

Inclusion of *Dalbergia cochinchinensis* Pierre in Appendix II

Proponent: Thailand and Viet Nam

Summary: *Dalbergia cochinchinensis* is a slow growing species of rosewood found growing sparsely in open semi-deciduous forests in Cambodia, Lao People's Democratic Republic (Lao PDR), Thailand and southern Viet Nam. *Dalbergia cochinchinensis* has become rare and the species is disappearing from most of its natural habitat, the last remaining stronghold of the species is in Thailand in a protected area near the border with Cambodia. The total population size has not been systemically surveyed. In Thailand, *D. cochinchinensis* is found scattered in 30 protected areas (560 km²) and the number of trees is estimated to have declined from perhaps as much as 70%, from around 300 000 in 2005 to 80 000-100 000 trees in 2011. There has not been a comprehensive survey in Viet Nam, but the population size of rosewood (species not specified) is thought to have declined by half or more during the past 5-10 years. A specific survey of *D. cochinchinensis* in five protected areas in Viet Nam conducted in 2010 showed a low density of 1-10 tree/hectare. No information is available on trends for the species in Cambodia or Lao PDR, but mature individuals are very rarely seen, even within protected areas. *Dalbergia cochinchinensis* is classified globally by IUCN as Vulnerable, although this assessment was published in 1998 and is regarded as in need of updating.

The wood is highly desirable in cabinet-making; the primary parts in the international trade are logs and sawn wood but wooden furniture and handicraft finished products are also found. Much of the trade is thought to be destined for China. Harvesting of this species is either restricted or banned across all of its range. It appears that illegal trade is increasing rapidly. The species is also affected by habitat loss. Trial plantations have been established; however, the slow-growth rate of the species means such plantations have limited commercial appeal.

The proposal is for the inclusion of *D. cochinchinensis* in Appendix II with Annotation #5 (logs, sawn wood and veneer sheets).

Analysis: *Dalbergia cochinchinensis* is a rosewood tree from Southeast Asia that yields a highly sought after timber, demand for which has grown very markedly in recent years, particularly in China. This demand is met entirely by harvest, often illegal, from wild populations. Although inventory data are lacking in most of the range there are indications of declines in range states; at least one (Thailand) decline in the past six years would already appear to meet the criteria for Appendix I. The species would therefore appear likely to meet the criteria for inclusion in Appendix II Annex 2 a, paragraph A of *Resolution Conf. 9.24 (Rev. CoP15)*: it is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.

| Supporting Statement (SS) | Additional information |
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| Synonym: <i>Dalbergia cambodiana</i> . | <p style="text-align: center;"><u>Taxonomy</u></p> <p><i>Dalbergia cambodiana</i> is considered to be a separate valid species by IUCN. <i>D. cambodiana</i> is a synonym of <i>D. cochinchinensis</i> according to the latest revision of the genus in Indo-China (Niyomdham, 1997), and this has also been confirmed by molecular barcoding analyses (results not published, Hartvig in litt., 2012).</p> |

