

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



Tenth meeting of the Plants Committee  
Shepherdstown (United States of America), 11–15 December 2000

Technical proposals for the 12th meeting of the Conference of the Parties

DEFINITION OF 'ARTIFICIALLY PROPAGATED' IN RELATION TO TIMBER

1. Decision 10.127 instructs the Secretariat to take the following action.
2. *The potential for silvicultural techniques (e.g. enrichment plantings, assisted natural regeneration) to be dealt with in the general context of Resolutions on ranching and quotas, as well as in accordance with the definition of "artificially propagated" contained in Resolution Conf 9.18 (Rev.) (now replaced by Resolution Conf. 11.11), shall be investigated to determine whether these concepts provide useful bases for establishing trade regimes for timber species listed in the Appendices.*
3. The text contained in paragraphs 4 to 33 below has been taken from a document that was prepared for the second meeting of the Timber Working Group (October 1996). This document was prepared by one of the European representatives (Switzerland) in this working group.
4. Conservation and sustainable use of tree species has been of central interest to forest services for at least 150 years. The core branch of forestry, silviculture, is entirely dedicated to this task. Note Secretariat: *It should, however, be noted that the conservation efforts are frequently aimed at selected tree species only, and not at the full range of taxa occurring in the ecosystems considered.*
5. Silviculture can be defined as the science and art of conserving, cultivating and managing trees and forests. Tree stands and forests are managed for production of forest products, protection of landscape and watershed, recreation, etc. Silviculture considers in particular the sustainable production of timber and non-timber forest products, in both quantity and quality.
6. Silvicultural activities are generally financed through the sale of forest products, in particular timber. Applied research in silviculture has been developed during the last 150 years and many publications have been written on the conservation, regeneration and management of forest tree species.
7. In silviculture, different methods have been developed to promote the use of forest species, to sustain existing forests or to create new forest stands. The methods are generally described in Forest Management Plans (FMP). FMPs are comprehensive planning documents valid for a certain time-frame (e.g. 10 years), determining forest functions and regulating their use.
8. Modern FMPs are based on ecological, economic and social principles. Nowadays, the forest legislation in many countries around the world requires Forest Management Plans, which have to be elaborated

prior to every intervention in the forests. However, insufficient enforcement and control mechanisms and lack of financing often hinder the adequate implementation of silvicultural prescriptions.

#### Silviculture and international trade in timber

9. The relation between silviculture and international trade in timber is somewhat ambiguous. On the one hand, international trade in timber is an added factor to finance silvicultural activities and consequently sustainable forest management. Silviculture is therefore dependent to some extent on the promotion of timber trade.
10. On the other hand, the timber trade does not need silviculture. The timber trade is largely regulated by the rules of the free market system. Until today, timber, and in particular tropical and boreal timber, can be cut from forests without taking into account any silvicultural measures. Timber traded from such production undermines silviculture and leads, in the long run, to the depletion of forest resources. Forests that have lost their economic value cannot be economically managed on a sustainable basis.
11. However, a recent development, in particular in Europe, is increased consumer awareness about the dangers of forest destruction, and a desire to purchase timber that is guaranteed to have been produced from sustainably managed or well managed forests. In this respect, voluntary certification and labelling is a possible mechanism for providing such a guarantee<sup>1</sup>.
12. Note Secretariat: *Legal trade in CITES specimens of species included in Appendix II, based on relevant non-detriment, however, is probably the best certification possible. CITES documents form a harmonized, internationally recognized system that guarantees consumers that the conservation aspects related to the species traded have been taken care of.*
13. Silvicultural knowledge exists for many of the traded timber species. Examples of such species are Lawson's cypress (*Chamaecyparis lawsoniana*), African mahoganies (*Khaya* spp.), Ramin (*Gonystylus bancanus*), *Swietenia macrophylla*, etc. However such knowledge is often not applied. For others, in particular tropical timber species exploited in primary forests, silvicultural knowledge is nearly non-existent. Examples of such species are most of the climax species of primary forests, such as different species of *Dalbergia* spp., *Dyospyros* spp., *Intsia* spp. and a large number of so-called "lesser-known species".
14. From a silvicultural point of view, traded timber species that are managed either by natural regeneration or by artificial propagation are not endangered by trade. They can become temporarily rare on the market owing to over-exploitation of mature trees, but in the long run the sustainability of the species is assured, as long as they have not been over-exploited to the point of genetic depletion.
15. However, traded climax species exploited in natural forests and for which there is poor silvicultural knowledge are potentially endangered by trade. The fact that the timber trade uses today a much greater number of species than 20 years ago is therefore a mixed blessing. On the one hand it broadens the possibilities of sustainable forest management, but on the other hand it comprises a danger because of the considerable lack of silvicultural knowledge on most of these newly traded species.
16. It is not the fact that timber of a certain species is traded, but the way the traded timber species is produced, that is important. It is in the interest of silviculture to promote sustainably produced timber of a certain species and not to hamper trade in the species. Voluntary certification of timber can be one measure for promoting trade in sustainably produced timber. Adequate enforcement of forest laws at the national level and WTO-compatible regulation of trade are two others.

