

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



Twenty-fifth meeting of the Plants Committee  
Geneva (Switzerland), 17 and 20-23 July 2020

Interpretation and implementation matters

General compliance and enforcement

Malagasy palisanders and rosewoods (*Dalbergia* spp.) and ebonies (*Diospyros* spp.)

REPORT OF MADAGASCAR ON THE IMPLEMENTATION OF DECISION 18.96

1. This document has been submitted by Madagascar.\*
2. The table below summarizes the progress made by Madagascar with the implementation of Decision 18.96 directed to Madagascar on Malagasy palisanders and rosewoods (*Dalbergia* spp.) and ebonies (*Diospyros* spp.). It addresses paragraphs a), b), c) and d).
3. In accordance with Decision 18.98, paragraph b), at the request of Madagascar, the CITES Standing Committee established at its 72nd meeting (Geneva, Switzerland, 28 August 2019) an intersessional advisory group (IAG) on Malagasy palisanders and rosewoods (*Dalbergia* spp.) and ebonies (*Diospyros* spp.) with a mandate to assist and advise Madagascar on the implementation of all measures regarding *Dalbergia* spp. and *Diospyros* spp. taken in the framework of CITES.
4. The intersessional advisory committee is being set up and will be chaired by Madagascar. It is composed of members of the following regions: Africa: Kenya and Morocco; Asia: Nepal and Thailand; Central and South America and the Caribbean: Nicaragua; Europe: European Union and Ireland; North America: United States of America. Initial contact between working group members will be made shortly.
5. Madagascar recommends that the Plants Committee take note of this document and the progress reported.

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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.

**Decision 18.96: Directed to Madagascar:**

- a) continue to identify the main commercially valuable species in the genera *Dalbergia* and *Diospyros* from Madagascar, in cooperation with the Secretariat and relevant partners, such as the International Tropical Timber Organization (ITTO), the Food and Agriculture Organization of the United Nations (FAO) and other intergovernmental and non-governmental organizations;

Date/Situation	Progress made by Madagascar	Comments
July 2018 – April 2020	<p><b>Project: “Sustainable management of <i>Dalbergia</i> and <i>Diospyros</i> precious woods of Madagascar, scientific support for the implementation of the CITES Action Plan” (2018-2022)</b></p> <p>Project funded by the European Union</p> <p>The project has the following objectives:</p> <ul style="list-style-type: none"> <li>- To clarify the taxonomic definition of Malagasy <i>Dalbergia</i> and <i>Diospyros</i> species in order to allow for the reliable identification of species through the creation of a reference collection;</li> <li>- To develop and disseminate reliable and easy-to-use identification methods for Malagasy <i>Dalbergia</i> and <i>Diospyros</i> timber species;</li> <li>- To establish a conservatory for the genetic resources of Malagasy <i>Dalbergia</i> and <i>Diospyros</i> species;</li> <li>- To train the main players in the precious wood sector in the identification of <i>Dalbergia</i> and <i>Diospyros</i> timber species.</li> </ul>	<p>The project is in its second year of implementation. Years 1 and 2 have been devoted to: (i) collecting botanical samples (i.e., herbarium specimens, leaves, trunk and bark pieces, branches, wood cores) throughout Madagascar and (ii) strengthening the laboratories for the analysis of samples and the conservation of genetic resources: laboratories devoted to plant anatomy, near-infrared spectroscopy, molecular analysis, and forest biotechnologies, respectively.</p> <p>Collection took place in 17 regions of Madagascar; 853 <i>Dalbergia</i> and 559 <i>Diospyros</i> specimens were collected. A specimen consists of herbarium samples, shredded leaves, a trunk and a bark sample, a twig and two wood cores. A collection protocol has been established to obtain standard specimens that can be used as a reference and in tests.</p> <p>A database has been developed to manage these reference specimens. A core collection has been established to obtain a good knowledge of these samples.</p> <p>Taxonomic studies have made it possible to clarify the definition of most <i>Dalbergia</i> species described and have revealed about 50 potential new species based on analyses of the morphology, echo-geography and DNA sequences of samples; the first of these taxa are currently being described; extinction risk assessments are underway for 15 <i>Dalbergia</i> species.</p> <p>The 69 large tree species of <i>Diospyros</i> are now completely delimited (of these, descriptions of 32 new species are awaiting publication in 6 articles) and their extinction risk has been assessed (including 46 new assessments). The data and images compiled are available online in the catalogue of Madagascar. The local managers of 6 field gene banks have received expert training and have obtained 1661 plants by propagating 72 <i>Diospyros</i> and 16 <i>Dalbergia</i> individuals of 28 and 13 species, respectively. Field botanists, interns and PhD students have received training in fieldwork, taxonomy and species recognition.</p> <p>Regarding laboratories for analysis: three laboratories are currently operational after the human and material capacity-building efforts made.</p>

