The background of the entire page is a close-up photograph of a wood grain, showing concentric growth rings in shades of orange, red, and brown. The texture is highly detailed and organic.

TRAFFIC

August 2022

POLICIES ON
ROSEWOOD
IN CHINA

*Ke Zhang,
Hin Keong Chen*

TRAFFIC REPORT

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ABBREVIATIONS AND ACRONYMS

AC	CITES Animals Committee
ANAM	National Environment Authority of Panama
APEC	Asia-Pacific Economic Cooperation
BRI	Belt and Road Initiative
CAF	Chinese Academy of Forestry
CBD	Convention on Biological Diversity
CEC	China Environmental Certification
CFCC	China Forest Certification Council
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMAA	Customs Mutual Assistance Agreement
CNY	Chinese Yuan (Renminbi)
CoC	Chain of Custody
CoP	Conference of the Parties (to CITES)
CWPCA	China Wild Plant Conservation Association
CTWPDA	China Timber & Wood Products Distribution Association
DNA	Deoxyribonucleic acid
EGILAT	APEC Expert Group on Illegal Logging and Trade
EIA	Environmental Investigation Agency, an NGO
EU	European Union
FLEGT	Forest Law Enforcement Governance and Trade of the EU
FOCAC	Forum on China-Africa Cooperation
FSC	Forest Stewardship Council
GACC	General Administration of Customs
GGSC	Global Green Supply Chains
HCV	High Conservation Value
HS	Harmonized Commodity Description and Coding System for Customs Tariffs
ICCWC	International Consortium on Combating Wildlife Crime
INAFOR	Instituto Nacional Forestal of Nicaragua
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature
Lao PDR	Lao People's Democratic Republic
MA	CITES Management Authority

cont...

MEE	Ministry of Ecology and Environment of China
MFN	Most Favoured Nation
MNR	Ministry of Natural Resources
MOFCOM	Ministry of Commerce
MPS	Ministry of Public Security
NBSAP	National Biodiversity Strategy and Action Plan
NDF	CITES Non-Detriment Findings
NFGA	National Forestry and Grassland Administration of China
NGO	Non-Governmental Organisation
PC	CITES Plants Committee
PEFC	Programme for the Endorsement of Forest Certification
RILO	World Customs Organization's (WCO) Regional Intelligence Liaison Office
SA	CITES Scientific Authority
SATCM	State Administration of Traditional Chinese Medicine
SFA	State Forestry Administration of China (previously, now known as NFGA) Spp.species
SVLK	timber legality assurance system of Indonesia
TLVS	timber legality verification system
TWIX	Trade in Wildlife Information eXchange
UNODC	United Nations Office on Drugs and Crime
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value Added Tax
VPA	Voluntary Partnership Agreement of the EU
WCO	World Customs Organization
WIRI	Wood Industry Research Institute
WISE	World Wildlife Seizures database
WITIS	Wildlife Trade Information System
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

THE TERM HONGMU HAS BEEN USED FOR MORE THAN 600 YEARS IN CHINA

Rosewood is a general designation of a specific group of high-quality tropical hardwoods in the Chinese market and has been used as a term by Chinese people for more than 600 years. Some rosewood and tropical hardwood products manufactured with traditional Chinese furnishing and art carving techniques are called Hongmu (红木).

Rosewood sap DEZALB /Pixabay

According to China's National Hongmu Standard, developed in August 2000 and revised in 2017 (GB18107-2017) for Chinese rosewood industry stakeholders by the Chinese Academy of Forestry, Hongmu refers to the heartwood of 29 selected species in the *Pterocarpus* genus, *Dalbergia* genus, *Diospyros* genus, *Millettia* genus and *Senna siamea*, which have the density, structure, and colour that exemplifies the qualities and requirements of the Standard.

The rosewood industry in China has developed rapidly since 2000, in line with the rapid development of China's economy. The general trend of high rosewood trade volume and value continued until 2019, with some fluctuations in price evident across the period (Zhang et al., 2022¹). The China Hongmu Commission of the China Timber & Wood Products Distribution Association (CTWPDA) estimated that the overall value of China's rosewood industry would reach CNY200 billion (USD28 billion) in 2015, making it a leading segment of the wood and wood products industry in China (Mao, 2017²). In 2019, the overall value of China's rosewood industry fell slightly to CNY176 billion (USD24.6 billion) (CTWPDA, 2020³).

The rapid development of China's rosewood industry has had a detrimental effect on global rosewood populations. This has in turn been exacerbated by a lack of general planning for the sustainability of the rosewood industry, including by government bodies, a low level of concern for traceability and legality across the supply chain, and challenges in government enforcement against illegal rosewood exports and imports. All of these issues need to be addressed by stronger policy and law enforcement.

China has developed various legislation protecting its native rosewood species. However, as the world's largest rosewood consumer, China now also has a responsibility to other rosewood range countries. At the moment, China Customs and the Convention on International Trade in Endangered Species of Wild Fauna and Flora Management Authority (CITES MA) are only able to act on trade

violations relating to CITES-listed species (the genus *Dalbergia* and several *Pterocarpus* spp., as well as the *Diospyros* spp. populations of Madagascar). Non-CITES species are not given adequate protection by China, even when listed in the National Hongmu Standard (17 of 29 Hongmu species are listed under CITES Appendices I and II): amendments to Chinese domestic legislation are warranted.

This report demonstrates that while China's laws and regulations have contributed to the protection of its wild native rosewood resources, the legislative framework should be further strengthened. Existing laws and regulations do not impose high-enough penalties to deter illegal activities. In addition, China's current laws and regulations are very broad, making them difficult for law enforcement agencies to implement. Similar issues also apply to current industry standards and quality norms which guide the rosewood industry and provide technical guidance to enforcement agencies and consumers. Moreover, current relevant standards do not cover the whole supply chain which means product traceability cannot extend to and prove the legal source, especially from range countries.

To address these issues, this report provides the following recommendations for a range of key stakeholders in relation to ensuring the sustainable harvesting, trade, administration and utilisation of rosewood, with an emphasis on China as the global rosewood manufacturing and consumption centre.

- **Directed to government agencies**
- **Directed to companies operating in China's rosewood industry**
- **Directed to civil society for responsible rosewood consumption**
- **Directed to intergovernmental organisations**

SUMMARY OF RECOMMENDATIONS

DIRECTED TO GOVERNMENT AGENCIES

1. Increase scientific research on sustainable forest management, including support for determination of CITES Non-Detriment Findings.
2. Redefine the list of species in the National Hongmu Standard, clarifying CITES and non-CITES listed species.
3. Set standards for China's rosewood industry.
4. Consolidate national and international investment co-operation, incorporating environmental and conservation principles and sustainable species management.
5. Take a comprehensive, co-ordinated, and integrated approach to implementing China's rosewood policies, laws, regulations, and administrative guidelines.
6. Develop regulations for implementation of the new Forest Law. Develop implementation regulations and measures that support the enforcement of traceability systems in supply chains from range countries under China's Forest Law.
7. Strengthen co-operation between China Customs, CITES MA, and other enforcement agencies and their counterparts abroad, through the following actions:
 - a. Establish a dynamic surveillance and intelligence network for enforcement agencies;
 - b. Regularly use technologies such as big data analytics, cloud based computing, and secure storage to analyse data to assist enforcement agencies in enhancing their risk targeting and profiling tools;
 - c. Train frontline officers on timber species identification to contribute to investigation of seizures involving illegal timber and subsequent prosecution of cases;
 - d. Build the capacity of China Customs and other law enforcement agencies using various training tools from intergovernmental organisations and NGOs;
 - e. Chinese authorities should engage directly with rosewood resource owners and government agencies responsible for forest reserves, extraction/harvesting and trade in range countries, to ensure the burden of proof on demonstrating legality is recognised and adhered to, and to determine issues surrounding illegality.
8. Continue promoting the Guide on Sustainable Overseas Forest Management and Utilization by Chinese Enterprises. Chinese enterprises are expected to use the Guide to ensure their forestry operations are legal and adhere to the laws of the country of operation.

DIRECTED TO COMPANIES OPERATING IN CHINA'S ROSEWOOD INDUSTRY

1. **Address misconceptions and ignorance around the conservation of rosewood.**
2. **Conduct a comprehensive stockpile inventory of rosewood** held by timber industry associations in China in collaboration with the government.
3. **Pursue a voluntary certification of forest resources and chain-of-custody for rosewood**, as encouraged in Article 64 of the updated Forest Law.
4. **Strengthen industrial supervision and quality inspection systems for rosewood**, including the following:
 - a. The strict implementation of national standards for rosewood furniture products;
 - b. The standardisation of labels and price tags, ensuring they meet legal and quality requirements;
 - c. The rosewood industry, with support from government agencies, should carry out rosewood standardisation work for the industry and build a quality-based access system especially for authenticity and fair pricing for large whole-sale rosewood markets, implement special campaigns to crack down on illegal rosewood products; thereby contributing to the elimination of illegal rosewood trade and illegal logging of rosewood;
 - d. Establish industry supervision at the timber association level, to ensure a legal and sustainable supply via independent audits of traceability systems.

DIRECTED TO CIVIL SOCIETY FOR RESPONSIBLE ROSEWOOD CONSUMPTION

1. **Promote consumer awareness.** Encourage the strong interest already found among rosewood consumers in the legality and sustainability status of rosewood used in final retail products and their willingness to pay a premium for these assurances.
2. **Advocate awareness raising and provide capacity-building support for rosewood industry players.** Awareness raising initiatives should be delivered to Chinese consumers, to engage them in the start of a behaviour change journey and stimulate desire for proven sustainably sourced rosewood products for which they would be willing to pay a premium. This will in turn put pressure on private sector-wholesalers and retailers to supply sustainable rosewood products.

DIRECTED TO CIVIL SOCIETY FOR RESPONSIBLE ROSEWOOD CONSUMPTION

1. The **CITES Secretariat**, in collaboration with **CITES Scientific Authorities of range countries**, should gather scientific evidence to support new listings of rosewood species not currently listed under CITES.
2. The **World Customs Organization (WCO)**, **United Nations Office on Drugs and Crime (UNODC)**, **INTERPOL**, and **World Bank** should collaborate regularly under the International Consortium to Combat Wildlife Crime (ICWC) to conduct interagency law enforcement operations against illegal logging and timber trafficking.
3. The **International Tropical Timber Organization (ITTO)** should be encouraged to focus on data gathering and research and analysis on rosewood species to support conservation, sustainable management, and legal trade of these products for their members.

PREFACE

HONGMU FURNITURE AND HANDICRAFTS ARE PART OF A CULTURAL HERITAGE

"Hongmu" in Chinese, is a general designation of a specific group of high-quality tropical hardwood species. In China, it is not comparable to the term of Hongmu that began to be used by Chinese people during the Ming Dynasty, more than 600 years ago. China has a national standard to classify Hongmu, called the National Hongmu Standard. Fifteen Hongmu species are from the *Dalbergia* genus and fourteen species from other rosewood genera; noting that the genus of *Dalbergia* itself has over 304 accepted species names and 242 synonyms (Winfield *et al.*, 2016) in the rosewood scale. Other genera on the Standard include *Pterocarpus* (six species), *Diospyros* (five species), *Millettia* (2 species) and *Senna siamea*.

Hongmu furniture and handicrafts are part of a cultural heritage that continues to evolve. The industry has grown along with the development of China's market economy, including increased individual purchasing power, shifting social norms, and the gradual improvement of people's living standards.

The rapid development of China's rosewood industry has, however, also given rise to many global threats to rosewood populations. This has in turn been exacerbated by an unregulated market structure, the lack of clear industry strategy, low levels of concern regarding sustainability and legality throughout the supply chain; and challenges to interagency co-ordination and co-operation at the national and international levels.

