

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

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Twenty-fourth meeting of the Plants Committee  
Geneva (Switzerland), 20, 21 and 23-26 July 2018

Interpretation and implementation matters

Trade controls and traceability

Definition of the term 'artificially propagated'

DEFINITION OF PLANTATION

1. This document has been submitted on behalf of the co-chairs of the Intersessional Working Group on the definition of the term "artificially propagated", the representative of Oceania (Mr. Leach) and the alternate representative of Asia (Ms. Setijo Rahajoe). The document was prepared by Ms. S. Rahajoe (Indonesia) and Ms. V. Vaglica (United Kingdom of Great Britain and Northern Ireland)\*.

Summary

2. There are no internationally agreed definitions of "plantation" and "planted forest", and lack of agreement may cause problems in the interpretation of CITES provisions for plants.

This document represents an attempt to collect available information on existing definitions of 'plantation' and 'planted forest' and suggests definitions for these two terms.

Within 'plantations' there is an option to cover any life form of only non-tree. Two definitions might be needed to separate trees and non-tree species.

There are also options around the issues of even-age class and defined land boundaries.

Within 'planted forest', which implies primarily trees, the considerations of native or introduced species and whether there is commercial production are provided as options within the definitions.

The Plants Committee is invited to consider if a definition of plantation and/or a definition of 'planted forest' are needed, and if the proposed definitions can be considered acceptable, determine whether definitions and related terms should be recommended for adoption by the Conference of the Parties.

Three Party members of the WG expressed the view that a CITES-definition of plantation is not necessary in the view of the discussion concerning a new intermediate source code for plants.

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\* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

## Background

3. At its 23rd meeting (PC23, Geneva, July 2017), the Plants Committee established an intersessional working group (iWG) on the definition of the term 'artificially propagated' (PC23, agenda item 19.2) with the following mandate:
  - a) give an overview of the evolution of Resolution Conf. 11.11 (Rev. CoP17) and perspective on the original intent of the Resolution guiding the definition of artificial propagation to inform debate regarding possible amendment of Resolution Conf. 11.11 (Rev. CoP17);
  - b) provide an overview of the relevant work completed and conclusions thus far in the Plants Committee and the Conference of Parties regarding production systems;
  - c) enable consideration of the current production systems of tree species, including mixed and monospecific plantations; and assess the applicability of the definition of 'artificial propagation' in Resolution Conf. 10.13 (Rev. CoP15), Resolution Conf. 11.11 (Rev. CoP17) and Resolution Conf. 16.10;
  - d) review current production systems for artificial propagation and cultivation of non-tree plant taxa listed in the Appendices and assess the applicability and utility of the definitions of 'artificial propagation' and 'under controlled conditions' in Resolution Conf. 11.11 (Rev. CoP17);
  - e) explore a definition of plantation; and
  - f) report back to the 24th meeting of the Plants Committee, including recommendations as appropriate.
4. Paragraph e) of the mandate tasked the Working Group to explore a definition of plantation that might be appropriate to CITES-listed species.
5. Lack of agreement on interpretations of the definition of 'plantation' or 'planted forest' or 'forest plantation' may cause problems. Noting that these terms are yet to be defined from a CITES perspective, it is important to explore the possibility of defining these terms to improve communication and interpretation of CITES provisions.
6. At its 23rd meeting, the Plants Committee recommended that existing definitions used by other agencies should be explored.
7. The WG was invited to provide examples of definitions of 'plantation' used in national legislations, policy or any projects. Responses were received from members of the iWG of the following Parties: South Africa, Indonesia, Germany, the United States of America, and Niger
  - 7.1 South Africa uses several definitions for 'plantation' in various legal and policy instruments [under the mandate of South Africa's Department of Agriculture, Forestry and Fisheries]. Two definitions under the classification of Land Use and Land Cover, respectively "Production Forestry" and "Planted forest", were provided to the WG:

Production forestry: commercial production/harvesting of timber, bamboo, fuelwood, charcoal, biofuels, or non-timber forest products from cultivated tree or perennial crops or from natural forests and woodland;

Planted forest: tree cover of either indigenous or exotic species that shows evidence of active establishment intervention e.g. in the form of soil preparation, site modification and/or planting.

