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

Eighteenth meeting of the Conference of the Parties
Colombo (Sri Lanka), 23 May – 3 June 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To list the species *Pterocarpus tinctorius* in CITES Appendix II without annotation specifying the types of specimens to be included, in order to include all readily recognizable parts and derivatives in accordance with Resolution Conf. 11.21 (Rev. CoP17). Though most illegal and unsustainable international trade is currently of logs and sawn timber, experience with CITES listings of other rosewood species has demonstrated that other annotations can be easily circumvented (Government of Thailand, 2015). On the basis of available information, it can be inferred that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.

B. Proponent

Malawi[*]:

C. Supporting statement

1. Taxonomy

1.1 Class: Magnoliopsida

1.2 Order: Fabales

1.3 Family: Fabaceae (suborder Faboideae, tribe Dalbergieae)

1.4 Genus, species or subspecies, including author and year: Pterocarpus tinctorius Welw

1.5 Scientific synonyms: Pterocarpus chrysothrix Taub (1895); Pterocarpus stolzii Harms (1915); Lingoum tinctorium (Welw.) Kuntze; Pterocarpus holtzii Harms; Pterocarpus odoratus De Wild ; Pterocarpus zimmermannii Harms.

1.6 Common names: (DRC, Zambia), Nkula/Mkula (Zambia, Malawi), Mlombwa (Malawi), Mkurungu or Mkulungu (Kitongwe, Tanzania), Tacula (Po), Mninga maji (Sw), bloodwood. Sometimes called Padouk d'Afrique or Padauk d´Afrique, although this name is more commonly used for Pterocarpus soyeauxii. Sometimes called Mukwa, although this name is more commonly used for Pterocarpus angolensis.

1.7 Code numbers:

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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.*

2. Overview

Pterocarpus tinctorius is a rosewood species native to a range of habitats across east and southern Africa. The past few years have seen a dramatic increase in harvest and export from several countries across its range, both legal and illegal, following a by-now familiar pattern directly linked to Asian demand. As the species of Dalbergia genus that have traditionally been most highly traded become less available – due both to trade restrictions and in some cases to virtual commercial extinction – demand and continues to shift to alternate species as replacements, particularly within the Pterocarpus genus. Available information indicate that the illegal and unsustainable exploitation of *Pterocarpus tinctorius* has already had severe reported impacts on its wild populations in various range States. Unless rapidly checked, the growing unsustainable and illegal exploitation of *Pterocarpus tinctorius* for international trade is likely to lead the commercial extinction of the species in various range States. Several range States have passed and enforced harvest and/or trade bans in order to regulate the surge in international trade and mitigate its dire impacts. The illegal and unsustainable exploitation of the species relies on regional, well-reported, smuggling routes to avoid enforcement. As stated in CoP Inf. 48: "Serial depletion of rosewood species across the globe is a real and substantial risk to their survival" (Senegal 2016). From existing studies, news, and trade data, it can be strongly inferred or projected that *P. tinctorius* will be the next domino to fall and needs protection to stop international trade from threating its survival in the wild.

3. Species characteristics

3.1 Distribution

P. tinctorius is found across Africa's broad belt of miombo woodland, a 2.7 million km2 area of tropical seasonal forest and dry forests in Angola, Democratic Republic of Congo, Burundi, Tanzania, Malawi, Mozambique, and Zambia (Campbell et al. 1996; Barstow 2018).

3.2 Habitat

P. tinctorius is found in a range of habitats, including wooded savanna, dry evergreen thickets, riparian moist forests, and miombo woodland where it can form part of Acacia and Brachystegia woodland associations (Barstow 2018; Munishi et al 2011). The species thrives in poor and rocky soils, and grows between approximately 50 and 1800m ASL (Barstow 2018; Phiri et al 2015).