Rosewood end-products mainly target segments of the Chinese domestic market without significant export potential, which may impede the transfer of progressive approaches and tools towards legality and sustainability measures from other developed markets. These include codes of conduct, chain-of-custody measures, and independent auditing, transparency and traceability norms, which

have not yet been adopted by the rosewood industry in China.

The period from 2003 to 2013 was known as the "golden decade" for China's rosewood industry development, with a ten-fold price increase observed during that time. However, this led to the overexploitation of China's domestic rosewood resources in Hainan, Guangdong, and Yunnan provinces. This created a demand to seek alternative species from tropical forest regions around the world. Illegal logging and deforestation occurred nationally, causing poor water quality, soil erosion, and biodiversity loss (Ming, 2015), while illegal logging and timber trafficking have had a devastating impact on valuable tropical forest resources worldwide. As the world's largest importer and consumer of rosewood products, China plays a vital role in redressing these issues and combating illegal rosewood harvest and trade.

In line with the evolution of its market economy, China has acceded to relevant international conventions. These include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Party since 1981) and the Convention on Biological Diversity (CBD) (Party since 1993). It has also joined intergovernmental organisations (International Union for Conservation of Nature (IUCN), member since 1996), International Tropical Timber Organization (ITTO) (Party since 1983) and formulated national policies such as the Regulations of the People's Republic of China on Wild Plants Protection (1996), the Regulations of the People's Republic of China on Nature Reserves (1994), and the Regulations of the People's Republic of China on the Administration of Import and Export of Endangered Wild Animals and Plants (2006), and has published the List of China National Key Protected Wild Plants. Most national legislation has no focus on non-native rosewood species.

China's Forest Law revisions (2019) came into force on 1st July 2020. However, there is only one new article related to the illegal import of timber. Nevertheless, this still provides a window of opportunity to develop relevant forestry regulations and administrative measures to ensure the legality of imported timber.

More than 4,000 of China's wild plants, including timber species, are threatened, of which more than 1,000 species are on the verge of extinction. Threatened tree species account for 15–20% of the whole national protected species inventory. China's three indigenous Hongmu species are included in the "List of China's National Key Protected Wild Plants". The China Wild Plant Conservation Association (CWPCA) has been contacting relevant ministries and scientific research institutions actively to promote the publication of the second iteration of this List, which is expected to enlarge the scale of protected rosewood species including those introduced to China from other countries.

Illegal logging and the illegal timber trade, including that involving rosewood species, are environmental crimes that have negative impacts on biodiversity and sustainable development. This report compiles an overview of policies, laws and regulations related to the rosewood trade in China and looks for ways to improve that policy environment, with a focus on legality and sustainability of the rosewood industry within China and supply chains from range countries. To understand issues in China better, relevant laws and regulations were reviewed, and studies on illegal logging and related trade were selectively summarised.

This report complements two other studies conducted by TRAFFIC: "Assessment of the Rosewood Market in China" and "Rosewood Products and Consumption in China". The three documents form the most comprehensive assessment of the rosewood trade in China to date and will underpin a "Responsible Consumption" campaign to be delivered to industry stakeholders and public consumers under the EU-supported China's

Champions of Change project.

The results of this policy review are intended to motivate Chinese rosewood-based enterprises and stakeholders to implement sustainable use policies for rosewood resources; introduce international best practices for sustainable management of timber trade; and implement commercial best practices for sustainable use of wood-based resources.

It is hoped this report will also motivate participation in standards and policy development to support sustainable resource management and legal timber trade. The report will be shared with the government's legal supervision and policy promotion units. The results of the analysis on the laws and regulations will focus on the roles and responsibilities of the relevant government and industry stakeholders, and the recommendations will target areas where gaps and weaknesses were identified within the current rosewood governance structure in China. The uptake of the recommendations should support the sustainable development of the rosewood industry and markets in China.

RESEARCH METHODOLOGY

THE FOLLOWING RESEARCH METHODS WERE USED IN THE PREPARATION OF THIS REPORT:

- 1. Compiling existing policies, laws, regulations, and standards relevant to rosewood trade into and within China.** Desk research was undertaken based on documents from official websites of international organisations, national governments, relevant ministries, and industry associations. The authors also collected, sorted, and researched existing policies, laws, regulations and standards related to the current harvesting, cultivation, and resource management of the timber species at the international level and at China's national, provincial and municipal levels.
- 2. Analysing policies, laws, and regulations and standards in China.** A gap analysis was carried out on the development of policies and regulations. Through tabular comparison, gaps between different policies and regulations regarding concepts, identification of objects and subjects of protection, protective measures, and reward-and-punishment mechanisms were analysed. Through on-site surveys, interviews with regulating agencies, associations, enterprises, and forestry and rosewood experts, the execution of current laws and regulations were examined.
- 3. Reviewing existing laws, regulations and industrial policies.** This was undertaken following a thorough check of official websites of the relevant government authorities together with a review of a large amount of existing literature to assess collection, administration and utilisation of tree, medicinal plant, timber, and rosewood resources, including 12 national laws, 10 administrative regulations, 29 ministerial regulations, 57 national industrial policies, 21 industrial plans or planning outlines, five standard specifications, eight specific protection lists.
- 4. Preparing recommendations based on the findings.** Based on the findings from 1–3 inclusive, recommendations on policies, laws, regulations, and standards were drafted and then finalised through a comprehensive process of expert interviews and workshop discussions.



Dalbergia oliveri Chinchang sawn wood, photographed in Zhangjiagang Bigland City rosewood market, 30th August 2018. © TRAFFIC

HONGMU RESOURCES AND PROTECTION

Before the year 2000, there was not a clear, standardised, and scientific definition for Hongmu in China, even though Hongmu products had become a symbol of luxury (Ming, 2015). According to the National Hongmu Standard developed in August 2000 and revised in 2017 (GB18107-2017) for Chinese rosewood industry stakeholders by the Chinese Academy of Forestry, Hongmu refers to the heartwood of selected species in the *Pterocarpus* genus, *Dalbergia* genus, *Diospyros* genus, *Millettia* genus and *Senna siamea*, whose density, structure and colour meet the requirements of the Standard. In addition, the heartwood of other species excluded in the above five genera, whose density, structure, and colour are in accordance with this Standard, are also classified as Hongmu but are not listed under the current Standard. The definition gives the flexibility to enlarge the species list when the Standard is later revised, allowing the rosewood industry to use alternative timber species (CAF, 2000).

The rosewood industry covers the whole supply chain from harvesting in and outside of China to end-consumption of rosewood products, mainly in China. The estimated value of this industry was almost CNY150 billion (USD25 billion) in 2013 with nearly 1 million associated jobs in China. The rosewood industry had become the shining star in China's timber products industry (CTWPDA, 2015). In 2018, global imports of tropical hardwood logs totalled 18 million cubic meters, valued at more than USD3 billion. Some 82% of the value of this import demand came from industries based in China. However, illegality is a major concern. The United Nations Office on Drugs and Crime (UNODC) reported that in the World Wildlife Seizures (World WISE) database, rosewood seizures accounted for 31.7% of all types of wildlife seizures between 2014 and 2018, making rosewood the most illegally traded wildlife product type (UNODC, 2020).

The main international agreements guiding the protection, administration and utilisation of plant resources are the CBD and CITES. CITES is an intergovernmental agreement that entered into force in 1975. It aims to ensure the survival of

listed species from being endangered through over utilization by managing and controlling the international trade of the listed wild fauna and flora. In recent years, the international trade of timber has gathered attention of the CITES Parties. China is a party to CITES and one of the main destination countries for the trade of endangered tropical timber.

Long-term operational strategies such as the "Global Strategy for Plant Conservation" have also been formulated and countries are encouraged to develop National Biodiversity Strategy and Action Plans (NBSAPs). Under China's NBSAP, a "Chinese Strategy for Plant Conservation" 2021–2030 was developed. There is no specific native rosewood protection section in the Strategy. For native rosewood species in the List of China's National Key Protected Wild Plants, there is a special conservation plan for the species, but there is no specific action point for imported timber except for CITES-listed timber species (Chen Guoke et al., 2019). China's legislative framework on biodiversity conservation is still evolving, and in general the protection of flora lags behind that of fauna.

Beyond those in China, actions taken in range countries linked to Chinese investment or timber trade sourcing are not widely discussed amongst Chinese stakeholders, such as central government authorities and legislative agencies. The Belt and Road Initiative (BRI), a global infrastructure development strategy adopted by the Chinese government in 2013, aims to enhance regional connectivity. However, the BRI has the potential to provide a vehicle through which criminals may have more streamlined opportunities to move illegal timber products including rosewood into China as it does not include adequate safeguards for ecological and conservation issues and challenges in range countries. Besides the BRI, the Forum on China-Africa Cooperation (FOCAC), as the multi-lateral dialogue platform with a clear action plan, provides additional opportunity for regulating wildlife trade issues, including illicit trade in rosewood.

The FOCAC Beijing Action Plan 2019–2021 has

significant content on wildlife and forestry, as well as corruption and transnational crime, all of which are very relevant to combatting illegality in the natural resource sector and promoting sustainable rosewood trade

between China and Africa. The Action Plan also affords relevant government agencies in Africa, such as law enforcement agencies and Customs, the opportunity to work closely with their counterparts in China.

HONGMU SPECIES IN CITES

Species of the genera *Dalbergia* and *Pterocarpus* provide the main raw materials for the rosewood industry in China. These species are now overexploited and this has been recognised by the international community as causing severe damage and depletion to multiple fragile forest ecosystems and environmental degradation. Some species face extinction as a result.

At the 16th Conference of the Parties to CITES (CITES CoP16) in Bangkok, March 2013, Parties voted to include 247 tree species in the Convention's Appendices. Of these, six rosewood species were added to Appendix II, and one to Appendix I. In 2016, at CITES CoP17 held in Johannesburg, Parties voted to add

Pterocarpus erinaceus and all *Dalbergia* spp. to Appendix II, retaining *D. nigra* in Appendix I. *Pterocarpus santalinus* was listed in Appendix II in 1995 at CITES CoP14.

At CITES CoP18 in 2019 in Geneva, the Parties also adopted Decisions 18.234–18.237 on rosewood tree species. As one of the most important substitute rosewood species of *Pterocarpus santalinus* in recent years, *P. tinctorius* was voted by the Parties to be included in Appendix II during CITES CoP18. Although *P. tinctorius* is not a Hongmu species in the National Hongmu Standard, the Chinese Rosewood industry has initiated some informal discussions around the listing of all *Pterocarpus* in the CITES Appendices¹.

HONGMU RESOURCES AND PROTECTION IN CHINA

Hongmu has been sought after in China since the Ming Dynasty. Rosewood is a tropical timber mainly growing in the "Nanyang" region (Southeast Asia and South Asia), Africa, and Latin America. Although historically China was able to meet demand for rosewood through domestic resources, currently, almost all the raw materials needed for China's rosewood industry depend on imports. With the development of China's economy, improvement of people's living standards, and a return to revering traditional culture, rosewood has been increasingly valued by consumers, causing a boom in the market. Over the past two decades consumption has caused an overall resource shortage across a range of rosewood species.

Among the 29 species in five genera in the National Hongmu Standard (GB18107-2017), only five species are distributed in China;

Dalbergia odorifera (Hainan Huanghuali), *D. fusca* Pierre, *Diospyros philippinensis* (Philippine Blackwood), *Senna siamea* *Pterocarpus indicus*. Out of the above five species, *Dalbergia odorifera*, *D. fusca*, *Diospyros philippinensis*, and *Senna siamea* are native species in China while and *Pterocarpus indicus* are introduced species (CAF, 2017). All the other rosewood species classified as Hongmu are distributed in tropical and semi-tropical regions outside China.

