

**HEART OF THE MATTER: AGARWOOD USE AND TRADE  
AND CITES IMPLEMENTATION FOR *AQUILARIA MALACCENSIS***

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## HARVEST, TRADE AND CITES IMPLEMENTATION WITHIN KEY AQUILARIA RANGE STATES

### MALAYSIA

#### Status and distribution

Three species of *Aquilaria* are found in Malaysia: *A. hirta*, *A. malaccensis* and *A. rostrata*. A significant number of research studies have been conducted on *A. malaccensis*, but none on *A. hirta* or *A. rostrata* (Nget *et al.*, 1997). *Aquilaria malaccensis* is well distributed throughout Peninsular Malaysia, except for the States of Kedah and Perlis. It is confined mainly to plains, hill slopes and ridges up to 750 m in both primary and secondary Malaysian lowland and hill dipterocarp forests (Jantan, 1990). Although *A. malaccensis* enjoys good geographical coverage, its occurrence is rather rare. La Frankie (1994, cited in Soehartono and Mardiasuti, 1997) studied the population dynamics of *A. malaccensis* in Pasoh Forest Reserve. He suggested a typical lowland Malaysian forest density of 2.5/ha and found that the growth rate varied between 0-1.95 cm/year.

#### Harvesting

Malaysia has a long history in the trade in agarwood. Agarwood has long been collected by the indigenous peoples of the interior of Peninsular Malaysia to supplement their income. Other local people are also involved in collecting, particularly in the State of Kelantan. Agarwood is referred to as *gaharu* or *garu* wood in Malaysia, the Sanskrit word *garu* meaning heavy. It has been reported that Malaysian agarwood can also be sourced from some *Gonystylus* spp., which are more prevalent in peat-swamp forests. The aromatic wood from *Gonystylus* spp., together with other fragrant woods, is also traded under the name *gaharu*, which further complicates efforts to study trade volumes and trends in *Aquilaria* spp.

#### Markets and prices

The majority of agarwood harvested is exported, with only relatively small quantities of agarwood being used locally, primarily for the production of incense. Muslims use agarwood incense during important religious occasions, especially at gatherings. *Aquilaria malaccensis* is also used occasionally for medicinal purposes. The main forms of agarwood in trade in Malaysia are wood sections, flakes, chips, incense and occasionally powder (Yaacob, 1999). Finished products such as perfume are also traded.

Non-resinous wood harvested from *Aquilaria* is categorized as a light hardwood that is not durable and is easily stained by fungal growth. It is therefore not a popular trade material. However, its lightness makes it suitable for light indoor construction, packing, jewellery boxes, and veneers. Research undertaken by the Forest Research Institute of Malaysia (FRIM) has identified five to seven grades of agarwood for Peninsular Malaysia. There are at least two grading systems in use, one for middlemen and harvesters and another for middlemen and traders (Dr C.Y. Shyun, Medicinal Plants Division, FRIM, *in litt.* to TRAFFIC International, 8 May 2000). According to Heuveling van Beek and Phillips (1999), as a general rule Malaysia produces eight grades of agarwood: grades one to three are dark, highly resinous and sink in water, whereas grades four to eight are brown to light brown and float in water. Agarwood is often adulterated with kerosene or other coloured oils to resemble higher grade agarwood.

Raw materials are processed in Malaysia as well as consumed for domestic use (Heuveling van Beek and Phillips, 1999). There is at least one processing plant in Malaysia. One agarwood trader

interviewed in Singapore said he owned a distillation facility in Malaysia; oil reportedly distilled in Malaysia was observed for sale in Singapore (Heuveling van Beek and Phillips, 1999). Within Malaysia, the production of agarwood oil via steam distillation is considered too time consuming and has been replaced by hydrodistillation (Dr C.Y. Shyun, Medicinal Plants Division, FRIM, *in litt.* to TRAFFIC International, 8 May 2000). CITES annual report data do not show any oil exports from Malaysia.

Chakrabarty *et al.* (1994) stated that the lowest grade of Malaysian agarwood (not necessarily *Aquilaria malaccensis*) could be obtained for USD19/kg in the Middle East. The high grades, normally reserved for exclusive buyers, are said to cost up to USD9589/kg. More expensive grades are also available and can sell for as much as USD27 400/kg.

