit cost of conservation services relative to CWR populations.

Key findings

- A number of management practices which communities considered capable of reducing CWR erosion were identified. These included:
 - a) selective weeding in crop lands
 - B) controlled grazing practices on communal lands
 - c) maintaining field borders and
 - d) Early or reduced burning practices on communal lands.

Key findings

- Communities made CWR conservation service contract offers based on AMOs identified as beneficial for CWR conservation that imply total direct (i.e. excluding monitoring and administration costs) conservation costs would amount to US\$ 304,000 if all the offers from the surveyed communities were to be funded, leading to a total area being conserved of 1,315 ha (equivalent to US\$ 231/ha).
- Three different budget scenarios were compared (low; medium and high). The budget scenarios considered conservation area; number of farmers; plots and budget as model constraints and varied with the AMOs. The total budget under the different model scenarios was US\$ 23k, 46k and 69k for the low, medium and high scenarios respectively.

Key findings

- Least cost conservation sites and management practices are to be found in field borders or communal lands. Furthermore, not only was the conservation of CWRs considered by farmers to involve relatively higher opportunity costs in crop lands, but such lands contained the lowest levels of CWR diversity and abundance.

Key findings

- Median bid offers per farmer for **AMO-Borders** amounted to US\$92 and \$96 for non-GMA and GMA sites respectively.
- For **AMO-Plots** bid offers were US\$138 and \$275 for non-GMA and GMA sites respectively.
- This is approximately equivalent to 29 and 30 days of paid labour for **AMO-Borders** and 44 and 87 days for **AMO-Plots** (non-GMA sites and GMA sites respectively).
- Conservation costs in Non-GMA and GMA sites were cheapest for **AMO-Borders** costing \$39.3 and \$108.8 per species or \$47.8 and \$131.4 per genus respectively per hectare per year.

Recommendations

- Efforts should focus on AMO-Borders and AMO-Common given significantly higher species, abundance and genus counts were recorded in these areas thereby increasing the cost effectiveness of conservation services per hectare.
- Identification of areas with relatively high concentrations of CWR (abundance and diversity) is a priority for targeting locations where incentives for conservation should be implemented.

Recommendations

- Implementation of a tender-based CWR conservation programme would require that a monitoring programme (likely to require both conventional and participatory monitoring methods) be implemented in order to assess both;
 - (i) Compliance and
 - (ii) The actual impact (relative to an established baseline) on CWR diversity and species under the respective AMOs.

END

Thank you for
Listening