At present, China has introduced and created plantations of *Senna siamea* and *Pterocarpus indicus* mainly in Yunnan, Guangdong, Hainan, Guangxi, and Fujian. Additional information on the Hongmu species in China and the rest of the world can be found in the Assessment of the Rosewood Market in China report in preparation by TRAFFIC (Zhang et al., 2022)

¹ Species listed in CITES Appendix I are prohibited from commercial international trade; species listed in Appendix II can only be traded internationally with import, export or re-export permits, and countries are encouraged to conduct Non-Detriment Findings (NDF) to determine if the trade is detrimental to the survival of the species in the wild (See CITES Resolution Conf. 13.2 (Rev. CoP14), 16.3, Standing Committee 57th meeting on indicators for NDF, Conf. 9.21 (Rev. CoP13), Conf. 16.7, Animals Committee/Plants committee AC26/PC20 Doc. 8.4; NDFs have not been conducted for many rosewood species. Species listed in Appendix III can only be traded internationally with import or export certificates and certificates of origin.

LEGISLATION RELEVANT TO ROSEWOOD IN CHINA

Representative national laws and regulations that govern forest and timber trade, rosewood resources protection, as well as rosewood products distribution under the Constitution of the People's Republic of China include:

TABLE 1

China's law and regulations on rosewood harvesting and trade

POLICY CATEGORY	POLICIES ON ROSEWOOD HARVESTING AND TRADE (SHORT NAME)	YEAR OF ISSUE	GOVERNANCE BODY
Law	Forestry Law of the People's Republic of China (Forest Law)	2019 (3rd amendment, July 2020 issue)	NFGA
Law	Criminal Law of the People's Republic of China (Criminal Law)	2017 (amendment)	MPS
Law	Customs Law of the People's Republic of China (Customs Law)	2017 (amendment)	GACC
Law	Environmental Protection Law of the People's Republic of China (Environmental Protection Law)	2014 (amendment)	MEE
Law	Law of the People's Republic of China on Soil and Water Conservation (Soil and Water Conservation Law)	2010 (amendment)	MNR
Regulation	Regulation on Protection of Wild Medicinal Resources of China (Wild Medicinal Resource Regulation)	1987	NFGA/ SATCM
Regulation	Regulations of the People's Republic of China on Wild Plants Protection (Wild Plants Protection Regulation)	2017 (amendment)	NFGA
Regulation	Regulations of the People's Republic of China on the Administration of Import and Export of Endangered Wild Animals and Plants (Import and Export of Endangered Species Regulation)	2018 (amendment)	NFGA/ CITES MA
Regulation	Regulation on the Implementation of the Forestry Law of the People's Republic of China (Forest Regulation)	2018 (amendment)	NFGA
Regulation	Regulations of the People's Republic of China on Nature Reserves (Nature Reserves Regulation)	2017 (amendment)	MEE/MNR
Regulation	Regulations of the People's Republic of China on Restoring Farmland to Forest (Farmland to Forest Regulation)	2016 (amendment)	NFGA
Regulation	Regulations of the People's Republic of China on the Origin of Import and Export Goods (Origin Good Regulation)	2002	MOFCOM

NFGA: National Forestry and Grassland Administration | MPS: Ministry of Public Security | GACC: General Administration of Customs | MEE: Ministry of Ecology and Environment | MNR: Ministry of Natural Resources | ATCM: State Administration of Traditional Chinese Medicine CITES MA: CITES Management Authority | MOFCOM: Ministry of Commerce

All these legislative instruments manage, protect, and enforce the conservation and use of domestic rosewood species, while the last regulation in Table 1 focuses on the import and export of goods, including rosewood raw materials and products.

At the national level, the Chinese government has enacted a series of laws, regulations and industrial policies aimed at protecting and utilising native wild plant/timber resources—including natural timber and rosewood resources—

sustainably. There is support from the government for the domestication of wild species through a move to develop plantations, and the regulation of the production, circulation, and utilisation of wood products in the forest sector.

Provincial and municipal governments have also developed and executed local laws, regulations, and industrial policies that have had a significant impact on domestic utilisation of timber resources and have promoted the rapid

development of timber plantations in China. It will take decades before these timber plantations are commercially viable, even though the first batch of rosewood planted before 2000 has been harvested in recent years. However, the key challenge for China is still related to international timber trade, including rosewood imports from countries with various restrictions and prohibitions on timber and rosewood exports.

In China, there are several laws to regulate logging directly and indirectly, but Regulations of the People's Republic of China on Wild Plants Protection of (2017) is the only species-based regulation for flora. It is applied in conjunction with the List of Key National Protected Wild Plants (1999), although neither the regulation nor the list has enforcement application and guides the technical administration for the listed species only.

The National Rare Tree Species List of the People's Republic of China (1992) includes non-wild threatened species, but it does not include any regulatory measures for the species. Although there have been many lists compiled between 1992 and 2019, the Regulations and List above are still the only domestic species-based reference points for all flora-related regulations and laws for measurement of punishment—damaging and/or illegal harvesting of species listed may face more severe punishment. Except for the Criminal Law of the People's Republic of China (2017), other laws only state civil sanction and administrative sanctions. Therefore, the Criminal Law is the only reference for criminal penalties, when the damage meets the threshold specified in other laws.

The Forest Law of the People's Republic of China is the law with the most direct relevance to timber logging. On 28th December 2019, the Forest Law of the People's Republic of China (second amendment) was promulgated. In China, the State owns all the land, while organisations and individuals can acquire use-rights. The law clarifies how different forest types can be used and stipulates requirements for legal harvesting. Harvesting or disturbing the living environment of species listed in the List of Key National Protected Wild Plants or National Rare Tree Species List of the People's

Republic of China is prohibited except in plantations or experimental fields. Harvesting trees in natural reserves is also prohibited unless it is to mitigate natural disasters such as forest fires or stop invasive species. Other types of forest have strict regulations on harvesting, i.e. public forest, ecological forest, and nursery.

Commercial forests (mainly plantations) can be harvested to an annual quota following specific cutting regulations. The quota is permitted with a logging licence issued by the local Forest Bureau. The quota system does not apply to bamboo forests or to sporadic cutting near country houses and farmland.

The logging and trade of domestic native rosewood species is considered illegal activities under this legislative and regulatory framework, because all native rosewood species are listed in the List of Key National Protected Wild Plants/National Rare Tree Species List of the People's Republic of China. The threshold for defining "break the law" under these Lists is 5 cubic metres of timber volume or 200 felled saplings. If illegal logging takes place in strictly regulated forests (i.e. national reserves), the action will be considered a violation of the Criminal Law. In addition to financial penalties, the person conducting the harvest may then be punished by a 3–7-year fixed-term imprisonment, detention, or put under surveillance. When the crime takes place in a natural reserve or other strictly regulated forests, the incarceration time may be longer than 7 years. Illegal acquisition and transportation of timber known to be illegal/over-logged may be subject to similar punishment.

Forgery, alteration, sale, and lease of logging permits is punished through fines rather than through a prison term (criminally). For species listed in the two Lists above, illegal logging or damage is penalised by a prison sentence, detention, or put under surveillance, plus forfeiture of ill-gotten gains. The criteria for a crime penalised by imprisonment include cutting down two trees, causing the death of three trees, or obtaining a timber volume of more than 2 cubic metres. The perpetrator may be sentenced to 3–7 years in jail if they exceed this threshold, otherwise, their

sentence is no more than 3 years. Illegally acquiring, transporting, processing, or selling these species and the products thereof may be penalised through a similar sentence to illegal logging. The second amendment of the Forest Law removed the requirement for a transportation licence, however, which leads to lower levels of monitoring and enforcement along transportation routes, and more difficulty in determining what is considered as illegal transportation.

Since harvesting of trees from natural forests is prohibited, illegal logging of rosewood native to China is covered under an adequate legal framework. For imported rosewood, however,

ROSEWOOD IMPLEMENTATION MEASURES IN CHINA

A series of implementation measures under these laws and regulations have been developed to guide law enforcement agencies and administration bodies. These include ministerial administrative regulations covering rosewood resource protection and utilisation, such as the Administrative Measures for Nature Reserves of Forestry and Wild Animals, the Administrative Measures for Import and Export Certificates of Wild Animals and Plants, the Revised Administrative Measures for Forest Harvesting, and the Administrative Measures for Forestry Management and Protection of the Natural Forest Protection Project. The Administration of Import and Export of Endangered Wild Animals and Plants is supervised by the CITES MA of China, the Wildlife Conservation Department of the National Forestry and Grassland Administration (NFGA), and technically supported by the CITES Scientific Authority (SA), and the Zoology Institute of the Chinese Academy of Sciences.

In addition to the administrative measures, various notifications have been developed by relevant authorities as immediate policies for some emergent issues. The enforcement of these notifications falls under the parent laws and regulations. These include the Notice on Strengthening the Protection and Administration of Biological Species Resources, the Notice on Strengthening the Protection and Administration of Forest

only the Regulations of the People's Republic of China on the Origin of Import and Export Goods (Origin Good Regulation) applies in addition to CITES.

The 2016 NFGA statistics show there were 196,579 cases involving violations of the Forest Law. Of these, 49,648 (25.3% of total cases) involved illegal purchase and transportation, 2,673 (16.6%) involved illegal logging, and 4,989 (2.5%) involved illegal processing. Timber-related cases declined 11.2% from 2015 (NFGA, 2017). However, the number of illegal import and export timber cases were not available from the authorities.

Resources, the Opinions on Accelerating the Construction of Ecological Civilization, the Opinions on Tightening Administration of the Natural Forest Harvesting, the Guidelines on Promoting Sustainable Development of Wild Animals and Plants, the Opinions on Further Strengthening the Administration of Forest Resources, the Guidelines on Strengthening the Development of Industries for Wild Plants Cultivation and Utilization, and the Opinions on Further Strengthening the Ecological Protection Work.

The implementation of these laws and regulations in China is ultimately guided by the species listed in the CITES Appendices (2013), the List of Key National Protected Wild Plants (first rendition), the List of Protected New Varieties of Plant in China (first, second, third, fourth, and fifth editions), the Commodity Catalogue of Import and Export on Wild Fauna and Flora, and the Catalogue of Major Timber Species of the People's Republic of China (first iteration). Native rosewood is listed and covered by these laws, but for non-native rosewood, only a CITES listing allows for the monitoring and enforcement action to be taken by China Customs and CITES MA.