| Supporting Statement (SS) | Additional information |
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| <p>Cambodia, Lao PDR, Thailand and Viet Nam.</p> | <p>Range</p> <p>IUCN Global Category</p> <p><i>Vulnerable A1cd (Assessed 1998, Criteria Version 2.3) (needs updating).</i></p> |
| <p>Biological and trade criteria for inclusion in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)</p> | |
| <p><u>A) Trade regulation needed to prevent future inclusion in Appendix I</u></p> | |
| <p>The population size of <i>D. cochinchinensis</i> has never been systemically surveyed. However, the wild population of <i>D. cochinchinensis</i> is likely to be severely diminished as a result of heavy illegal logging to meet a recent elevated demand for the wood in Asian markets.</p> <p>The species has a slow growth rate. Natural regeneration is often poor. The species is pollinated by insects. It is an often self-pollinated crop, resulting in a limited genetic variation observed within each natural population. However, based on DNA analysis, there is a great deal of genetic variation between populations.</p> <p>The species has been found growing sparsely in open semi-deciduous forests in Cambodia, Lao PDR, Thailand and Southern Viet Nam. Due to its vulnerability to extinction from over-exploitation of the natural population, <i>D. cochinchinensis</i> has become rare and the species is disappearing from most of its natural habitat.</p> <p>It is now restricted to a few localities in the range state, especially in Thailand where its distribution is diminishing. At the moment, the only remaining rich source of the species is in a protected area near the Thai border with Cambodia.</p> <p>Thailand In Thailand, it was estimated that the country had 300 000 natural stands in 2005, but greatly reduced to just 80 000- 100 000 trees (approximately 63 500 cubic meters) in 2011.</p> <p>The habitat area has been continuously reduced due to both deforestation for agriculture and recent illegal logging. Currently, the natural stands of the species are found scattered only in 30 protected areas of 557.76 km². The habitat is thus fragmented.</p> <p>Viet Nam There has been no comprehensive survey of rose wood in Viet Nam. The population size of rosewood in Viet Nam has been declining about 50-60% during the past 5-10 years.</p> | <p><i>In 2011 the species was considered to meet the IUCN Red List criteria for Critically Endangered (A2+3+4 cd) as illegal cutting and habitat destruction together had led to a population decline of an estimated 80% through the last 150 years (3 generation), and this rate of decline was projected to continue unless radical conservation actions were taken (Hartvig in litt., 2012).</i></p> <p><i>Although no information is available on population trends in Cambodia, Lao PDR and Viet Nam there are observed declines in all three countries (Hartvig in litt., 2012). Natural populations of <i>D. cochinchinensis</i> are disappearing and only limited numbers are found in the remaining forest fragments of Southern Viet Nam (Hien and Phong, 2012).</i></p> <p><i>Rosewood has been overharvested and is now only found in remote areas and some economic land concessions have been granted close to the remote areas (Cambodia Daily, 2012).</i></p> <p>Thailand <i>The Thai government estimates that only 100 000 trees remain in the wild, scattered along protected areas on the border of Cambodia and Viet Nam (EIA, 2012c).</i></p> <p>Viet Nam <i>The SS does not specify which species of rosewood the 50-60% decline refers to.</i></p> |

| Supporting Statement (SS) | Additional information |
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| <p>Whilst in Viet Nam, a specific survey in five protected areas conducted in 2010 showed a low density of 1-10 tree/hectare.</p> <p>No information is available on trends for the species in Cambodia or Lao PDR.</p> | <p>Cambodia <i>In Cambodia populations can be found in many provinces, but mature individuals are very rare outside strictly protected areas. Due to conversion of forest land, logging and illegal log-poaching, Cambodian populations face severe depletion (Hartvig in litt., 2012).</i></p> <p>Lao PDR <i>In Lao PDR, the species is becoming very rare because of overexploitation and illegal cutting, even from protected populations (Hartvig in litt., 2012).</i></p> |
| <p><u>B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences</u></p> | |
| <p>The wood, which is highly desirable for premium wooden furniture, has recently become one of the most expensive kinds of wood in the world.</p> <p>The wood has recently been used to make furniture, carvings, wood turnery, fine-art articles, musical instruments and sewing machines. The wood from the stumps and roots can also be used for making handicrafts. Root, bark and sap can be part of traditional medicine.</p> <p>The primary parts in the international trade are logs and sawn wood but wooden furniture and handy craft finished products are also found in international trade.</p> <p>The wood is not as popular with local people due to a local belief that restricts utilization by ordinary people. However, a belief in an overseas market that furniture made from the Rosewood is good for the health of the owner has created a great demand for the wood.</p> <p>Illegal logging to meet high demand (with the price of USD1500 to 2000/cubic meter) from overseas markets posts a major threat to the survival of the species.</p> <p>Evidence suggests that the species is threatened with extinction, a major rosewood trader complained in April 2011 that the species is finished ... there are only about five years left in the trade.+</p> | <p><i>The results of the FAO Forest Resource Assessment (2010) showed that range states have no large forest stocks of D. cochinchinensis to sustain the current levels of trade. The scarcity of suitable quality wood and the expanding size of the market have prompted traders to seek substitute (Dalbergia) species from other regions. China's import of Rosewood (species or genus unknown) sourced from Lao PDR and Viet Nam has increased substantially since 2005. In 2011 approximately 500 000 cubic metres were imported into China, based on China customs data. Import levels of roundwood for USA and the European Union are estimated to be 20 000 cubic metres each, mostly in the form of musical instruments (Jenkins et al., 2012).</i></p> <p><i>Actual data on export and import levels are limited. According to Global Timber (2012), imports into China are increasing every year, mostly from Cambodia and Viet Nam.</i></p> <p><i>There are many companies and websites selling D. cochinchinensis timber for prices ranging up to USD3900 - USD6000 or even USD50 000 per m³ (UNEP-WCMC, 2008; EIA, 2012c). One unnamed company exported 1200 m³ of D. cochinchinensis logs to Yantai City in China in January 2011 (EIA, 2012c).</i></p> <p><i>A recent EIA report (2012b) published the findings of an enquiry on the illegal trade in Lao PDR and Viet Nam, with a company based in Haiphong (Viet Nam), offering up to 50 000 m³ of D. cochinchinensis and D. oliveri for export.</i></p> <p><i>About 70% of Viet Nam's 450 export companies are specialising in exports of indoor furniture made of D. cochinchinensis (and other valuable timber species) mainly to</i></p> |

