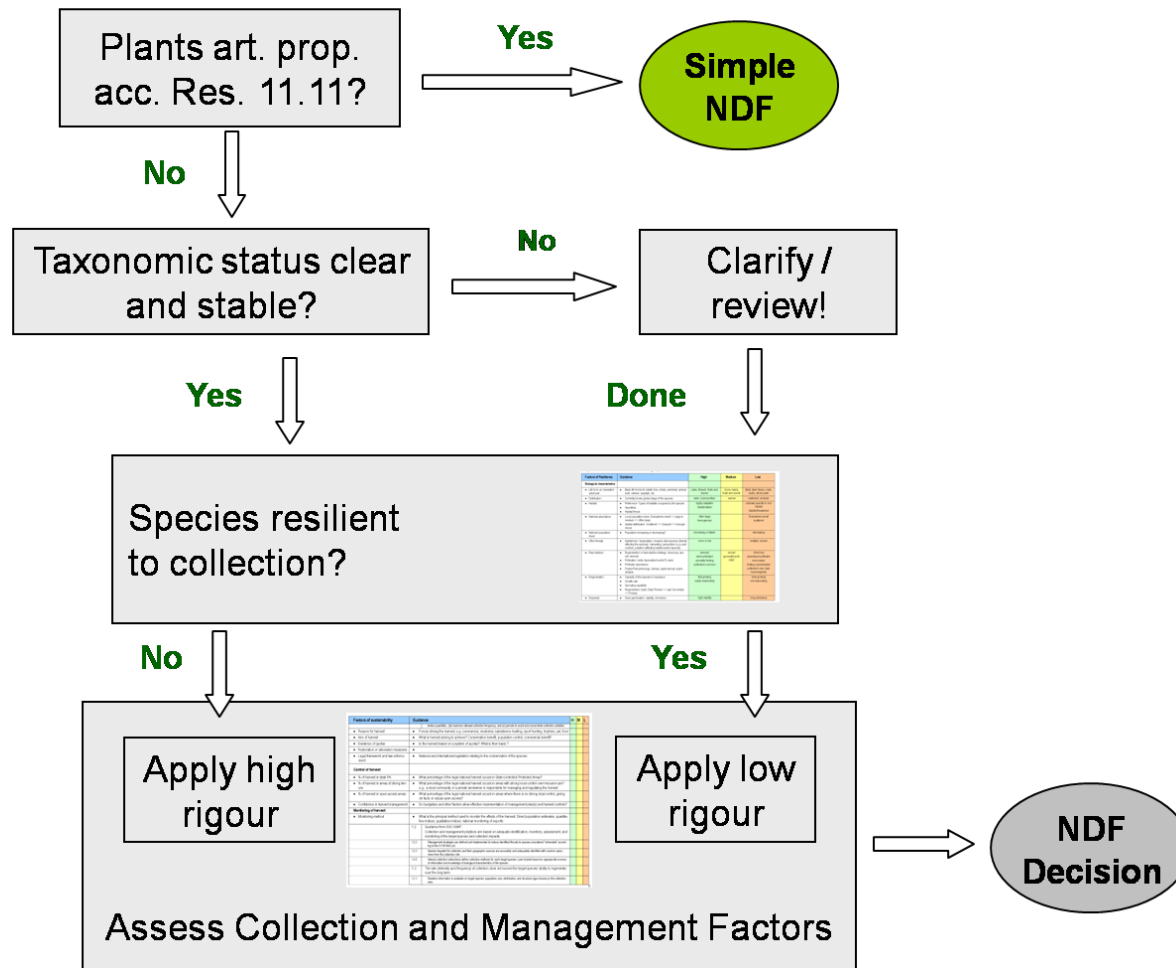


# Guidance for Scientific Authorities in making a CITES Non-Detriment Finding

## Working Group: Perennials Make NDF Decision!!!

20.11.2008, Resilience\_Check\_&\_Factors\_Vers2.doc

### Steps for making a CITES NDF for plants



This Annex describes a process for making a non detriment finding for perennial plants and possibly all CITES Appendix II plants, summarized in a decision tree, that builds upon the IUCN checklist and other tools by incorporating the sources of information and methods that can be used to evaluate an element as well as identifying when a more rigorous approach is needed (when more information and data are needed). All elements of the following tools for making NDFs were reviewed and included as appropriate for perennial plants.

