

Inclusion of *Uncarina grandidieri* in Appendix II

Proponent: Madagascar

Summary: *Uncarina grandidieri* is a succulent shrub, one of around ten species in the genus, all of which occur in Madagascar. It has a wide though evidently patchy distribution in south-west and southern Madagascar, from the Mangoky River basin in the region of Morondava southwards. It grows in dry thorny thicket and dry forest, habitats that are affected by conversion to agriculture, burning and charcoal production. Ground observations have provided a population estimate of 420 individuals in a 2 hectare plot within the protected area of Beza-Mahafaly Special Reserve. The species is also reported from Andohahela National Park in south-east Madagascar. It is in cultivation, both as an ornamental plants (apparently on a small scale) in Madagascar and elsewhere. It is said to be easy to propagate from seeds and cuttings and to grow rapidly. Export of plants was reported in the early 2000s, amounting to around 4600 plants in the period 2000-2005, with highest exports (just over 2000) in 2004. No plants were reported in 2006 and export has not been reported since then. The majority of the limited trade outside Madagascar at present appears to be in seeds or plants propagated from seeds or cuttings. Current legal controls in Madagascar on collection and export are unclear.

Analysis: *Uncarina grandidieri* has a wide distribution in south and south-west Madagascar. It is in cultivation, and is reportedly easy to propagate. Recent trade outside Madagascar appears to be very largely in seeds or in propagated plants. Some export of plants, some or all of which are presumed wild-collected, has taken place in the past, although there is no indication of ongoing export of plants from the range State. The scale of the reported trade is small compared with the likely population of the species based on observed densities. It seems very unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Supporting Statement (SS)	Additional information
	<p style="text-align: center;"><u>Taxonomy</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;">Synonyms: <i>Uncaria grandidieri</i>, <i>Uncarina didiera</i>, <i>Uncarina dimidiata</i>, <i>Harpagophytum dimidiatum</i>, <i>Harpagophytum grandidieri</i> (<i>Eggl</i>i in litt., 2012).</p> <p style="text-align: center;"><u>Range</u></p> <p style="text-align: center;"> </p> <p>Madagascar.</p> <p style="text-align: center;"><u>IUCN Global Category</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;">Not currently listed.</p>
<p>Biological and trade criteria for inclusion in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)</p>	
<p style="text-align: center;"><u>A) Trade regulation needed to prevent future inclusion in Appendix I</u></p>	
<p>Ground observations in December 2009 in the South West region, within la Réserve Spéciale de Bezé-Mahafaly, provided information about the abundance of <i>Uncarina</i></p>	

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<p><i>grandidieri</i>. It was estimated that there were approximately 210 mature individuals per ha, and the estimated area occupied by <i>U. grandidieri</i> within the reserve is two hectares, giving a total population estimate within the reserve of 420 individuals.</p> <p>A study into the regeneration of <i>U. grandidieri</i> showed regeneration difficulty with a regeneration rate of 52%. International trade could lead to the absence of natural regeneration and the decline or even the disappearance of populations in areas of collection which in the long term would be a serious threat to the species.</p> <p>A future decline of 77% is predicted (a figure of 64% is also given).</p> <p>In 2011, the conservation status of <i>U. grandidieri</i> according to IUCN criteria was estimated to be endangered.</p> <p><i>Uncarina grandidieri</i> has a narrow distribution in Madagascar. It is only found in the South of the Island with the majority of occurrence outside of protected areas. The Area of Occupancy of <i>U. grandidieri</i> is less than 500 km² (297 km²) and the Extent of Occurrence is 342 260 km².</p> <p>The species is found in two main types of habitat, dry thorny thicket and dry forest. The dry thorny thicket of the South and South West of the island covers an area of approximately 18 355 km², of which 4.5% is located within protected areas. This type of land cover has reduced by 29.7% since the 1970s. The dry forest of the West of the island covers an area of 31 970 km², of which 17.1% is within protected areas. This type of forest has reduced by 39.7% since the 1970s.</p> <p>In exploited areas, individuals reaching a size suitable for commercial export are becoming increasingly rare.</p>	<p><i>Two different figures are presented in the proposal for predicted future decline and neither is over a specified time period. The evidence upon which the decline is predicted is not detailed in the proposal.</i></p> <p><i>The conservation status of U. grandidieri is not published on the IUCN Red List. The IUCN status assessment given in the proposal was assigned using GIS data, which were used to calculate Area of Occupancy and Extent of Occurrence and to predict future decline (CITES, 2012).</i></p> <p><i>The Extent of Occurrence quoted in the proposal is large (342 260 km²). However, the text reports that the distribution is restricted and the map presented in Annex I of the proposal shows a smaller distribution. It is thought that the figure may be misreported.</i></p> <p><i>Rauh (1998) reports that U. grandidieri grows in the same regions as U. decaryi: in the Mangoky river basin, in the Mandrare valley, near Ampanihy, Ambovombe, Tsihombe and Faux Cap (all in the South of Madagascar).</i></p>
<p><u>B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences</u></p>	
<p>All species of <i>Uncarina</i> are ornamental plants sought after in international markets. <i>U. grandidieri</i> is currently traded legally in international markets as young living plants and as seed. <i>U. grandidieri</i> is collected from the wild and is reported as becoming rare as a result.</p> <p>Reported exports of living plants are as follows: 2000 (321), 2001 (3), 2002 (8), 900 in 2003 (900), 2097 in 2004 (2097), 1314 in 2005 (1314) and 0 in 2006 (0).</p>	<p><i>Yuan in litt. (2012) reports that U. grandidieri is common in China and that trade is of cultivated plants.</i></p> <p><i>Export figures for years subsequent to 2006 are not provided in the proposal. The availability of seeds in international trade is not reported in the proposal.</i></p>