3.3 Biological characteristics

P. tinctorius, like most legumes, forms symbiotic associations with certain soil bacteria to fix atmospheric nitrogen. The tree can be evergreen or deciduous (Lemmens 2008, Storrs 1995), with bisexual flowers that develop in March-May and appear to be pollinated principally by bees. Seeds are wind-dispersed. *P. tinctorius* is fire-adapted in its native ecosystems. It can propagate via seeds, cuttings or coppice (Phiri et al 2015). Like other members of its family and genus, *P. tinctorius* is slow-growing; Burkhill (1995) indicated that it can take over 90 years to reach maturity.

3.4 Morphological characteristics

P. tinctorius is a mid-sized tree that reaches 20-25m in height and 70 cm in diameter, with a round, flattened and dense crown. Morphology varies across its range in complex ways, with distinct regional differences that had been subdivided into three infraspecific taxa; however subsequent revisions suggest these races are conspecific (Gillett, Polhill and Verdcourt 1971).

Leaves are compound, 10-30cm long with 2-6 lateral leaflets on either side, glandular, and leaflets shine on the upper surface. Young twigs are brown and fulvous; bark is grey to dark reddish-brown and can be fairly smooth to conspicuously fissured. Inner bark is whitish and exudes a reddish sap when cut. Flowers are cream to golden-yellow or orange in color and fragrant, in axillary or terminal panicles (8-22cm) from upper leaves. The seed pod is approximately circular, 6-10cm in diameter with a thickened center, densely pilose with interspersed coarse hairs over the seed, and a broad, undulate papery wing (Zambia Flora; Drummond and Moll 2002; Gillett, Polhill and Verdcourt 1971.)

P. tinctorius wood saws and works well, is easy to plane, not generally liable to splitting, and takes polish well. It is moderately durable to durable (Lemmens 2008). The wood shows variable properties depending on its ecosystem and resulting growth patterns:

At 12% moisture content (data from Lemmens 2008 and Senegal 2016):

Properties	**Mayombo, Congo forest**	**Burundi savannah**
Density	450 kg/m3	900 kg/m3
Modulus of rupture	91 N/mm2	147 N/mm2
Modulus of elasticity	9100 N/mm2	15000 N/mm2
Compression parallel to grain	45 N/mm2	77 N/mm2
Cleavage	8 N/mm	
Chalais-Meudon hardness	2.2	

3.5 Role of the species in its ecosystem

P. tinctorius is a nitrogen-fixing species that augments the availability of soil nitrogen for other plants in the ecosystem. While little formal information exists documenting the ecosystem services of this species, it is known to be an important pollen source for bees, and primates including colobus monkeys and chimpanzees commonly consume its leaves (Lemmens 2008). Forest elephants eat the tree sprouts, and baboons and squirrels eat the seed pods. Almost every part of the tree is valued for medicinal purposes.

4. Status and trends

4.1 Habitat trends

Forest disturbance and loss are occurring throughout the miombo woodlands and associated ecosystems that form *P. tinctorius*'s range. For example, in Tanzania, forests disappeared at 370,000 ha/year between 2005-2015, average growing stock in natural forests declined by one-third and per capita forest area decreased from 3 to 1.1. ha/capita (TRAFFIC 2016). Agriculture and fuel wood collection play a role in the degradation of existing forest areas. While a number of protected areas do exist across the range, these are not always well-protected in practice and can be subject to encroachment and illegal logging.

4.2 Population size

The total population of *P. tinctorius* is not known, nor is quantitative data available on the total area of relevant habitat or average density of stems per hectare (Barstow 2018). The species was apparently locally common in areas including east and south Tanzania and north Malawi (Brummitt et a. 2007), at least before the rosewood boom; it is now clearly in decline throughout Zambia and likely other countries as well (Phiri 2015).