		These laboratories are intended to develop reliable and easy-to-use identification methods for the wood and other derivatives.
November 2018 - May 2020	<p><b>PEER-USAID Project: “Building a reference collection for Malagasy rosewood, palissander and ebony identification” (2018-2021)</b> Project funded by USAID</p>	<p>The project contributes to the development of collections of wood specimens and their associated herbarium vouchers in which the taxon is accurately identified for all CITES-listed commercially valuable Malagasy <i>Dalbergia</i> and <i>Diospyros</i> species.</p> <p>The PEER-USAID Project has enabled the acquisition of a building to house the reference wood collection resulting from all the current projects for Malagasy precious woods; this authoritative global collection in Madagascar is intended to be accessible to all domestic and international researchers.</p> <p>341 herbarium specimens have been carefully mounted and 566 wood specimens of commercially valuable species are polished and available for inclusion in the reference collection of Appendix-II listed species.</p>
March 2018 – May 2020	<p><b>Conservation and sustainable management of the genera of precious woods <i>Dalbergia</i> (Fabaceae) and <i>Diospyros</i> (Ebenaceae) in Madagascar (2018-2021)</b> (<i>Conservation et gestion durable des genres de bois précieux Dalbergia (Fabaceae) et Diospyros (Ebenaceae) à Madagascar</i>) Project funded by Fondation Franklinia</p> <p>The project has the following objectives:</p> <ul style="list-style-type: none"> <li>- Support field inventories in order to build a comprehensive reference collection – provide the necessary samples for all scientific research;</li> <li>- Clarify the taxonomic limits of potentially exploitable species of <i>Dalbergia</i> and <i>Diospyros</i> and assess their conservation status – solve problems in the delimitation of already recognized species, name and describe new species and identify those that are threatened;</li> <li>- Develop and manage field gene banks in conservation sites and cultivate and propagate <i>Dalbergia</i> and <i>Diospyros</i> plants in a safe context;</li> <li>- Develop practical tools for field identification – enable reliable identification of standing trees based on easily observed characters</li> <li>- Ensure that Malagasy botanists and students can recognize and identify <i>Dalbergia</i> and <i>Diospyros</i></li> </ul>	<p>Fieldwork conducted in 122 sites in the second year has enabled the development of 879 collections of Malagasy <i>Dalbergia</i> and <i>Diospyros</i>, thus contributing significantly to a better understanding of species of both genera and their conservation status; this also provides verified taxonomic material for morphological, anatomical, spectrometry and DNA sequencing research to support the development of reliable identification tools.</p> <ul style="list-style-type: none"> <li>- The delimitations of 48 currently recognized <i>Dalbergia</i> species (including 28 large tree species that are potential sources of commercially valuable wood) have been reviewed and about 50 potential new species have been identified, including 24 large tree species; all 69 large tree species of <i>Diospyros</i> are now delimited.</li> <li>- Extinction risk assessments are being finalized for 16 large tree species of <i>Dalbergia</i>; they will be reviewed and validated by the Madagascar Plant Specialist Group before being published on the IUCN Red List; the 69 large tree species of <i>Diospyros</i> have been assessed, including 43 new assessments that are now ready to be reviewed and validated.</li> <li>- Three new species of <i>Dalbergia</i> have been described and are awaiting publication and another 15 are ready to be described; 60 new species of <i>Diospyros</i> have been described in papers that are at various stages of publication, including the 32 new species of large trees.</li> <li>- To date, the collections of 72 <i>Diospyros</i> and 16 <i>Dalbergia</i> individuals representing 38 and 13 species) have yielded 1661 live plants that are currently being propagated by a qualified manager in each of the 6 field gene banks of the project.</li> </ul>