In land cover, further sub-classifications, according to canopy density and canopy height criteria, were proposed as follows:

The canopy density can be classified as:

- Contiguous: >75% canopy cover
- Dense: 35-75%
- Open: 10-35%
- Sparse: 5-10%

The canopy height can be classified as:

- High: >20m
- Tall: 12-20m
- Medium: 6-12m
- Low: 2.5-6m
- Regeneration/ scrub: <2.5m

- 7.2. In Indonesia the word ‘plantation’ defines “any activity of management of natural resources, human resources, facilities productions, tools and machinery, cultivation, harvesting, processing and marketing related to plantation crops” [Law of the Republic of Indonesia No. 39 of 2014].

Indonesia also provided a definition for ‘industrial plantation forest’: “plantations built in order to increase the potential and quality of production forests by applying intensive silviculture to meet the needs of raw materials of forest products industry. According to Government Regulation No. 7/1990 on Industrial Plantation Forest Concessions, this type of forest is intended to increase the productivity of natural production forests that have been damaged or unproductive, where for unproductive natural forests are those characterized by: a) trees less than 20 cm in diameter and no more than 25 trees per hectare; b) the parent trees are less than 10 trees per hectare; c) natural regeneration has decreased: seedlings  $\leq$  1000 stems / hectare, sapling  $\leq$  240 stems / hectare and pole  $\leq$  75 stems / hectare.

- 7.3 Germany provided the Food and Agriculture Organization of the United Nations (FAO) definitions for planted forests (Fig 1.), disclosing the continuum from natural to planted forests, reminding also that the differentiation between semi-natural forests and plantations can be very problematic.

Natural forest			Planted Forests		
Primary	Naturally regenerated forests	Semi-Natural		Plantation	
Forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed	Forest of naturally regenerated native species where there are clearly visible indications of human activities	Assisted natural regeneration through silvicultural practices	Planted component	Productive	Protective
		Weeding Fertilizing Thinning Selective logging	Forest of native species, established through planting, seeding, coppice	Forest of primarily introduced and native species, established through plan-ting or seeding mainly for production of wood or non- wood goods	Forest of native or introduced species, established through planting or seeding mainly for provision of services

**Figure 1. Definition of planted forests by FAO** (compiled by Germany, taken from <http://www.fao.org/forestry/plantedforests/67504/en/>, accessed on line on 08/01/2018)

Germany suggested criteria to be considered when defining artificial propagation for tree species (plantation):

Natural, semi-natural or planted forests: a plantation can only be called a plantation if seeds or young trees have actively been planted, and when the amount of the growing stock (either number of trees or volume of timber) comes from planted origin.

Existing or newly established forests: the history of a plantation area has to be considered in order not to set perverse incentives, especially in those cases where plantation have been established in primary forests, naturally regenerated or assisted natural regenerated forests.

- 7.4 The United States of America provided the definition of plantation used by the U.S. Forest Service, as defined by the Society of American Foresters<sup>1</sup>, as follows:

‘Plantation’: a stand composed primarily of trees established by planting or artificial seeding:

Note 1. A plantation may have tree or understory components that have resulted from natural regeneration;

Note 2. Depending on management objectives, a plantation may be pure or mixed species, treated to have uniform or diverse structure and age classes, and have wildlife species commensurate with its stage of development and structure;

Note 3. Plantations may be grown on short rotations for biomass, energy or fiber production, on rotations of varying lengths for timber production, or indefinitely for other values.

- 7.5 Niger provided general information on the situation of the plantations in the Sudano-Sahelian zone, and concepts and classification of forest plantations in Africa.

In the Sudano-Sahelian zone, repetitive droughts are leading states to make enormous efforts in plantations through reforestation and stabilization of sand dunes through the planting of perennial woody species, the spread of green belts around cities and villages, the creation in each county department and borough of an arboretum. At the global scale, in the Sahel, under the effect of climate change combined with intense agricultural exploitation due to demographic pressure, the forest area is declining. This deforestation leads to almost inexorable land degradation and desertification. Today, two-thirds of Africa has become desert or severely degraded. The desert has gnawed on fertile lands in the Sahel for decades. To stop its progress, eleven African countries initiated in 2005 a continent-wide project, led by the African Union: the Great Green Wall. As a line of resistance to counter the progress of the desert, this wall of greenery 15 km wide will be built from Dakar to Djibouti, 7000 km long.

