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

Listing of the species *Operculicarya decaryi* 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: Dicotyledons

1.2 Order: Sapindales

1.3 Family: Anacardiaceae

1.4 Genus, species or subspecies, including author and year: *Operculicarya decaryi.* H. Perrier. (1944).

1.5 Scientific synonyms:

1.6 Common names: Malagasy: Jabihy, Jiabiha, Saby, Tabily, Zabihy, Zabily, Zaby.

1.7 Code numbers:

2. Overview

The genus *Operculicarya* is a small tree endemic to Madagascar, comprising five species. *Operculicarya decaryi*, the most common of these, is known in the form of small deciduous trees with a conical or bulbous trunk, and gnarled branches, producing bulbous subterranean ramifications in the form of tubers. The bark is silver in colour, somewhat irregular and bulbous. The branches are thin and make a zigzag pattern. Male and female flowers can be distinguished although both have the same appearance, bright red to dark red. They produce small fleshy drupes. This species is collected in the wild and has become scarce. However, it is not yet protected by CITES legislation.

This document suggests that *Operculicarya decaryi* 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),

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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.*

Annex 2 a, paragraph A. To avoid a diminishing of the wild population of the species resulting from the collection of specimens from nature, trade in the species needs to be regulated. Similarly, regulation is required to avoid the threats to the survival of the species arising from continued harvesting or other influences.

3. Species characteristics

3.1 Distribution

Operculicarya decaryi is a species having a wide geographical distribution, being found throughout the spiny forests of south-western and southern Madagascar from the Table de Toliara mountain in Andatabo as far as Amboasary Sud.

The geographical distribution of *Operculicarya decaryi* is shown in Annex 1.

3.2 Habitat

Operculicarya decaryi is found in the dense dry forest and the xerophylic thickets of the south. The species grows on sandy substrates or calcareous rocky ground, at altitudes between 50 and 600 m.

3.3 Biological characteristics

Operculicarya decaryi flowers from September to December.

3.4 Morphological characteristics

Bottle-shaped tree or shrub, dioecious, with bulbous subterranean roots in the form of tubers, rough bark of a silver colour, which exudes thick soluble aromatic gum; short branches in a zigzag pattern. Deciduous leaves, odd-pinnate, midribs dilated into oblanceolate phyllodes. Pilosity varies with the degree of development of the leaves. The leaves are scattered on both sides with white hairs, which are erect and quite long. Male and female flowers can be distinguished although both have the same appearance, and both are red. Fruit in the form of fleshy drupes, at the apex of short branches, or sometimes at the base of the cluster of leaves at their end. Albuminous seeds limited in number or absent.

3.5 Role of the species in its ecosystem

This species plays an important role in the daily life of the local population. It is a plant used in traditional medicine.

4. Status and trends

4.1 Habitat trends

The dry spiny growth of forests and thickets of the south-west covers an area of approximately 18,355 km², 4.46% of which is located in protected areas. This type of forest has declined by 29.72 % since the 1970s (Moat & Smith, 2007).

This type of growth is fragile and readily subject to degradation. This results in open and degraded areas.

4.2 Population size

Around 150 specimens were counted in 2005 to the north of Toliara (Andoharano Forest). Also, 440 specimens were counted in 2006 in the Tongobory site (Ravaomanalina, 2006).

At the beginning of January 2012, 79 specimens were surveyed in Andatabo, Toliara, an area where collectors are active. In this area, *Operculicarya decaryi* has become very rare. Table 1 summarizes the population density and abundance at this site (DBEV, 2012).

Table 1: Population density and abundance at Andatabo, Toliara

Factors	Andatabo
Total area of the plots studied (ha)	0.3
Number of mature specimens in 0.1 ha	38.7
Average specific density (spec./ha)	386.7
Estimate of the area occupied by the species (ha)	3
Estimated total abundance	1160.1

4.3 Population structure

It was observed that the harvesting areas visited were lacking juvenile or adult specimens, and that the rates of growth and regeneration were low.

4.4 Population trends

In the harvesting areas, the specimens usable for commercial purposes have become rarer and rarer. In addition to large-scale harvesting for export, habitat destruction by various anthropic activities has caused an ongoing decline in the size of the population still in existence, and it is predicted that future decline will amount to 76.7%. Harvesters are obliged to travel further since the former harvesting areas close to the towns are now empty.

4.5 Geographic trends

This species is widely distributed, but the zone of occurrence (86,9947 km²) and the area actually occupied by the species (423 km²) are constantly declining because of the various threats and pressures to which they are subject.