	<p>species – transfer the knowledge and skills of international botanists to ensure domestic expertise;</p> <ul style="list-style-type: none"> <li>- Support and contribute to the coordination of the Consortium (Scientific Authority for Plants – Department of Plant Biology and Ecology – University of Antananarivo; School of Agronomy – University of Antananarivo; the NGO Missouri Botanical Garden – MBG).</li> </ul>	<ul style="list-style-type: none"> <li>- The Malagasy participants in the project (including field botanists, interns and PhD students) have become very familiar with the main identification characters of numerous species of <i>Dalbergia</i> and <i>Diospyros</i> and are now able to recognize them and identify them accurately.</li> <li>- The members of the Precious Woods of Madagascar Consortium and the main stakeholders have understood that the genera <i>Dalbergia</i> and <i>Diospyros</i> both include many more species of large trees than was previously thought and that many potentially exploitable species have very limited ranges and are of great conservation concern.</li> </ul>
March 2018 – March 2020	<p>Pollen morphology of Malagasy <i>Dalbergia</i> species and study of <i>Dalbergia greveana</i>: plant and pollen morphology and genetic diversity (<i>Morphologie pollinique des espèces de Dalbergia à Madagascar et étude de Dalbergia greveana : morphologie des plantes, pollens et diversité génétique</i>). PhD dissertation (2018-2021)</p> <ul style="list-style-type: none"> <li>- The description of the pollen of 27 Malagasy species of <i>Dalbergia</i> and 4 morphotypes of <i>Dalbergia greveana</i> has been conducted.</li> <li>- The botanical description and molecular analysis of <i>Dalbergia greveana</i> yielded 10 morphotypes of the species.</li> </ul>	Preparation of an article on the pollen of Malagasy <i>Dalbergia</i> species.
2016 - 2019	<p>“Phylogeny and genetics of the populations of <i>Diospyros</i> species of the Mascarene Islands” (<i>Phylogénie et génétique des populations des espèces de Diospyros des Mascareignes</i>) RAD-seq database of 10 species of <i>Diospyros</i> and 39 species of <i>Diospyros</i></p> <p>A total of 17 species are recognized in Madagascar, of which 13 are recently described and illustrated, as well as a new species that is restricted to the island of Mayotte in the Comoros archipelago. An identification key is provided as well as IUCN extinction risk assessments, according to which one species is Critically Endangered, six are Endangered and six are Vulnerable, one is Near Threatened and four are of conservation concern. Full descriptions are also provided for the four species described earlier.</p>	<p>Alexander G. Linan defended his dissertation in 2019. An article has already been published: “Ebony and the Mascarenes: the evolutionary relationships and biogeography of <i>Diospyros</i> (Ebenaceae) in the western Indian Ocean” (Linan and al. 2019) and a second article is currently in press in <i>Molecular Ecology</i>.</p> <p>Another article will be submitted on the taxonomic review of <i>Diospyros</i> sect. <i>Forbesia</i> in Madagascar and the Comoros.</p>
2016 -2020	“Conservation genomics of Malagasy <i>Dalbergia</i> precious woods: insights and implications for forensic species identification”	Thesis project of Simon Crameri, defence scheduled for September 2020.