TABLE 2

China's policies towards rosewood harvesting and trade

POLICY CATEGORY	POLICIES TOWARDS ROSEWOOD HARVESTING AND TRADE	RELATED TO
Administrative Measures	Administrative Measures for Nature Reserves of Forestry and Wild Animals	Nature Reserves Regulation
Administrative Measures	Administrative Measures for Import and Export Certificates of Wild Animals and Plants	Import and Export of Endangered Species Regulation/Origin of Goods Regulation
Administrative Measures	Revised Administrative Measures for Forest Harvesting	Forest Law/Forest Regulation
Administrative Measures	Administrative Measures for Forestry Management and Protection of the Natural Forest Protection Project	Forest Law/Forest Regulation
Administrative Measures	Notice on Strengthening the Protection and Administration of Biological Species Resources	Environmental Protection Law/Wild Plants Protection Regulation
Notice	Notice on Strengthening the Protection and Administration of Forest Resources	Forest Law/Soil and Water Conservation Law/Farmland to Forest Regulation
Opinions	Opinions on Accelerating the Construction of Ecological Civilization	Environmental Protection Law
Opinions	Opinions About Tightening Administration of the Natural Forest Harvesting	Forest Law/Forest Regulation
Guidelines	Guidelines on Promoting Sustainable Development of Wild Animals and Plants	Wild Medicinal Resource Regulation
Opinions	Opinions on Further Strengthening the Administration of Forest Resources	Forest Law/Forest Regulation/Soil and Water Conservation Law
Guidelines	Guidelines on Strengthening the Development of Industries for Wild Plants Cultivation and Utilization	Forest Law/Forest Regulation/Farmland to Forest Regulation
Opinions	Opinions on Further Strengthening the Ecological Protection Work.	Environmental Protection Law
Guidelines	Overseas Forest Sustainable Management and Utilization Guidelines for Chinese Enterprises	Customs Law/Import and Export of Endangered Species Regulation/Origin of Goods Regulation

ROSEWOOD RESOURCES IN SOUTH AND SOUTHEAST ASIA

The Nanyang region is China's most important rosewood import source, from countries including (in no particular order) Cambodia, Indonesia, Lao People's Democratic Republic (PDR), Malaysia, Myanmar, Philippines, Thailand, and Viet Nam in Southeast Asia, as well as South Asia. These include range countries for 16 Hongmu species: *Dalbergia odorifera*, *D. cochinchinensis*, *D. bariensis*, *D. oliveri*, *D. cultrata*, *D. fusca* Pierre, *D. latifolia*, *Pterocarpus macrocarpus*, *P. santalinus*, *P. dalbergioides* Benth, *P. marsupium*, *Diospyros ebenum*, *D. pilosanthera*, *D. celebica*, *D. philippinensis*, and *Millettia leucantha*.

According to statistics, the rosewood boom years were 2003–2013. After a short-term market adjustment from 2014 to 2015,

a second phase of the boom occurred in 2016, with values climbing to a peak in 2017 (UNODC, 2020). From 2003 to 2013, China imported 3.5 million cubic metres of rosewood. Nearly half of that amount, 1.67 million cubic metres (worth USD3 billion), was imported from countries in the lower Mekong region (encompassing Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam). Since 2014, exploitation has shifted towards African rosewood species; however, the lower Mekong countries still represent an important percentage of rosewood imports into China, especially for some endemic species (Hoare, 2015). To mitigate a rapid deforestation process, Mekong countries have issued logging or export bans and placed some rosewood species under total protection.

TABLE 3

Policies of range countries towards rosewood harvesting and trade
(Forest Trends, 2020; UNEP-WCMC, 2015; UNEP-WCMC, 2018; Winfield, et al., 2016)

COUNTRY	POLICIES TOWARDS ROSEWOOD HARVESTING AND TRADE
Madagascar	Decree N. 141/2010 prohibits the export of rosewood and other precious timbers, with validation for 2 to 5 years, and the Ministry of Environment also issued a decree prohibiting illegal rosewood trade.
India	The export of <i>Pterocarpus santalinus</i> is prohibited with exceptions under special circumstances (Customs Law, 1962, and Wildlife Conservation Law, 1972).
Viet Nam	Logging and export of wild <i>Dalbergia cochinchinensis</i> are banned. Viet Nam banned commercial exploitation and export of timber in 2006 and has imposed a 200% tax on rosewood since May 2013. Viet Nam has banned logging in natural forests in general and has an export ban for logs and sawn wood from natural forests. Commercial harvesting of all <i>Dalbergia</i> spp. and <i>Pterocarpus</i> spp. found in Viet Nam is prohibited, and export of specific protected species products such as <i>Diospyros salletii</i> , <i>Dalbergia tonkinensis</i> , <i>D. cochinchinensis</i> , <i>D. oliveri</i> , <i>D. bariensis</i> , <i>D. mammosa</i> and <i>Pterocarpus macrocarpus</i> has also been banned since 2006.
Thailand	Logging and export of wild <i>D. cochinchinensis</i> is banned. Logging from natural forests has been prohibited since 1989. <i>D. cochinchinensis</i> was listed as a restricted timber species in 2017, meaning logging and exports are allowed from private land with permits.
Cambodia	Logging and export of wild <i>D. cochinchinensis</i> is banned. It is prohibited from being collected, stored, and processed for domestic use in 2003; Prohibited export of timber and circulation in 2013 (when included in CITES Appendix II). <i>D. oliveri</i> and <i>P. macrocarpus</i> are also protected under the Cambodian Forestry Law. Cambodia has also banned the export of all timber to Viet Nam since 2016.
Lao PDR	Logging and export of wild <i>D. cochinchinensis</i> is banned. Prohibited harvesting of domestic trees in 2008; prohibited the exploitation, trade, and export of timber in 2011; commercial trade of timber suspended in 2016; prohibited exportation of all unfinished products in 2019 (including timbers from plantations; including tables, uncarved chairs, and planks).
Central and South American countries	There are strict controls over the logging and export of <i>Dalbergia retusa</i> , <i>D. granadillo</i> , and <i>D. stevensonii</i> . Nicaragua: Only could log in authorised areas + management plan + logging permit (annual quota), which should be issued by the Instituto Nacional Forestal (INAFOR) Panama: Suspended the issue of forestry permits for <i>D. retusa</i> and <i>D. dariensis</i> and banned the commercial sale of all parts of trees except seeds and seedlings, handicrafts made from their timber, or timber confiscated by the Ministry of the Environment before the issuance of the resolution in 2014. Plantations formally enrolled with the National Environment Authority (ANAM) may still apply for new permits. Honduras: Trade in <i>D. retusa</i> and <i>D. stevensonii</i> is under CITES control (CoP16 Prop.61). El Salvador: <i>D. granadillo</i> is not listed as a protected species. Mexico: <i>D. granadillo</i> is listed as Endangered by Mexico (PC22 Doc. 22.4). No official protection of <i>D. stevensonii</i> . Guatemala: <i>D. stevensonii</i> is listed in the official list of threatened species. Belize: Moratorium on harvesting and export of <i>D. stevensonii</i> since 2012.
Gabon	Log exports have been banned since January 2010.
Ghana	Rosewood exports have been banned since January 2014.
Myanmar	Log exports have been banned since April 2014.

In April 2014, the Myanmar government banned the export of logs through terrestrial border points to China, which means technically logs of *Dalbergia oliveri* and *Pterocarpus macrocarpus* can now only be exported through the port of Yangon. It is estimated that only 1.69 million cubic metres of *Dalbergia oliveri* and 1.41 million cubic metres of *Pterocarpus macrocarpus* remained in Myanmar's forests in 2013 and if the imports of these two Hongmu species by China continues at the rate seen that year, Myanmar's rosewood populations can only last another 13 years (Ming, 2015). After years of overharvesting, only 100,000 standing trees of *Dalbergia cochinchinensis*, remain in Thailand, most of these in the country's World Heritage Sites (Ming, 2015). Lao PDR reports having no more mature *D. cochinchinensis* trees, while Viet Nam announced in 2014 that they had no more *D. cochinchinensis* trees left in the wild. Cambodia only has a few standing *D. cochinchinensis* trees in nature reserves. From 2005 to 2012, the market price of *D. cochinchinensis*, grew 15-fold, to USD15,000 per cubic metre (Huang et al., 2013), all of which was sourced from the lower Mekong region in Southeast Asia.

Some of these countries have listed rosewood species under relevant domestic protection legislation or put in restrictions around harvest and trade (Winfield, et al., 2016, Forest Trends, 2020) (see Table 3).

The export of *Dalbergia latifolia* logs and sawn timber are banned under the Indian Forest Act. The endemic Red Sanders *Pterocarpus santalinus* is prohibited from being exported from India in any form, raw or processed, although Red Sanders products such as extracts, dyes, musical instruments, and parts of musical instruments, if made from a legally sourced wood since 2012 may be exported but only with an appropriate permit.

Indonesia has banned the export of non-plantation logs since 2001. As part of the European Union (EU)-Indonesia Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreement (VPA) to export legal timber, Indonesia has finalised its VPA timber products legality traceability system. Indonesia began issuing a FLEGT

licence called the timber legality assurance system (Sistem Verifikasi Legalitas Kayu (SVLK) in Indonesian) for wood exports from the country for most of the relevant rosewood products in trade in 2016.

Peninsular Malaysia and the state of Sabah in Malaysia have banned the export of logs since 1985 and 2018, respectively. Sarawak, Malaysia, also has a log export quota restriction.

Myanmar has banned the export of round logs, boule-cut logs, and baulk squares since 1st April 2014. *Pterocarpus macrocarpus* and *Dalbergia oliveri* are classified as "reserved" species which require authorisation from the Ministry of Natural Resources and Environmental Conservation for harvesting and trade.

In the Philippines, collection, and trade of *Pterocarpus indicus* requires an official permit from the Department of Environment and Natural Resources. The Philippines also has had a ban on exports of sawn wood from natural forests in place since 1989, a ban on log exports from natural forests since 1975, and all timber from natural forests since 2011.

Thailand has banned logging of natural forests, which means *Dalbergia* spp. and *Pterocarpus* spp. found in Thailand cannot be harvested for export.

The information compiled on countries with restrictions on rosewood export is shown in Table 3 below. China has not been involved in any bilateral or multilateral co-operation for timber trade protection aside from the implementation of CITES. China requires a CITES export permit prior to the release of any CITES-listed rosewood species product into China. The listing of range countries' rosewood export restrictions only gives limited impetus for China's authorities to take law enforcement actions and implement domestic timber public procurement mandates.

China's illegal timber imports almost doubled from 17 million to 33 million cubic metres over 2000–2013: (Hoare, 2015). All *Dalbergia cochinchinensis* imports have been illegal for some time, or at least illegally harvested and trafficked into China with falsified

documentation. To fulfil domestic demand since 2014, Chinese rosewood industry companies have started to target rosewood sources in Africa and Latin America more significantly.

ROSEWOOD RESOURCES IN AFRICA

The African region has been the second-largest source of rosewood imports into China since 2012 (UNODC, 2020). In June 2014, volumes of rosewood logs imported from Africa into China exceeded those from the Nanyang region for the first time. The main rosewood range countries in Africa are Benin, Democratic Republic of the Congo (Kinshasa), Gambia, Ghana, Guinea-Bissau, Madagascar, Mozambique, Nigeria, and Republic of the Congo (Brazzaville). Five Hongmu species are sourced from these countries: *Dalbergia louvelii*, *D. melanoxylon*, *Pterocarpus erinaceus*, *Diospyros crassiflora*, and *Millettia laurentii*.

Some of these countries protect their rosewood species through domestic restrictions around harvest and trade (See Table 3). For example, Benin has prohibited the export of all timber species in their raw form, including *Pterocarpus erinaceus*, a protected species since 2005, with only finished products permitted in trade. Burkina Faso has prohibited the export of all logs and processed products of *Dalbergia melanoxylon*, *Pterocarpus erinaceus*, and *P. lucens* since 2005. Cameroon has banned log exports of rosewood species found in the country since 1999. Ghana has banned the harvesting and export of *P. erinaceus*, and *P. lucens* since 2014 and has banned the exports of logs from natural forests since 1994. Guinea-Bissau has banned all timber exports.

Dalbergia louvelii from Madagascar has been targeted as a substitute species for *Pterocarpus santalinus* from India due to similarities in colour and quality. Valuable timber has been exploited from Madagascar's rainforests for decades, and Malagasy rosewood and palissandre/palisander

ROSEWOOD RESOURCES IN THE AMERICAS

Latin America is rich in timber resources and has potential for further development, although for many countries in this region, precious species such as *Dalbergia nigra* have been severely depleted due to overexploitation. Rosewood from the Americas comprises a relatively small portion of China's squared timber and log rosewood imports—between

(*Dalbergia* spp. other than *Dalbergia louvelii*) are among the most sought-after hardwoods in the world. Large quantities have been harvested and exported at an increasing rate over the last decade, almost entirely from illegal logging in protected areas since 2008 (Schuurman et al., 2009). A study conducted by TRAFFIC in Madagascar revealed that 98% of the *Dalbergia* and *Diospyros* species exported between 2010 and 2014 went to China (Ratsimbazafy et al., 2018).