- (1) tables 1 and 2 of the IUCN NDF Checklist<sup>1</sup> but also takes on board additional elements from other documents, such as:
- (2) the Cancun Workshop Case Study Format<sup>2</sup>;
- (3) the EU-SRG Guidance Paper<sup>3</sup>;
- (4) the International Standard for the Sustainable Wild Collection of Medicinal and Aromatic Plants, ISSC-MAP<sup>4</sup> (ISSC-MAP especially provided guidance for the factors “Management Plan” and “Monitoring Methods” through detailed criteria and indicators); and
- (5) susceptibility matrices published by Cunningham and Peters<sup>5</sup>.

The first factor to consider is source material – whether the source of the specimen proposed for trade is from the wild or artificially propagated (as per Resol. Conf. 11.11). If the specimen was artificially propagated, a simple NDF is made. If the specimen was grown from a plant collected from the wild (i.e. motherstock is wild), the specimen is treated as wild requiring an NDF to be made.

The next factor to consider is taxonomic status. Assess whether the taxonomic circumscription, including authorities and synonyms, has been stable in the past or dynamic; the latter bears the risk that the taxon may consist of several entities which have to be assessed separately. Sources of information include published floras, CITES checklist, identification guides, and taxonomic experts.

The next step involves evaluating the resilience of a species to collection and trade. The evaluation is done by considering factors most indicative of resilience or vulnerability of a particular species to collection. The table does not include an exhaustive list of indicators for higher and lower risk but rather includes examples taken from Cunningham (2001) and Peters (1994). Species are evaluated as having higher resilience i.e. less at risk from collection, if most of the resilience factors are in the higher category. It is expected that judgement will be cautionary, for example, should a species have only a few factors deemed lower resilience and several deemed higher resilience, the species may still be considered as having lower resilience to collection.

**Assessment of the resilience of the species to collection**

Factors of Resilience	Guidance	Higher	Medium	Lower	Ref
<b>Biological characteristics</b>					
<ul style="list-style-type: none"> <li>• Life form vs. harvested plant part</li> </ul>	<ul style="list-style-type: none"> <li>• Basic life forms for plants: tree, shrub, perennial, annual, bulb, climber, epiphyte, etc.</li> </ul>	Latex, flowers, fruits and leaves	Some resins, fruits and seeds	Bark, stem tissue, roots, bulbs, whole plant	1, 5
<ul style="list-style-type: none"> <li>• Distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Currently known global range of the species</li> </ul>	wide, cosmopolitan	narrow	restricted, endemic	2, 5

Factors of Resilience	Guidance	Higher	Medium	Lower	Ref
<ul style="list-style-type: none"> <li>Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Preference: Types of habitats occupied by the species</li> <li>Specificity</li> <li>Habitat threat</li> </ul>	highly adaptable habitat stable		narrowly specific to one habitat habitat threatened	1, 2, 5
<ul style="list-style-type: none"> <li>National abundance</li> </ul>	<ul style="list-style-type: none"> <li>Local population sizes: Everywhere small &lt;&gt; Large to medium &lt;&gt; Often large</li> <li>Spatial distribution: Scattered &lt;&gt; Clumped &lt;&gt; Homogeneous</li> </ul>	often large homogenous		Everywhere small scattered	1, 5
<ul style="list-style-type: none"> <li>National population trend</li> </ul>	<ul style="list-style-type: none"> <li>Population increasing or decreasing?</li> </ul>	increasing or stable		decreasing	1
<ul style="list-style-type: none"> <li>Other threats</li> </ul>	<ul style="list-style-type: none"> <li>habitat loss / degradation; invasive alien species (directly affecting the species); harvesting; persecution (e.g. pest control); pollution (affecting habitat and/or species)</li> </ul>	none or low		multiple, severe	1, 2
<ul style="list-style-type: none"> <li>Reproduction</li> </ul>	<ul style="list-style-type: none"> <li>Regeneration or reproductive strategy: dioecious, sexual, asexual</li> <li>Pollination: biotic (specialised vector?), wind</li> <li>Pollinator abundance</li> <li>Flower/Fruit phenology: annual, supra-annual, unpredictable</li> </ul>	Asexual wind pollinated annually fruiting pollinators common	sexual generalist pollinator	Dioecious specialised pollinator monocarpic fruiting unpredictable pollinators rare; bats, hummingbirds	2, 5
<ul style="list-style-type: none"> <li>Regeneration</li> </ul>	<ul style="list-style-type: none"> <li>Capacity of the species to reproduce</li> <li>Growth rate</li> <li>Sprouting capability</li> <li>Regeneration Guild: Early Pioneer &lt;&gt; Late Secondary &lt;&gt; Primary</li> </ul>	fast growing easily resprouting		slow growing not resprouting	1, 5
<ul style="list-style-type: none"> <li>Dispersal</li> </ul>	<ul style="list-style-type: none"> <li>Seed germination: viability, dormance</li> <li>Seed dispersal strategy</li> <li>Disperser abundance</li> <li>Dispersal efficiency</li> </ul>	high viability wind and other abiotic		long dormancy Biotic, with specialized vector	1, 5
<b>Harvest characteristics</b>					
<ul style="list-style-type: none"> <li>Harvest specificity</li> </ul>	<ul style="list-style-type: none"> <li>Indiscriminate collection of other species vs. target species easy to identify</li> </ul>	target species easy to identify		Indiscriminate collection of other species	5