July 2018 – May 2020	<p><b>List of species of potential commercial value (see Annex II)</b></p> <p>Twenty-seven (27) <i>Dalbergia</i> species are large trees. Of the <i>Diospyros</i> species whose description has been published to date or not published yet, seventy-six (76) are large trees.</p>	<p>Species of commercial value meet three criteria: (i) large tree species that are able to provide timber; (ii) species with a known use and a considerable demand in the domestic and international market; and (iii) species whose abundance has been proven.</p> <p>The sizes of the trees of each species were analysed based on the available data resulting from sample collection, the morphological description of each species and field monitoring work. This resulted in the list of species that can become large trees.</p> <p>Today, data on use and trade are partially available; they are being completed.</p> <p>To obtain accurate information on the third criterion it is necessary to conduct inventories; indicators have been used so far.</p>
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**b) continue to make progress in the development of non-detriment findings for commercially valuable species in the genera *Dalbergia* and *Diospyros*, including implementation of appropriate monitoring mechanisms;**

July 2018 – April 2020	<p><b>Project: “Sustainable management of <i>Dalbergia</i> and <i>Diospyros</i> precious woods of Madagascar, scientific support for the implementation of the CITES Action Plan” (2018-2022)</b></p> <p>Five <i>Dalbergia</i> species and three <i>Diospyros</i> species are proposed for making scientific non-detriment findings (NDFs).</p> <p><i>Dalbergia baronii</i> Baker  <i>Dalbergia chlorocarpa</i> R. Vig.  <i>Dalbergia purpurasens</i>  <i>Dalbergia orientalis</i>  <i>Dalbergia trichocarpa</i> Baker  <i>Diospyros tropophylla</i> (H. Perrier) G.E. Schatz &amp; Lowry  <i>Diospyros clusiifolia</i> (Hiern) G.E. Schatz &amp; Lowry  <i>Diospyros toxicaria</i> Hiern  <i>Diospyros cupulifera</i> H. Perrier</p>	<p>Based on the list proposed in paragraph a), data yielded by the collection of samples of plant material were analysed to obtain (i) indicators of species abundance, particularly outside protected areas, and (ii) the geographical distribution of each species. (iii) A third criterion is related to the ease of identification based on standing trees, that is, the clarity of the morphological description of the species. An important stage of the NDF-making process is to conduct an inventory of live plants. This is an important criterion.</p> <p>Based on the above, five <i>Dalbergia</i> and four <i>Diospyros</i> species (i.e., candidate species) are proposed for making NDFs.</p>
September 2018 – March 2020	<p><b>FAO-FLEGT Programme</b></p> <p><b>Start and implementation of the project:</b></p> <p><b>Study on how to make non-detriment findings (NDFs) for two rosewood species: <i>Dalbergia lemurica</i> and <i>D. suarezensis</i> (Fabaceae).</b></p>	<p>The making of an NDF makes it possible to ensure the sustainability of the exploitation of a species by avoiding its extinction in the wild. Two species have been targeted: <i>Dalbergia lemurica</i> in Kirindy (Menabe Region) and <i>D. suarezensis</i> (Diana Region). They were chosen based on the following criteria: not having a reduced range, being exploited at a</p>

		<p>level that may affect the survival of the species in the short term, and being present in KoloAla protected areas.</p> <p>Four thematic areas were prioritized in order to obtain scientifically valid results:</p> <ul style="list-style-type: none"> <li>- Research on the ecology of the target species: biological inventories of natural populations, particularly regarding the current population size, types of pressures and threats, and survival rate.</li> <li>- Trade chain and legal aspects in Madagascar: documentation on the domestic legislation in force and on the quantities of wood exploited within the country.</li> <li>- Respect of legality and the provisions of the CITES Convention: creation of a repository of data on the protection of the target species regarding international trade.</li> <li>- Capacity building of the players involved in the conservation of the target species: exchange of experiences on the conservation of these species considering the multidisciplinary nature of the elements needed for the project to be successful.</li> </ul> <p>It is a pilot programme on the development of methods for the identification and monitoring of the status of existing <i>Dalbergia</i> populations with the aim of developing a management plan for certain species or species groups; Madagascar received the assistance of international experts who have already worked on similar projects involving the making of NDFs.</p>
<p>November 2018- April 2020</p>	<p><b>PEER-USAID Project: “Building a reference collection for Malagasy rosewood, palissander and ebony identification”.</b></p>	<p>The project contributes to increasing and improving the knowledge available on the reproductive capacity of the species and the reduction of their extinction risk by promoting <i>in situ</i> conservation in the 4 project intervention sites: Marolambo, Tsitongambarika, Ambohidray and Ampasindava.</p> <p>These sites will be gene banks and effective restoration areas for commercially valuable species. The project also provides the necessary scientific arguments for the identification, germination, ecology and restoration of the necessary habitats for the decision-making stages of the development of NDFs.</p>