| Supporting Statement (SS) | Additional information |
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| <p>Thailand Due to a National Logging Ban in Thailand, illegal logging is now practically the only way to obtain the timber of <i>D. cochinchinensis</i> in the country, especially since the auction of released exhibits (seized timbers) was stopped in 2007 when the international demand started to surge rapidly. Speculation by overseas traders that the wood will soon be unavailable has led to extremely high price which is a great driving force for illegal trade.</p> <p>The illegal trade in Thailand doubled each year between 2009 and 2011 with a rise in the number of cases from 134 to 687; number of specimens from 1222 to 5956 and volume from 184 to 596 m³. In addition, 6780 logs from 786 cases were seized in the first 9 months of 2012.</p> <p>Approximately 178 609 pieces of wood were confiscated in over 3000 illegal logging cases during the past 6 years in Thailand. These specimens had a market price of approximately USD3 billion. This volume of seized logs (0.63 million m³) can be roughly converted to being the equivalent of at least 600 000 trees measuring 50 cm in DBH removed from the wild. The auctioning of seized timber in Thailand stopped in 2007, when international demand started to rapidly increase.</p> <p>Viet Nam The species has been exposed to high rates of exploitation of the prime timber.</p> <p>There were 74 illegal logging cases of Rosewood in 2010.</p> | <p><i>Asian countries such as China, Hong Kong, Taiwan POC and Singapore (Forest Trends, 2010). Furniture sellers have commented that prices of rosewood increased by 30-40% in 2012 compared to 2011. The number of companies trading rosewood from Thailand in China increased by 30-40% in 2012 with annual rosewood prices increasing by 15-40% (EIA, 2012a). The wood is also used for making chop sticks, tea-containers and acoustic instruments, all available on the internet (EIA, 2012a).</i></p> <p>Thailand <i>In 2009, Thailand's Department of National Parks seized 1222 rosewood logs in 134 cases, in 2010 2739 logs were seized in 223 separate cases and in 2011 4850 logs were seized in 560 cases (EIA, 2012a).</i></p> <p><i>In 2006 the Lao embassy and forest police confiscated 1664 high grade logs, identified as Dalbergia cochinchinensis, believed to belong to a transitional illegal logging network preparing to export the timber. The Customs invoice showed that the logs had been transported to the depot by a Thai freight company destined for export to China by a Lao firm but no export permit had been issued. It is likely that the seized timber had been smuggled in and illegally felled from a Thai forest (TRAFFIC, 2012).</i></p> <p><i>It is not clear from the SS, if the figures quoted for the illegal trade are just of Thai D. cochinchinensis or rosewood in general.</i></p> <p><i>According to the SS, confiscations are estimated to be equivalent to 600 000 trees. This figure suggests the original population estimate in 2005 (300 000 trees) may have been in error, some of the confiscated wood may have originated from stockpiles of Thai D. cochinchinensis, that confiscations included trees harvested outside of Thailand, that the confiscation calculation of 0.63million m³, may have been in error, that other timber species are included or a combination of any number of these factors.</i></p> <p>Viet Nam <i>In 2011 Viet Nam exported 123 000 m³ of rosewood logs (Vietnamese Dalbergia species) to China which was illegally felled from protected areas, especially in Quang Binh province, with reports of Chinese buyers being backed up by criminal gangs from Viet Nam. However, the majority of Vietnamese rosewood exports originate from Lao PDR, Thailand and Cambodia. Lao PDR exported 80 000 m³ to China in 2011 despite harvest bans. The bulk is exported through Viet Nam with companies boasting of circumventing restrictions (EIA, 2012c).</i></p> <p>Cambodia <i>The most serious threat to this species in Cambodia is illegal logging and trade. It appears that little effort is made to control the logging. There is evidence that officials</i></p> |

