

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Sixteenth meeting of the Conference of the Parties
Bangkok (Thailand), 3-14 March 2013

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Include the species *Uncarina grandidieri* in CITES Appendix II, in accordance with Article II, paragraph 2(a) of the Convention and Resolution Conf. 9.24 (Rev. CoP13), Annex 2 a, paragraph A.

B. Proponent

Madagascar*.

C. Supporting statement

1. Taxonomy

- | | |
|--------------------------|--|
| 1.1 Class: | Dicotyledones |
| 1.2 Order: | Lamiales |
| 1.3 Family: | Pedaliaceae |
| 1.4 Genus and author: | <i>Uncarina grandidieri</i> , H. Humbert (1971) |
| 1.5 Scientific synonyms: | – |
| 1.6 Common names: | Malagasy: Anakoraky, Atsipirekity, Betsila, Fandrimaboavovo, Farahaitso, Farahetsy kely, Farehetse, Farehitra, Farehitravoloindravina, Farehitsy, Faretra, Mamolo, Mamololo, Ravitay, Riketa, Salavaratse, Selaniomby, Voamanagala, Voamangala |
| 1.7 Code numbers: | |

2. Overview

Pedaliaceae is a small tropical and subtropical family that is often found in areas with an arid climate. It includes 18 genera and approximately 95 species. Only one genus – *Uncarina* – occurs in Madagascar. *Uncarina* is an endemic genus that includes nine species, all of which occur in the dry vegetation complexes of the north, north-west, south-west and south of Madagascar. It is easily recognized by its flowers, which have a large tubular corolla, and its fruits, covered with spines tipped with hooks ("uncus"=hook), which facilitates dispersal by clinging to animal fur.

* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

This species is collected from the wild and is becoming rare. However, it is not yet protected by the CITES Convention.

The present document suggests that the species *Adenia firingalavensis* meets the criteria for inclusion in CITES Appendix II in accordance with Article II, paragraph 2(a) of the Convention and Resolution Conf. 9.24 (Rev. CoP13), Annex 2 a, paragraph A. Regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population and that the survival of the species is not threatened by continued harvesting or other influences.

3. Species characteristics

3.1 Distribution

Uncarina grandidieri has a small distribution in Madagascar, where it is only found in the south, from Tongobory to Toliara, between Ambovombe and Ifotaka to Amboasary Sud and Fort-Dauphin, Betioky, in the protected areas of Bezà Mahafaly (Réserve Spéciale) and Andohahela (Réserve Nationale Intégrale).

The distribution of *Uncarina grandidieri* is shown in Annex 1.

3.2 Habitat

Uncarina grandidieri is found in the dense dry forest and xerophytic thicket of the south-west and the south of the island on calcareous plateaux, coastal soil, tropical ferruginous soil (reddish-brown sand) and sandy limestone soil at an altitude between 0 et 800 m.

3.3 Biological characteristics

The phenology of *Uncarina* species is closely linked to the rain cycle. They are deciduous and *Uncarina grandidieri* starts to flower before the leaves appear, often at the beginning of the wet season (August-February). The fruiting period is between November and April.

The bright colours and funnel shape of the flowers suggest that the species is pollinated by wasps, bees and butterflies.

The fruits of *Uncarina* species are covered with hooked spines that resemble harpoons. This provides the diaspores with devices that facilitate seed dispersal by clinging to animal fur (zebus, lemurs). Diaspores are thus dispersed by epizoochory.

3.4 Morphological characteristics

Uncarina grandidieri is one of the largest plants of the genus *Uncarina*. This species has a rather dense crown of branches and can reach a height of 5 m. The leaves are lobed, covered with identical glandular hairs from the base to the apex. The flowers are golden yellow, often with a dark red throat. The fruit is ovoid, with sharp woody spines and a prominent beak.

3.5 Role of the species in its ecosystem

This species plays an important role in the daily life of the local population owing to its use in traditional medicine.

4. Status and trends

4.1 Habitat trends

Uncarina grandidieri is found in two main types of habitat: thickets and dry forests.

The dry thorny thicket of the south and south-west covers an area of approximately 18,355 km² (of which 4.5 % is within protected areas). This type of forest has decreased by 29.7 % since the 1970s (Moat & Smith, 2007).

The dry forest of the west covers an area of 31,970 km² (of which 17.1 % is within protected areas). This type of forest has decreased by 39.7 % since the 1970s, which represents a considerable loss (Moat & Smith, 2007).

These formations are fragile and easily degraded. Degradation results in open degraded areas.

4.2 Population size

Field observations (in December 2009) in the south-western region (in Bezà-Mahafaly Special Reserve) provided information about the abundance of *Uncarina grandidieri* (Table 1).

Table 1: Density and abundance of the population of *Uncarina grandidieri* in Bezà-Mahafaly Special Reserve

Parameters	Bezà-Mahafaly SR
Total area of study plots (ha)	0.4
Number of mature individuals in 0.1 ha	21
Average specific density (ind./ha)	210
Estimated area occupied by the species (ha)	2
Estimated total abundance	420

4.3 Population structure

Individuals of a size suitable for export are becoming increasingly rare. A study of the regeneration of *Uncarina grandidieri* has shown regeneration difficulty, with a regeneration rate of 52.2 % (Rakotondrabe, 2011).