**Organization of workshops to support the implementation of paragraphs a) and b) of the present Decision;**

November 2018 - May 2021	PEER-USAID Project: "Building a reference collection for Malagasy rosewood, palissander and ebony identification".	Towards the end of the project (May 2021), the project will contribute to the training and capacity building of customs officials in ports and airports on the use of smartphones and XyloTrons, that is, tools developed to easily identify wood with a minimum knowledge of its anatomical structure that can be used by customs officials in ports and airports.
June 2019	<p>Information workshop on Malagasy precious woods, 12-13 June 2019</p> <ul style="list-style-type: none"> <li>- Discussion between the various players who work with <i>Dalbergia</i> and <i>Diospyros</i> species;</li> <li>- Harmonization of actions, sharing of the knowledge acquired and progress of the various research projects underway on precious woods;</li> <li>- Proposal for decision-makers on the sustainable management of Malagasy precious woods;</li> <li>- Practical recommendations to guide research on precious woods.</li> </ul>	<p>Topics dealt with:</p> <ul style="list-style-type: none"> <li>- Presentations on the various projects involving precious woods</li> <li>- Current status of the projects</li> <li>- Panel session on cooperation and partnership</li> <li>- Panel session on the gaps and opportunities of current research on precious woods.</li> </ul>

**d) continue the production of identification materials for timber and timber products from species of the genera *Dalbergia* and *Diospyros* from Madagascar;**

July 2018 – April 2020	<p><b>Project: "Sustainable management of <i>Dalbergia</i> and <i>Diospyros</i> precious woods of Madagascar, scientific support for the implementation of the CITES Action Plan" (2018-2022)</b></p> <p>Anatomy: 8 <i>Dalbergia</i> species and 15 <i>Diospyros</i> species of commercial value have been described</p> <p>NIRS: the discrimination models of 6 <i>Dalbergia</i> species have been developed</p> <p>9 <i>Dalbergia</i> species and 7 <i>Diospyros</i> species have been chemically analysed</p> <p>Molecular analysis: 6 <i>Dalbergia</i> species and 3 <i>Diospyros</i> species of commercial value can be identified</p>	<p>Work in the laboratories (i.e., plant anatomy, NIRS, and molecular analysis laboratories) that exist in Madagascar continues with the wood samples collected.</p> <p>Collaboration has been established with partner laboratories: recently, a PhD student conducted chemical analyses at the Cirad laboratory (France). A second PhD student is doing a one-year internship at the ETH laboratory (Switzerland) on anatomy and molecular analysis. A third PhD student is currently working at the INQABA laboratory (South Africa) on gene sequencing for molecular barcoding.</p>
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April 2020	PEER-USAID Project: “Building a reference collection for Malagasy rosewood, palissander and ebony identification”.	<p>The project contributes to:</p> <p>(1) finalizing the identification systems that are being developed by Dr. Ravaomanalina based on wood anatomy with the extended analytical tools created by Dr. Wiemann and Dr. Hermanson (USDA) for the main species in trade.</p> <p>(2) validating the identification criteria for some <i>Dalbergia</i> and <i>Diospyros</i> species of the first atlas started by Ravaomanalina and al., 2017, adding more repetitions and more species, most of which are commercially valuable.</p> <p>This atlas will be completed by the macroscopic characters of the wood, whose observation will be facilitated by easy-to-use identification tools such as smartphones and XyloTrons (i.e., magnifiers) for customs officials at ports and airports.</p>
July 2018 – May 2020	<p>Anatomy, dendrochronology and molecular identification of the two groups of the genus <i>Dalbergia</i>: <i>chlorocarpa</i> and <i>maritima</i>.</p> <p>Objective: Develop and test molecular identification techniques for <i>Dalbergia lemurica</i> and <i>Dabergia maritima</i> with closely related species.</p> <p>Sub-objective: Identify the genetic markers that can be used to distinguish between <i>Dalbergia lemurica</i> and <i>Dalbergia aff lemurica</i>; <i>Dalbergia maritima</i> and <i>Dalbergia aff maritima</i></p>	The PhD student involved in this project is currently conducting laboratory work in Zurich, Switzerland.