Ng *et al.* (1997) reported that, in 1991, south-east Asian countries exported approximately MYR48.3 million (approximately USD17.6 million) worth of agarwood to Saudi Arabia, of which approximately 26% was sourced from Malaysia. Trade data compiled by Ng and Azmi (1997) show that the value of agarwood chips alone (therefore representing only a small part of the actual trade in agarwood and its products) exported from Malaysia was MYR393 065 in 1995 (USD156 746, or USD164 787 adjusted for inflation to 1998 values) and MYR546 289 in 1996 (USD217 144, or USD223 897 adjusted for inflation to 1998 values).

### **Reported international trade**

Within Malaysia, Peninsular Malaysia, Sabah and Sarawak have their own wildlife trade legislation and CITES-implementing authorities, with each producing separate CITES annual reports. Reports for Sarawak and Sabah for the period 1995 to 1997 had not been submitted at the time of writing. Therefore, Malaysian CITES annual report data represent only Peninsular Malaysia. The Government of Peninsular Malaysia has not indicated their basis for their CITES annual reporting, i.e. whether this is based on permits issued, permits used or actual trade. CITES annual report data for Peninsular Malaysia show the export of approximately 341 t of agarwood chips from 1995 to 1997 (approximately 90 t in 1995, 163 t in 1996 and 87 t in 1997). All but nine tonnes were destined for Singapore. Singapore's annual reports show corresponding imports from Malaysia during each of these years. Sixty-eight tonnes of agarwood were reported as exported in 1998, a further decline from 1996 export levels. Exports for the months January to March 1999 totalled approximately 21 t (E.N. Abdullah, Assistant Wildlife Ranger Department of Wildlife and National Parks, Peninsular Malaysia, pers. comm. to TRAFFIC Southeast Asia, March 1999). According to CITES annual report data for 1995 to 1997, the main end-destination for agarwood of Malaysian origin (i.e., including wood re-exported from countries such as Singapore) was Hong Kong, which was the final destination for approximately 86 t. Other significant end-destinations were India (25 t) and Saudi Arabia (17 t), followed by Egypt (9 t), United Arab Emirates (5.99 t), Oman (2.23 t), and Japan (1.35 t). Kuwait, Qatar, Bangladesh, Thailand, Bhutan and Morocco each imported less than one tonne of agarwood reported as originating in Malaysia over the three-year period.

A review of Singapore's CITES annual reports for 1995 and 1996 shows imports of *Aquilaria malaccensis* from both Sarawak and Peninsular Malaysia. Customs data for Sarawak show the export of approximately 16 t of agarwood in 1995 and eight tonnes in 1996. Corresponding import data for Singapore show the import of approximately seven tonnes of *Aquilaria malaccensis* from Sarawak in 1996. Customs data for 1997 were unavailable. According to Sarawak's CITES Management Authority, far larger quantities of *A. malaccensis* (approximately 528 t) were exported in 1998 (E.S. Bakar, Wildlife Ranger, Forest Department, Sarawak, pers. comm. to TRAFFIC Southeast Asia, April 1999). Sarawak's 1998 annual report includes data for *A.*

*malaccensis* as well as for “*Aetoxylon malaccensis*”, the combined export weight being approximately 528 t. Therefore, it seems likely that *Aetoxylon malaccensis* is actually *Aquilaria malaccensis*, but this could not be confirmed. The main export destination in 1998 was Singapore. Exports from Sabah are recorded as *gaharu* and these may comprise any *Aquilaria* (or even *Gonystylus*) species, making it impossible to determine the export volume of *A. malaccensis*. Exports are classified as log exports and sawn timber exports, both being measured in cubic metres. This makes comparison with export volumes measured in kilogrammes difficult. Additionally, data for some years are unavailable, with *gaharu* included in the category ‘Other Timber’. Forestry Department records show the export of only 18.88 m<sup>3</sup> of *gaharu* logs for the period January to November 1998. This is the only reported sawn timber or log export from 1995 to November 1998. The same data show a log production volume of 2901.71 m<sup>3</sup> for 1997 to November 1998. *Gaharu* log production was classed as ‘Other Timber’ in 1995, and no production was reported in 1996 (E.A. Abi, Head of Economic, Industry and Statistic Division, Sabah Forestry Department, Sandakan, *in litt.* to TRAFFIC Southeast Asia, 1999).