In 2013, the 16th Conference of the Parties (CoP16) to CITES agreed to include Malagasy populations of the genera *Dalbergia* and *Diospyros* in Appendix II as well as to adopt a CITES Action Plan for the conservation and sustainable use of these species (CITES Decision 16.152). There are approximately 48 species of *Dalbergia* and 85 species of *Diospyros* in Madagascar (Yin, 2013). In response to the threats of the illegal timber trade to the island's rich biodiversity, Madagascar committed to a logging ban (Decree N. 11832 / 2000) and to the implementation of the CITES Action Plan. These actions were strengthened by adoption of Decisions 17.203 to 17.208 relating to these species at CITES CoP17 held in Johannesburg, South Africa, in 2016.

Trade in Malagasy rosewood, ebonies, and other tropical woods is an important source of income for the country and helps to sustain livelihoods by providing employment. However, illegal logging and trafficking activities have severely damaged forest resources for local communities and have had an adverse impact on the survival of other endangered wildlife (Ratsimbazafy et al., 2018).

1% and 3%. It is, however, a growing figure. Rosewood range countries in the region include Brazil, Guatemala, Mexico, Nicaragua, and Panama, among others. Seven Hongmu species from the region are in trade, including *D. retusa*, *D. granadillo*, *D. frutescens*, *D. cearensis*, *D. stevensonii*, *D. nigra*, and *D. spruceana*.

Some of these countries have protected their rosewood species through restrictions on harvest and trade (Winfield, et al., 2016; Forest Trends, 2020) (See Table 3). Belize has had a moratorium on the harvest and export of *Dalbergia stevensonii* since 2012. Brazil banned the harvest of *D. nigra* and exports of logs, sawn wood, and firewood from natural forests in 2005. Honduras banned all trade in *D. retusa* in 2007 and exports of unprocessed wood products from natural forests. Guatemala banned exports of logs and sawn wood in 1996. Nicaragua banned exports of logs, sawn wood, and timber from natural forests in 2006. Panama banned exports of

ROSEWOOD STOCKPILES IN CHINA

Some rosewood species are now on the verge of commercial extinction based on supply trends observed in China's markets, including Hainan *Dalbergia odorifera* and *D. nigra*. International regulations are in place under CITES and several range countries have enacted trade prohibitions. These policies will promote rational rosewood industry development. Chinese rosewood stockpiles

are heavily influenced by the price of Hongmu furniture and arts and crafts, in turn impacting capital investment available in the rosewood industry. In this regard, policies contributing to improved monitoring, management, and legality verification of rosewood stockpiles in China are essential for ensuring the sustainability of end-market supply.

According to feedback from interviewees and discussions conducted in China for this study, the inventories held and stocks for mainstream market Hongmu species are classified as follows:

- Species with relatively high stock include *Pterocarpus erinaceus*, *P. macrocarpus*, *Dalbergia retusa*, and *Millettia laurentii*.
- Species with medium stock include *Dalbergia cochinchinensis*, *D. bariensis*, *D. oliveri*, *D. melanoxylon*, and *D. louvelii*.
- Species with stock shortages include *Dalbergia odorifera* and *Pterocarpus santalinus*.

Less is known about other Hongmu species, with most used as substitutes for higher-value taxa that are well-established in the market. The sentiments from merchants interviewed may not reflect the actual conservation, protection and sustainability challenges and issues with these species in the wild but reflect on the lack of such knowledge amongst timber merchants, and/or disregard for this knowledge in the Chinese rosewood market in general.

The estimated stockpile inventory does not cover all rosewood species or show detailed volumes; therefore, it is recommended that this information be collected by relevant authorities, institutes, and industry associations. The information could be stored in a confidential database for timber management bodies, law enforcement agencies, and policy makers.

Dalbergia retusa from Latin America has been targeted by Chinese manufacturers and promoted by sellers in China as a cheaper alternative to *D. cochinchinensis*. Because of this new demand, the price of *D. retusa* and non-Mexican *Dalbergia* species from Latin America has increased in the past 10 years to around CNY30,000 (USD4,300) per tonne and to CNY60,000 (USD8,700) per tonne for *Dalbergia* species from Mexico (Zhang et al., 2019).

The estimated stockpile inventory does not cover all rosewood species or show detailed volumes; therefore, it is recommended that this information be collected by relevant authorities, institutes, and industry associations. The information could be stored in a confidential database for timber management bodies, law enforcement agencies, and policy makers.

DISCUSSION

With the continuous listing of timber species in CITES over the last few COPs, China, as one of the major importers and consumers of endangered timber species, is facing increasing pressure to enhance its compliance measures, while considering the difficulties and challenges which are gradually coming to light.

1). International public opinion is increasing the pressure on China's authorities to combat illegal logging and timber trade. The international community has taken note of the impact of the demand for endangered tropical timber, especially Hongmu and rosewood resources. The demand is a result of resurgence in the use of traditional Chinese culture furniture designs from the past; and the demand continues to grow in recent years. Many assumptions and innuendoes have been made overseas about the role of China and its industry in relation to the illegal logging of some tropical rain forests in Southeast Asia, Central and South America and Africa. This has serious repercussions to the image of China, despite the denials and explanations given by the Chinese government against such false and negative reportings.

2). In the forest resource rich developing countries, the authorities face serious difficulties to supervise and enforce their laws. The government agencies suffer from a low

level of capacity-building, weak management and law enforcement capacity, poor pay and benefits which can facilitate corrupt practices, among others. Within China, its long border of more than 50 000 kilometres, over 300 ports of all kinds, and coupled with the limited strength of customs, border patrol and other supervision and law enforcement agencies are serious impediments to effective and efficient controls and enforcement. To crack down on the illegal harvest and trade of endangered timber species, countries of origin, transit and consumption need to cooperate and coordinate their regulations, coordination and enforcement efforts along the entire trade chain.

3). Enforcement agencies find it difficult to identify wood species. The identification of wood species needs strong professional and high technical requirements, which is an urgent scientific and technological problem to be solved all over the world. Most endangered wood species do not originate in China, and there are many similar tree species used as substitutes. Support towards the development of such technology to help enforcement agencies in the source, transit and consumer countries will greatly improve the controls and enforcement efforts.

Specifically, the following aspects can be further discussed:

NATIONAL STANDARDS

The development and maturity of the rosewood industry requires a sound sustainable and traceable management system that should be part and parcel of the National Hongmu Standard in China, from forest to market. All supply chain aspects should be covered, including logging, gathering of the raw material, production, export, import, testing, marketing, legality, and quality monitoring, etc. The construction of a suitable standardised system is urgently required and should be guided by China's legal framework. The use of standards throughout the supply chain will help ensure the supply of rosewood products in Chinese markets is sustainable, legal, and traceable.

In China, informal discussions between TRAFFIC and management bodies and industry players show a strong move towards having stronger standards for Hongmu. TRAFFIC's research into rosewood consumers has found strong interest in the legality and sustainability of rosewood used in final retail products. This consumer pressure could push the private sector to move further towards sustainable trade targets and encourage the adequate implementation of national laws on harvesting, transport, trade, taxes, and other regulations.

Standards for China's rosewood industry are, however, still in their infancy. At

present, only six Standards (including those published and due to be published) exist. These are the National Hongmu Standard (GB/T 18107), the Hongmu Furniture General Technical Requirement (GB28010), the Name of Commercial Hongmu (SB/T 10758), the Specification for Classification of Hongmu products (SB/T 10759) and the Specification on Hongmu Furniture Retail Business Service in Shanghai.

In addition, the China Hongmu Committee under CTWPDA is drafting and will soon promulgate Management Standards of Hongmu Commodity Sale and Quantity Monitoring. Given the current situation and challenges, significant effort needs to be invested urgently to improve these Standards and ensure that they are implemented adequately and that their progress is evaluated.

The first, most significant rosewood boom was from 2003–2013. It was followed by a second shorter one in 2016 for those species

Implementation measures of relevant ministries

The laws and regulations in Tables 1–3 are enacted and implemented independently, thus there is a need for a more comprehensive, co-ordinated, and integrated approach to implementing China's rosewood policies, laws, regulations and administrative guidelines. This is especially relevant for rosewood imports, where there is a lack of guidance for the various rosewoods in trade, which may or may not be listed in CITES and the National Hongmu Standard. This wide range of categorisation and regulatory controls or lack thereof, makes it difficult for administrative and enforcement actions by the relevant ministries and their respective administrations.

A key policy of the NFGA and Ministry of Commerce in preventing illegal timber imports, which also impacts rosewood trade, has been the Voluntary Guidelines produced for Chinese businesses operating overseas (Overseas Forest Sustainable Management and Utilization Guideline for Chinese Enterprises, 2009). In the Guidelines, Chinese enterprises operating overseas are encouraged by the Chinese government to follow international conventions, implement China's policies on enterprises' overseas investment, and strictly comply with the relevant laws and regulations of the host country. It also provides

listed in CITES following CoP17. Both drew a massive influx of personnel and capital into the sector. High prices, different levels of demand along the supply chain for rosewood products, and speculative stockpiling have all combined to stimulate fierce competition for rosewood products, although counterfeit and inferior products also feature. This latter factor has damaged consumer trust and prevented a level playing field for those suppliers and enterprises that wish to be legal. At present, due to differences in hardware, software, sampling, and inspection methods, various bodies that conduct voluntary analysis and verification for industry enterprises are unable to replicate results regarding species identification, which makes the credibility of any certification difficult. Therefore, accelerating a standardised inspection process is a necessity. Only independent and standardised inspection will produce authoritative results, benefitting the future development of the rosewood industry and consumer confidence in China.

guidance on overseas afforestation, ecological protection, environmental administration, community development, and forest resource administration. The Overseas Guide promotes social and environmental standards in different industrial sectors, although, a legality verification system to complement these has yet to be developed. The Chinese Academy of Forestry (CAF) was assigned in 2017 by the then SFA (State Forestry Administration) to develop such a verification system for China, but progress has been slow. The lack of a domestic legality verification system that takes into account the legal frameworks along the supply chain in source and transit countries has been identified as a challenge that continues to hamper the ability of law enforcement agencies in China to identify and interdict illegal timber shipments into China. The CAF is attempting to upgrade the national guidance to a mandatory scheme under the new Forest Law. Currently, there is no monitoring or punitive measures against infringement of any of the principles included in the Overseas Guide. This process of enhancing the Overseas Guide will take time, and companies are encouraged to conduct their own processes to find information and knowledge to meet the national sustainability and legality elements in the countries where they operate.

CONSOLIDATION, HARMONISATION AND UPDATING OF THE DOMESTIC LEGISLATIVE FRAMEWORK

At present, China's laws and regulations have contributed to the protection and administration of remaining wild rosewood resources in China, but there is still work to be done to curb the illicit rosewood trade from other range countries into China's market. The current laws and regulations were drafted by different government ministries with their own mandates, and a consolidation of the legislation guided by a coherent policy would enhance efficiency and effectiveness. Currently, the relevant departments and ministries face numerous problems, including divided legislation, overlapping legislative scope, the narrow jurisdictional scope of individual laws, relatively dispersed terms and definitions, different applicable laws, and different law enforcement entities.

Many legislative instruments that were enacted some years back have not been revised to consider changes with regards to species conservation and sustainable development challenges, alongside trade and industry concerns. There is an urgent need to revise the legislative instruments, and improved coordination would help to reduce or minimise conflicts or confusion regarding institutional responsibilities and implementation.