Factors of Resilience	Guidance	Higher	Medium	Lower	Ref
<ul style="list-style-type: none"> <li>Demographic segment of population</li> </ul>	<ul style="list-style-type: none"> <li>Are mature and immature plants harvested?</li> </ul>	collection of all age-classes		highly selective collection of one age-class	1, 2
<ul style="list-style-type: none"> <li>Multiple use</li> </ul>	<ul style="list-style-type: none"> <li>Multiple, conflicting uses vs. single use or non-competing</li> </ul>	Multiple, conflicting uses		single use or non-competing	5
<ul style="list-style-type: none"> <li>Yield per plant</li> </ul>	<ul style="list-style-type: none"> <li>with high yield less individuals are affected by collection</li> </ul>	High	medium	Low	
<ul style="list-style-type: none"> <li>Scale of trade</li> </ul>	<ul style="list-style-type: none"> <li>Quantitative information on numbers or quantity, if available; otherwise, a qualitative assessment;</li> <li>Trade level: High – medium – low</li> <li>Local, national, international</li> </ul>	Low		High	1, 5
<ul style="list-style-type: none"> <li>Utilization trend</li> </ul>	<ul style="list-style-type: none"> <li>Increasing fast &lt;&gt; Slowly increasing &lt;&gt; Stable or decreasing</li> </ul>	Stable or decreasing	Slowly increasing	Increasing fast	5

The final step involves assessing factors affecting management of the collection or harvest. Examples of data sources are included for each element and it is expected that greater rigor, for example, multiple data sources, intensive field study, etc, will be used for those species that are considered less resilient to collection where possible. Generally, the rule of thumb is that at minimum, it is expected that a scientific authority works with the information that is available and seeks more information and more reliable information for species with very low resilience. It is also recognized that the source of data considered most reliable will vary depending on the collection situation. For example, in some cases knowledge of population abundance gained from local harvesters may be very reliable.

### **Assessment of factors affecting the management of the collection**

Factors of sustainability	Guidance	Ref
<b>Biological characteristics</b>		
<ul style="list-style-type: none"> <li>Role of the species in its ecosystem</li> </ul>	Consider the role the species plays in the ecosystem and whether ecosystem processes are interrupted or changed by the collection of the species. Is the species a keystone or guild species, do other species depend on it for survival, <ul style="list-style-type: none"> <li>Scientific literature</li> </ul>	2
<b>Population status</b>		
<ul style="list-style-type: none"> <li>National distribution</li> </ul>	Range and distribution of the species in the country (whether or not the distribution of the species is continuous,	1, 5

Factors of sustainability	Guidance	Ref
	or to what degree it is fragmented): <ul style="list-style-type: none"> <li>• National distribution map,</li> <li>• Herbarium records, surveys or other vegetation inventories</li> <li>• Expert knowledge (all stakeholders)</li> <li>• Field studies</li> <li>• GIS</li> <li>• Modelling</li> </ul>	
<ul style="list-style-type: none"> <li>• National conservation status</li> </ul>	Conservation status of the species in the country <ul style="list-style-type: none"> <li>• Species at Risk Lists</li> <li>• Conservation Data Centres</li> <li>• Experts (all stakeholders)</li> <li>• Scientific literature</li> <li>• Herbarium records</li> <li>• Field surveys (locations, population size, etc.)</li> </ul>	2
<ul style="list-style-type: none"> <li>• National population trend</li> </ul>	Population increasing or decreasing? to be measured over a time period independent of the harvest <ul style="list-style-type: none"> <li>• Refer to conservation status</li> <li>• Reported harvests</li> <li>• Experts (all stakeholders)</li> <li>• Field surveys over short term</li> <li>• Field surveys over long term</li> <li>• Demographic studies (population viability analyses)</li> </ul>	1
<ul style="list-style-type: none"> <li>• Global conservation status</li> </ul>	Refer to global assessment to compare national situation to global range <ul style="list-style-type: none"> <li>• Published global assessments (e.g., IUCN Red List, Conservation Data Centres , e.g., Nature Serve)</li> </ul>	2
<ul style="list-style-type: none"> <li>• Global Distribution</li> </ul>	Refer to global distribution for national context <ul style="list-style-type: none"> <li>• Published global distribution map</li> </ul>	2, 5
<ul style="list-style-type: none"> <li>• Global population size and trend</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to global population size and trend for national context</li> <li>• Published global assessment</li> </ul>	2
<b>Harvest management</b>		
<ul style="list-style-type: none"> <li>• Regulated / unregulated</li> </ul>	“Regulated” refers to a sanctioned (government approved or otherwise official) harvest that is under the full con-	1, 2

