





Which strategies to conserve and restore metallophytes threatened by intensive mining activities in Southeastern D.R.Congo?

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Context

Integration of economic activities with environmental integrity: case of mining activities in South Katanga, in the Democratic Republic of Congo (Fig. 1).

While pristine habitats are threatened by mining activities, plant communities include numerous endemic species (Fig. 2).



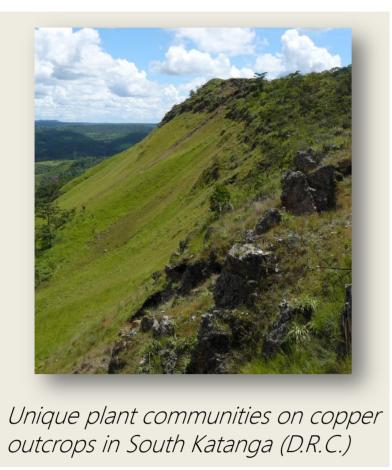
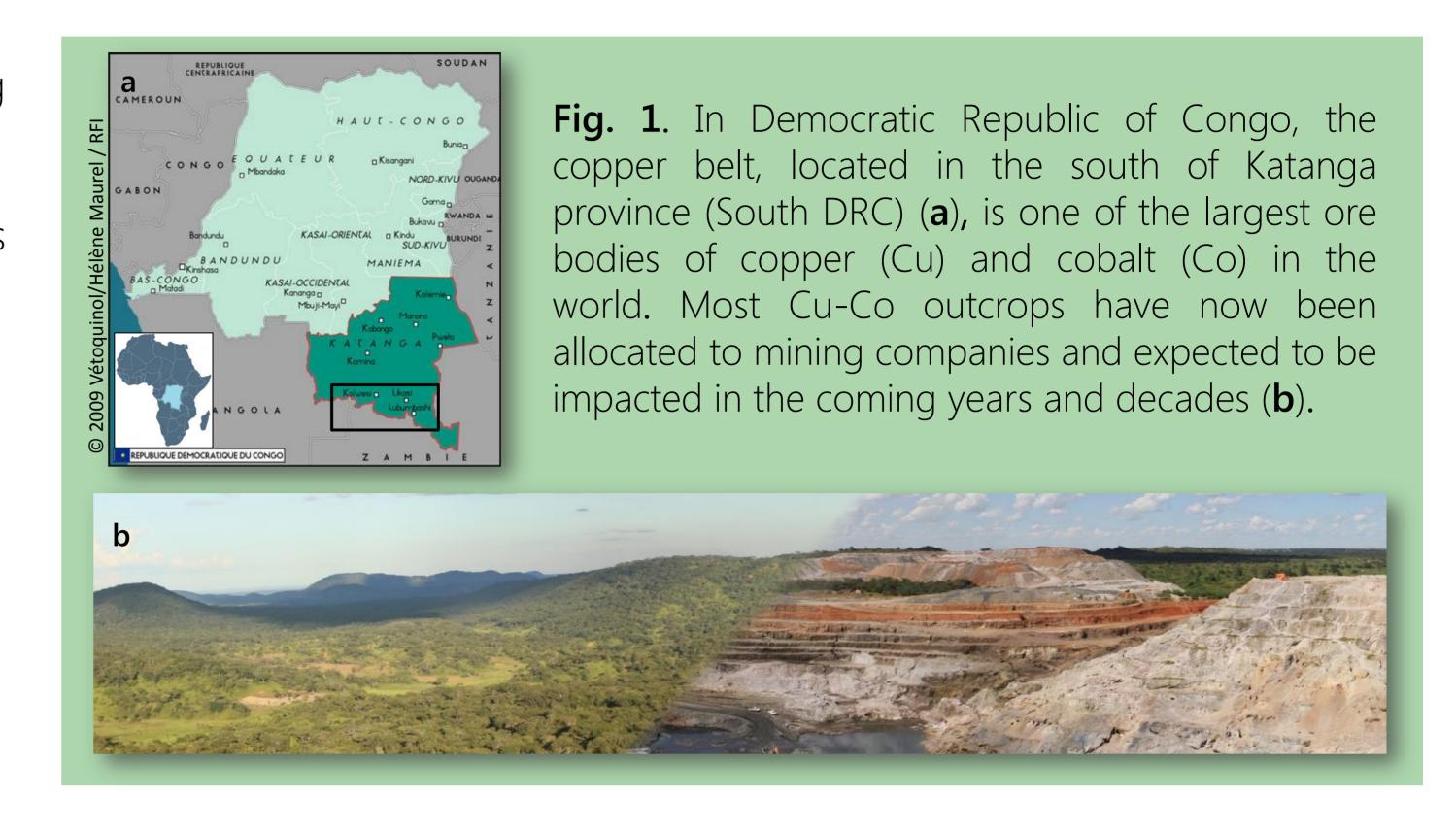




Fig 2. Due to high available copper and cobalt concentrations in soils, Cu-Co hills present original plant communities with over 550 metallophytes including 56 endemics