4.3 Population structure

Very little information is available. However, given that the largest specimens are disproportionately targeted for timber production, it can be expected that the recent boom in illegal and unsustainable harvesting will be leading to a skewing of the population structure towards immature specimens. For example, in Zambia, the minimum cutting diameter of *P. tinctorius* was decreased to 30cm in 2015 in response to commercial pressures (CIFOR 2017). Rosewoods as a group exhibit poor recruitment, even in protected areas where large numbers of mature trees exist (Phiri et al 2015; Augustino & Hall 2008). While some local loggers in Zambia claimed to observe large numbers of seedlings in areas where they worked (CIFOR 2017), this may mean little in terms of survivorship. Other Pterocarpus species in this region demonstrate troublingly low regeneration patterns (Mojeremane and Uyapo Lumbile 2016).

4.4 Population trends

At a genus level, 90% of the Pterocarpus and Dalbergia populations where studies exist, show declining or unstable population dynamics (Senegal 2016). According to a 2018 IUCN Red List update looking at available data, the *P. tinctorius* population "is considered to be in decline as a result of the harvesting of the species for its timber…currently in high demand in local markest and it is predicted that in the future its international demand could increase as other Pterocarpus timber species become rare or protected." (Barstow 2018). A 2017 CIFOR study of the mukula value chain in Zambia found that 84% of community cutters had entered the business since 2012. 68% of these cutters observed depletion of population stocks in the field, and thought that they would not be able to continue harvesting this tree at the same rate in five years' time. A full 95% of key informants in the same study agreed with this assessment and anticipated the species "going extinct" (CIFOR 2017).

4.5 Geographic trends

No information available.

5. Threats

The primary threat to *Pterocarpus tinctorius* is overharvesting, including both legal and widespread illegal extraction, for the international trade (See section 6). As other African rosewood species (Dahlbergia genus, Pterocarpus erinaceous) have become scarcer and increasingly protected, demand for *P. tinctorius* has increased. This species is slow-growing and not considered to be under sustainable management throughout its range, with the exception of certain protected areas (Phiri et al 2015). The threat represented by this trade is compounded by deforestation from forest conversion and aridification due to climate change and more severe fires (Senegal 2016).

6. Utilization and trade

While *Pterocarpus tinctorius* has non-timber uses, its current unsustainable extraction in various range states is almost entirely linked to international trade.

6.1 National utilization

P. tinctorius, like many members of the Fabaceae family, is a favored shade tree and its foliage is a common grazing fodder for domestic wildlife. The flowers are important for honey production in Congo (Kuo 2017) and Zambia (Phiri et al 2015). The reddish sap is used for fabric dyes and body coloring. This species has a number of valuable antibacterial and medicinal qualities. In the DRC, Burkhill (1995) reported its use to treat respiratory congestion. Augustino et al (2016) found that Tanzanian villagers use roots, bark, and leaves of the trees in different preparations to treat anaemia, diarrhea, snakebites, stomach aches, and eye pain; to prevent miscarriage, and to prevent wound infection. The biochemical and medicinal properties of both bark and sap are reported to be of interest to the pharmaceutical industry although little information is available (Phiri et al 2015).

The wood of *P. tinctorius* is high-density, easily workable, reddish, and particularly attractive upon finishing. It is used for making a wide variety of products: ornamental items, gunstocks, tool handles, carvings, turnery, furniture, cabinets, parquet floors, joinery and trim, plywood veneer, as well as less valuable products. While historically, communities this species for firewood, curving and charcoal (Phiri et al 2015), current prices and export-oriented trade patterns are likely to have reduced these local uses. TRAFFIC (2016) states that in Tanzania, this species has "almost no demand in local markets…exclusively harvested for the export market to China."

6.2 Legal trade

Separating legal trade from illegal trade is not a simple task given the spotty data, irregular enforcement and lack of clarity around national regulations in some countries.

Official Chinese data shows skyrocketing imports of rosewood species from African nations – up 700% since 2010 (Phiri et al 2015). While *Pterocarpus tinctorius* is not on the official hongmu list, it has achieved market demand due to its lookalike characteristics. Chinese buyers in Zambia reported to CIFOR interviewers that an early boom in *P. tinctorius* (beginning in 2010) was actually due to its being used as a false rosewood: shipments were sent through intermediary traders and nations to Vietnam

and the Philippines, where it was mixed with *Pterocarpus santalinus* (red sandalwood) and sold onto the Chinese furniture market.