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<sup>1</sup> Definitions (based on the IPF workshop on certification, held in Brisbane, Australia, June 1996):  
Certification: Process of confirming or attesting to the management of forests according to a specified set of standards;  
Labelling: Market tool which confirms to consumers that the products are derived from forests managed according to a specified set of standards.

## Silvicultural methods

### Guided natural regeneration

17. Silviculture in natural forests is based on in-depth knowledge of forest ecology, in particular the response of species to environmental factors such as requirements relating to light, climatic and soil conditions, association with other plant species, pests and diseases, etc.
18. The objective is to promote natural regeneration of the most valuable species in a forest, to stimulate their growth and to keep them healthy throughout their life span. The underlying goal is usually the production of good quality timber and/or specific non-timber forest products while maintaining the basic ecological processes. The main ecological criterion for the selection of a species is its 'temperament', i.e. its specific behaviour in respect to different degrees of canopy opening.
19. According to their temperament, three different kinds of species can be distinguished: shade-intolerant species (so-called pioneer species), which need large canopy gaps to develop; long-living shade-intolerant species (so-called nomad species, gap opportunists or gregarious species), which regenerate in small gaps; and shade-tolerant species or forest climax species, which can develop in the shade of other trees.
20. Silviculture in natural forests also implies the conservation of the genetic variety of selected timber species to guarantee the perpetuity of the resource. Silvicultural activities lead in general to a simplification of initial primary or secondary forest stands in respect to their species composition and structure. A certain loss of biodiversity in comparison with primary forests therefore tends to be unavoidable in managed forests. To stimulate the regeneration of a species or a group of different species, different silvicultural methods have been developed, such as the selection of mother trees, selective felling, group felling, successive opening-up of the canopy, soil treatment, protective measures for single trees, tending, thinning, pruning, etc.
21. The management of forest stands through natural regeneration has been widespread in temperate forests, e.g. in Central Europe, for several centuries. Initially concerned with producing both fuel and timber, there has been a gradual shift towards timber production exclusively. Major traded broad-leaved timber species, such as oaks (*Quercus* spp.), the European beech (*Fagus sylvatica*), elms (*Ulmus* spp.), ashes (*Fraxinus* spp.), maples (*Acer* spp.) and the wild cherry (*Prunus avium*) are managed on such a basis.
22. In the tropics, experiences are more recent. In certain regions, such as the Indian subcontinent, some major timber species like teak (*Tectona grandis*) and sal (*Shorea robusta*), have been managed with guided natural regeneration for more than 120 years. It is known that silvicultural experience gained in the relatively simple forest ecosystems of temperate zones cannot be transferred in general to the tropics as a technological package.
23. The high diversity of species, complex forest structures and complex plant associations, combined with specific conditions (e.g. annual fires in some areas), characterize tropical and subtropical forest ecosystems and call for differentiated ecological approaches in natural forest silviculture. Therefore, in most tropical countries, silviculture based on ecological principles is a relatively new field, even though specific silvicultural systems aimed at sustainable timber production and based on natural regeneration have been developed in certain tropical countries.

### Artificial propagation of trees (forest plantations)

24. A forest plantation is the establishment of tree crops by sowing or planting. Plantations are established either on land without forest cover (afforestation), on forest soils where the forest cover has been removed by clear-cutting (reforestation) or in areas with existing forest cover (enrichment).
25. Taking into account criteria of growth and wood quality, only a limited number of tree species can be used for plantation establishment: for afforestation, robust, shade-intolerant species (pioneer species); for reforestation, besides pioneer species, nomad species; and for enrichment planting, besides nomad species, selected forest climax species.

