CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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Non-detrimental findings to the survival of Appendix-II species

NEED FOR RELEVANT INFORMATION AND A STANDARDIZED PROCEDURE TO EVALUATE THE NON-DETRIMENTAL CHARACTER OF THE TRADE IN TIMBER SPECIES LISTED IN APPENDIX II OF CITES

1. This document[1] has been submitted by Belgium.

Background

2. Over the past years, many of the scientific authorities of exporting and importing countries had to express their opinion on the imports of CITES-listed timbers. Most often these opinions had to do with Appendix II species *Swietenia* spp. from Latin America, *Gonystylus* spp. from South East Asia and *Pericopsis elata* from West and Central Africa. The convention presupposes that these authorities verify whether trade is not detrimental to the survival of these species throughout their range at a level consistent with its role in the ecosystems in which they occur and well above the level at which that species might become eligible for inclusion in Appendix I.

3. In specialist literature and other information sources there is a manifest lack of information on the status of the species mentioned: even the minimal information is not available for a sound scientific assessment. Therefore, scientific authorities most frequently have only been able to express pragmatic viewpoints, motivated by relatively low quantities of trade or based on 'indications' of improved management. This is often in conflict with the scientific deontology presupposing precise information and well-founded arguments. Indeed, information is sometimes being provided that is not relevant for diagnoses and evaluations adapted to forest ecology. For instance, the number of individuals from a certain species in a tree population has no relevant information content when it is not being accompanied by age and size data.

4. CITES statistics are difficult to analyse from an ecological viewpoint. Very rarely there is precise information on the origin of the timber. Moreover, the quantitative values of traded logs, sawnwood, veneer sheets and processed products are almost never being converted into roundwood equivalents. This is the only value that allows to evaluate the ecological impact of a specific trade.

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5. Ecologically sustainable forest management means that the management should not impair the ecological functions of the forest. This general concept, however, is quite difficult to achieve and to monitor and gives rise to controversy. Therefore the concept of sustained yield is being advocated as a more robust means to evaluate the non-detrimental character of timber logging and trade. Applying the principle of sustained yield implies that log removals should not exceed the capacity of the growing populations to replace them. In any case, this silvicultural concept is an important condition for non-detrimental logging of natural tree populations. It probably is not the single unique condition (as other factors such as sociological and ecological parameters could also be taken into account), but the concept is generally accepted as a the basic principle of forest management aiming at sustainability. The concept of sustained yield has a long history and has proven to be a practical assessment of ecological carrying capacity of tree populations for logging as it goes as far back as the 18th century (Sands, 2005).

6. To evaluate the level of sustainability of any timber trade, the scientific authorities need at least the following information, which can be summarized in ten points: (1) total forest cover within the country of origin, (2) general management regimes of the forests, (3) total distribution surface area of the concerned species within the production forests, (4) the population status of the species in the logged forest, (5) felling diameters of the concerned species, (6) the logging damage to the tree population (7) the yield of sawmills and end product processing, (8) silvicultural treatment after logging, (9) statistics of trade and local consumption expressed in roundwood equivalents and (10) controlling measures.

7. The data on forest cover should be accompanied by a precise definition for the term 'forest'. Two documents of the FAO illustrate the importance of a precise definition. In a first document, The State of the World's Forests of 1999, forest in developed countries is defined as: *land with tree **crown cover of more than about 20 percent** of the area; continuous forest with trees usually growing to more than about 7 m in height and able to produce wood.* In developing countries the definition is: *an ecosystem with a **minimum of 10 percent crown cover** of trees and/or bamboos, generally associated with wild flora and fauna and natural soil conditions, and not subject to agricultural practices.* In the Forest Resources Assessment Programme of 2000 (FRA) only one general definition is utilized: *Land with **tree crown cover of more than 10 percent** and area of more than 0.5 hectares (ha). The trees should be able to reach a minimum height of 5 meters (m) at maturity in situ.* The definition provided by the latter programme has not changed and can actually be considered as a standard. This doesn't mean that every country quantifies forest cover through this definition. Several countries developed their own forest laws and definitions. Countries should be encouraged to use the FAO definition of the FRA 2000, creating forest cover measures that are comparable in time and space. Anyhow, CITES documents and statistics should give a precise definition of the term 'forest' when dealing with timber trade.

8. Three different general management regimes of the total forest cover of a country or region can be distinguished: a) totally protected areas, b) production forests and c) forests that will be converted to other destinations.

   a) *Totally protected areas*: the International Union of Nature Conservation (IUCN) defines this type of forest cover as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, managed through legal or other effective means (FAO, 2000b). In a CITES context, it is important to know whether in these protected areas no logging is taken place. Indeed, logging as a management tool in a protected well-managed area is sometimes possible but only if it aims at conserving or increasing biodiversity and environmental values. In 2005, 11.2 % of the forests belonged to a protected area with conservation of biodiversity as primary function (FAO, 2005).

   b) *Production forests* are forests managed to harvest forest products and to sustain the bioproductivity of the system (FAO, 2000a). An area of forest permanently reserved for timber production is dedicated long tenure for timber production. It requires long-term commitment and vision from a strong government. If these conditions are fulfilled, production forests can provide a tool to combat deforestation (Sands, 2005). In most cases not the whole production forest is apt to logging: because of different reasons (steep slopes, rivers, marshlands…) some parts remain untouched. Therefore, CITES documents need to present sound estimations of the exploitable area within a production forest. Protection or absence of logging of a given species in

one part of the country should not justify overexploitation in another part. At present, little data are available on this matter.

c) *Forest conversion areas* include forests that will be converted for the purpose of other land uses such as agriculture, plantations, mining or urbanisation. It is important to know whether populations of CITES species grow in so-called forest conversion areas and whether traded volumes originate from these populations.