For example, Regulations on the Protection of Wild Plants of the People's Republic of China was promulgated in 1996 and updated in 2017. These regulations suggest violations shall only be dealt with under relevant laws, but they remain regulations instead of a law with legal effectiveness. One loophole of the Regulation is that penalties can only be applied in reference to the Criminal Law, and only when it comes to rare species under the two lists (List of Key National Protected Wild Plants and National Rare Tree Species List of the People's Republic of China) can penalties be applied. A suitable disciplinary system relevant to biodiversity harm or destruction has not yet been established.

ADAPTATION OF INTERNATIONAL LEGISLATION FOR NON-NATIVE ROSEWOOD SPECIES

China has been progressively adopting more stringent domestic management measures than CITES to strengthen the trade control of imported CITES wood species when timber species get listed.

1) China implements stronger domestic measures by requiring a CITES import permit

Regular revisions of the legislation have not kept pace with changing trade dynamics. The List of Key National Protected Wild Plants (1999) was amended in 2017 and sent for deliberation in December 2019, while the National Rare Tree Species List of the People's Republic of China has not been updated since 1992. Thus, promoting timely updates and a shorter review frequency would be in line with conservation and trade changes. Moreover, the development of specific implementation rules for articles that are vague, lack clarity, or are ambiguous in the Regulations on the Protection of Wild Plants of the People's Republic of China can help improve the management of flora and ensure biodiversity conservation, while giving increased attention to flora protection. The specific implementation rules for these regulations have not been drafted and thus risks giving rise to contradictory problems in implementation.

The structure and functions of various relevant ministries have changed significantly over the years, and the functions of enforcement entities, together with punishment/reward mechanisms, now also need to be revised accordingly. For example, some of the ministries function under outdated references such as "implementation should be in accordance with the approved plan under the unified management and operation of the national level State-owned company," but other enterprises are not covered and now should be. In addition, China became a Party to CITES in 1981 and the CBD in 1993, and has to harmonise its legislation to ensure it complements the commitments made under these global Conventions. China has a strong role to play as a key stakeholder in the global supply chain for responsible wildlife resource management and trade (i.e. including flora as well as fauna).

certificate for CITES listed timber species. Exporters are obliged to obtain a CITES export permit issued by the Management Authority of the exporting country in accordance with the requirements of CITES, and must apply to the China CITES MA in advance and obtain the CITES import permit certificate. These documents are checked by China customs.

2) Implement the certificate confirmation system. Before issuing the import permit, the CITES MA will take the initiative to contact the CITES Secretariat or the CITES MA of the exporting country for the verification of the authenticity and validity CITES permit/certificate prior to the issuance of the import permit certificate.

3) China Management Authority effectively fulfils the obligations of due diligence for CITES listed timber species. First, strictly implement the trade suspension decision made by the CITES Standing Committee and do not recognize the export licenses and permits issued by countries subject to trade suspension sanctions. Second, if an export is considered suspicious, China will contact the the CITES MA of that country for their comments. If no reasonable reply is received, no import permit shall be issued.

4) Promote activities in countries of origin of timber to strengthen export controls and supervision. From June 1, 2021, China will no longer accept the CITES Appendix II tree species export permit without the quantities indicated in the export endorsement column and signed and sealed by the customs of the exporting country, so as to promote the exporting country to strengthen the export management of endangered timber and improve their ability and performance and to assist in law enforcement.

Current Chinese policy and legislation against illegal logging and timber trade only applies to species harvested domestically. This is similar to the majority of the countries in the world, with a few exceptions, including the USA with its Lacey Act, the EU's Timber Regulation,

PENALTIES AND DETERRENTS

The existing laws and regulations do not impose high enough penalties to deter illegal rosewood trade and any associated activities in China. The limited financial penalties do not provide an effective deterrent to criminal behaviour. For example, the Regulations of the People's Republic of China on Wild Plants Protection stipulates that activities such as harvesting key wild plants (including timber) under national protection without certificates or without strict compliance with certificated permissions and selling and purchasing key wild plants (including timber) under national

the Australian Illegal Logging Prohibition Act, and to some extent in the South Korean Act on the Sustainable Use of Timber, all of which have references to legislation, systems, and procedures from other countries in the international timber supply chain. China also needs to address the lack of legislative provisions for imported timber, except where species are covered by inclusion in the CITES Appendices. For CITES-listed timber species, China's law (Customs Law and Import and Export of Endangered Species Regulation) is stronger than the minimum provisions that CITES requires (i.e. an import permit is required to import Appendix II-listed species, as well as the requirements for Appendix I-listed species). However, this law does not cover non-CITES listed species. In cases where other range countries have national legislation which protects certain timber species, China will have to decide if it wants to help those countries to implement and enforce their regulations. China can seek dialogues and discussions through bilateral or multilateral approaches via entities such as the International Tropical Timber Organization (ITTO) or the Forum on China-Africa Cooperation (FOCAC).

Even though China does not recognise and use foreign legislation and systems to verify the legality of imports, Chinese enterprises that export timber products to the USA, EU, Australia, and South Korea still have to comply with the respective requirements to trade with partners in these countries. This includes the need for relevant procedures to allow China Customs and other law enforcement agencies to interdict suspected illegal shipments for inspection and further action, and verify legality in the supply chains.

protection—will only be fined to a maximum of 10 times the illegal gains.

Furthermore, the regulations are only applicable to native species. Regarding non-native rosewood timber species, illegal harvesting and trade from the range country is not covered by any regulation or punitive measures in China. Therefore, a low risk–high reward scenario persists regarding import of illegally sourced timber from other range countries.

CLARITY ON IMPLEMENTATION MECHANISMS FOR EXECUTING INSTITUTIONS

The provisions of China's current laws and regulations are broad. When illegal cases occur, law enforcement procedures are not clearly set out. Legal references for the specific punishment are not specific enough and, therefore, too flexible in their interpretation. In addition, law enforcement effectiveness is often hampered by lack of standardised and effective implementation procedures. Case management is not secured with proper regulations, which undermines the efficiency of investigations and, therefore, overall law enforcement effectiveness.

Multiple institutions are engaged in the conservation of flora species, although the utilisation of species from other countries are not really covered under existing laws (unless they are CITES-listed). Numerous laws and administrative regulations have overlaps, as well as gaps in coverage and jurisdiction—leading to confusion over institutional roles and responsibilities. As a result, one case may need collective execution by several government agencies. One of the interviewees for this study said that unless one agency steps forward to take charge, law enforcement actions may not happen, or responsibilities may be shifted around without effective action taken. As for penalties from individual cases, custodial sentences are rare and financial

penalties lead to limited deterrence against illegal logging/harvesting. Currently, China has many departments spread across several Ministries engaged in wild plant (and therefore timber) protection and administration (see Figure 1). The Forestry Department of the NFGA under the Ministry of Natural Resources is mainly responsible for the supervision and administration of wild rosewood resources in China's domestic forests, and China Customs' main responsibility is supervising the import and export of rosewood products. The Ministry of Ecology and Environment (MEE) mainly undertakes the task of co-ordinating the work of the relevant departments such as NFGA, Ministry of Commerce, and the National Development and Reform Commission.

It appears the provincial governors and lawmakers are increasingly aware of the importance of flora conservation—the second amendment of the Forest Law was promulgated in December 2019 while the List of Key National Protected Wild Plants (1999) and the National Park Act will soon be going through deliberation for domestic plant resources, including native rosewood species. However, there are no signs of positive changes at legislative and institutional levels for imported timber, especially rosewood species.

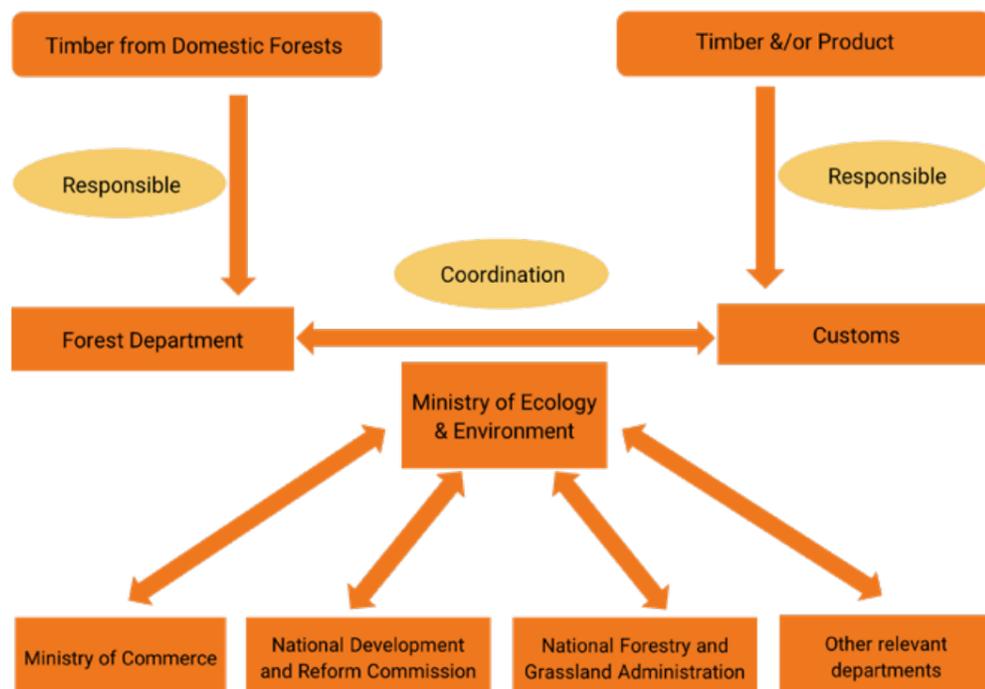


FIGURE 1
Departments regulating rosewood timber and products in China

Framework of advisory laws, regulations, and policies in China

China's authorities have not engaged directly with rosewood resource owners and government agencies responsible for forest resources, extraction/harvesting, and trade practices in range countries. The framework outlined in Figure 2 depicts mechanisms to ensure the sustainability of resources, especially regarding offtake/local yields, protecting local livelihoods, avoiding negative conservation impacts, and providing assurance of legal

harvesting. Each stakeholder group has to carry out various reforms and actions to ensure the laws, standards, rules, and regulations, and procedures are available. These need to be properly co-ordinated and resourced including adequate training given to combat illegal timber imports at the borders and additionally when those timbers have crossed the China Customs supervision area into domestic trade networks.

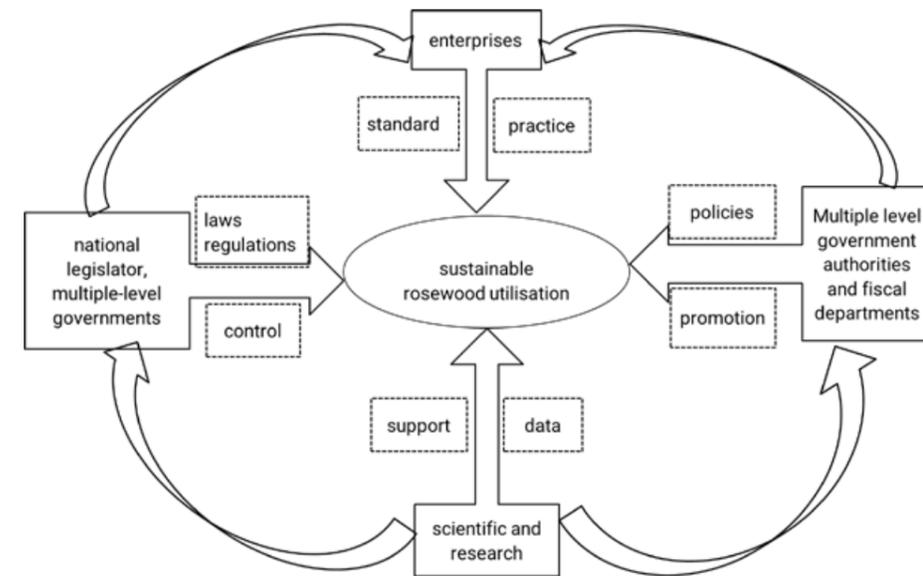


Figure 2: Framework of advice on laws, regulations, and policies in China

FIGURE 2

Framework of advice on laws, regulations, and policies in China

INSUFFICIENT USE OF TECHNOLOGY AND EXPERTISE

Accurate identification of species, origin, texture, and quality are required to ensure rosewood species protection. Such identification work can only realistically be undertaken by expert professionals as general law enforcement officers do not usually have the requisite expertise. Analysis beyond visual identification can be done in the laboratory, but appropriate technology and expert personnel would be required. At present there is insufficient expertise and a lack of laboratory facilities and skills to be able to support adequate law enforcement efforts around rosewood species protection. This relates to a diverse range of law enforcement agencies, including customs,

forest police, market inspection forces, and environment officers. This undermines the timely gathering of evidence and affects case management efforts, including the investigation and prosecution of infractions or crimes.

