

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of *Hoodia* spp. in Appendix II, with an annotation to read as follows:

Designates all parts and derivatives except those bearing the label "Produced from *Hoodia* spp. material obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of Botswana/Namibia/South Africa under agreement no. BW/NA/ZA xxxxxx".

B. Proponent

Botswana, Namibia and South Africa.

C. Supporting statement1. Taxonomy

- 1.1 Class: Magnoliopsida
- 1.2 Order: Gentianales
- 1.3 Family: Apocynaceae
- 1.4 Genus: *Hoodia* Sweet ex Decne.
- 1.5 Scientific synonyms: *Gonostemon* Haw.; *Trichocaulon* N.E.Br.
- 1.6 Common names: English:
French:
Spanish:
Namibia: Hoodia, |goa.-l, |khoba.b, |khowa.b, |goai-l,
|khoba, |khoba.b|s, |khabab, |khowab, |goab,
otjinove, Inawa#kharab
South Africa: Ghaap, Bitter Ghaap
- 1.7 Trade names and pharmaceutical names: P57 (active ingredient)

2. Biological parameters

2.1 Distribution

Hoodia occur in summer rainfall areas in Angola, Botswana, Namibia and South Africa, as well as winter rainfall areas in Namibia (MET 2002). All taxa except one are found west of 26° longitude from 33° degrees south to as far north as Angola. The only exception is *H. currorii* subsp. *lugardii*, which occurs in Botswana and the Limpopo province of South Africa. The centres of diversity are in Namibia (11 taxa) and South Africa (9 taxa) (see table below).

2.2 Habitat availability

Species of the genus occur in a wide variety of arid habitats from coastal to mountainous, but typically on arid gravel or shale plains and slopes and ridges. The precise habitat requirements for *Hoodia* are not known, but habitat availability is not expected to be a limiting factor.

2.3 Population status

Several species occur in very large populations over large areas (several more than 10,000 km²). This includes *H. gordonii*, which is the species currently most sought after for trade in weight reduction products. There are, however, other closely related species that are less prolific, occurring in isolated patches with an overall low density, and a relatively small distribution range (less than 1,000 km²). A relatively common feature is that most species have patchy distributions. The conservation risk classification for species that have been assessed using the IUCN 2001 criteria are given in the table below (as in the 1997 Red List and separate updates for the species that have been assessed using the IUCN's 2001 criteria). Ten of the 16 taxa assessed have been classified as threatened in the latest Red Data assessments for those taxa.

TAXON NAME	STATUS 1997	STATUS 2002
<i>Hoodia alstonii</i> (N.E.Br.) Plowes	nt	
<i>H. currorii</i> (Hook.) Decne. subsp. <i>lugardii</i> (N.E.Br.) Bruyns	nt	
<i>H. dregei</i> N.E.Br.	R	
<i>H. flava</i> (N.E.Br.) Plowes	nt	
<i>H. gordonii</i> (Masson) Sweet ex Decne.	nt	
<i>H. juttae</i> Dinter	R	VU
<i>H. officinalis</i> (N.E.Br.) Plowes subsp. <i>delatiana</i> (Dinter) Bruyns	R	VU
<i>H. officinalis</i> (N.E.Br.) Plowes subsp. <i>officinalis</i>	nt	
<i>H. pilifera</i> (L.f.) Plowes subsp. <i>annulata</i> (N.E.Br.) Bruyns	R	
<i>H. pilifera</i> (L.f.) Plowes subsp. <i>pilifera</i>	R	
<i>H. pilifera</i> (L.f.) Plowes subsp. <i>pillansii</i> (N.E.Br.) Bruyns	V	
<i>H. ruschii</i> Dinter	I	VU
<i>H. triebneri</i> (Nel) Bruyns	R	VU

2.4 Population trends

Little is known about population trends at population level, although declines in several sites are known as the result of mining, infrastructure development and agriculture. For example, the population of *Hoodia pilifera* subsp. *pillansii*, which is on the Red Data list, is severely fragmented with no population thought to contain more than 250 individuals (Archer and Victor, 2003). Several localities of *H. currorii* subsp. *lugardi* in Botswana have been lost to the combined effects of diamond mining and attack by a snout beetle (Setshogo and Hargreaves 2002). There are also reports of intensive bioprospecting for commercial exploitation in Botswana (Setshogo and Hargreaves 2002), as well as reports of collecting or solicitation of collecting in Namibia, and South Africa.