26. In international trade, pulp and paperwood species are generally pioneer species, the main traded lumber species are often nomad species and a considerable number of the so-called 'lesser-known species' are climax species.
27. Pioneer species are easy to reproduce by seeds and to plant. Nomad species have some particularities, and need much more attention in their propagation. Besides seeds, they are often reproduced by cuttings and other forms of vegetative propagation. Climax species are in general difficult to reproduce by seeds. A method sometimes used is the replanting of wildlings collected in forest areas.
28. Plantation forestry is widespread throughout the world. Conifer species such as *Pinus* spp. make the bulk of them (e.g. in Chile, the tropical Americas or New Zealand). Among broad-leaved species less valuable species, such as poplars in temperate zones and eucalyptuses in tropical zones are the most important. With some exceptions (oak, teak), high-value timber species have not been planted to a large extent. More than 90 per cent of internationally traded hardwood comes from selective cuttings and clear-cuttings of natural forests.
29. The tree species currently included in the Appendices can be grouped as follows:
- a) A first group of species is well known in silviculture. It comprises *Araucaria araucana*, a temperate species, and four tropical species: *Pericopsis elata*, *Pterocarpus santalinus*, *Swietenia macrophylla* and *Swietenia mahagoni*. *Araucaria araucana* has been exploited in the past, in general by clear cutting. The remaining species have been or are being exploited in natural stands with selective felling, in general without considering elementary silvicultural practices. All these species could be sustainably produced if existing silvicultural knowledge were applied and the remaining genetic resources preserved. The species in this group can also be produced artificially without major obstacles.
  - b) A second group comprises species for which silvicultural knowledge is limited. They have been exploited for timber in the past. Owing to the lack of mature trees, these species are no longer traded in large volumes. These species are: *Abies guatemalensis*, *Dalbergia nigra*, *Fitzroya cupressoides*, *Guaiacum officinale*, *Guaiacum sanctum* and *Podocarpus neriifolius*. Intensified silvicultural research is needed and the conservation of remaining genetic resources is a high priority. They have not been artificially propagated on a large scale.
  - c) A third group comprises species that have not received sufficient attention in silviculture. The main trade concerns non-timber forest products rather than industrial cellulose. These species are *Aquilaria malaccensis*, *Prunus africana* and *Taxus baccata* var. *wallichiana*. In certain areas of their natural distribution, they are endangered as a result of poor utilization practices. Their potential for management as natural stands or for artificial propagation has not been tested.
  - d) The species of the fourth group are more or less unknown in silviculture. They have never been the subject of any major international trade. These species are: *Caryocar costaricense*, *Oreomunnea pterocarpa*, *Pilgerodendron uviferum*, *Platymiscium pleiostachyum*, *Podocarpus parlatorei* and *Swietenia humilis*. These species are probably endangered as a result of the general destruction of forest ecosystems where they occur.

#### Ranching

30. Ranching, as defined by CITES, means the rearing in a controlled environment of specimens taken from the wild. Ranching programmes must contain sufficient safeguards to ensure that adequate numbers of animals are returned to wild, if necessary and appropriate.
31. The closest to this procedure (originally developed for animals) is the use of wildlings for the establishment of plantations (cf. paragraph 27 above). It is, however, logical that for trees, it is not necessary to return sufficient numbers of them back to the wild.

32. The provisions of the current Resolution on ranching of animals (Resolution Conf. 11.16 on Ranching and trade in ranched specimens of species transferred from Appendix I to Appendix II) can relatively easily be adapted to apply also to timber species. It is probably preferable to use a term other than 'ranching'.
33. Although, the Secretariat is not aware of any intention to develop plantations using wildlings of species currently included in Appendix I, it believes that it would be useful and proactive to develop this idea further. If the Plants Committee agrees, the Secretariat will prepare a draft resolution on the subject for consideration at the next meeting of the Plants Committee.

#### Quota

34. Only two Parties have informed the Secretariat that they have established quotas for the export of timber species included in Appendix II: the Democratic Republic of the Congo for *Pericopsis elata* (cf. Notification to the Parties No. 2000/53 of 31 August 2000) and, in preceding years, Nicaragua for *Swietenia macrophylla*.
35. Establishing export quotas is a useful procedure to comply with the obligations under the provisions of Article IV, paragraph 2(a), of the Convention, but Parties have to decide themselves whether they wish to use this mechanism.

#### The definition of 'artificially propagated'

36. The current definition of 'artificially propagated' is contained in Resolution Conf.11.11 under the first DETERMINES and is as follows (the other paragraphs of the definition are not relevant to this discussion):

#### *DETERMINES that:*

- a) *the term 'artificially propagated' shall be interpreted to refer only to live plants grown from seeds, cuttings, divisions, callus tissues or other plant tissues, spores or other propagules under controlled conditions; and*

*that 'under controlled conditions' means in a non-natural environment that is intensively manipulated by human intervention for the purpose of producing selected species or hybrids. General characteristics of controlled conditions may include but are not limited to tillage, fertilization, weed control, irrigation, or nursery operations such as potting, bedding or protection from weather;*

37. It has already been agreed that timber from monospecific plantations (plantations consisting of one species only) as described in paragraphs 23 to 26, is to be regarded as being artificially propagated (see also Resolution Conf. 10.13).
38. The silvicultural techniques described in paragraphs 17 to 23 all relate to natural conditions. Specimens taken from such forest stands can therefore not comply with the current definition of 'artificially propagated' because they do not meet the requirement of being produced in a 'non-natural environment'. At the moment the source code for such specimens is therefore 'W' (wild origin).
39. However, guided natural regeneration also forms an additional guarantee that the resource is exploited sustainably, that the species continues to maintain its role in the ecosystem and that areas are not replanted with alien species (see paragraph 28). For trees produced under this management system, the making of non-detriment findings is greatly facilitated and trade in their timber should be in the interest of the conservation of the species.
40. The Secretariat therefore intends to explore this subject further, and to consider the creation of a special source code. A document on this subject will be presented at the 11th meeting of the Plants Committee.