### **Domestic harvest and trade controls**

The government of each of Malaysia’s States requires that special permits be obtained from the relevant State Forestry Department to harvest and trade agarwood. Harvesting from national parks or wildlife sanctuaries is prohibited in all States. Within Peninsular Malaysia, the *National Forestry Act, 1984* prohibits the felling of *Aquilaria malaccensis* from State forests or Permanent Forest Estates. Harvesting from national parks or wildlife sanctuaries is prohibited by the *Protection of Wildlife Act, 1972*. Under the *National Forestry Act*, illegal removal of forest products is subject to fines of up to MYR2000 (USD526) and/or imprisonment up to 12 months. A ‘Removal of Minor Forest Product’ permit is required to harvest all *Aquilaria* spp. from Peninsular Malaysia. Permits cost MYR100 (USD26) and are renewable annually. Felling of *Aquilaria malaccensis* in Sarawak is regulated under the *Wildlife Protection Ordinance, 1998* and the *Forests Ordinance, 1958*. Harvesting from national parks or wildlife sanctuaries is prohibited by the *National Parks and Reserves Ordinance, 1998* and the *Wildlife Protection Ordinance, 1998*. Illegal removal of Sarawak’s protected plants can result in imprisonment of up to 12 months or fines of MYR10 000 (USD2631) (A.B. Othman, Director Crop Protection and Plant Quarantine Services Division, Department of Agriculture, Malaysia, *in litt.* to CITES Secretariat, 22 January 2000). In Sabah, felling of *Aquilaria malaccensis* is subject to the *Forest Enactment, 1968*, whilst harvesting from State land (government forests and gazetted parks and their equivalents) is forbidden by the *Parks Enactment Act, 1984*. Convictions for illegally harvesting any forest materials in Sabah will result in fines of up to 10 times the royalty value. Illegal exporters are subject to fines not exceeding MYR500 000 (USD131 555) or imprisonment under the *Forest Enactment* and *C.F. Circular 1/83*.

For more general offences such as the altering and counterfeiting of documents and permits relating to the provisions of the *Forest Enactment*, the fine is MYR5000 (USD1316). Under the *Wildlife Conservation Bill, 1997*, the searching for and the harvesting of all CITES-listed plants requires a Plant Collection Licence issued by the Director of the Sabah Wildlife Department. Offences made against the *Wildlife Conservation Bill* incur a fine of MYR30 000 (USD7893) and/or imprisonment up to three years.

Additionally, collectors are charged a premium fee that varies with each State. For example, in Perak (Peninsular Malaysia) the collector’s fee is MYR100/200/ha (USD26/200/ha) and an additional royalty fee of MYR18/t (USD5/t) applies to all *Aquilaria* spp. (E.N.M. Shah, State Deputy Director, Department of Forestry, Perak, pers. comm. to TRAFFIC Southeast Asia, April 1999).

### **International trade controls**

A levy or royalty is imposed before traders can apply for CITES export permits. These charges vary with each State. CITES export permits are required for export from all but Sabah, where the Department of Forestry instead requires their own export permits to be used. It appears that Malaysia's CITES Scientific Authority, the Ministry of Science, Technology and the Environment, is not involved in making nondetriment findings for the export of *Aquilaria malaccensis*. Offences in any State will result in seizure and confiscation by the relevant authority, with the goods subsequently either destroyed or auctioned, in accordance with State legislation. To date, no seizures have been made. This is believed to be linked at least in part to the difficulty of discriminating between *Aquilaria malaccensis*, other *Aquilaria* species and the wood products of other genera, with the effect that illegal shipments are not recognized.

In Peninsular Malaysia, the CITES Management Authority is the Department of Wildlife and National Parks (PERHILITAN). As well as issuing CITES permits for Peninsular Malaysia, the Department (in consultation with relevant agencies such as the Forestry Department) is responsible for reporting to national and international agencies. PERHILITAN is also accountable for monitoring trade via an enforcement unit that inspects shipments, and which occasionally acts on information received from the public. According to the Management Authority, shipments of agarwood are inspected by both themselves and the Malaysian Timber Council prior to export. They reported that some Malaysian Timber Council staff can identify the wood of different *Aquilaria* species, including *A. malaccensis*.