Factors of sustainability	Guidance	Ref
	trol of the manager <ul style="list-style-type: none"> <li>• Market reports</li> <li>• Experts (all stakeholders)</li> <li>• WCMC permit database</li> <li>• Trade volume records (e.g. statistics from Customs)</li> <li>• National or state permit databases</li> <li>• Enforcement reports</li> <li>• Field surveys</li> </ul>	
<ul style="list-style-type: none"> <li>• Management history</li> </ul>	What is the history of harvest? Is the harvest ongoing or new? <ul style="list-style-type: none"> <li>• Literature</li> <li>• Experts (all stakeholders)</li> </ul>	1, 2
<ul style="list-style-type: none"> <li>• Illegal harvest or trade</li> </ul>	How significant is the national problem of illegal or unmanaged harvest or trade? Assess the levels of both unmanaged and illegal harvest <ul style="list-style-type: none"> <li>• Market information</li> <li>• Information from traders, collectors, wildlife managers</li> <li>• Compare exports and imports with other Parties</li> <li>• Compare CITES Permit Data to other export data sources (national trade statistics)</li> <li>• Enforcement reports</li> <li>• Field surveys</li> </ul>	1
<ul style="list-style-type: none"> <li>• Management plan</li> </ul>	Is there an adaptive management plan related to the collection of the species with the aim of sustainable use? <ul style="list-style-type: none"> <li>• National and international legislation relating to the conservation of the species</li> <li>• Management plan in place</li> <li>• Plan specifies plant and habitat conservation strategies (may include protected areas)</li> <li>• Collection practices in place</li> <li>• Collection practices specify restoration measures (e.g., planting seed when whole plant is removed)</li> <li>• Requirement to keep records of collection</li> <li>• Collection records are reviewed and collection monitored</li> <li>• Management plan is reviewed at regular intervals specified in the plan</li> <li>• Limitations on collection (examples include collection seasons, collection of certain size classes, maximum collection quantities, maximum allowed collection frequency, maximum allowed number of collectors)</li> </ul>	1, 2, 4

Factors of sustainability	Guidance	Ref
	<ul style="list-style-type: none"> <li>• Periods allowed for collection are determined using reliable and practical indicators (e.g., seasonality, precipitation cycles, flowering and fruiting times) and are based on information about the reproductive cycles of target species.</li> <li>• The age / size-classes are defined using reliable and practical characters (e.g., plant diameter / DBH, height, fruiting and flowering, local collectors' knowledge).</li> </ul>	
<b>Control of harvest</b>		
<ul style="list-style-type: none"> <li>• Percent of harvest in state Protected Area</li> </ul>	<p>What percentage of the legal national harvest occurs in State-controlled Protected Areas?</p> <ul style="list-style-type: none"> <li>• Harvester information or interviews</li> <li>• Enforcement information or interviews</li> <li>• Park manager information or interviews</li> <li>• Compare location information from permit with maps of protected areas</li> <li>• GIS layers of harvesting and land tenure</li> </ul>	1
<ul style="list-style-type: none"> <li>• Percent of harvest in areas of strong tenure</li> </ul>	<p>What percentage of the legal national harvest occurs in areas with strong local control over resource use? e.g.: a local community or a private landowner is responsible for managing and regulating the harvest</p> <ul style="list-style-type: none"> <li>• Harvester information or interviews</li> <li>• Enforcement information or interviews</li> <li>• Landowner information or interviews</li> <li>• Compare location information from permit with maps of protected areas</li> <li>• GIS layers of harvesting and land tenure</li> </ul>	1
<ul style="list-style-type: none"> <li>• Percent of harvest in open access areas</li> </ul>	<p>What percentage of the legal national harvest occurs in areas where there is no strong local control, giving de facto or actual open access?</p> <ul style="list-style-type: none"> <li>• Harvester information or interviews</li> <li>• Enforcement information or interviews</li> <li>• Compare location information from permit with maps of protected areas</li> <li>• GIS layers of harvesting and land tenure</li> </ul>	1
<ul style="list-style-type: none"> <li>• Proportion of range or population protected from harvest</li> </ul>	<p>What percentage of the species' natural range or population is legally excluded from harvest?</p> <ul style="list-style-type: none"> <li>• Compare distribution map with maps of areas excluding harvest</li> </ul>	1
<ul style="list-style-type: none"> <li>• Confidence in effectiveness of strict protection measures</li> </ul>	<ul style="list-style-type: none"> <li>• Do budgetary and other factors give confidence in the effectiveness of measures taken to afford strict protection?</li> </ul>	1