However, over time the species has become recognized in its own right and direct shipments to China are more common (CIFOR 2017). In 2017 the going price in Zhang Jiagang was between 17,000 and 22,000 renminbi per tonne ($2,500 and $3,200). Greenpeace estimates that as much as 15,000 tonnes of the wood are sold each month from just the four biggest mukula markets (Kuo 2017). In Tanzania, one of the few countries where species-specific official data is available, export permits for *P. tinctorius* increased almost 7 times between 2012 and 2014 alone (831.4 to 5,578.4 thousand cubic meters), according to Tanzania Forest Service data (TRAFFIC 2016).

Range state governments have struggled to improve governance over this resource. For example, Zambia has imposed and lifted moratoriums on harvest and/or export of mukula three times since 2014, and an export ban on all logs is currently in place, although the Minister and Director of Forests may still issue export permits for timber if "deemed necessary in the interest of the Republic". Malawi banned export of all roundwood in 2008 but has faced many legal battles to impose the ban for *P.tinctorius* which is apparently transported to China originating from neighbouring countries. (CIFOR 2017) Chinese customs data, meanwhile, shows log imports from Zambia going from 35 thousand m3 in 2015, to 65 thousand in just the first half of 2017; CIFOR research indicates that "the vast majority" of these logs are *P. tinctorius*.

6.3 Parts and derivatives in trade

The products in international trade are primarily round and rough squared logs (HS code 4403) and rough sawn timber (HS code 4407). The majority of the trade is destined for China, although Vietnam also imports significant volumes. Because *P. tinctorius* is not on the Chinese official hongmu list, there is not a specific customs code in Chinese customs data, making precise figures harder to obtain for either imports or exports from specific African countries. In importing country markets, the main usage is for decorative furniture consumed in China (Wenbin and Xiufang, 2013; Forest Trends, 2015). There is no information available on re-exports of furniture or secondary processed products from China.

6.4 Illegal trade

Illegal mukula export trade is fundamentally a regional issue, in part because the most significant extraction appears to be occurring in the landlocked forests of southeastern Congo (Katanga Plateau), Zambia and northeast Angola. Trucking routes are documented towards ports on both the Atlantic (Angola, Namibia, even South Africa [Yi 2017]) and Pacific (Tanzania, Mozambique), though the key routes change as range states have attempted to control trade in this and other precious wood species through log export bans. For example, when Mozambique and Angola banned log exports in 2017, exports surged in Namibia (Grobler 2017). While not a range state itself, Namibia exports an estimated 250 to 300 containers of mukula logs monthly to China from Walvis Bay port – a trade worth some US$8.75 to $16 million monthly.

As with other timber species, the mukula trade is connected to illegal trade in endangered animal parts. In late 2016, Chinese customs officials seized a 2.9-tonne shipment of pangolin scales hidden in a container of mukula timber (Sharman 2016) . In Namibia, the Chinese national identified as owner of the key exports logistics company for Angolan and Zambian clients has also been repeatedly linked to traffic in rhino horn and animal skins (ibid).

Angola: In response to growing concern over harvest and export of mukula, in January 2018 the Ministry of Agriculture suspended "all activities related to the exploitation of forest resources such as felling, movement and transportation of logs" and created a multisectoral commission to inventory seized timber (macauhub.mo 2018). Immediately thereafter officials seized 540 m3 (1880 logs) of wood that police investigators stated had been harvested illegally in Cuando Cubango province and was being prepared for export without proper documentation (Nkala 2018). Sources describe *P. tinctorius* logs being harvested in south Eastern Angola, Zambia and DRC, then transported to Namibia to avoid the export ban (Grobler 2017; Mulenga 2017).