Technology has a role to play in addressing this issue, as does empowering law enforcement officials to combat illegal activities. Recent examples include prize-winning technologies featuring in the USAID Wildlife Crime Technology Challenge (Kaldjian, 2017). Genetic tracking techniques can help to differentiate wood species through DNA technology.

An “E-Eye” remote-controlled surveillance system may also help prevent poaching and illegal logging activities. The tracking and mapping of illegal trade routes for threatened species (whether fauna or flora) share similarities across many products, and any advance in information technology should be evaluated for application to assisting compliance verification and traceability of timber resources in, or coming into, China.

The illicit nature of illegal logging and timber trade creates many challenges. Discrepancies in official trade data can provide some insights

EVIDENCE GATHERING FOR PROSECUTIONS IN CHINA

The authors interviewed prosecutors from partnership agencies in China, who offered insight into the challenges in securing prosecutions when official evidence is required from a range country, especially in relation to the “ownership rights” of the seizure specimens in question. In cases involving illegally imported rosewood, many prosecutors struggle to gather evidence from overseas, where there is often a lack of support to obtain evidence and proof. The foreign ministry would have to be involved, and this can cause delays in obtaining data and information from a range country, in turn creating difficulties in securing successful prosecutions. Currently, only customs agencies can activate a bilateral agreement to obtain and share information. The Customs Mutual Assistance Agreements (CMAA) enable one customs administration to request administrative assistance from another. Currently, there are few CMAAs signed by any country bilaterally, although US Customs has an extensive CMAA with many countries. Even if a country has a CMAA in place, customs officials do not have to use this channel to share and gather information and intelligence. This means that cases are often not able to progress if the prosecution relies on proving “ownership” of the goods as they may not have those documents which are obtained from another country.

As a result, judgements have been mainly based on harvesting/logging activities in China, with transportation and acquisition

into possible obfuscation of legal processes, but the general paucity of data limits the extent and depth of statistical studies. Big data analytics is a new area which can assist in analysing the huge quantities of customs data captured from declaration forms, bills of lading and invoices, which, when critically analysed with the appropriate technology, can assist enforcement agencies in targeting suspicious shipments and trade, and hence conduct investigations. Similarly, the absence in most countries of publicly available data compromises analysis of illegal logging activities.

distinguished as subsequent actions related to the illegal logging. When the timber was not logged in China, these subsequent actions (i.e. illegal transportation and acquisition) can be difficult to ascertain, unless a high degree of traceability exists. This is a challenge across international supply chains. At a minimum, solid evidence must be obtained by investigators and provided to prosecutors to prove the downstream suspects (buyers or traders in China) know that the shipment was harvested illegally. Thus, the development of a timber legality system regulating the whole supply chain is needed urgently, with the involvement of chain-of-custody (CoC) bodies overseeing independent certification.

Investigation and prosecution should also not just focus on laws related to plant conservation and trade. Often money laundering, document fraud, and other serious crimes occur at the same time as illegal timber trade. This is known as “crime convergence” and demonstrates the potential for efforts to tackle one form of illicit trade to combat another. Law enforcement agencies in China may benefit from not just using rights of ownership as the basis of prosecution, but also other engagements used in other serious crimes, especially money laundering, tax evasion, and corruption, which are more under the purview of national agencies in China.

CUSTOMS POLICIES AND SYSTEMS IN CHINA

China Customs is a specialised enforcement agency with a mandate to track the import and export of timber and ensure adequate management and supply chain controls. All trade of timber into and out of China requires a customs declaration. Traders are obliged to submit a declaration form to China Customs stating the species used for the imported products, as well as the volumes, monetary value, consignee, and consignor, amongst other details. Additional endorsement by relevant agencies may be needed, such as permits from the relevant CITES MA, and phytosanitary certificates for disease and pest control. Customs may decide to inspect the consignment to verify that the shipment correctly matches the declaration. However, inspections are not conducted for every consignment and are dependent on the respective provincial China Customs authority’s risk assessment analysis. The rates of inspection for consignments at China’s ports of entry are not known, but they are still based on individual cargo risk assessments on a case-by-case basis.

According to the Regulation on Customs Statistics of the People’s Republic of China, different customs tariffs apply according to the consignment’s country of origin. They are, respectively, Most Favoured Nation (MFN) Tariff Rates, Conventional Tariff Rates, Special Preferential Tariff Rates, General Tariff Rates, and Interim Tariff Rates. The MFN tariffs on import of raw timber and sawn wood have been zero since 1999.

China’s Harmonised Commodity Description and Coding System or Harmonised System HS Code for rosewood, is not linked to China’s National Hongmu Standard (Yang et al., 2000). Analysis of import documents shows that non-rosewood HS codes are often used for rosewoods, while the rosewood HS Codes are occasionally used for non-rosewood cargoes when shipped from overseas.

This confusion arises partly because of the use of different rosewood definitions and common names by various trading parties in the supply chain. Another reason is the illegal extraction and/or smuggling from the range country where logging or export of the species is banned. When there is no customs

export declaration made, the exporting national statistics do not capture that trade. For importing countries like China, however, where there are no specific legal requirements to recognise those prohibitions, as long as all customs procedures and supporting documents are presented, the consignment can enter the country. As a result, there are significant discrepancies in data, and difficulties in ascertaining how much of the declared trade in other tropical wood species are in fact rosewoods of the genus *Dalbergia*, and other National Hongmu Standard species.

Beyond the discussion of timber trade in general, country-specific studies to compare the customs export and import declarations and identify discrepancies will present more robust evidence. For example, a Vietnamese researcher (Thi Thu Hien Phan, 2015) focused on illicit timber trade between Viet Nam and China and adopted a “mirror statistics” methodology. By examining the trade data provided by border customs for both countries from 2012 to 2014, she identified discrepancies relating to the low quantity of timber reported as being exported from Viet Nam to China and the high quantity that China reported as being imported from Viet Nam (with the exception of sawn wood). Misdeclarations in customs valuation and fraudulent documentation appear to be a concern in this instance. Viet Nam acts as a significant transit hub of illegally harvested timber in the transnational smuggling network from Mekong range countries (Lao PDR, Cambodia, Myanmar) to China, in contravention of the national bans on natural timber exports (Phan, 2015).

As previously mentioned, China’s domestic forestry laws and related laws do not cover foreign-harvested timber, and the only one directly relevant law is the Customs Law of the People’s Republic of China (2017). The Customs Law refers to the criminal law for sentencing and, unlike for wild animals, cargoes of fraudulent or misidentified timber carry a sentence determined by the evaded VAT (value-added tax; zero tariff/Customs duty is charged on timber) instead of the protected status of the relevant species/CITES-listing, or volume of timber imported.

In addition, again unlike the situation for wild animals, the Regulations on the Protection of Wild Plants of the People's Republic of China (2017) does not include any specific article of law about smuggling protected species. Thus, illegally harvested/logged CITES-listed species which originate from other countries should be

INDUSTRY DEVELOPMENT PLANS

Rosewood trade businesses in China have been developed by timber and wood industry leaders within the parameters of the numerous government policies and legislation compiled in this report. The industry regularly contributes to discussions and committee meetings organised by Chinese government agencies to influence policy, regulations, and standard setting exercises. Core reference points for business development plans covering rosewood resource protection and utilisation include the China Biodiversity Conservation Strategy and Action Plan (2011–2030), the Program of Action for Sustainable Development in China in the Early 21st Century, the National Outline for the Conservation and Utilization of Biological Species Resources, the Guidelines of Sustainable Forest Management, the 12th Five-Year Plan on Forestry Development, the Bio-industry Development Plan, and the 12th Five-Year Plan on National Ecological Protection.

Industry plans are not specific to rosewood. Development for a specific sub-segment of the timber industry must be in accordance with the above-mentioned national and ministerial policies. Business planning, therefore, mainly focuses on enterprise participation in rosewood import, market development, carpentry, and manufacturing techniques, as well as quality assurance. Thus, there is a need to synthesise the various guidance documents for the forestry sector in the legislative framework, while extracting elements relevant to the rosewood industry through a coherent, harmonised, and co-ordinated approach.

Illegal logging and timber trafficking have not been a focal area for policy development or implementation (Wellesley, 2014). However, the private sector plays an important role in the uptake of the voluntary chain-of-

regulated similarly as protected native species, regardless of country of origin, and the penalty should follow that of other domestic laws, including Regulations on the Protection of Wild Plants of the People's Republic of China (2017) and the Criminal Law of the People's Republic of China (2017).

custody certification, and some commercial enterprises have stated that they intend to participate in piloting the proposed national timber legality verification system (TLVS). The TLVS is still in development, led by the Chinese Academy of Forestry. The intended guidance for national chain-of-custody certification does not preclude enterprises from using independent chain-of-custody certification, such as that offered by the China Forest Certification Council (CFCC, launched in 2010) and endorsed by the Programme for the Endorsement of Forest Certification (PEFC) or the Forest Stewardship Council (FSC) National Forest Stewardship Standard for the country in 2018. According to the rosewood consumer survey study (Yang & Watson, 2022), more than 70% of rosewood consumers who are persuadable are concerned about legal and ecological risks after being informed, and fear of fake products is one of the top three barriers stopping them from buying. Some 60% of Persuadable Buyers reported being willing to accept a price increase of up to 20% for a guarantee of legality and authenticity, suggesting that rosewood consumers are ready to pay for certification.

The updated Forest Law also has a specific principle on certification: "Article 64 Forestry operators can voluntarily apply for forest certification to promote the improvement of forest management and to promote sustainable operation and management."

None of the national and industry standards mentioned in this study are capable yet of meeting basic traceability requirements, nor the requirements of certain supply chain management processes. Most standards grant companies the right to label products with a "brand" or seal, to indicate compliance. However, some are only for pre-production,

which means they are not for safety and quality management certification. Some standards only cover production in the supply chain, which means they may neglect pre-existing problems around resource extraction. However, certain international standards, such as FSC chain-of-command certification, traces products throughout the supply chain. FSC certified sustainably managed forests could have rosewood species present in the concessions that could enter the Chinese market.

China is the largest importer of endangered tropical timber species due to the strong demand for those species in China. The demand for endangered tropical timber, especially rosewood resources, continues to be strong, which means China will continue to garner international attention and become the target of some unfriendly countries and international organizations. China has adopted stricter import management policy, and should continue to promote its enforcement actions at international events, and advocate for more effective international cooperation and coordination to combat illegal logging and illegal timber trade.