In Sarawak, the CITES Management Authority is the Forest Department. Exporters are required to register with the Sarawak Timber Industry Development Corporation. An annually renewable 'Licence to Sell and Deal' must be obtained, costing MYR100 (USD26) (E.S. Bakar, Wildlife Ranger, Forest Department, Sarawak, pers. comm. to TRAFFIC Southeast Asia, April 1999). Exporters must also complete a Customs Declaration Form before shipments are inspected by Customs and, occasionally, by the Forest Department. Trade data are maintained by the Forest Department, which states that it investigates any report of illegal trade. Staff commented that it was difficult to identify agarwood shipments to species level, and that they normally assumed that shipments presented for export comprised *Aquilaria malaccensis*.

The Sabah Wildlife Department (the CITES Management Authority for Sabah) is responsible for issuing CITES permits and works closely with the Sabah Forestry Department. The Forestry Department requires its own permit for export, but has not yet implemented a requirement that shipments be accompanied by CITES export permits. Export from Sabah (via blanket export regulations for all agarwood species) is regulated for both logs and processed timber and an Export Declaration Form must be completed for all exports

Log exports require a letter of consent from the Sabah Forestry Department (limited to one letter per person) and this requirement applies to individual shipments. Exporters must apply for the relevant permit from the place where the logs were obtained. The Sabah Forestry Department applies individual exporter quotas to agarwood logs; these have no time limit. A royalty system is in place for log exports of all *Aquilaria* spp. (under the category of 'Other Timber'), this being MYR100/m<sup>3</sup> (USD26/m<sup>3</sup>) (E.H. Baharun, Economic Officer, Economic, Industry and Statistics Division, Sabah Forestry Department, pers. comm. to TRAFFIC Southeast Asia, March 1999). All log exporters must complete a Scaling Order Form in addition to the Customs Declaration Form. In Sabah, an annual 'Licence to Export Processed Timber' is required to export processed agarwood. This costs MYR2500/yr (USD658/yr). No royalty fees are imposed on the export of processed agarwood (E.H. Baharun, Economic Officer, Economic, Industry and Statistics Division, Sabah Forestry Department, pers. comm. to TRAFFIC Southeast Asia, March 1999).

Sabah's CITES Management Authority noted their concern over miscommunications between relevant agencies, in that no CITES permits have yet been issued from Sabah. There are no CITES data for Sabah as a result. The Management Authority stated that they will bring the need for CITES export permits to be issued to the attention of the Department of Forestry (L. Ambu, Deputy Director, Sabah Wildlife Department, pers. comm. to TRAFFIC Southeast Asia, April 1999). Shipments are inspected by the Department of Forestry, all exports being classified as *gaharu* with no effort being made to identify the actual species. Staff noted that it is difficult to differentiate between the wood of different *Aquilaria* species.

### **Illegal trade**

Agarwood oil is being distilled illegally in Peninsular Malaysia and this is thought to be undertaken primarily by Cambodians. People from Thailand and Cambodia are also known to enter Malaysia to harvest or purchase agarwood illegally (Dr C.Y. Shyun, Medicinal Plants Division, FRIM, *in litt.* To TRAFFIC International, 8 May 2000). A government staff person in the Department of Wildlife and National Parks reported that some exporters used courier services to export *Aquilaria malaccensis* (especially of higher grades) in order to avoid CITES permitting requirements (E.S. Bakar, Wildlife Ranger, Forest Department, Sarawak, pers. comm. to TRAFFIC Southeast Asia, April 1999). No seizures of *Aquilaria malaccensis* have been reported. As noted above, this is likely to reflect, at least in part, the difficulties involved in distinguishing *A. malaccensis* from the five other native *Aquilaria* species.

### **Cultivation**

One of the first attempts to cultivate *Aquilaria* occurred in 1928 (Lok and Zuhaidi, 1996). Natural mortality caused the original population density of this stock of 833/ha to decrease to 31/ha by 1995 and it is unknown whether any of these trees produce agarwood. Additional research has shown that *Aquilaria* can be artificially propagated and there are continuing laboratory experiments regarding artificial induction of agarwood formation. There is private sector interest in this area and a committee involving FRIM and private foreign companies has been established to look into agarwood research and development (Dr C.Y. Shyun, Medicinal Plants Division, FRIM, *in litt.* to TRAFFIC International, 8 May 2000).