In general, the term "plantation" is used to refer to:

- forest stands established artificially by afforestation on land that did not previously have forest cover;
- forest stands artificially established by afforestation on land that has undergone forest cover in the last fifty years or in human memory, the operation involving the replacement of the previous stand by a new and different stand;
- enrichment introductions.

These plantations can be linear, in bands, in block and various objectives are assigned to them. These include fuel wood production, fruit and gum production, soil defence and restoration, soil biological fixation.

#### Regarding existing definitions related to "plantation"

8. Realizing that there is no internationally agreed definition of "plantation";
9. Noting that the word "plantation" derives from Latin, from the verb "plantare-plantatio": to plant, denoting the action of planting seeds;
10. Also noting that the word plantation has several definitions in common English usage:
  1. A large farm, especially in a hot part of the world, on which a particular type of crop is grown; an area where trees are grown for wood<sup>2</sup>;
  2. An estate on which crops such as coffee, sugar and tobacco are grown<sup>3</sup>;
  3. A group of cultivated trees or plants<sup>4</sup>;
  4. A large piece of land, especially in a tropical country, where crops such as rubber, coffee, tea or sugar are grown<sup>5</sup>;
  5. The action of planting seeds or plants in the ground<sup>3</sup>;
  6. A large number of trees that have been planted together<sup>5</sup>;
11. Recognising that there are many types of plantations, ranging from short-rotation industrial tree crops through to 'close-to-nature' plantations, which vary in intensity of management and other management practices according to whether the objectives are to maximize wood production, environmental values, or some combination of production and conservation objectives<sup>6</sup>;
12. Considering that there are some aspects that should be taken into consideration in the definition of plantation, such as date, purpose, management plans of plantations and land availability;
13. Considering also that the objective of the plantation and the main purpose for planting of the species determines what species are selected, and therefore the management plan of the species; plantations are grown for a purpose, and it is this purpose that determines rotation lengths, scale, complexity and species selection<sup>7</sup>;

14. Acknowledging that successful industrial plantations require species well matched with sites, control of competing vegetation, and attention to related operations that enhance tree (or different species) quality and stand growth, such as improvement of genetic stock<sup>7</sup>;
15. Noting that the uniformity of plantation conditions can render plantations particularly vulnerable through exposure to fire or high winds and increased risk from pests and diseases than natural forest formations. Further, plantations tend to be regular in shape, with boundaries commonly following artificial and often straight legal boundaries to a property or area or land<sup>7</sup>;
16. Acknowledging that that large-scale single species plantations, with negative environmental impacts, can be improved by incorporating ecological and integrated management approaches, such as planting mixed species, use of silvicultural systems based on close-to-nature principles, conservation management of natural forest remnants and the planting of native species as well as introduced species<sup>8</sup>;

#### Proposed draft definitions related to “plantation”

17. Taking into consideration the above-mentioned findings, four examples of wording for a definition of ‘plantation’ are proposed to the Plants Committee for consideration (in *italics*: changes in re-wording of the proposed first definition, point **a.** for easy reference);

[note: options **a.**, **b.** and **c.** cover any life form, while option **d.** covers only non-trees species].

- a.** Plantation: a “managed land stand, established primarily with the purpose to produce products for sale, trade and/or consumption, by planting and/or deliberate seeding of a selected number of target species, in accordance with the provisions of CITES”;
- b.** Plantation: a “managed land stand, established primarily with the purpose to produce products for sale, trade and/or consumption, by planting and/or deliberate seeding of a selected number of target species, *with even age class and regular shaping*, in accordance with the provisions of CITES”;
- c.** Plantation: a “managed land stand *with defined boundaries*, established primarily with the purpose to produce products for sale, trade and/or consumption, by planting and/or deliberate seeding of a selected number of target species, in accordance with the provisions of CITES”;
- d.** Plantation: a “managed land stand, established primarily with the purpose to produce products for sale, trade and/or consumption, by planting and/or deliberate seeding of a selected number of target *non-tree\** species, in accordance with the provisions of CITES”;