Burundi: Almost all natural forest and woodland areas in Burundi where *Pterocarpus tinctorius* might be present have been set aside as protected areas where logging is not permitted. Illegal timber from DRC forests and, to a lesser extent, Tanzania's miombo woodlands, is known to be brought across the

border and sold locally (Blondel 2014), but specific reports of mukula logging or trade are not currently available.

Democratic Republic of Congo: Lubumbashi, the provincial capital of Haut-Katanga, is the hub for trade in *P. tinctorius*, with at least 10 Chinese-owned mukula trading companies. A field study by local civil society showed that the volume of trees cut down in five months of 2016 totaled almost 3,300 m3, approximately five times the number given by the Ministry of Environment, suggesting widespread corruption and illegality (Kuo 2017). The Ministry of Environment recognizes the problem: in 2016 the new head of the Ministry's Nature Conservation and Sustainable Development division was asked to move to Lubumbashi to analyze and address the surge in *P. tinctorius* smuggling. He determined that logging activities "far exceeded" the limits allowed by government issued permits for artisanal logging (Li 2017). Around the same time, a Catholic bishop in Katanga province went to the media denouncing illegal logging and destruction of mukula, describing logs being moved at night to a depot in Lubumbashi "before they are smuggled into Tanzania via Zambia en route to China" (Hughes 2016), and alleging logging within Kundelungu National Park (Leclercq 2016). In April 2017, officials in Haut-Katanga arrested 14 Chinese people with tourist visas "suspected of illegally exporting red wood [mukula]" (AFP 2017). The acting governor stated that 17,000 tons of mukula had been illegally exported to China through Zambia over four months, with Zambian officials seizing hundreds of vehicles (Kuo 2017). An ITTO-sponsored study of regional timber flows conducted surveys of cross-border timber movements at three of the main checkpoints between DRC and Zambia. They found 90% of the wood moving across the border from DRC was mukula, 90% of it in debarked logs or cants; the primary crossing was Kasumbalesa. The study extrapolates that 49,804 m3 of timber were being traded annually through these three checkpoints, of which 44,824m3 was mukula. All this timber was recorded as destined for China, via ports in Tanzania, Namibia, Zimbabwe and Botswana (CIFOR/ITTO, *undated*).

Malawi: CIFOR (2017) reports that there has been "recent large-scale expansion of mukula harvesting and trade into Zambia's neighbouring countries such as Malawi, Mozambique and the DRC." Increases in illegal harvest of mukula and two other species, as well as trafficking of mukula smuggled from Zambia, caused the government to ban exports of native hardwood logs in 2008 (Malawi Government, 2008).

Mozambique: Mozambique is China's biggest supplier of African logs [insert more data]. Species-specific export data is not available for *P. tinctorius* on either end of this trade flow. However, CIFOR (2017) reports "recent large-scale expansion of mukula harvesting and trade into Zambia's neighbouring countries such as Malawi, Mozambique and the DRC." Field investigations have found evidence of large-scale illegal harvest and trafficking of Precious and Class 1 timber species from Mozambique into Tanzania (Hall 2014). Chinese buyers often go directly to individuals in the countryside to avoid the costs of obtaining logging licenses, obligations to replant etc (Dijkstra 2015). Trade data discrepancy analysis between Chinese import data and Mozambique export data shows significant export underreporting (TRAFFIC 2016). Likewise, almost none of the logs and sawn wood reported as imports by Tanzania (on the order of tens of thousands m3 yearly) are reported by Mozambique, suggesting the bulk this trade is illegal (TRAFFIC 2016). Nearly 90% of logs are exported to China, the majority consisting of only five species: *Afzelia quanzensis* (chanfuta), *Millettia stuhlmannii* (jambirre or panga-panga), Combretum imberbe, Swartzia madagascariensis, and *Pterocarpus angolensis* (umbila), (Hall 2014). This last species shares many properties with mukula. Mozambique implemented regulations to ban log exports of Class 1 timber species in 2007, although roughly sawn timber is considered to be processed (TRAFFIC 2016). A new log ban was put in place in 2017.