| Supporting Statement (SS) | Additional information |
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| | <p><i>who should be preventing the logging are themselves benefitting from the trade (Newman in litt., 2012). They are also making high profits and logging will not cease due to the value of the timber</i></p> <p><i>Cross border illegal logging has increased in protected areas in the last few years and it is evident that populations have been severely reduced by illegal logging and deforestation. Mature trees are very rarely seen, even within protected areas. Large numbers of logs have been confiscated by Forest Administration district officers in protected areas and undoubtedly larger amounts do make it across the border. According to the Forest Administration officers, the logs are exported to Viet Nam and China where the demand is huge. (Hartvig in litt., 2012).</i></p> <p><i>Logging of Dalbergia species was very active in Cambodian Forests in 2010. Piles of marked logs (Dalbergia but species not specified) were observed by the road from Promaoy Commune, Veal Veang District in Phnum Samkoh Wildlife Sanctuary on the road from Promaoy to Koh Kong in May 2010. Logging here and in the Cardamom Mountains Protected Area seemed to be going ahead completely unhindered by the authorities. (Newman in litt., 2012).</i></p> <p><i>In Cambodia about 30 containers (each holding 20 m³) of D. cambodiana and D. bariensis are exported abroad per month illegally (UNEP-WCMC, 2008; TRAFFIC, 2012).</i></p> <p><i>A report in the 'Cambodia Daily' (2012) based on official Chinese import documents revealed 36 000 m³ of rosewood logs (species unknown) have been recorded entering China from Cambodia between January 2007 and August 2012. In 2011, 9800 m³ of rosewood logs were imported into Shanghai in 3 shipments and 4300 m³ in 2012. A further 10 000 m³ of logs and 15 000 m³ sawn wood of various timber types have entered China from Cambodia since 2005. The Chinese Customs applies a specific import code for the rosewood imports. This continues despite the Cambodia's Forestry Law (2002) which prohibits logging of rare tree species. The rosewood is said to be destined for markets in Viet Nam and China. The value of rosewood imports since 2007 was registered by China Customs as USD61 million and considerably more in the retail market. Many companies can be found on the Chinese trading website 'Alibaba' selling the wood for as high as USD35 000 per cubic meter.</i></p> <p>Lao PDR</p> <p><i>Field surveys carried out in Bolikhamsay and Khammouane provinces Lao PDR in November 2012 (by Ida Hartvig and National Herbarium of Lao PDR) have confirmed that natural populations of D. cochinchinensis in Lao PDR are under severe and continuing threat from illegal logging. No mature individuals were found and all trees with a DBH over 15 cm had been logged. This trend was observed for all surveyed populations, even within strictly protected areas such as Phu Khao Khuay National Park. According to locals and staff of the National Park felling had been ordered by</i></p> |

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| | <i>Chinese businessmen, carried out by locals and timber exported to China directly after logging. The majority of this occurred in 2007 when all valuable trees were removed and there is photographic evidence of more recent logging (Hartvig in litt., 2012).</i> |

Inclusion in Appendix II to improve control of other listed species

A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I

The wood of *D. oliveri* (sometime known as *D. bariensis*) is similar to that of *D. cochinchinensis*. The two closely related species can be differentiated from each other by bark colour and general appearance; wood colour; characteristics of specific gravity and hardness at specified moisture content; and presence of solitary pores and multiple pores with metatrachal parenchyma.

There are an estimated 250 Dalbergia species (Lewis et al., 2005). Ten other Dalbergia species are already listed in CITES Appendices – all on Appendix III, apart from D. nigra which is listed in Appendix I. As a consequence issue is already being addressed by Parties to some extent.

The genus is in need of global revision. D. oliveri and D. cochinchinensis are not closely related but the heartwood is similar and the trees are easily discriminated by bark, leaf, flower and fruit characteristics as well as by molecular markers (Niyomdham, et al., 1997; Hartvig, 2011; Hartvig in litt., 2012).