9. When the forest cover and the management regimes in a country are identified, the distribution area of the CITES-species (*Swietenia spp.*, *Pericopsis elata*, *Gonystylus spp.*) should be estimated. When the distribution area is generally well-known to the forestry services, additional statistics need to be set up, namely to document the distribution area of the species WITHIN the production forests.

10. Forest management tries to mimic ecosystem processes. An idealized forest is composed of a mix of species, having a large range of size-age-classes. When old trees die, gaps appear where new trees can regenerate from seed shed from surrounding trees. In its broadest terms, management for sustained yield is where the frequency and amount of logging is such that the forest can maintain a sustained yield for many centuries. The main objective is to develop forests with about equal areas of each age size or class in order to have a more or less constant supply of the largest trees for harvest. Still, forests managed for sustainable yield are, by definition, not over-cut and for the most part in good condition (Sands, 2005). The next step thus considers gaining information on the population status of the CITES listed species in the production forest. When precise quantitative data on size and ages classes are collected, it becomes possible to estimate growing stock. The growing stock is the volume over bark of all living trees more than X cm in diameter at breast height. It includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm; thresholds should indicated by the countries (FAO, 2005).

11. Harvesting is permitted from a minimum felling diameter (MFD) onwards. The determination per species of this parameter should be executed with great care. When the value for this felling diameter is taken too high, trees will become very heavy and cause much damage to the surroundings when logged. Moreover, tropical trees tend to be sensible to heart rot, which occurs especially in large, older trees. If specimens remain too long in the forest, risk of heart rot increases and the quality of the wood decreases. Finally, it would be regrettable to cut down some of those natural monuments, sometimes even mother trees that can facilitate regeneration.

12. On the other hand, cutting trees with a small MFD also causes problems with regeneration and wood quality. Wood with a small diameter frequently contains more juvenile wood, that doesn't have the technical qualities of wood coming from taller trees. Often also the density is lower. Additionally, removing little diameter trees makes the process of regeneration harder and longer in duration.

13. In Cameroon, the MFD of several commercial trees is specified in Decree No. 74/357 of 1974 (decree on forest management legislation formulated by the Provincial Delegation for Environment and Forestry, Cameroon). But sometimes it is possible to adapt this parameter as a function of the local circumstances. For *Pericopsis*, this diameter was set to 1 m. ATIBT, conversely, recommends Cameroon to reduce the MFD to 80 cm, so as to relieve pressure on the smaller diameter classes, which are cut indiscriminately due to the lack of trees with diameters of > 1 m (CITES, 2003). In Ghana, the felling limit is 110 cm for *Pericopsis elata.*

14. When a forest is being logged, the logging damage should be reduced as much as possible. The percentage of logs of the concerned species remaining in the forest because of injuries and lack of stem quality ranges from 30 to 50% of the cut volume. One source of logging waste is felled and bucked trees which are not found during the skidding operation. Research in 1981 concluded that 20% of extracted volume of logs could not be found by the skidder in felling operations. Logging wastes also develop due to poor working methods, and felling techniques which result in the splitting and breaking of felled trees. The estimated volume of waste due to felling and bucking losses amounts to about 6.5-8.5% of the utilizable stem volume. In addition to volume loss due to poor felling techniques, there can be significant value losses. Hence, it is important to know the yield of a logging operation and to increase that yield by giving the loggers an adequate training. Trained loggers are able to achieve a reduction in waste by 120 to 300 % (Schwab *et al.*, 2001).

15. Once the logs are harvested, they need to be transported and/or processed (sawmills). In this case, it is necessary to know the yield of sawmills. Wood volume losses or waste also occur at roadside landings, export ports, millyards and in manufacturing itself. Results of a study at the harbour in Papua New Guinea showed that 10-35 % of the export volume was left as not fulfilling export grade rules. Research has proven that 70% of the wood being logged from natural forests is wasted owing to both poor harvesting and mill processing, and the non-availability of markets for all wood. Mill process yields have been reported to range between 33% and 57% of delivered log volume. When sawing large diameter tropical hardwood logs the LRF should be at least 50% and yields of 56-68% should generally be expected (Schwab *et al.*, 2001). Yield of chainsaw plank production in the forest is generally not more than 15%.

16. Information should be given on the silvicultural treatment after logging in view of successful regeneration: is there any planting programme, measures to stimulate natural regeneration, stand enrichment…?

17. When import volumes of traded timber are being analysed it is of the utmost importance that statistics bear an ecological information content. It is necessary to be able to calculate timber arriving in the harbour back to the forest. Actually there is much confusion when statistics expressed in different units (mass, volumes of logs, volumes of sawnwood, volumes of processed timber, volumes of veneer sheets) are being compared. It is advisable to express export and import in roundwood equivalents. The sum of volumes of traded sawn wood, veneer sheets and logs does not have any ecological useful meaning. Roundwood equivalents measurements provide the only comparable ecological equivalent.

18. Finally the Scientific Authorities should have information on controlling measures of logging, processing of timber, trade and post-harvest silvicultural treatment.

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