Tanzania: While Tanzanian Forest Service data shows a sharp increase in export permits for *P. tinctorius* (almost 7 times between 2012 and 2014 alone (831.4 to 5,578.4 thousand cubic meters) (TRAFFIC 2016), TFS reports that this is primarily logs from Zambia that are transited through Tanzania to the Dar es Salaam port for export to China. They typically enter already in containers – as many as 60 containers a month pass through – and have in some case been subject to confiscations by Tanzanian authorities due to insufficient documentation (ibid).

Zambia: Zambia is "currently facing immense pressure due to widespread illegal harvesting accelerated by its high international demand" (Phiri et al 2015). Pressure on mukula seems to have begun since at least 2010 in Zambia, with increased presence of Chinese traders. A series of harvest moratoriums and export bans have been imposed and lifted in attempts to control a trade that nevertheless continues to grow. In 2013, the Ministry of Lands, Natural Resources and Environmental Protection declared that foreigners should not be allowed in timber production and trade, which had

the effect of limiting Chinese companies to transit and export but did not reduce logging. In July 2014, mukula logging was banned and a taskforce was created to address its illegal logging. The ban was lifted in 2015, and the Ministry auctioned and sold thousands of confiscated logs to Chinese markets, even sending a Ministerial delegation to China. Then under political pressures, a new ban on harvesting and transit was imposed in January 2016, lifted then reimposed. As of June 2017, export of sawlogs not only of mukula but any species is banned, although the Minister of Lands, Natural Resources and Environmental Protection, in consultation with the Director of Forests, "may issue export permits for any timber if that is deemed necessary in the interest of the Republic" (CIFOR 2017). Zambian media has widely covered the government's bans and restrictions on mukula trade, as well as related scandals including police investigations and bribes to officials (e.g. Mwende 2017; Mulenga 2017). Chinese syndicates are reported to be financing harvest in Zambia, SE Angola and DRC, exporting 250-300 containers of logs monthly via Namibia (Mulenga 2017; Grobler 2017). CIFOR (2017) meanwhile estimated that national annual production of mukula in Zambia alone was 110,000m3 – between 1500 and 2000 containers of logs, affecting a forest area between 90 and 150 thousand hectares (assuming 7 stems/ha in high-stocked forests and 3-4 in low-stocked). Most of this is technically illegal and transported with bribes corresponding to US$16-27/log. They further estimate that this corresponds to US$3.2 million in lost revenues to the Zambbian government. Chinese customs data indicates a rapid increase in import of logs from Zambia, and CIFOR research indicates that the vast majority of those are mukula logs. Imports went from just over 35,000 m3 in 2015, to 65,000m3 in the first half of 2017 alone. A large portion of this is falsely declared as sawnwood in export documents: in 2016, Zambia declared only 3000 m3 of log exports (approximate value US $900,000) while CHinaa declaread log imports of about 61,000 m3 (approximate value US$87 million). (FAOSTAT and Chinese Customs, Cerutti 2017, Fig 14 and 15).

6.5 Actual or potential trade impacts

As described in Section 4, evidence from various countries suggests populations in sharp decline across *P. tinctorius*'s native range due to the surge international trade since 2010. If this trend is unabated, the impact will be not only on the ecosystems in which this unsustainable logging occurs but also on the local communities that rely on *P. tinctorius* for livestock fodder, honey production, firewood or other traditional uses.

7. Legal instruments

7.1 National

Note that this table is focused on national laws and regulatory measures. However, in many of the range states, traditional chiefs have significant authority over harvest rights in their villages or territories. Their decisions may not always be in line with the national government's policies.

