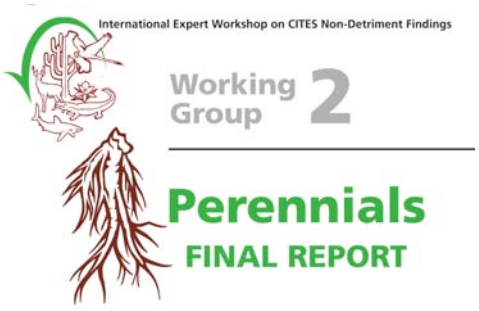


Perennial Plants Working Group Annex
Guidance for Scientific Authorities in making a CITES Non-Detriment Finding

This Annex describes a process for making non detriment findings for perennial plant species (and perhaps all CITES Appendix II plants), summarized in a decision tree. It builds upon the IUCN Checklist and other references by incorporating the sources of information and methods that can be used to evaluate certain factors as well as identifying when a more rigorous approach is needed (i.e., when more information and data are needed).

All elements of the following references for making NDFs were reviewed and included as appropriate for perennial plants:

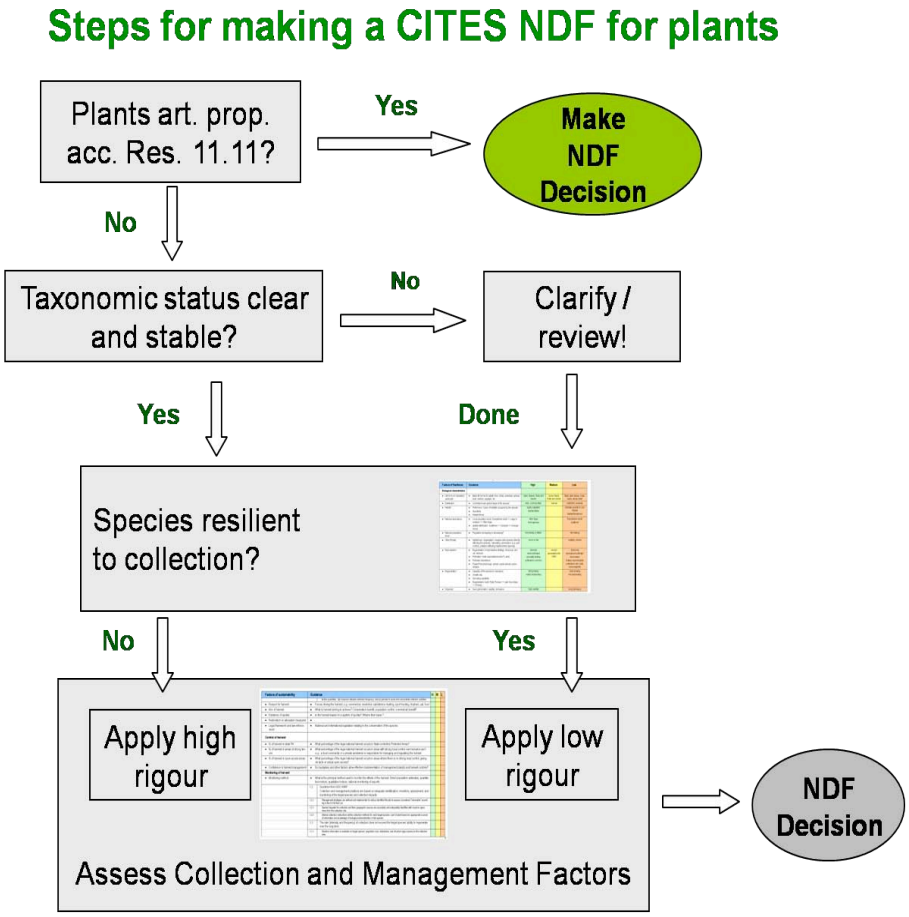
(1) Tables 1 and 2 of the Guidance for CITES Scientific Authorities, IUCN NDF Checklist[1]

(2) Cancun Workshop Case Study Format[2];

(3) EU-SRG Guidance Paper[3];

(4) International Standard for the Sustainable Wild Collection of Medicinal and Aromatic Plants, ISSC-MAP[4] (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 (2001) and Peters (1994)[5].



The first factor to consider is the source of the plant specimen or material – i.e. whether the source of the specimen proposed for trade is from the wild or artificially propagated. If the specimen was artificially propagated according to Resol. Conf. 11.11[6], 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 of the species. Assess whether the taxonomic circumscription, including authorities and synonyms, is stable or is dynamic. If the status of the taxon is dynamic, then the taxonomy is usually uncertain (e.g., 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.

Once the taxonomy is checked, the next step involves evaluating the resilience of species to collection. The evaluation is done by considering factors most indicative of resilience or vulnerability of the particular species to collection. The table does not include an exhaustive list of indicators to consider for high, medium, and low resilience 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, if a species has only a few factors of lower resilience and several deemed higher resilience, the species may still be considered as having a lower resilience to collection.