Other information

Over-exploitation for the extremely highly-priced timber of *D. cochinchinensis* is the major threat to the species throughout its range. Habitat loss is an additional threat. For example, in Thailand deforestation for economic crop production threatens the species.

Threats

In Cambodia and Lao PDR, habitat loss poses a great threat for D. cochinchinensis populations. Large areas of forest are being cleared for the purpose of rubber plantations, acacia, rice and for other agricultural or development purposes. This is true for most of Cambodia, but particularly for the north-western provinces of Otdor Meancheay, (parts of) Siem Reap and Preah Vihear, that until recently were very remote and difficult to access. These provinces have the largest and most continuous populations of D. cochinchinensis across its distribution area, but that may no longer be true in the future if deforestation continues (Hartvig in litt., 2012).

Data in the table below are derived from FAO (2010) showing the forest extent in range states, deforestation and forests in protected areas.

| Country | % forest land area | forest area 1990 (1000 ha) | forest area 2010 (1000 ha) | Annual change rate 2005-2010 (1000 ha yr) | Forests in protected areas (1000 ha) |
|----------|--------------------|----------------------------|----------------------------|---|--------------------------------------|
| Lao PDR | 68 | 17314 | 15751 | -78 | - |
| Thailand | 37 | 19549 | 18972 | 15 | 9426 (50%) |
| Viet Nam | 44 | 9363 | 13797 | 144 | - |
| Cambodia | 57 | 12944 | 10094 | -127 | 3092 (31%) |

| Supporting Statement (SS) | Additional information |
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| <u>Conservation, management and legislation</u> | |
| <p>There are currently no international measures implementing control of movement of <i>D. cochinchinensis</i> timber across international borders, however, collaboration on the control of cross border illegal trade among the range States was recently initiated</p> <p>Cambodia Harvesting this species is banned by Cambodian Forestry Law 2002 No.35.</p> <p>Lao PDR The Prime Ministerial Order No-17/PM of 2008 explicitly prohibits harvesting all domestic <i>Dalbergia</i> species. In addition, Prime Minister's Order No 010/PM of 2011 bans the exploitation, trading and export of <i>D. cochinchinensis</i> wood.</p> <p>Thailand <i>D. cochinchinensis</i> is listed as Category A (general restrict): restricted timber No. 53 by Thai Forest Act, B.E. 2484. As a result, no harvest of the species from forest without permit or concession is legal in Thailand. However, logging from private property can still be performed. In addition, Thailand has prohibited logging of natural forest trees nationwide since 1989. Export permit from the Ministry of Commerce for the logs has also been required.</p> <p>Viet Nam In Viet Nam, <i>D. cochinchinensis</i> was listed as group IIA protected species under Forest Law in 2006. Later, it has been placed in danger of extinction at level EN A1a, c, d in 2007. As a result, it is prohibited to exploit, dispatch or store the wood, according to Vietnamese government decision 32/2006/ND-CP.</p> | <p><i>A workshop held in Chiang Mai, Thailand in November 2011 proposed that the species be listed as globally Critically Endangered based on rate of decline. The rationale for this noted that "the level of forest clearing and exploitation in Viet Nam and Thailand has lead to a severe reduction in population size and dispersal of the species and it now only occurs in protected areas. In Cambodia and Lao PDR, there are still significant populations, but they are severely threatened by illegal cutting and forest clearing" (Hartvig in litt., 2012). Ida Hartvig Larsen, a participant in the workshop, is undertaking a PhD that aims to develop a strategy for sustainable use and management of Dalbergia in Cambodia and adjacent countries in the context of REDD. She has commented on this from a further survey in Lao PDR in 2012 where she doubts these significant populations exist (Hartvig in litt., 2012).</i></p> <p>Cambodia <i>In Cambodia a network of conservation stands has been protected by Royal Decree to preserve genetic variation within the species. There is a restoration programme for the species at Sre Noy, Siem Reap. (Hartvig et al., 2011). In Cambodia the vast intact forest area in the Central Lowlands known as Prey Long has been proposed as Protected Forest in 2011. This prime habitat for <i>D. cochinchinensis</i> is however classified as production forest and is under immediate threat from industrial logging, economic land concessions and illegal logging (Strange et al., 2007).</i></p> <p>Lao PDR <i>According to Lao Forestry Law, logging is only allowed in "production forest areas" that have approved management plans in place and export of roundwood, sawnwood and semi-finished products is prohibited as is harvesting of the species. The Lao Forestry Law bans the export of roundwood, however, companies find a way around this by converting it into sawn wood for which a special logging quota can be obtained which allows the harvest and export of the wood regardless of legislation (DFID, Forest Trends, 2010).</i></p> <p>Thailand <i>Customs and the Royal Forestry Department are monitoring imports of timber to check for the presence of rosewood (EU FLEGT, 2012).</i></p> <p>Viet Nam <i>It was assessed as Endangered A1 acd by Dang and Nguyen in 2007 (Hien and Phong, 2012). There are not thought to be equivalent national red list assessments for Cambodia, Lao P.D.R. and Thailand.</i></p> <p><i>There is a specific conservation site for the species in Dak Ha, KonThum province.</i></p> |