Country	**Special measures for protection and management of the species**	**Export-related regulation**
Angola	None	Partial log export ban since 2017. Wood can only be exported upon presentation of "proof of deposit of the corresponding value in one of the country's banks or a credit note" (macauhub.mo 2018)
Burundi	None	None
DRC	One news article reports that the government in Kinshasa has restricted harvesting of mukula, but unconfirmed.	DRC has a Voluntary Partnership Agreement with the European Union.
Malawi	The Forest Regulations under the Malawi Forest Act lists indigenous fine-hardwood species, including closely related *Pterocarpus angolensis* as protected tree species.	Native hardwood log exports banned since 2008

Mozambique	None	Ban on export of unprocessed logs of precious and Class 1 species since 2007. Additional ban since 2017.
Tanzania	None	2002 *Forest Act regulations* require that sawn wood be issued a Grading Certificate and Export Licence from TFS. Log export ban since 2004 (TRAFFIC 2016)
Zambia	Forest Act No. 4 of 2015. A series of bans on commercial harvesting and trade since 2013. Moratorium on harvest and movement in place since 2017. The legal limit to harvest mukula is set (since 2013) at 30cm top diameter over-bark (it was 40 cm previously).	Log export ban (since 2017). However, Ministry of Lands, Natural Resources, and Environmental Protection, in consultation with Director of Forestry, can issue export permits for timber "deemed necessary in the interest of the Republic" (CIFOR 2017).

7.2 International

There are no international controls specifically related to *Pterocarpus tinctorius* in place. Imports to the USA, European Union and Australia are subject to national legislation in those jurisdictions prohibiting the import and/or sale of wood which was illegally sourced in the country of origin (Hoare, 2015). However, little or no African rosewood is traded to these countries. Chinese companies may choose to operate under Voluntary Guidelines called the Guide on Sustainable Overseas Forest Management and Utilization by Chinese Enterprises.

All range states of *P. tinctorius* are members of the the South African Development Community, which has had a Protocol on Forestry since 2002 that "aims to promote the development, conservation, sustainable management and utilisation of all types of forest and trees; trade in forest products and achieve effective protection of the environment, and safeguard the interests of both the present and future generations" (SADC 2018). In theory, members states are required to conduct and update national forest assessments, including data on uses of forest products, markets and commercial and industrial issues, to collaborate on a regional database and a market information system, and to exchange information concerning forest management and trade (TRAFFIC 2016).

8. Species management

8.1 Management measures

Management measures are defined by each range state's forest legislation, which define aspects including minimum cutting diameters and areas off-limits from harvest activity such as parks and other protected areas, riparian corridors, steep slopes etc. In practice these measures are unevenly enforced. In Zambia, for example, unlike most timber species, mukula logging is not generally linked to presence of a concession where regulations are more consistently applied; cutters report broad ignorance of the law, with only 4% reporting to CIFOR that they are aware of a legally established 50m buffer zone around rivers (Cerutti et al 2017). Zambia has banned harvest and/or export of *P. tinctorius* several different times over the previous 5 years in its attempts to reduce extraction rates. TRAFFIC states that logging and timber processing industry in eastern and southern Africa, including key range states (Tanzania, DRC, Zambia, Mozambique), "is largely unregulated and fragmented, which greatly challenges sustainability. Despite existing policies, laws, and international protocols, most forestry departments in the region do not routinely monitor the industry. Records of the number and types of enterprises, the levels of employment, species used, the volume of raw materials consumed and converted, exported or imported, and the revenue turnover and taxes paid by forestry companies are largely unavailable." (TRAFFIC 2016). CIFOR (2017) corroborates in Zambia that official monitoring of harvest activities appears to be nonexistent.

8.2 Population monitoring

No information available at this time.

8.3 Control measures

See section 7 above.

8.4 Captive breeding and artificial propagation

Pterocarpus tinctorius can be propagated by either seed or cuttings, and wildlings can also be collected for planting (Lemmens 2008). However there is little to no information available regarding artificial propagation for commercial purposes. Genetic exploration using tissue culture has not been done (Phiri et al 2015). At present, almost all harvest of this slow-growing species appears to be from wild sources.