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<p>No illegal trade in <i>U. grandidieri</i> has been registered. The species is rarely sold in local markets. The harvest and export of <i>U. grandidieri</i> are not currently subject to any international regulation and collectors have a tendency to abstract large numbers.</p> <p>A study by Royal Botanic Gardens Kew found ten web sources of <i>U. grandidieri</i>, selling mature plants or seedlings. Their origin is not recorded. Price per plant ranged from USD30-500.</p>	<p><i>A further web review found seeds of U. grandidieri available from sellers in Germany (USD3.37 for 10 seeds) and the UK (USD4.43 for five seeds, the seller notes U. grandidieri is rarely offered). An additional seller located in the Netherlands offers packs of 20 seeds for USD11.70, 100 seeds for USD47.05 and 1000 seeds for USD313.66. The origin of the seeds is not reported.</i></p> <p><i>A web review also identified individuals were found for sale at a price lower than that noted in the proposal. A seller in Germany offers individuals of U. grandidieri for USD18.30, the origin of material and the size of the individual offered is not provided. A seller based in the USA offers individuals for USD24.95, but information on size or origin is not provided.</i></p> <p><i>An additional nine-day web survey to investigate web trade for U. grandidieri was conducted in Autumn 2012. One plant and three packages of seeds of U. grandidieri were found sold. The plant has been sold from UK to Singapore. Another thirteen plants and one package of seeds were offered from Germany, USA, New Zealand, UK, and South Africa. The price of four plants was over USD100 The highest price reached USD500 (Augugliaro in litt., 2012).</i></p> <p><i>Other species of Uncarina were also identified as available to buy from online searches, including U. decaryi which has a similar distribution to U. grandidieri and species with a smaller distribution, such as U. roeoesliana (distribution information taken from Rauh, 1998).</i></p> <p><i>A two day review of web sellers based in Japan selling U. grandidieri was conducted (04-05 December 2012). Two websites selling U. grandidieri plants were identified (although these directed to the same source) and one website selling seeds was identified (TRAFFIC Japan, 2012).</i></p>
<p>Inclusion in Appendix II to improve control of other listed species</p>	
<p><u>A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I</u></p>	
	<p><i>U. grandidieri, when not in leaf and/or pruned, will be difficult to distinguish from other species of the genus (Eggl in litt., 2012). U. stellulifera is proposed for inclusion in Appendix II (CoP16 Prop. 68).</i></p>