5. Threats

Several threats weigh on this species and its habitat. Operations for the production of firewood and charcoal, small in size but very widespread, are the greatest threat facing spiny forests. Selective felling to obtain wood for building is also a significant threat, in particular because forest of the shrubby spiny type has a naturally slow rate of growth and regeneration.

The increasing extension of maize-growing and fires set to create pastureland for animals (mainly cattle and goats) are also very serious threats weighing on the species inhabiting the region.

In Andatabo, the species grows on calcareous soils which are currently used to make bricks.

Also, selective harvesting of *Operculicarya decaryi* from the wild for purposes of export constitutes a real threat and endangers the survival of the species.

6. Utilization and trade

6.1 National utilization

In addition to use of the species as an ornamental plant, the leaves have medicinal properties, being used in the recovery of women shortly after childbirth.

6.2 Legal trade

Operculicarya decaryi is an ornamental plant which is much in demand owing to its bonsai appearance. The species is often harvested from the wild and is becoming scarce, but is not yet protected by CITES legislation. According to the report on exports from the CITES Management Authority, the number of specimens of this species exported has seen a continuous rise since 2003 (Table 2).

Table 2: Number of seedlings of *Operculicarya decaryi* exported per year

Years	2003	2004	2005	2006
Number of seedlings exported	56	200	495	2 647

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

6.3 Parts and derivatives in trade

Operculicarya decaryi is exported as a live plant.

6.4 Illegal trade

No illegal trade in *Operculicarya decaryi* has so far been recorded. The species is not very often sold on the national market.

6.5 Actual or potential trade impacts

The number of plants, in particular of regenerated individuals at the sites where collectors harvest them, is already low. *Operculicarya decaryi* has difficulty in regenerating, the regeneration rate being 24.14%. In 2006, the species was considered vulnerable, according to IUCN definitions. Now, it is considered endangered, on the basis of recent observations on the ground and analyses of its distribution. Although this ornamental species is much in demand, it still does not fall under CITES. Harvesting and export are thus not subject to any form of regulation, and collectors have a tendency to collect a large number of seedlings of the species. Exporting could thus result in a lack of natural regeneration and the decline or even disappearance of populations in certain harvesting areas, which in the long term would represent a major threat to the species. Consequently, it is very urgent to undertake ex situ reproduction of the species.

7. Legal instruments

7.1 National

As the species is not yet listed in the CITES Appendices, exploitation of it is not subject to the Convention's rules. Collecting and exporting are regulated only by the authorization procedures at national level.

7.2 International

Inclusion of the species in CITES Appendix II will make it possible to ensure that all exports are accompanied by a CITES permit certifying that the specimens have been collected in conformity with the relevant laws and by methods which do not threaten the survival of the species.

Furthermore, listing the species in Appendix II will give them the benefits of studies of significant trade, making it possible to track and update their biological and ecological data.

8. Species management

8.1 Management measures

The number of specimens authorized for export is dependent on the stocks of the species in a horticultural centre. A single request for collection, per species and per collector, is allowed, enabling the plants to be used for breeding. Those dealing in the species have to breed it *ex situ*. Export permits and authorizations are issued only for plants propagated artificially.

8.2 Population monitoring

This species has already been the subject of a study of significant trade, with a view to listing it in CITES Appendix II in 2008. Its conservation status as defined by IUCN has changed from vulnerable, VU B2b (i, ii, iii), to Endangered, EN A2c, B2, corresponding to a reduction of 50% or more in the past

10 years in the size of the area where the species may grow, in the zone of occurrence and in the quality of its habitat.

8.3 Control measures

8.3.1 International

The species is not yet listed in the CITES Appendices.

Inclusion of the species in CITES Appendix II will make it possible to ensure that all exports are accompanied by a CITES permit certifying that the specimens have been collected in conformity with the relevant laws and by methods which do not threaten the survival of the species.

8.3.2 Domestic

Some populations of this species are found in the Andohahela National Park and the Special Reserve in Cap Sainte Marie. In Andatabo, *Operculicarya decaryi* takes on an ideal bonsai form, which is highly prized and sought after by those dealing in the species. In the protected areas, on the other hand, the species grows as a shrub, in which form it is not of commercial interest. This change in form is explained by the adaptation of the species to the characteristics of the ground on which it is growing. Calcareous rocky ground favors growth as a bonsai tree, while sandy soils produce shrubs.