**Decisions: Malagasy palisanders and rosewoods (*Dalbergia* spp.) and ebonies (*Diospyros* spp.)**

18.94	<i>Directed to source, transit and destination Parties for Malagasy Dalbergia spp. and Diospyros spp.</i>	<p>Source, transit and destination Parties for specimens of species of the genera <i>Dalbergia</i> and <i>Diospyros</i> occurring in Madagascar are urged to:</p> <p>a) enforce all the measures that are recommended by the CITES Standing Committee concerning commercial trade in specimens of these species from Madagascar, including suspensions of such trade;</p> <p>b) effectively manage timber stockpiles of <i>Dalbergia</i> spp. and <i>Diospyros</i> spp. from Madagascar; and</p> <p>c) provide written reports describing progress made with implementation of paragraphs a) and b) of this Decision to the 73rd and 74th meetings of the Standing Committee.</p>
18.95	<i>Directed to Parties and other relevant partners</i>	<p>Parties and relevant partners, such as the International Tropical Timber Organization (ITTO), the Food and Agriculture Organization of the United Nations (FAO), the International Consortium on Combating Wildlife Crime (ICWC) and other intergovernmental and non-governmental organizations, are invited to:</p> <p>a) enforce all measures that are recommended by the CITES Standing Committee concerning commercial trade in specimens of Malagasy <i>Dalbergia</i> spp. and <i>Diospyros</i> spp. from Madagascar;</p> <p>b) collaborate with Madagascar in the implementation of the agreed parts of the use plan to manage stockpiles of timber of these species from Madagascar; and</p> <p>c) provide technical and financial assistance to support the implementation of Decision 18.96.</p>
18.96	<i>Directed to Madagascar</i>	<p>Madagascar shall:</p> <p>a) continue to identify the main commercially valuable species in the genera <i>Dalbergia</i> and <i>Diospyros</i> from Madagascar, in cooperation with the Secretariat and relevant partners, such as the International Tropical Timber Organization (ITTO), the Food and Agriculture Organization of the United Nations (FAO) and other intergovernmental and non-governmental organizations;</p> <p>b) continue to make progress in the development of non-detriment findings for commercially valuable species in the genera <i>Dalbergia</i> and <i>Diospyros</i>, including implementation of appropriate monitoring mechanisms;</p> <p>c) for those species identified under paragraph a) establish, in collaboration with the CITES Secretariat, a precautionary export quota based upon a scientifically robust non-detriment finding;</p> <p>d) continue the production of identification materials for timber and timber products from species of the genera <i>Dalbergia</i> and <i>Diospyros</i> from Madagascar;</p> <p>e) for those species identified under paragraph a), strengthen control and enforcement measures against illegal logging and export at the national level, including seizures, investigations, arrests, prosecutions, and sanctions, regardless of the title and level of responsibility of the offenders;</p> <p>f) subject to available funding, secure the stockpiles (including undeclared and hidden stocks) of timber of <i>Dalbergia</i> and <i>Diospyros</i> in Madagascar, and submit regular updates on audited inventories thereof, and a use plan based on transparency and independent oversight mechanisms, for consideration, approval and further guidance from the Standing Committee;</p>

