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 stellulifera* 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: *Uncarina stellulifera* H. Humbert (1971)

1.5 Scientific synonyms: -

1.6 Common names: Malagasy: Farehitsy, Fandriboalavo

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.

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

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* *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.*

The present document suggests that the species *Uncarina stellulifera* 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 stellulifera has a restricted distribution. It grows on calcareous soil north of Toliara to Lake Tsimanampetsotsa towards the south. The distribution of *U. stellulifera* is shown in Annex 1.

3.2 Habitat

Uncarina stellulifera is found in the xerophytic scrub of south-western Madagascar in tropical ferruginous soil (reddish-brown sand), coastal sand, calcimorphic sand, stony calcareous soil and unconsolidated sand at an altitude between 0 and 200 m.

3.3 Biological characteristics

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

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 stellulata is a small tree 1 to 2.5 m tall with swollen stems. The leaves are lobed, with white hairs and long petioles. The flowers are scarce and grow from the axil of higher leaves; they have a long corolla with a whitish-pink tube with veins that are crimson red inside and brown in the throat, and a pink-lilac lobe. The fruit is 4 to 5 cm long; it bears two types of spines ending in hooks that are minute harpoons. The seeds are oval to sub-triangular, 6 mm long, wrinkled on both sides, papillose, narrow-winged.

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 for traditional medicine and various purposes.

4. Status and trends

4.1 Habitat trends

Uncarina stellulifera 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 2010 (Rakotondrabe, 2011) in the south-western region provided information about the abundance of the species (Table 1).

Table 1: Density and abundance of the population of *Uncarina stellulifera* in Toliary

Parameters	Toliary
Total area of study plots (ha)	0.3
Number of mature individuals in 0.1 ha	16
Average specific density (ind./ha)	160
Estimated area occupied by the species (ha)	1.5
Estimated total abundance	240

4.3 Population structure

Individuals of a size suitable for export are becoming increasingly rare. *Uncarina stellulifera* has regeneration difficulty, with a rate of 43.8 % (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 85 % is expected). Collectors have to go further to find the species as it no longer found in areas of previous collection near towns and cities.

4.5 Geographic trends

This species has a rather restricted distribution. The distribution of *U. stellulifera* is limited in south-western Madagascar. The area of occupancy of the species is less than 500 km² and the extent of occurrence is 9,105.4 km². The area actually occupied by the species is continually decreasing due to the various threats and pressures it is subject to.

5. Threats

Habitat degradation due to 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 Andatabo, a collection site, rocky calcareous areas – the main habitat of this species – are exploited to manufacture bricks.

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

6. Utilization and trade

6.1 National utilization

Apart from being used as an ornamental plant, the fruits of this species are particularly exploited as rat traps by the local population.

Plants of the genus *Uncarina*, including *U. stellulifera*, 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 stellulifera is one of the species of *Uncarina* that are internationally traded. The highest number of seedlings sold was recorded in 2004, with 343 seedlings (Table 2).

Table 2: Number of seedlings of *Uncarina stellulifera* exported per year

Years	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Number of seedlings exported	17	2	0	10	343	154	136

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

6.3 Parts and derivatives in trade

Uncarina stellulifera is exported in the form of live plants.

6.4 Illegal trade

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

6.5 Actual or potential trade impacts

The number of plants, including seed-bearing individuals and young plants, is becoming increasingly rare in the areas studied. 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, iii). Moreover, neither collection nor export is subject to any regulations, the number of specimens collected is often higher than the number authorized and the harvesting method is detrimental to the survival of the species. International trade could thus lead to the absence of natural regeneration and the decline (a future decline of 85 % is expected) of the species. 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.

This species has been classified as Endangered according to the IUCN criteria for the evaluation 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 (Randriambololomamonjy, 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 Andohaela 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 stellulifera* occur in Tsimanampetsotsa 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 Onilahy and Analavelona Sacred Forest 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 Dublin 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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Webographie

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13. List of annexes

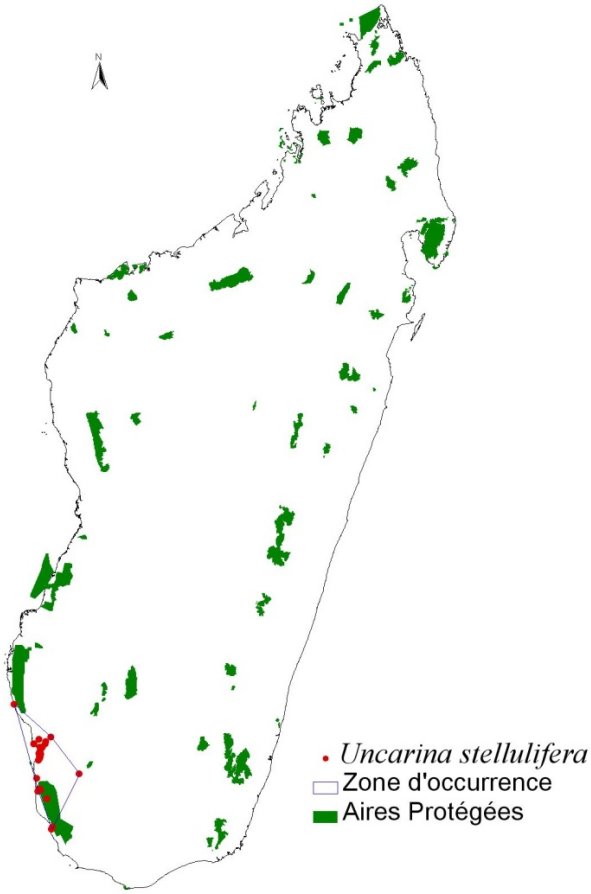
Annex 1: Illustrations and geographic distribution of *Uncarina stellulifera*

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 stellulifera*

General view of *Uncarina stellulifera*
(Ravaomanalina, 2011)

Flowering branch of *Uncarina stellulifera*
(Rakotondrabe, 2012)



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.

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