Assessment of the resilience of the species to collection

Factors of Resilience	Guidance	Higher Resilience	Medium	Lower Resilience	Ref
Biological characteristics					
• Life form vs. harvested plant part	• Basic life forms for plants: tree, shrub, perennial, annual, bulb, climber, epiphyte, etc.	Latex, flowers, fruits and leaves Short-lived life forms	Some resins, fruits and seeds	Bark, stem tissue, roots, bulbs, whole plant Long-lived life forms	1, 5
• Distribution	• Currently known global range of the species	wide, cosmopolitan	narrow	restricted, endemic	2, 5
• Habitat	• Preference: Types of habitats occupied by the species • Specificity • Habitat threat	highly adaptable habitat stable		narrowly specific to one habitat habitat threatened	1, 2, 5
• National abundance	• Local population sizes: Everywhere small <> Large to medium <> Often large • Spatial distribution: Scattered <> Clumped <> Homogeneous	often large homogenous		Everywhere small scattered	1, 5
• National population trend	• Population increasing or decreasing?	increasing or stable		decreasing	1
• Other threats	• Habitat loss / degradation; invasive alien species (directly affecting the species); harvesting; persecution (e.g. pest control); pollution (affecting habitat and/or species)	none or low		multiple, severe	1, 2
• Reproduction	• Regeneration or reproductive strategy: dioecious, sexual, asexual • Pollination: biotic (specialised vector?), wind	Asexual wind pollinated annually fruiting pollinators com-	sexual generalist pollinator	Dioecious specialised pollinator monocarpic	2, 5

Factors of Resilience	Guidance	Higher Resilience	Medium	Lower Resilience	Ref
	• Pollinator abundance • Flower/Fruit phenology: annual, supra-annual, unpredictable	mon		fruiting unpredictable pollinators rare; bats, hummingbirds	
• Regeneration	• Capacity of the species to reproduce • Growth rate • Sprouting capability • Regeneration Guild: Early Pioneer <> Late Secondary <> Primary	fast growing easily resprouting early pioneer		slow growing not resprouting primary	1, 5
• Dispersal	• Seed germination: viability, dormancy • Seed dispersal strategy • Disperser abundance • Dispersal efficiency	high viability wind and other abiotic vectors		long dormancy Biotic, with specialized vector	1, 5
Harvest characteristics					
• Harvest specificity	• Indiscriminate collection of other species vs. target species easy to identify	target species easy to identify		Indiscriminate collection of other species	5
• Demographic segment of population	• Are mature and immature plants harvested?	collection of all age-classes		highly selective collection of one age-class	1, 2
• Multiple use	• Multiple, conflicting uses vs. single use or non-competing	single use or non-competing		Multiple, conflicting uses	5
• Yield per plant	• With high yield less individuals are affected by collection	High	medium	Low	
• Scale of trade	• Quantitative information on numbers or quantity, if available; otherwise, a qualitative assessment; • Trade level: High – medium – low	Low		High	1, 5

Factors of Resilience	Guidance	Higher Resilience	Medium	Lower Resilience	Ref
	• Local, national, international				
• Utilization trend	• Increasing fast <> Slowly increasing <> Stable or decreasing	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. It is expected that where possible, greater rigour, for example, multiple data sources, intensive field study, etc, will be used for species that are considered less resilient to collection. In general, it is expected that Scientific Authorities will work with the information that is available and seek more extensive information for species with very low resilience. It is also recognized that sources of data considered most reliable will vary depending on the species and collection situation. For example, in some cases knowledge of population abundance gained from local harvesters may be the only information available, yet very reliable.

Assessment of factors affecting the management of the collection

Factors of sustainability	Guidance	Ref
Biological characteristics		
• Role of the species in its ecosystem	Consider the role of the species 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 (e.g., food source)? • Scientific literature • Expert (including collector) knowledge • Field observations	2
Population status		
• National distribution	Range and distribution of the species in the country (whether or not the distribution of the species is continuous, or to what degree it is fragmented): • National distribution map, • Herbarium records, surveys or other vegetation inventories	1, 5

Factors of sustainability	Guidance	Ref
	• Expert knowledge (all stakeholders) • Field studies • GIS vegetation coverages • Modelling	
• National conservation status	Conservation status of the species in the country • Species at Risk Lists • Conservation Data Centres • Experts (all stakeholders) • Scientific literature • Herbarium records • Field surveys (locations, population size, etc.)	2
• National population trend	Population increasing or decreasing? To be measured over a time period independent of the harvest • Refer to conservation status • Reported harvests • Experts (all stakeholders) • Field surveys over short term • Field surveys over long term • Demographic studies (population viability analyses)	1
• Global conservation status	Refer to global assessment to compare national situation to global range • Published global assessments (e.g., IUCN Red List, Conservation Data Centres , e.g., Nature Serve) • Consult other range states • Undertake global assessment with other range states	2
• Global Distribution	Refer to global distribution for national context • Published global distribution map • Consult other range states	2, 5
• Global population size and trend	Refer to global population size and trend for national context • Published global assessment • Consult other range states	2