*\*where for tree is intended a woody perennial plant, with an elongate single stem or trunk, unbranched for at least several cm/ft above the ground, producing wood and non-wood forest products of value to society.*

#### Regarding existing definitions related to “planted forest”

18. Aware that several agencies such as the FAO, the Forest Stewardship Council (FSC) and the International Tropical Timber Organization (ITTO) do not provide a definition of the word ‘plantation’; although, these organisations provide definitions for terms such as forest plantation, planted forests or productive or protective plantation. However, even for these terms, there is no internationally agreed definition in place.
19. Noting that definitions of *plantation forests* used by FAO are very broad:
  - In 1997<sup>9</sup>, FAO defined ‘plantation forest’ as: forest established artificially:
    - By afforestation on lands which previously did not carry forest within living memory;
    - By reforestation of land which carried forest before and involving the replacement of the indigenous species by a new and essentially different species or genetic variety.
  - In 2001<sup>10</sup>, FAO defined ‘plantation forest’ as: ‘forest stands established by planting or/and seeding in the process of afforestation or reforestation. They are either:
    - introduced species (all planted stands), or

- intensively managed stands of indigenous species, which meet all the following criteria: one or two species at plantation, even age class, regular spacing’;

Excludes: stands which were established as plantations but which have been without intensive management for a significant period of time. These should be considered semi-natural.

- In 2003<sup>11</sup>, FAO defined ‘plantation forests’ as: “planted forests that have been established and are (intensively) managed for commercial production of wood and non-wood forest products, or to provide a specific environmental service (e.g. erosion control, landslide stabilization, windbreaks, etc.).

Planted forests established for conservation, watershed or soil protection may be subject to little human intervention after their establishment. Changes may occur in purpose, degree of management intensity, time scale and potential reversibility (to other land uses).

- In 2010<sup>12</sup>, FAO re-defined its definition of ‘plantation forests’ as: “forests that are composed of trees established through planting and/or through deliberate seeding of native or introduced species. Establishment is either through afforestation on land which has not carried forest within living memory or by reforestation of previously forested land”.
- Planted forests can be successively subdivided into the following categories and comprising planted components within semi-natural forests, and forest plantations for productive and protective purposes. The difference between a semi-natural forest and planted forest is essentially arbitrary. The planted component of semi-natural forest, with similar establishment patterns and intensive silvicultural treatments, is not materially different from forest plantations. FAO defines productive and protective plantations:
  - Productive plantation: is a forest of primary introduced and native species, established through planting or seeding mainly for production of wood or non-wood goods.
  - Protective plantation: forest of native or introduced species, established through planting of seeding mainly for provision of services”.
- In 2010<sup>13</sup>, FAO stated there is a need to recognize semi-natural forests which are neither strictly natural forests with minimal management, nor planted forests with intensive management, but which provide critical wood and non-wood forest product supplies and valuable social, cultural, environmental and economic values.
- In 2012<sup>14</sup>, the Forest Resources Assessment of FAO redefines the above-mentioned definition with the following definition: “Forest plantations are forests predominantly composed of trees established through planting and/or deliberate seeding, where the planted/seeded trees are expected to constitute more than 50 percent of the growing stock at maturity”.

20. Acknowledging that ITTO defines planted forest as a “forest stand established by planting or seeding”<sup>15</sup>.
21. Acknowledging that FSC defines the word plantation as “forest areas lacking most of the principal characteristics and key elements of natural ecosystems, which result from the human activities of planting, sowing or intensive silvicultural treatments”. Planted forests can resemble natural ecological processes to a greater or lesser extent. There is also the need to distinguish between “planted forests” consisting of indigenous species from those consisting of exotic species<sup>16</sup>.
22. Noting that according to INDUFOR<sup>17</sup>, there is a trend towards referring to planted forest of exotic species as “plantation forests” (with single or few species, even age class, uniform planting density). Planted forest of indigenous species are forms of “semi-natural forests” or “modified natural forests” depending on the degree of naturalness, including mixed species and age classes and variable planting density.
23. Acknowledging also that planted forests are generally defined according to the extent of human intervention in the establishment and/or management of the forest, which depends, to a large extent, on the purpose of growing the forest<sup>18</sup>.
24. Noting diverse characteristics of planted forest and forest plantation (as defined by several authors):