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| <u>Captive Breeding/Artificial Propagation</u> | |
| <p>For a long time, it has been known that the natural stands of <i>D. cochinchinensis</i> grow slowly. The species has, thus, not been of interest for commercial planting programs (has only trial plantations).</p> <p>Many trial plantations of the species have been established in Thailand since 1989. Thailand has selected 570 parental stocks in 18 provinces since 1987 for sourcing seed and there are now at least 20 000 trees growing in plantations. Since 2002, Cambodia has selected 121 parental stocks within 50 hectares of a conserved area in Seam Reap and Lao PDR has protected 108 hectares in three natural forests for this purpose. Viet Nam has established two <i>ex situ</i> collections of 2600 trees since 1990. A number of plots in trial plantations in Lao PDR and Thailand have shown that <i>D. cochinchinensis</i> can potentially grow as fast as teak under favourable conditions, however, give a low heartwood yield. There is no information on the extent of artificial propagation outside the countries of origin.</p> <p>Listing <i>D. cochinchinensis</i> in the CITES Appendix II would enhance the success of commercial plantation, which is of future economic benefit to rural people.</p> <p>A number of molecular genetic studies have also been executed to develop a network of <i>in situ</i> gene banks as well as sustainable seed gardens for future planting.</p> <p>All range states started planting programs for the species, some with assistances from international agencies.</p> | <p><i>The Forestry Administration of Cambodia has established a 500 ha plantation of D. cochinchinensis in July 2012, close to the protected seed source area at Sre Noy, Siem Reap. A similar plantation is underway close to Prasat Preah Vihear, province of Preah Vihear (Hartvig in litt., 2012).</i></p> <p><i>In Viet Nam two ex situ stands with 2600 trees have been established since 1990 and 10 ha were planted for conservation and seed supply (APFORGEN).</i></p> <p><i>This species occurs in four botanical gardens in Viet Nam, Thailand, Singapore and USA (BGCI Plantsearch, 2012).</i></p> |
| <u>Other comments</u> | |
| <p>Thailand is directly sending this draft proposal to authorities of all range States of this species, five international organizations as well as the Netherlands, requesting comments. A comment from Vietnamese CITES Management Authority, which was received by 25 September 2012, is incorporated in this document. Moreover, ITTO and IUFRO expressed their support to this proposal.</p> | <p><i>The PhD project undertaken by Ida Hartvig is testing the use of DNA fingerprinting methods to determine the species and geographic origin of traded timber of Dalbergia spp. in Cambodia and neighboring countries. Once research is completed, it is hoped that a tool suitable for use in global certification schemes and/or FLEGT programmes can be developed.</i></p> <p><i>Hartvig in litt. (2012) suggested that D. oliveri should also be considered for inclusion in Appendix II. Although not yet as desired as D. cochinchinensis, the species is also illegally logged in Cambodia, Lao PDR and Viet Nam (Thailand unknown), and this poses a severe threat to its further survival. Hartvig expects that when D. cochinchinensis stands have been completely exploited for high value trees (as has already happened in many areas), the focus will change to D. oliveri. The wood has the same qualities as D. cochinchinensis and at least in Cambodia, is used for the same purposes (luxury furniture, fine handicraft etc) (Hartvig in litt., 2012).</i></p> |

Reviewers: I. Hartvig, C. Hin Keong, J. de Koning, M. Newman, I. Theilade.

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