Palm Conservation in Itremo, Madagascar

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1. Population of *Dypsis decipiens* in a narrow depression and deep valley at Antsirakambiaty, Itremo Protected Area. The species inhabits humid rocky sites on steep slopes or narrow depressions throughout the grasslands or on forest margins.

The authors describe efforts to conserve two iconic Madagascar palms.

Palms are highly characteristic of the east of Madagascar with about 91% of the 195 currently described species inhabiting the eastern lowland rainforest. In other parts of the island, palms, although few in numbers of species, can be conspicuous and even charismatic, especially when they form homogeneous populations across the landscape. This is the case in Itremo protected area, a rocky massif composed of quartzite, mica schist and marble extending through 244 km^2 and located at about 70 km west of Ambositra in the Central High Plateau of Madagascar. With only three species recorded locally (*Dypsis ambositrae*, *D. baronii* and *D. decipiens*), the local palm flora is not rich but the visitor is immediately struck by the abundance of palm trees in the landscape.

Dypsis baronii is widespread but the other two species are both threatened with extinction according to the IUCN Redlist. On the one hand, *D. decipiens* (Back Cover), Endangered, is known to occur sporadically in the Highlands between Andilamena and Ambohimahasoa. Outside Itremo, this species is quite rare as populations are usually small. In contrast, *D. decipiens* dominates the

2. Fires are one of the major threats to the regeneration of the population of *D. decipiens*. Almost all seedlings and juvenile plants are destroyed by fire on the grassland every year at the end of dry season (August through October). Photo: G. Ratovonirina.

landscape in Itremo with individuals abundant in valleys and along riverbanks (Fig. 1). A counting of palm crowns using Google Earth across the area revealed that there are at least 2700 mature trees of *D. decipiens* in Itremo. In spite of such density, this palm is highly threatened in Itremo. Annual grassland firing for cattle-grazing, for deterring migratory locusts or for preventing bandit attacks, severely affects the population structure as seedlings are killed and eliminated by burning and trunks are sometimes consumed by fire (Fig. 2). If such practices continue, it is expected that the population of this species will decline progressively. On the other hand, *D. ambositrae* (Fig. 3), Critically Endangered, is regionally endemic, restricted to Ambositra and Itremo area. In total, fewer than 50 mature individuals are estimated for this species in the wild; about 20 of them are in the gallery forest of Itremo. The main threat for this species in Itremo is forest logging as this causes habitat degradation and disturbs the growth and regeneration of this species.

These two species are endemic to the High Plateaux and play a key role in the ecosystem mainly by preventing erosion and participating in the water cycle; the loss of the two species will undeniably have an impact on the ecology and on the local economic balance. Residents around Itremo massif are mainly farmers and any change in the water availability or the soil structure in their fields may have a negative impact on their income, and consequently have a knock-on effect on conservation. In response, the Conservation Leadership Programme (CLP), a partnership of four organizations (BirdLife International,

3. *Dypsis ambositrae* emerging from the canopy of gallery forest, Antsirakambiaty, Itremo.

Conservation International, Fauna & Flora International and Wildlife Conservation Society) decided to support the effort of the Royal Botanic Gardens, Kew in the research and the conservation of the palms of Madagascar. CLP is funding a one year project to start the restoration of these species, for awareness-raising of the importance of palms in the ecosystem and finally for ecological surveys of the wild populations. Specifically, the project works firstly with the local community for restoring the wild populations by collecting seeds, building a local nursery and for assuring the transfer of the produced seedlings from the collected seeds back into the wild; secondly for providing environmental education to children by encouraging them to respect the environment and to adults by increasing their awareness of the ecosystem in general and of any risk related to the destruction of the environment; thirdly by studying the population trends of the two species, including population genetics and niche modeling under current ecological conditions and the potential effects of climate change. The expected results for this one-year project are to increase the involvement of the local community in the protection of the two species and to develop their interest in a balanced environment.

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