2.5 Geographic trends

There are reports that *Hoodia* species have disappeared from parts of their range due to mining activities, agriculture and collecting.

2.6 Role of the species in its ecosystem

Hoodias are part of the succulent flora in southern Africa, and are a minor source of food and moisture to a range of wildlife species in arid ecosystems. *Hoodia* species (analogous to stemmed cacti and euphorbias) are perennial, slow growing, spiny, and form multiple aboveground stem clusters, which provide shelter or breeding sites for small animals.

2.7 Threats

All Hoodias have been subject to collecting by succulent collectors, and several taxa have been impacted by habitat disturbance (e.g. road construction, mining and overgrazing). Harvesting for medicinal properties has occurred in the past as part of traditional practices, but harvesting for commercial purposes is becoming a large potential threat. Since the isolation of the active ingredient in *H. gordonii* and the extensive press coverage that projected huge financial benefits to be derived from exploiting this species, there has been an increasing interest in the harvest of *Hoodia* spp. Although *H. gordonii* is abundant and widespread, collectors of plant material cannot always tell the different species apart, and collecting from the wild is likely to impact a number of *Hoodia* species. Harvesting requires cutting off the above ground parts of the plant and it is relatively easy to decimate small populations.

3. Utilization and trade

3.1 National utilization

Hoodia spp. are widely used traditionally by the San people as an appetite suppressant, thirst quencher and as a cure for severe abdominal cramps, haemorrhoids, tuberculosis, indigestion, hypertension and diabetes. Various uses have been recorded among Anikhwe (northern Botswana), Hei//om (northern Namibia), Khomani (north western South Africa), and the !Xun and Khwe (Khoe) (originally from Angola) communities. Less is known about the use of these plants by other indigenous people, but some records show limited use of plant parts as food items, albeit not as preferred food items. Hoodias are known to be used for cultural purposes in some areas (Hargreaves and Turner, 2002). Although relatively difficult to cultivate, Hoodias are attractive plants and are used for horticultural purposes.

The Council for Scientific and Industrial Research (CSIR) in South Africa isolated an active compound (P57) for appetite suppression from *H. gordonii*. The CSIR licensed the rights for further development of P57 and the setting up of a sustainable production system to Phytopharm in the UK. Phytopharm in turn sub-licensed the rights to Pfizer for the development and global commercialisation, but Pfizer has recently returned the clinical developmental rights. In terms of a benefit sharing agreement with the CSIR, all the San communities in the range States will benefit from the development of P57.

3.2 Legal international trade

Botswana: Harvesting for export has been permitted in some instances. This requires a permit and the area where harvesting is taking place is inspected by officers from the Agricultural Resources Board. One exporter reported exporting 2500kg/month.

Namibia: Exports have thus far been limited to herbarium collections. Manufactured pharmaceutical preparations for dieting and appetite suppression have appeared in the Namibian market, presumably as plant extracts from South African origin. Considerable potential exists for promoting sustainable legal trade in co-operation with responsible pharmaceutical companies. Negotiations are already under way in this regard, and Namibia intends to establish a controlled harvesting system in co-operation with specific manufacturing companies that make commitments to support conservation and use only material obtained through controlled harvesting or other forms of production.

South Africa: In trying to expand the development of Hoodia products, a limited amount of wild collected material was supplied to developing companies (permits issued by Northern Cape Nature Conservation and Western Cape Nature Conservation). There is a limited amount of trade in cultivated material. Permits have been issued to projects linked to the CSIR since 1998 (80 plants in 1998, 200 plants in 2000, 1350kg from cultivated sources in 2001, and 1900kg from cultivated sources in 2002).

3.3 Illegal trade

The extent of illegal trade is unknown. Illegal exports have been reported from Botswana for the extraction of the active ingredient in manufacturing appetite suppressants by Biomed (Anonymous, 2003, Hargreaves and Turner, 2002). Namibia has experienced attempts at illegal trade (solicitation by a North American company to individuals to supply material after being informed that exports will not be authorized). There is also illegal collecting in South Africa. A North American company claims to be importing 1,200 to 2,800 kg of dried Hoodia plants per week, but the source of this material is not known and it is assumed to be illegal. Limited illegal collection by succulent enthusiasts also occurs throughout the region.