- Planted forest consists of one or a few tree species, that are grown as even-aged monocultures, intensively managed, and harvested on relatively short rotations<sup>19</sup>;
  - Forest plantation embrace a range of forest types, with the common feature that most of the trees present were established by planting (or deliberate seeding); when mature, many planted forest can appear like natural forest formations (plantations are an intermediate stage between farmland and natural forest and help the process of forest restoration)<sup>7</sup>;
  - In planted forests, a new timber resource is continuing to be created and it will contribute significantly, not only to future wood and energy supplies, but can also meet a range of wider social and environmental benefits (ecosystem services)<sup>20, 21</sup>;
  - Well-managed forest plantations have higher yields of useful wood than natural forests (i.e. annual growth rate), producing wood quickly and of uniform size and quality than from natural forest, facilitating harvesting, transport and conversion<sup>18</sup>; forest plantations are usually regular in shape with fixed and clearly defined boundaries, and the stocking (number of trees/ha) can vary considerably depending on the type of plantation, site productivity, the effect of individual stem size on its value, effects of shade and root competition, etc.<sup>18</sup>.
25. Recognizing that nearly all tropical forest plantations are grown in mono-culture with one species being planted over a large area and evenly spaced at planting. However, although features such as even-age and single species simplify management, they may increase the risk of damage from biotic and abiotic sources. Monoculture plantation over an extended span of time may result in problems of soil erosion, epidemics, reduced or loss of soil productivity, disruption of local water cycles, etc<sup>18</sup>. Converting mono-specific stands into mixed ones may improve stand stability and might reduce abiotic and biotic disturbances due to factors such as climate change, higher decomposition rates and better nutrient retention<sup>18</sup>. Highly functional plantation forests with native species in mixed stands promote positive effects such as low tree mortality, enhanced biomass productivity coupled with higher resource-use efficiency, including nutrients, water and light<sup>18</sup>.
26. Considering that boundaries between planted and natural forest is not well defined, the origin of a forest should be taken into consideration. Four forest types can be identified according to their origin<sup>18</sup>:
1. Afforestation is the act or process of creating forest land where it historically did not exist, or where there has been no forest for at least 50 years or which previously did not carry forest within living memory.
  2. Reforestation is the act or process of changing previously deforested land back to forest land by replanting the same or a different species. Replanting is the re-establishment of planted trees, either because afforestation or reforestation failed, or the tree crop was felled and regenerated.
  3. Forest established by natural regeneration with deliberate silvicultural intervention and manipulation.
  4. Forest, which have regenerated naturally without human assistance.
27. Noting that in this document, planted forests are defined in the forest type classes 1 and 2 above (afforestation and reforestation) due to the criterion of artificial regeneration (as per paragraph *g*) of Resolution Conf. 10.13 (Rev. CoP15);

#### Proposed draft definitions related to “planted forest”

28. Taking into consideration the above-mentioned findings, and taking into consideration that two possible definitions might be proposed to separate tree and non-trees species from the definition of plantation, the following proposed definitions for “planted forest” are suggested for consideration of the Plants Committee (in *italics*: changes in re-wording of the proposed first definition, point **a.** for easy reference);
- a.** Planted forest: “managed planted forest stand, composed of trees established through planting and/or deliberate seeding of a selected number of target species during afforestation or reforestation activities, for commercial production of wood and non-wood forest products, in accordance with the provisions of CITES\*\*”;

- b. Planted forest: "managed planted forest stand, *predominantly* composed of trees established through planting and/or deliberate seeding of a selected number of *native or introduced* species, in accordance with the provisions of CITES <sup>\*\*</sup>“;
- c. Planted forest: “Managed planted forest stand, *predominantly* composed of trees established through plantings and/or deliberate seeding of a selected number of *native or introduced* species, for *sustainable commercial production of wood and non-wood forest products*, in accordance with the provision of CITES<sup>\*\*</sup>”;

\*\*The definition applies only when:

1. The origin of a planted forest stand derives from an afforestation or reforestation process,
2. Tree species established through plantings and/or deliberate seedlings are planted for the purpose to increase the potential and quality of production forests, by applying silviculture practices to meet the needs of raw materials of the forest products industry,
3. The species composition of the forest stand can be identified either as mono-specific [and therefore qualified as being artificially propagated in accordance with the definition contained in Res. Conf. 11.11 (Rev CoP17)] or mixed-specific.