The inclusion of species in the CITES Appendix II does not mean that they are prohibited from international trade. The species in Appendices II and III are allowed in commercial trade. Moreover, CITES ensures that international trade will not adversely affect the survival of the species by controlling exports to the level that is not detrimental to the survival of the species in the wild, so it has strict provisions on the issuance procedures of export permits and certificates. For example, before issuing an export permit, legal source determination and non-detrimental findings (NDF) must be carried out. For endangered tropical timber species, China has always adopted stricter import management measures than CITES requirements. China is not in favour of a trade ban. Such a ban has been carried out by other countries, and is detrimental to the livelihoods and employment of people dependent on

The other new standard covering the whole value chain is the China Environmental Certification (CEC) ecological label. This green label is administered by the China Ministry of Ecology and Environment and was developed in 2018. The rosewood industry would need time to consider how to implement and promote the application of this CEC standard to products sourced outside China. However, this standard primarily relates to public procurement, so is less relevant to the broad consumer market that is the target market for rosewood.

the resource, including local communities, those engaged in management, harvesting, processing and trade in the country of origin, It is also not appropriate for China, which is a major processing and exporting country. China, as a major market, can play a positive role in engaging with the developing countries with their rich forest resources to be benefit of all.

As a contracting party to CITES, China will continue to implement the provisions of CITES in an effective and efficient manner, and contribute to the promotion of the legal and sustainability of endangered timber species in international trade.

China fully respect the differences in cultural traditions and governance capabilities of different countries, and will work towards reducing the international tension for and against utilisation of such species and work towards strengthening international coordination and cooperation. In terms of law enforcement, China should advocate and support the establishment of a coordinated regulatory system among countries of origin, transit and consumer countries. In terms of capacity-building, it is necessary to enhance the exchange and cooperation among relevant parties in information gathering, analysis and intelligence sharing, identification technology, standard reference samples for Wood ID and so on.

RECOMMENDATIONS

This report provides the following recommendations for a range of key stakeholders in relation to ensuring the sustainable harvesting, trade, administration and utilisation of rosewood, with an emphasis on China as the global rosewood manufacturing and consumption centre.

DIRECTED TO GOVERNMENT AGENCIES

Efforts should be made to improve and strengthen regulations on the harvesting, trade, administration, and utilisation of rosewood through the following actions:

- 1. Increase scientific research on sustainable forest management, including support for determination of CITES Non-Detriment Findings.**

The Chinese rosewood industry needs sustainable sources of rosewood raw materials, which could include repurposing previously owned stock and stimulating consumer interest in “pre-loved” or previously owned products. Government departments should also work with research institutions and timber industry stakeholders from China and other countries to conduct systematic research into the status of rosewood species and inform the development of Non-Detriment Findings (NDF) in key countries of origin. In high-priority countries in Latin America and Africa, NDFs should focus on indicators such as species scarcity, resource abundance, high conservation value (HCV), legal risk, and Voluntary Partnership Agreement (VPA) status. Asian range countries could be a secondary priority, due to the existing scarcity of rosewood resources from previous years of overexploitation. For these Asian countries, research should focus on assisting with ecosystem recovery. Only through a factual and clear understanding of the resource base in each range country can strategies be developed for the long-term survival of the global rosewood industry and to ensure the continuing viability of wild populations.
- 2. Redefine the list of species in the National Hongmu Standard, clarifying CITES and non-CITES listed species.**

In China, the scope of species classified within the National Hongmu Standard should be reviewed and revised, as not all species are listed under CITES, and not all non-CITES species have adequate protection status in the country of origin. The Standard should also include Hongmu substitute species.

The Hongmu Standard should also be refined to capture information including:

 - The distribution and sustainability of various rosewood species in range countries, and inventories and stock distribution in China;
 - A system to evaluate current inventory stock in China’s market for different rosewood species. Through the system, the estimated industry volume for sustainable utilisation relative to legal supply could be verified;
 - An assessment of the status of wild rosewood populations, standing stocks, and production (including growth rates for each species, silvicultural treatments, pests and diseases, and cultivation possibilities) to assess sustainable yield thresholds, and long-term potential for sustainable production of rosewood raw materials. Biological constraints should be considered as a major factor that determines the level of utilisation to supply market demand.
- 3. Set standards for China’s rosewood industry**

Significant effort needs to be urgently invested to integrate the existing six standards for China’s rosewood industry into a single comprehensive standard that is effectively implemented with adequate evaluations of its progress. The standard should encompass the entire supply chain, processing, manufacturing, trade, and consumer needs and focus on meeting basic traceability requirements and supply chain management processes, such as chain-of-custody certification.

- 4. Consolidate national and international investment co-operation, incorporating environmental and conservation principles and sustainable species management.**

National and international investment should be consolidated to combat illegal timber import, with a special focus on rosewood, especially through the China Development Bank and the Belt and Road Initiative (BRI). Private companies and state-owned enterprises trading in rosewood should consider co-operating with the China Development Bank on green financing for rosewood resources projects. Financial institutions providing loans to rosewood businesses should adopt rigorous checks to ensure that the borrowers are adhering to best practices in traceable, legal, and sustainable sourcing.
- 5. Take a comprehensive, co-ordinated, and integrated approach to implementing China’s rosewood policies, laws, regulations, and administrative guidelines.**

There is an urgent need to revise legislative instruments pertaining to rosewood. Improved co-ordination would help to reduce confusion with regard to institutional responsibilities.

 - Legislation should be reviewed and updated more frequently to keep up with changes in conservation and trade and to complement commitments made in global Conventions such as CITES and CBD. It is important for China to address the lack of legislative provisions for imported non-CITES-listed timber. This includes the need to allow China Customs and other law enforcement agencies to seize suspected illegal shipments for inspection and further action, and to verify legality throughout the supply chains.
 - The proposed national timber legality verification system (TLVS) should be fast tracked, and should include legislative frameworks of range countries, the supply chain, import, export, and transit controls.
- 6. Develop regulations for implementation of the new Forest Law. Develop implementation regulations and measures that support the enforcement of traceability systems in supply chains from range countries under China’s Forest Law.**

Article 65 of the Forest Law states, “Timber operating and processing enterprises shall establish an input and output ledger for raw materials and products. No entity or individual may purchase, process, or transport timber that was knowingly sourced illegally.” Compliance with this Article requires the development of a traceability system to track the origins of timber and provide a legal basis for verification. Enforcement agencies urgently need guidance on traceability and transparency for sustainable forest management certification, timber tracking systems, and supply chain administration.
- 7. Strengthen co-operation between China Customs, CITES MA, and other enforcement agencies and their counterparts abroad, through the following actions:**
 - a. Establish a dynamic surveillance and intelligence network for enforcement agencies;
 - b. Regularly use technologies such as big data analytics, cloud based computing, and secure storage to analyse data to assist enforcement agencies in enhancing their risk targeting and profiling tools;
 - c. Train frontline officers on timber species identification to contribute to investigation of seizures involving illegal timber and subsequent prosecution of cases;
 - d. Build the capacity of China Customs and other law enforcement agencies using various training tools from intergovernmental organisations and NGOs;
 - e. Chinese authorities should engage directly with rosewood resource owners and government agencies responsible for forest reserves, extraction/harvesting and trade in range countries, to ensure the burden of proof on demonstrating legality is recognised and adhered to, and to determine issues surrounding illegality.
- 8. Continue promoting the Guide on Sustainable Overseas Forest Management and Utilization by Chinese Enterprises.**

Chinese enterprises are expected to use the Guide to ensure their forestry operations are legal and adhere to the laws of the country of operation.

RECOMMENDATIONS

DIRECTED TO COMPANIES OPERATING IN CHINA'S ROSEWOOD INDUSTRY

With more and more range countries restricting rosewood exports, the price for raw materials has increased and become one of the important factors inhibiting further expansion of the rosewood timber sector in China. In the face of resource shortage, the rosewood industry should reduce resource waste by processing raw materials more efficiently, adhering to the laws of the country of origin, improving traceability of import, and forming a common front for sustainable timber utilisation based on the sustainable offtake of the resource.

1. **Address misconceptions and ignorance around the conservation of rosewood.**

The sentiments of merchants included in this report may not reflect the actual sustainability challenges for wild rosewood populations but may instead reflect a lack of knowledge amongst timber merchants, and/or disregard for this in the Chinese rosewood market in general. Changing these perceptions will contribute towards ensuring the legality and sustainability of the supply chain and rosewood industry in China.

2. **Conduct a comprehensive stockpile inventory of rosewood held by companies in China.**

Relevant authorities, including institutes and industry associations, should conduct a rosewood stockpile inventory. The inventory could then be stored in a confidential database for timber management bodies, law enforcement agencies, and policy makers.

3. **Pursue a voluntary certification of forest resources and chain-of-custody for rosewood, as encouraged in Article 64 of the updated Forest Law.**

Sustainable forest and chain-of-custody certifications can contribute to the sustainable management of China's rosewood trade. Companies should consider these tools for their own internal purposes while meeting the needs of some market segments i.e. to meet consumer demand for these assurances. Growing demand for certification in China's market will encourage Chinese enterprises operating in rosewood range countries to certify forests under their concession. Rosewood vendors should also consider obtaining chain-of-custody certificates to determine legality and increase transparency in their supply chain.

4. **Strengthen industrial supervision and quality inspection systems for rosewood, including the following:**

- e. The strict implementation of national standards for rosewood furniture products;
- f. The standardisation of labels and price tags, ensuring they meet legal and quality requirements;
- g. The rosewood industry, with support from government agencies, should carry out rosewood standardisation work for the industry and build a quality-based access system for large whole-sale rosewood markets, implement special campaigns to crack down on illegal rosewood products thereby contributing to the elimination of illegal rosewood trade and illegal logging of rosewood;
- h. Establish industry supervision at the timber association level, to ensure a legal and sustainable supply via independent audits of traceability systems.
- i. Promote consumer awareness.
- j. Encourage the strong interest already found among rosewood consumers in the

DIRECTED TO CIVIL SOCIETY FOR RESPONSIBLE ROSEWOOD CONSUMPTION

1. **Promote consumer awareness.**

Encourage the strong interest already found among rosewood consumers in the legality and sustainability status of rosewood used in final retail products and their willingness to pay a premium for these assurances.

2. **Advocate awareness raising and provide capacity-building support for rosewood industry players.**

Awareness raising initiatives should be delivered to Chinese consumers, to engage them in the start of a behaviour change journey and stimulate desire for proven sustainably sourced rosewood products for which they would be willing to pay a premium. This will in turn put pressure on private sector-wholesalers and retailers to supply sustainable rosewood products.

DIRECTED TO INTERGOVERNMENTAL ORGANISATIONS

1. **The CITES Secretariat, in collaboration with CITES Scientific Authorities of range countries, should gather scientific evidence to support new listings of rosewood species not currently listed under CITES.**

2. **The World Customs Organization (WCO), United Nations Office on Drugs and Crime (UNODC), INTERPOL, and World Bank should collaborate regularly under the International Consortium to Combat Wildlife Crime (ICWC) to conduct interagency law enforcement operations against illegal logging and timber trafficking.**

3. **The International Tropical Timber Organization (ITTO) should be encouraged to focus on data gathering and research and analysis on rosewood species to support conservation, sustainable management, and legal trade of these products for their members.**

China is a member of ITTO, and the Chinese point of contact for the organisation is the China Academy of Forestry. In 2019, a sustainable timber trade and research platform with active engagement by China and the ITTO was established, called Global Green Supply Chains (GGSC). The avenues for the GGSC platform to help promote productive forests with a legal, sustainable wood supply chain, facilitating green growth and combating climate change should be fully explored. The platform also aims to address legality and sustainability issues, national and international regulations and regimes, incentive mechanisms, new technologies, timber legality verification, and independent third-party certification and to promote co-operation and collaboration between timber producers, buyers, processing industry players, and other relevant stakeholders.

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