8.4 Captive breeding and artificial propagation

Propagation from cuttings is possible (Petignat & Cooke, 2009).

8.5 Habitat conservation

Some populations of *Operculicarya decaryi* are found in the Andohahela National Park, the Tsimanapetsotsa National Park and the Special Reserve in Cap Sainte Marie. The government policy of expanding the size of the protected areas, at the same time as establishing new protected areas such as Amoron'i Mania, in the Ekodida forest, might assist with the conservation of the species and its natural habitat.

8.6 Safeguards

In order to guarantee the continued survival of the species, export permits and authorizations should be issued only for specimens reproduced artificially.

9. Information on similar species

Operculicarya decaryi somewhat resembles *Operculicarya pachypus*. The latter is of limited distribution around Toliara and grows on limestone. The branches of both species are in a zigzag pattern, but those of *O. pachypus* have the ends in the form of sharp spines (Pétignat & Cooke, 2009).

10. Consultations

There were no consultations with other countries, since the plant is endemic only to Madagascar.

11. Additional remarks

This species has already been the subject of a proposal for listing in Appendix II, at CoP15 held in Qatar in 2010. The biological and ecological data obtained have been updated and brought together in order to prepare this second proposal.

Under an agreement between the CITES Secretariat and the European Union, *Operculicarya decaryi* will be the subject of further research carried out during 2012, in order to amplify the existing data.

12. References

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Webography

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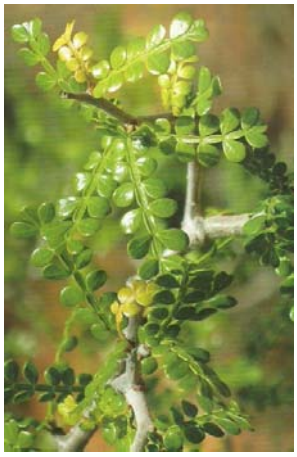
13 List of annexes

Annex 1: Illustrations and geographical distribution of *Operculicarya decaryi*

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.

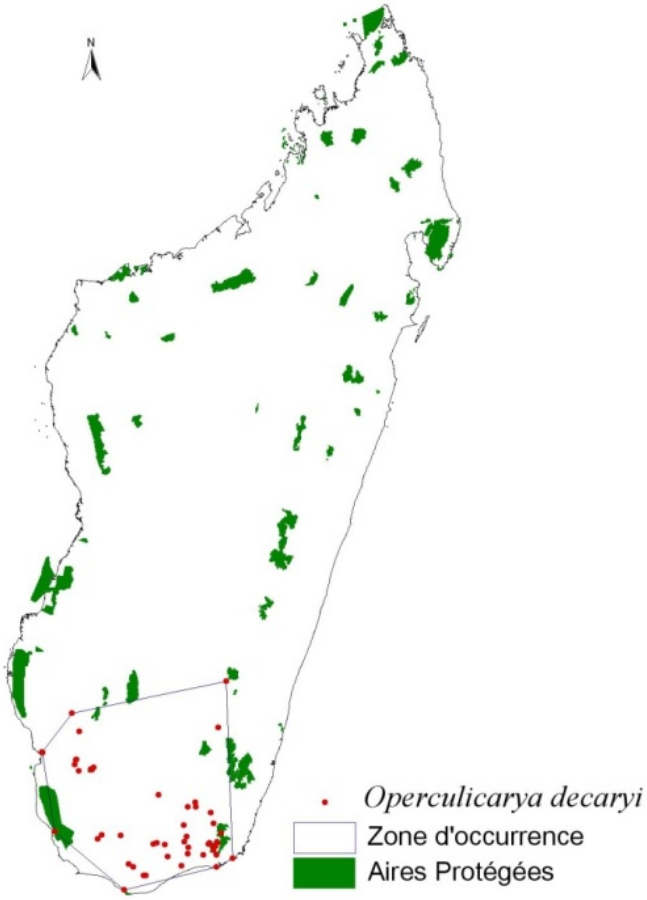
Illustrations and geographical distribution of *Operculicarya decaryi*

Mature specimen of *Operculicarya decaryi*
Saint Augustin Toliara
(Ravaomanalina, 2006)



Operculicarya decaryi leaves comprising rounded leaflets attached to a winged midrib
(Ravaomanalina, 2006)

Operculicarya decaryi as a shrub
Cap Sainte Marie National Park
(Ravaomanalina, 2006)



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		