		<p>g) share with the Secretariat a proposed budget, to seek assistance from Parties and technical and financial partners for the implementation of this Decision; and</p> <p>h) provide reports on progress with the implementation of Decision 18.96 to the 25th and 26th meetings of the Plants Committee and the 73rd and 74th meetings of the Standing Committee;</p>
18.97	<i>Directed to the Plants Committee</i>	<p>The Plants Committee shall, at its 25th and 26th meetings:</p> <p>a) review reports from Madagascar and the Secretariat as appropriate on the implementation of Decision 18.96, and provide recommendations to the Standing Committee and the Secretariat; and</p> <p>b) provide assistance to Madagascar with the implementation of Decision 18.96.</p>
18.98	<i>Directed to the Standing Committee</i>	<p>The Standing Committee shall, at its 73rd and 74th meetings:</p> <p>a) review reports from Madagascar and the Secretariat on the implementation of Decisions 18.96 and 18.97, and make recommendations to Madagascar, relevant Parties and the Secretariat as appropriate, and take measures in accordance with Resolution Conf. 14.3 (Rev. CoP18) on <i>CITES compliance procedures</i> if Madagascar fails to satisfactorily implement the actions directed to it in Decision 18.96.</p> <p>b) consider establishing a small intersessional advisory group of Parties to assist and advise Madagascar on the implementation of all measures regarding <i>Dalbergia</i> spp. and <i>Diospyros</i> spp.</p>

**List of large tree species of *Dalbergia*: 27 species**

*Dalbergia bathiei* R. Vig.  
*Dalbergia baronii* Baker  
*Dalbergia chlorocarpa* R. Vig.  
*Dalbergia chapelieri* Baill.  
*Dalbergia davidii* Bosser & R. Rabev.  
*Dalbergia delphinensis* Bosser & R. Rabev.  
*Dalbergia glaucocarpa* Bosser & R. Rabev.  
*Dalbergia greveana* Baill.  
*Dalbergia hirticalyx* Bosser & R. Rabev.  
*Dalbergia humbertii* R. Vig.  
*Dalbergia lemurica* Bosser & R. Rabev.  
*Dalbergia louvelii* R. Vig.  
*Dalbergia madagascariensis* Vatke  
*Dalbergia maritima* R. Vig.  
*Dalbergia mollis* Bosser & R. Rabev.  
*Dalbergia monticola* Bosser & R. Rabev.  
*Dalbergia neoperrieri* Bosser & R. Rabev.  
*Dalbergia normandii* Bosser & R. Rabev.  
*Dalbergia occulta* Bosser & R. Rabev.  
*Dalbergia orientalis* Bosser & R. Rabev.  
*Dalbergia pervillei* Vatke  
*Dalbergia purpurascens* Baill.  
*Dalbergia pseudobaronii* R. Vig.  
*Dalbergia suaresensis* Baill.  
*Dalbergia tsiandalana* R. Vig.  
*Dalbergia trichocarpa* Baker  
*Dalbergia urschii* Bosser & R. Rabev.

**List of large tree species of *Diospyros*: 76 species**

*Diospyros aculeata* H. Perrier  
*Diospyros ambanjensis* G.E. Schatz & Lowry, *ined.*  
*Diospyros amborelloides* G.E. Schatz & Lowry, *ined.*  
*Diospyros analamerensis* H. Perrier  
*Diospyros andohahelensis* G.E. Schatz & Lowry, *ined.*  
*Diospyros antakaranae* G.E. Schatz & Lowry, *ined.*  
*Diospyros antongilensis* G.E. Schatz & Lowry  
*Diospyros antsiranana* G.E. Schatz & Lowry, *ined.*  
*Diospyros bardotiae* G. E. Schatz & Lowry, *ined.*  
*Diospyros baroniana* H. Perrier  
*Diospyros beberonnii* G.E. Schatz & Lowry, *ined.*  
*Diospyros bemarivensis* H. Perrier  
*Diospyros bernieriana* (Baill.) H. Perrier  
*Diospyros bezofensis* H. Perrier  
*Diospyros brevipedicellata* G.E. Schatz, Lowry & Mas, *ined.*  
*Diospyros calophylla* Hiern  
*Diospyros chitoniophora* G.E. Schatz & Lowry, *ined.*  
*Diospyros clusiifolia* (Hiern) G.E. Schatz & Lowry  
*Diospyros crassipedicellata* G.E. Schatz & Lowry, *ined.*  
*Diospyros cupulifera* H. Perrier  
*Diospyros dolichopoda* G.E. Schatz, Lowry & Mas, *ined.*  
*Diospyros ebenifera* (H. Perrier) G.E. Schatz & Lowry  
*Diospyros falyi* G.E. Schatz & Lowry, *ined.*  
*Diospyros ferrea* (Willd.) Bakh.  
*Diospyros fuscovelutina* Baker  
*Diospyros gracilipes* Hiern  
*Diospyros grandiflora* G.E. Schatz & Lowry, *ined.*  
*Diospyros haplostylis* Boivin ex Hiern