3.4 Actual or potential trade impacts

The potential impact of illegal trade is considered to be very high because of the threat of over-exploitation after the patenting of compound P57 by the CSIR, in South Africa. *Hoodia* products are widely advertised on websites and all the material used to manufacture these products is thought to be derived from wild-harvested plants. There are at least ten companies offering Hoodia products for sale on their websites. Very high actual and potential impacts of trade can be expected, since some pharmaceutical companies require wild material for extraction of the active compound.

3.5 Captive breeding or artificial propagation for commercial purposes

Cultivation trials have been set up in South Africa and Namibia. Pfizer is also reported to have cloned Hoodia from cell cultures and there are also reports of cultivation in Chile (Hargreaves and Turner, 2002). The plantings in South Africa and Namibia have not yet reached a stage where harvesting is possible, so all material currently in trade is probably from wild sources.

4. Conservation and management

4.1 Legal status

4.1.1 National

Botswana: Harvesting is controlled by the Agricultural Resources Conservation Act [CAP. 35:06]. Regulations for harvesting of veld products were published on 26 March 2004.

Namibia: All *Hoodia* species are protected species, requiring prior authorization for harvesting and trade.

South Africa: *Hoodia* species are protected species in the Northern Cape (Environmental Conservation Ordinance No.19 of 1974). No collecting is allowed without a permit. Similarly, a permit is required for any cultivation, transport or export from the province. Similar regulations are applied in the Western Cape and Free State provinces.

4.1.2 International

None.

4.2 Species management

4.2.1 Population monitoring

In Botswana *Hoodia currori* has so far not been commercially exploited to avoid over-exploitation. *Hoodia currori* grows in a belt extending for 600 km east to west along the Limpopo River through Namibia. It has been included in the Southern African Plant Red Data List and was presented to the Agricultural Resources Board to be covered by the legislation currently protecting the grapple plant (Lloyd, 2003).

Namibia is in the process of expanding monitoring of these species as part of a long-term plant conservation programme in Southern Namibia, i.e. establishing reference sites. Funding is, however, a major constraint.

4.2.2 Habitat conservation

In Namibia, the status of all species has been assessed since 2001 (Craven & Loots 2002, Loots in press).

Hoodia gordonii is found in the areas of the central Kalahari and Makgadikgadi national parks, (Lloyd, 2003), Tanqua Karoo National Park (Strauss et al, 2003) and the Ai-Ais/Richtersveld Transfrontier Park (Peace Park Foundation, 2003) in South Africa. It, and other species, is also present in Namib Naukluft Park, (World Conservation Monitoring Centre, 2000), Skeleton Coast Park, and a new national park in southern Namibia (the former Sperrgebiet), as well as in several conservancies.

4.2.3 Management measures

In Namibia, harvesting is currently not authorized. Habitat protection is achieved through the protected area network and the mitigation of habitat disturbance through environmental impact assessment procedures and environmental contracts.

4.3 Control measures

4.3.1 International trade

Hoodias offer considerable economic potential to range States, and in particular also to indigenous people such as the San who first discovered the pharmaceutical value of these species. Inclusion of this genus in Appendix II is needed to establish a standardized international trading framework and monitoring regime. The proponents intend to promote local processing, and the major form of exports is likely to be in the form of extracts, partially processed or finished pharmaceutical products. Such products present complications for enforcement, and have traditionally been exempted for medicinal plant species included in Appendix II. It is therefore proposed to only exempt such products bearing a label indicating that the specific manufacturer/distributor/agent responsible for marketing such product has established an agreement with the relevant Management Authority, as specified in the proposal (Section A). All other specimens and raw material would remain subject to the requirements of trade under Article IV.

4.3.2 Domestic measures

In Botswana, *Hoodia* spp are protected by the Agricultural Resources Conservation Act, in which *Hoodia* is listed as a veld product.

In Namibia, all *Hoodia* species are protected and prior authorization is required for harvesting or trade. No wild harvesting has yet been authorized until a status review has been completed.

In South Africa, *Hoodia* species are protected species in the Northern Cape (Environmental Conservation Ordinance No.19 of 1974). No collecting is allowed without a permit. Similarly, a permit is required for any cultivation, transport or export from the province. The same regulations are applied in the Western Cape and Free State provinces.

5. Information on similar species

Hoodia species may be confused with one another and have also been confused with some cacti species, like *Trichocereus spachianus* (a declared noxious weed in South Africa) (Lloyd, 2003).

6. Other comments

7. Additional remarks

8. References

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