8.5 Habitat conservation

There are significant protected areas within the *Pterocarpus tinctorius* range, although the degree of protection in practice varies by country and PA. In addition, the species is found in fairly intact regions of the DRC's large forest area (IUCN page).

8.6 Safeguards

No information available at this time.

9. Information on similar species

There exists some confusion as to whether the common name used by traders in Zambia, mukula, refers specifically to *P. tinctorius* or to a rosewood species complex (Cerrutti et al 2017; (Cunningham 2016). The same may be the case in other range states. These look-alike issues are a complexity of the rosewood trade in general and were the key factor in listing of the entire Dalbergia genus in Appendix II in 2016. *Pterocarpus angolensis* (common names: muka, kiaat, African teak) is a species of the miombio woodland savannas of Eastern and Southern Africa with similar morphological and timber characteristics to *P. tinctorius* (Lemmens 2008). This species is a keystone of domestic timber markets (TRAFFIC 2016). Populations are in decline due to timber over-exploitation, fires, drought and disease; poor regeneration, and a *Fusarium* fungus (locally called mukwa disease) that is killing adult individuals throughout the region (Mojeremane and Lumbile 2016). IUCN Red List has listed P. angolensis as near threatened. *Pterocarpus soyauxii* (common names: Padauk d'Afrique) is another highly sought-after timber with rosewood properties.

10. Consultations

Following the Resolution Conf. 8.21 (Rev. CoP 16), consistent efforts have been deployed, under a tight deadline, in order to ensure the consultation with the range States and other CITES Parties. The draft proposal for the listing of *P. tinctorius* on the Appendix II of CITES was shared by Malawi in its electronic and hard copy versions with the range States, namely Angola, Burundi, the Democratic Republic of Congo, Mozambique, Tanzania and Zambia. In the framework of this consultation process, Malawi formally requested the support from the range States. The model of the letter used intended to the focal point of the range States Management Authority is presented in Annex 1. No formal answer were formally received by Malawi. Several range States informally expressed their strong support for the inclusion of *P. tinctorius* on Appendix II.

11. Additional remarks

None.

12. References

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Annex 1 - Model of consultation letter sent by Malawi to the other range States

All correspondences to be addressed to

The Director,
Department of National Parks
and Wildlife,
P.O Box 30131,
Lilongwe 3, Malawi.

Tel: +265 999 915 411 E-mail: dpw@wildlifemw.net

REF. NO. DNPW8/8/8 6th December 2018

The Director General,

CITES Management Authority,

INECN, B.P. 56,

GITEGA,

BURUNDI.

Dear Sir /Madam,

CONSULTATION FOR THE INCLUSION OF *Pterocarpus tinctorius* IN CITES APPENDIX II

I would like to share with you the draft proposal attached for the listing of *Pterocarpus tinctorius* in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and kindly request your support for this important initiative.

This idea has come about because this important timber species has been under extreme pressure from international trade over the past years. The wild populations of our country have been adversely impacted, as it is the case in several other range States. In many cases, the international demand for this high-value timber species has triggered unsustainable and illegal cycles of exploitation, often perpetrated by well-articulated timber groups that take advantage of our borders to smuggle timber from one country to another, bypassing our laws and depleting our national resources.

This initiative aims primarily at restoring a positive sustainable international trade that will benefit to our economies and our populations.

I thank you in advance for sharing with us your comments or position no later than 14th December 2018 so that a strong regional proposal can be submitted to the CITES Secretariat by Malawi with as many co-proponents as possible by 21 December 2018. You are free to join us as co- proponent of the proposal.

I would like to apologise for not being able to share the same in French language. I hope you will understand our handicap.

Yours faithfully,

CHIZAMSOKA M. MANDA

FOR: DIRECTOR OF NATIONAL PARKS AND WILDLIFE

CITES MANAGEMENT AUTHORITY FOR MALAWI