*Diospyros humbertiana* H. Perrier  
*Diospyros labatiana* Mas, G.E. Schatz & Lowry, ined.  
*Diospyros lanceolata* Poir.  
*Diospyros lewisiae* Mas, G.E. Schatz & Lowry, ined.  
*Diospyros littoralis* G.E. Schatz & Lowry, ined.  
*Diospyros lowryi* G.E. Schatz, ined.  
*Diospyros Maba* group sp. 14  
*Diospyros maculata* G.E. Schatz & Lowry  
*Diospyros mahaboensis* G.E. Schatz, Lowry & Mas, ined.  
*Diospyros malandy* H.N. Rakouth, G.E. Schatz & Lowry, ined.  
*Diospyros manampetsae* H. Perrier  
*Diospyros mandenensis* G.E. Schatz & Lowry, ined.  
*Diospyros manongarivoensis* A.G. Linan, G.E. Schatz & Lowry  
*Diospyros mapingo* H. Perrier  
*Diospyros masoalensis* H. Perrier  
*Diospyros melanocarpa* G.E. Schatz & Lowry, ined.  
*Diospyros microgracilipes* G.E. Schatz, Lowry & Mas, ined.  
*Diospyros mimusops* G.E. Schatz & Lowry, ined.  
*Diospyros Mucronata* group sp. 10  
*Diospyros myriophylla* (H. Perrier) G.E. Schatz & Lowry  
*Diospyros occlusa* H. Perrier  
*Diospyros orbicularis* G.E. Schatz & Lowry, ined.  
*Diospyros parifolia* H. Perrier  
*Diospyros perrieri* Jum.  
*Diospyros platycalyx* Hiern  
*Diospyros plicatycalyx* Linan and al., ined.  
*Diospyros pubicaula* Linan and al., ined.  
*Diospyros quadrangularis* G.E. Schatz & Lowry, ined.  
*Diospyros rahavavy* G.E. Schatz & Lowry, ined.  
*Diospyros rakotovaoui* G.E. Schatz & Lowry, ined.  
*Diospyros ramisonii* G.E. Schatz & Lowry, ined.  
*Diospyros randrianasoloi* G.E. Schatz, Lowry & Mas, ined.  
*Diospyros rodoensis* G.E. Schatz & Lowry, ined.  
*Diospyros rubripetiolata* G.E. Schatz & Lowry  
*Diospyros sakalavarum* H. Perrier  
*Diospyros Sclerophylla* group sp. 6  
*Diospyros sclerophylla* H. Perrier  
*Diospyros squamosa* Bojer ex A. DC.  
*Diospyros subnervis* (H. Perrier) G.E. Schatz & Lowry  
*Diospyros subtrinervis* H. Perrier  
*Diospyros taikintana* G.E. Schatz & Lowry, ined.  
*Diospyros torquata* H. Perrier  
*Diospyros toxicaria* Hiern  
*Diospyros tropophylla* (H. Perrier) G.E. Schatz & Lowry  
*Diospyros urschii* H. Perrier  
*Diospyros velutipes* (H. Perrier) G.E. Schatz & Lowry  
*Diospyros vescoi* Hiern  
*Diospyros parvifolia* Hiern