Factors of sustainability	Guidance	Ref
Harvest management		
• Regulated / unregulated	"Regulated" refers to a sanctioned (government approved or otherwise official) harvest that is under the full control of the manager • Market reports • Experts (all stakeholders) • Trade volume records (e.g. WCMC CITES trade database; statistics from Customs; National or state permit databases) • Enforcement reports • Field and market surveys	1, 2
• Management history	What is the history of harvest? Is the harvest ongoing or new? • Literature • Experts (all stakeholders, including trade networks)	1, 2
• Illegal harvest or trade	How significant is the national problem of illegal or unmanaged harvest or trade? Assess the levels of both unmanaged and illegal harvest • Market information • Information from traders, collectors, wildlife managers • Compare exports and imports with other Parties • Compare CITES permit data to other export data sources (national trade statistics) • Enforcement reports • Field and market surveys	1
• Management plan	Is there an adaptive management plan related to the collection of the species with the aim of sustainable use? • National and international legislation relating to the conservation of the species • Management plan in place • Plan specifies plant and habitat conservation strategies (may include protected areas) • Collection practices in place • Collection practices specify restoration measures (e.g., planting seed when whole plant is removed)	1, 2, 4

Factors of sustainability	Guidance	Ref
	• Requirement to keep records of collection • Collection records are reviewed and collection monitored • Management plan is reviewed at regular intervals specified in the plan • Limitations on collection (examples include collection seasons, minimum and maximum age / size class allowed for collection based on proportion of mature, reproducing individuals to be retained, maximum collection quantities, maximum allowed collection frequency, maximum allowed number of collectors) • 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. • The age / size-classes are defined using reliable and practical characters (e.g., plant diameter / DBH, height, fruiting and flowering, local collectors' knowledge).	
Control of harvest		
• Percent of harvest in state Protected Areas	What percentage of the legal national harvest occurs in state-controlled Protected Areas? • Harvester information or interviews • Enforcement information or interviews • Park manager information or interviews • Compare location information from permit with maps of protected areas • GIS layers of harvesting and land tenure	1
• Percent of harvest in areas of strong tenure	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 • Harvester information or interviews • Enforcement information or interviews • Landowner information or interviews • Compare location information from permit with maps of protected areas • GIS layers of harvesting and land tenure	1
• Percent of harvest in	What percentage of the legal national harvest occurs in areas where there is no	1

Factors of sustainability	Guidance	Ref
open access areas	strong local control, giving de facto or actual open access? • Harvester information or interviews • Enforcement information or interviews • Compare location information from permit with maps of protected areas • GIS layers of harvesting and land tenure	
• Proportion of range or population protected from harvest	What percentage of the species' natural range or population is legally excluded from harvest? • Compare distribution map with maps of areas excluding harvest • Information or interviews with wildlife managers	1
• Confidence in effectiveness of strict protection measures	Are there measures taken to enforce strict protection? • Information or interviews with protected areas managers	1
• Effectiveness of regulation of harvest effort	How effective are any restrictions on harvesting (such as age or size, season or equipment) for preventing overuse? • Information or interviews with resource managers	1
• Confidence in harvest management	Are there effective implementation of management plan(s) and harvest controls? • Information or interviews with resource managers	1
Monitoring of harvest		
• Monitoring of collection impact and management practices	Is management of wild collection supported by adequate identification, inventory, assessment, and monitoring of the target species and collection impacts? Does the rate (intensity and frequency) of collection enable the target species to regenerate over the long term? • Baseline information on population size, distribution, and structure (age classes) • Records on collected quantities (species/area/year) • Qualitative indices, e.g., discussions with collectors • Quantitative indices, e.g., roots per pound collected as an indication of population size, the quantity of national exports • Identification of target species with voucher specimens from the collection site • Direct population estimates through field surveys, including surveys of popu-	4

Factors of sustainability	Guidance	Ref
	lations before and after harvest (field surveys / data collection program is critical when collected quantities are above potential production)	
• Confidence in monitoring	Are there effective implementation of monitoring and harvest impact controls? • Monitoring confirms that abundance, viability and quality of the target resource / part of plant is stable or increasing	1
• Other factors that may affect whether or not to allow trade	• What is the effect of the harvest when taken together with the major threat that has been identified for this species? • At the national level, how much conservation benefit to this species accrues from harvesting? • At the national level, how much habitat conservation benefit is derived from harvesting?	1, 3

[1] Rosser, A. & M. 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

[2] NDF Workshop Doc.3, http://www.conabio.gob.mx/institucion/cooperacion_internacional/TallerNDF/Links-Documentos/WebPage%20-%20Format%20-%2023%20May%2008.doc

[3] 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

[4] http://www.floraweb.de/proxy/floraweb/map-pro/Standard_Version1_0.pdf

[5] 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.

[6] Conf. 11.11 (Rev. CoP14). Regulation of Trade in Plants. (http://www.cites.org/eng/res/11/11-11R14.shtml)