Factors of sustainability	Guidance	Ref
<ul style="list-style-type: none"> <li>Effectiveness of regulation of harvest effort</li> </ul>	<ul style="list-style-type: none"> <li>How effective are any restrictions on harvesting (such as age or size, season or equipment) for preventing overuse?</li> </ul>	1
<ul style="list-style-type: none"> <li>Confidence in harvest management</li> </ul>	Do budgetary and other factors allow effective implementation of management plan(s) and harvest controls?	1
<b>Monitoring of harvest</b>		
<ul style="list-style-type: none"> <li>Monitoring of collection impact and management practices</li> </ul>	<p>Management of wild collection is supported by adequate and practical resource inventory, assessment, and monitoring of collection impacts to ensure population will persist. Are the collection and management practices based on monitoring the abundance and the collection impacts of the species?</p> <ul style="list-style-type: none"> <li>Baseline information is available on population size, distribution, and structure (age classes)</li> <li>Assessment and regular monitoring is carried out, documented, and incorporated into the management plan</li> <li>Consolidated data on collected quantities, periods, and frequency of collection are available (species/area/year) and confirm compliance with collection instructions</li> <li>Qualitative indices, e.g., discussions with collectors</li> <li>Quantitative indices, e.g., roots per pound collected as an indication of population size, the quantity of national exports</li> <li>Direct population estimates (field surveys including regeneration after harvest)</li> </ul>	4
<ul style="list-style-type: none"> <li>Confidence in monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Do budgetary and other factors allow effective harvest monitoring?</li> <li>Monitoring confirms that abundance, viability and quality of the target resource / part of plant is stable or increasing</li> </ul>	Ref ?
<ul style="list-style-type: none"> <li>Other factors that may affect whether or not to allow trade</li> </ul>	<p>Evaluate the aim of the harvest when making an NDF at the time of import. For less resilient species, a positive NDF may not be made for commercial purposes and only for purposes to benefit conservation of the species.</p> <p>What is the effect of the harvest when taken together with the major threat that has been identified for this species?</p> <p>At the national level, how much conservation benefit to this species accrues from harvesting?</p> <p>At the national level, how much habitat conservation benefit is derived from harvesting?</p>	1, 3

<sup>1</sup> Rosser & Haywood (2002): Guidance for CITES Scientific Authorities. Checklist to assist in making non-detriment findings for Appendix II exports. - xi+146 pp., IUCN, Gland and Cambridge



---

<sup>2</sup> NDF Workshop Doc.3, [http://www.conabio.gob.mx/institucion/cooperacion\\_internacional/TallerNDF/Links-Documentos/WebPage%20-%20Format%20-%2023%20May%2008.doc](http://www.conabio.gob.mx/institucion/cooperacion_internacional/TallerNDF/Links-Documentos/WebPage%20-%20Format%20-%2023%20May%2008.doc)

<sup>3</sup> Duties of the CITES Scientific Authorities and Scientific Review Group under Regulations 338/97 and 865/2006. <http://ec.europa.eu/environment/cites/pdf/srg/guidelines.pdf>

<sup>4</sup> [http://www.floraweb.de/proxy/floraweb/map-pro/Standard\\_Version1\\_0.pdf](http://www.floraweb.de/proxy/floraweb/map-pro/Standard_Version1_0.pdf)

<sup>5</sup> CUNNINGHAM (2001): Applied ethnobotany. Earthscan; PETERS (1994): Sustainable harvest of non-timber forest plant resources in tropical moist forest. An ecological primer. - WWF Biodiversity Support Program, Washington.