Excluded from this definition and therefore treated as wild is the following associated biodiversity:

4. New non-target plant species, that due to natural events establish themselves in the same management stand and which are not covered by the intention/purpose of the management plan;
5. adventive or natural understory vegetation, and
6. fauna which may be present, living or migrating through a planted forest.

#### Preliminary comments received from the members of the iWG

29. A draft discussion document on the terms plantation and planted forest was distributed to the members of the iWG in February 2018 for consultation.

30. Comments from the Scientific Authorities of Germany, the United States of America and Canada were received as follows:

30.1 According to Germany, an additional definition for plantation is not needed because the working group is suggesting a new, 'intermediate source code' for plants requiring an NDF, which would cover amongst others all sorts of managed tree production systems. The existing definition of tree production systems falling under source code "A" (= monospecific plantations) as given in Resolution 10.13 (Rev. CoP15) should stay and does not require additional definition.

30.2 It is the view of the United States of America, there is currently no need for a CITES definition for the term 'plantation' or 'planted forest'. In particular, as the FAO, UN, ITTO, and the FSC have not defined the term plantation, and many countries have their own definition for 'plantation' in their national laws. The USA prefers the adoption and use of an 'intermediate' source code' to regulate trade in specimens derived from mixed species plantations. As such, an 'intermediate' source code' would negate the need to define the term 'plantation' in the context of CITES. It also supports maintaining monospecific plantation in paragraph g) of Resolution Conf. 10.13 (Rev. CoP15).

The USA suggested, however, that if a definition for the term 'plantation' or 'planted forest' is to be considered, then, the FAO-Forest Resource Assessment<sup>14</sup> definition of planted forest (please see paragraph 19 of the present document) could be considered. Reportedly, the FAO-FRA definition has been intensively reviewed by world-wide forest experts and is expected to be used by the United Nations Sustainable Development Goals with regard to global forest reporting.

The USA further noted that if the FAO-FRA definition is too restrictive, then the proposed draft definition **b.** (please see paragraph 28 of the present document) for 'planted forest' could be considered, with an amendment to the note accompanying the definition as below (underlined for easy reference):



**b. Planted forest:** managed planted forest stand, predominantly composed of trees established through planting and/or deliberate seeding of a selected number of native or introduced species, in accordance with the provisions of CITES\*\*.

\*\* based on afforestation or reforestation forestry practices.

30.3 According to Canada, the words “monospecific” and “trees” provide adequate clarity to understand the term “trees grown in monospecific plantations” in the definition of artificially propagated as applied to trees [Resolution Conf. 10.13 (Rev. CoP15)]; therefore, Canada do not support the development of a definition for plantation. Aware that a new intermediate source code for plants is going to be proposed by the WG at PC 24, Canada stated that any other situation would fit within the new source code's definition.

31. At its 10<sup>th</sup> European Regional CITES Plants Committee Meeting, held in Palermo, Italy, on 28 February and 1 & 2 March 2018, the document was discussed, and it was recommended that: ‘A new definition or a simple description of plantation is required and, if possible, it should take the form of one simple text, based on what is currently most widely accepted in the international community’.

#### Recommendation to the Plants Committee

32. Taking into consideration views expressed by members of the working group in paragraph 30 above, the Plants Committee is invited to:
- a) Discuss the information presented by the intersessional working group, in particular if a CITES definition of plantation, or planted forest, or both terms is needed;
  - b) Discuss if the terminology proposed is acceptable;
  - c) Determine if any further action as per point e) of the mandate of the working group is needed.

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