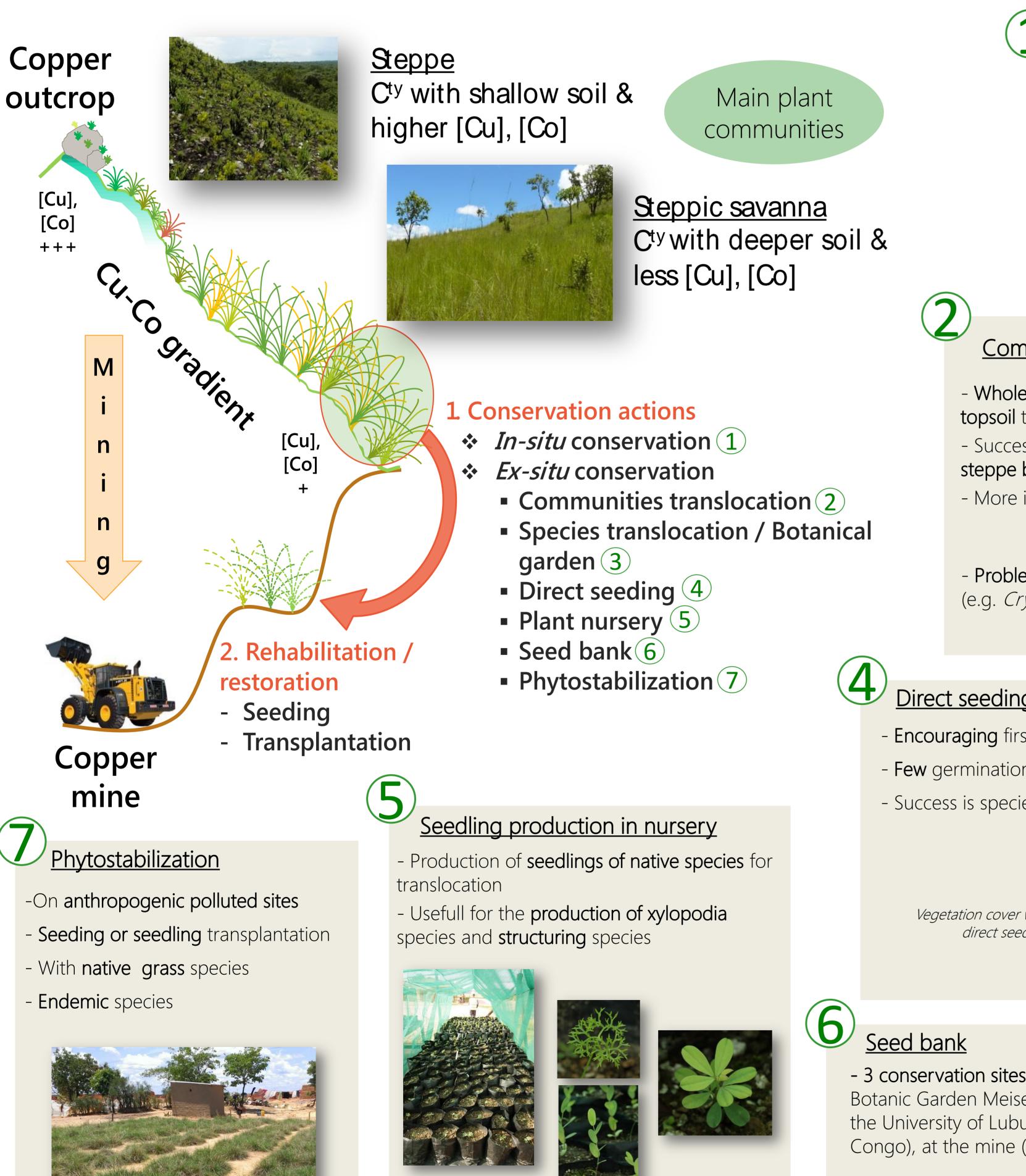


► Strategies to conserve and restore Cu-Co communities

To gain information on ecology of copper community & experience on the restoration of copper vegetation

To **temporarily store** and **conserve** native copper plant diversity in order to reestablish it on post-mining sites

Complementarity of implemented actions:





Plant Micro Reserve

- Good seed source - Limited surface - Potentially damaged by

communities

- Conservation of **pristine**

illegal miners and mine prospection

Communities translocation

- Whole-turf translocation better than topsoil translocation
- Success depends on community-type: steppe better than steppic savanna
- More important weed invasion in topsoil

- Problem to translocate structuring species with Xylopodium (e.g. Cryptosepalum maraviense)







yptosepalum maraviense

→ In other copper outcrops

→ In botanical garden

→ In translocated communities

Direct seeding

- Encouraging first results on topsoil
- Few germination in whole-turf communities - Success is species dependent





Ultra



- 3 conservation sites: at the
- Botanic Garden Meise (Belgium), at drying in the University of Lubumbashi (D.R. Congo), at the mine (D.R.Congo)
- Only for orthodox seeds
- Regular **seed** viability tests



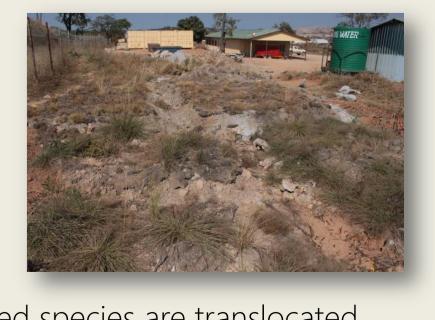
Basananthe kisimbae

Dissotis derriksiana

Species translocation







Botanical garden: where most endangered species are translocated

- Development of cooperation between university and mine company
- Improve restoration programs using native plant

Example of phytostabilized site in

Lubumbashi (Shutcha et al. 2015)

Deliver appropriate know-how to mining companies