4.4 Population trends

In collection areas, individuals of a commercially exploitable size have become increasingly rare. In addition to massive collection for export, habitat destruction by various anthropogenic activities results in a gradual decline in the number of existing populations (a future decline of 76.7 % is expected).

4.5 Geographic trends

The area of occupancy of *U. grandidieri* is less than 500 km² (297 km²) and the extent of occurrence is 342,260 km². The area actually occupied by the species is continually decreasing owing to the various threats and pressures it is subject to.

5. Threats

Habitat degradation from slash and burn agriculture (*Hatsake*) threatens this species.

The increasing expansion of the shifting cultivation of maize and fires linked to the management of pastures for livestock (mainly cattle and goats) also constitute serious threats to the habitats of the region.

The leaves of *Uncarina* species are used as soap by local populations. They are also used by cosmetic manufacturers to make shampoo. The excessive removal of leaves from individuals throughout the year could affect the reproductive capacity of the species.

In addition, excessive collection for export of *Uncarina grandidieri* from the wild poses a real threat to the species and is detrimental to its survival.

6. Utilization and trade

6.1 National utilization

All *Uncarina* species are sought after ornamental plants on the international market.

Plants of the genus *Uncarina* are known for their cosmetic use. The leaves and leafy stems are widely used for hair care (e.g. hair regrowth and dandruff treatments) (Rakotondrabe, 2011; Lucile & Maxime, 2007).

They also have therapeutic properties: the roots, leaves and stems are used in traditional medicine (Schatz, 2001).

The local populations also grow these species as living fences and ornamental plants (Rakotondrabe, 2011).

6.2 Legal trade

Uncarina grandidieri is internationally traded in the form of seedlings and seeds. The highest number of seedlings sold was recorded in 2004 (2,097 seedlings) (Table 2).

Table 2: Evolution in the number of seedlings of *Uncarina grandidieri* exported per year

Years	2000	2001	2002	2003	2004	2005	2006
Number of seedlings exported	321	3	8	900	2,097	1,314	0

Source: Management Authority (DGEF) and Permanent Secretariat, CITES Madagascar, 2009

6.3 Parts and derivatives in trade

Uncarina grandidieri is exported in the form of live plants and seeds.

6.4 Illegal trade

No illegal trade in *Uncarina grandidieri* has been recorded to date. The species is rarely traded in the local market.

6.5 Actual or potential trade impacts

The number of seed-bearing individuals and young plants is becoming increasingly rare. In addition, the species already has regeneration problems. In 2011, According to the IUCN criteria, this species was considered to be Endangered EN B2ab (i, ii, iii). Moreover, neither collection nor export is subject to any regulations, so collectors tend to harvest a large number of seedlings of this species. International trade could thus lead to the absence of natural regeneration and the decline (a future decline of 63.6 % is expected) or even disappearance of populations in certain collection areas. In the long term, this would pose a serious threat to the survival of the species.

7. Legal instruments

7.1 National

Since the species is not yet included in the CITES Appendices, its exploitation is not subject to CITES regulations. Collection and export are only regulated by authorization procedures at national level.

The Madagascar Plant Specialist Group classified this species as Endangered according to the IUCN criteria for the assessment of threat.

7.2 International

Inclusion of the species in CITES Appendix II will ensure that all exports are accompanied by a CITES permit that attests to the fact that the specimens were collected in compliance with existing laws and using methods that are not detrimental to the survival of the species.

In addition, specimens of species in Appendix II will benefit from Reviews of Significant Trade that will make it possible to monitor and update their biological and ecological data.

8. Species management

8.1 Management measures

The number of specimens authorized for export is based on the stock of the species in a horticultural centre. A single collection permit per species per operator is granted for the establishment of parental stock (mother plants). After this, operators must propagate the plants *ex situ*. Export permits and authorizations are only issued for artificially propagated specimens.

8.2 Population monitoring

Among the 14 endemic species of Madagascar, only five species of *Uncarina* have been studied and assessed according to IUCN criteria to determine their conservation status (Randriambolomamonjy, 2006; Rakotondrabe, 2011).

Data on inventoried populations have not been updated so far.

8.3 Control measures

8.3.1 International

The species is not yet included in the CITES Appendices.

Inclusion of the species in Appendix II will ensure that all exports are accompanied by a CITES permit that attests to the fact that the specimens were collected in compliance with existing laws and using methods that are not detrimental to the survival of the species.

8.3.2 Domestic

Some populations of this species are found in Andohaëla National Park and Bezà-Mahafaly Special Reserve.

8.4 Captive breeding and artificial propagation

Propagation of *Uncarina* species from cuttings is very successful and propagation from seed is also possible.

8.5 Habitat conservation

Some populations of *Uncarina grandidieri* occur in Andohahela National Park and Bezà-Mahafaly Special Reserve. The national policy of multiplying the surface of protected areas by designating new protected areas such as Amoron'i Mania and Ekodida could contribute to the conservation of the species and its natural habitat.