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	<p><i>The fruits of U. grandidieri, U. roeoesliana and U. decaryi are very similar and cannot be distinguished with certainty, but the species can be distinguished by their habit, shape of the lamina and especially by the structure of their indumentums (Eggl, 2002).</i></p>
Other information	
<u>Threats</u>	
<p>Habitat degradation by slash and burn agriculture threatens <i>U. grandidieri</i>. The increasing expansion of the shifting cultivation of maize and associated fires along with grazing animals constitutes a serious threat to habitat.</p>	
<u>Conservation, management and legislation</u>	
<p>Collection and export are only regulated at a national level.</p> <p>Para 7.1 of the SS states: collection and export [of this species] are not subject to any controls.</p> <p>Para 8.1 of the SS states: National management measures are detailed in the proposal: The number of specimens authorised for export is based on the supply of the species in horticultural centres. A single harvest authorization per species per operator is provided, to serve as parental stock. Operators should undertake ex situ reproduction. Permits and exportation authorizations are supplied only for individuals reproduced artificially.</p> <p>Part of the Area of Occupancy of <i>U. grandidieri</i> is within protected areas; Andohaela National Park and la Réserve Spéciale de Bezé-Mahafaly. The State policy to increase the extent of protected areas and define new protected areas could add to the conservation of the species in its natural habitat.</p>	<p><i>The level of national legislation afforded to this species is unclear as the proposal notes that harvest and export are not subject to regulation and later that they are subject to national authorization procedures. Information as to whether national management measures have been enforced or how successfully is not provided. Expert reviewers were asked to provide additional information about national legislation and its effectiveness but none of the comments received clarified this.</i></p>
<u>Captive Breeding/Artificial Propagation</u>	
<p>Propagation from cuttings is successful for <i>Uncarina</i> species, but it is also possible from seed.</p> <p>The proposal states that ex <i>situ</i> propagation is needed to create supplies for export.</p> <p>The local population also grow the species in enclosed gardens and as an ornamental plant.</p>	<p><i>The species is of very easy cultivation as long as warmth and sufficient space is available. It is fast growing. The plants held at Sukkulenten Sammlung, Zurich, are pot-bound or planted out in a greenhouse and grow vigorously and flower regularly. Seed is easily produced in cultivation but since plants are self-sterile, at least two specimens are necessary. Propagation through cuttings is also straightforward (Eggl in litt., 2012). The usual method of using a small brush to transfer pollen between plants doesn't work due to the specific pollination requirements of U. grandidieri (Bihrmann, undated). Small seedlings do form the caudex, but the caudex is not significant on even large plants. Seeds are common and propagation from cuttings is possible (Bihrmann in litt., 2012).</i></p>

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	<p><i>U. grandidieri</i> is noted to be appreciated by collectors due to its long lasting showy blooming and rather easy cultivation: (Puccio, undated).</p> <p>According to the online database of Botanic Gardens Conservation International (BGCI), PlantSearch, 45 gardens record holding <i>U. grandidieri</i> in their collection. The majority of these gardens are located in Europe and the United States of America. In addition to this, <i>U. grandidieri</i> is also held in the collection of Phyto-Logic Paradise Gardens in Madagascar. The original specimen has been in the garden for more than 10 years. This botanic garden is propagating <i>U. grandidieri</i> and <i>U. stellulifera</i> from cuttings and both species are being planted in gardens within the city of Antananarivo, where the botanic garden is located (Cooke in litt., 2012).</p>
<u>Other comments</u>	
<p>Information on this species was presented to the Plants Committee in 2011. Biological and ecological data obtained were updated and supplemented for the preparation of this new proposal.</p> <p>This species plays an important role in the daily life of the local population, due to its uses in traditional medicine. <i>Uncarina</i> also have therapeutic qualities, the roots, leaves and stems are used in traditional medicines. The <i>Uncarina</i> genus is also known for its use as a cosmetic plant. The leaves and stems are mainly used for hair care (such as hair regrowth and dandruff treatments). The leaves of <i>U. grandidieri</i> are used by cosmetic manufacturers to make shampoo and by local populations as soap. The constant removal of leaves from individuals throughout the year could affect the reproductive capacity of the species.</p>	<p>Pollination is by beetles (Bihrmann, undated).</p>

Reviewers: C. Augugliaro, A. Cattabriga, U. Eggli, D. Newton.

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