8.6 Safeguards

To ensure the continued existence of the species, the issuance of export permits and authorizations should strictly be limited to artificially propagated specimens.

The species should be on the list of species of urgent concern for which *ex-situ* propagation is necessary. Reintroduction of the species in former collection areas should also be considered.

9. Information on similar species

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10. Consultations

The other countries have not been consulted because this species is endemic to Madagascar.

11. Additional remarks

This species was already the subject of a brief presentation at the Plants Committee meeting held in 2011. The biological and ecological data obtained were updated and supplemented to prepare this proposal for the inclusion of the species in Appendix II.

12. References

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Webography

- <http://www.efloras.org>
- www.tropicos.org

13. List of annexes

Annex 1: Illustrations and geographic distribution of *Uncarina grandidieri*

Annex 2: Preliminary data on the Web trade of Malagasy succulent plants species coordinated at RBG Kew (A Web survey investigating the current Web-based trade in Malagasy succulent species has been carried out. The species include both CITES-listed species and species not currently listed).

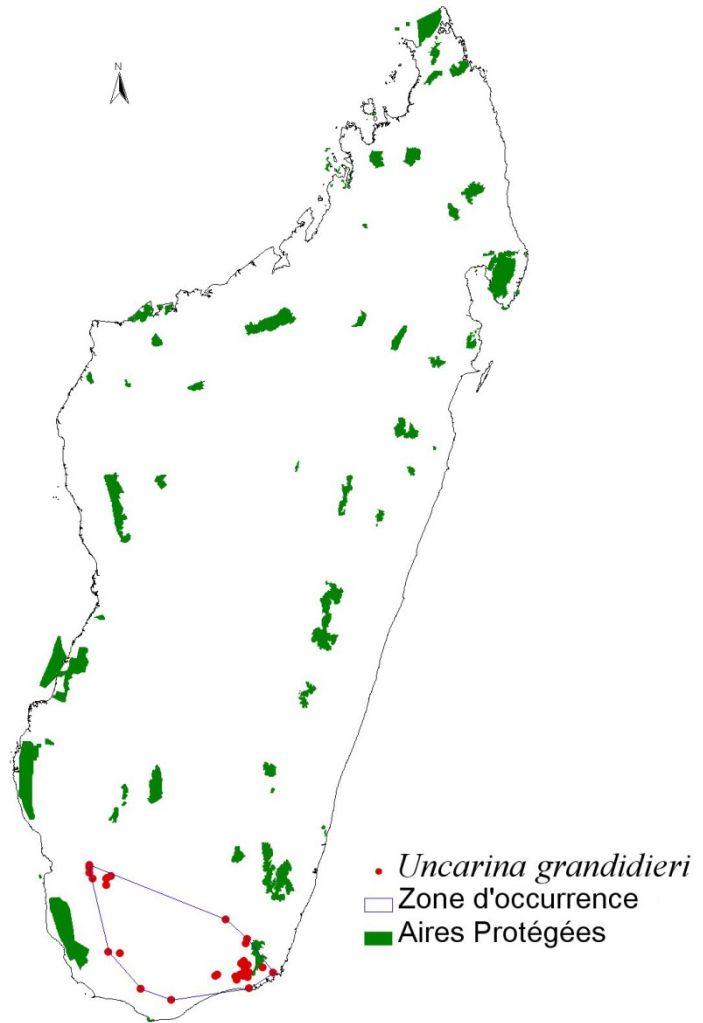
Illustrations and geographic distribution of *Uncarina grandidieri*



Flowering and fruiting branch of *Uncarina grandidieri* (Petignat & Cooke, 2009)



Leaves of *Uncarina grandidieri* (Ravaomanalina, 2011)



Preliminary data on the Web trade of Malagasy succulent plants species coordinated at RBG Kew
A Web survey investigating the current Web-based trade in Malagasy succulent species has been carried out.
The species include both CITES-listed species and species not currently listed.

Species	Website location					Specimen type for sale				Source of specimens for sale			Price range in USD			
	USA	EU	Other	Unknown	Total	Mature	Seedling	Seeds	Unknown	Wild	Propagated	Unknown	Per plant		Per seed	
													Min	Max	Min	Max
<i>Operculicarya decaryi</i>	11	4	2	1	18	9	1	5	3		1	17	14.95	400.00	0.39	0.86
<i>Senna meridionalis</i>	3		1		4	3		1		1		3	20.35	150.00	0.51	
<i>Adenia firingalavensis</i>	1	1	1		3	2		1		1		2	75.00	236.72	1.41	
<i>Adenia subsessifolia</i>	1	1			2	2						2	8.00	15.65		
<i>Cyphostemma laza</i>	3	2	1		6	3	1	1	1			6	28.00	65.00	1.18	
<i>Uncarina stellulifera</i>	3	1			4	1		3			1	3	70		0.66	2.52
<i>Uncarina grandidieri</i>	10				10	7	3						30	500		