

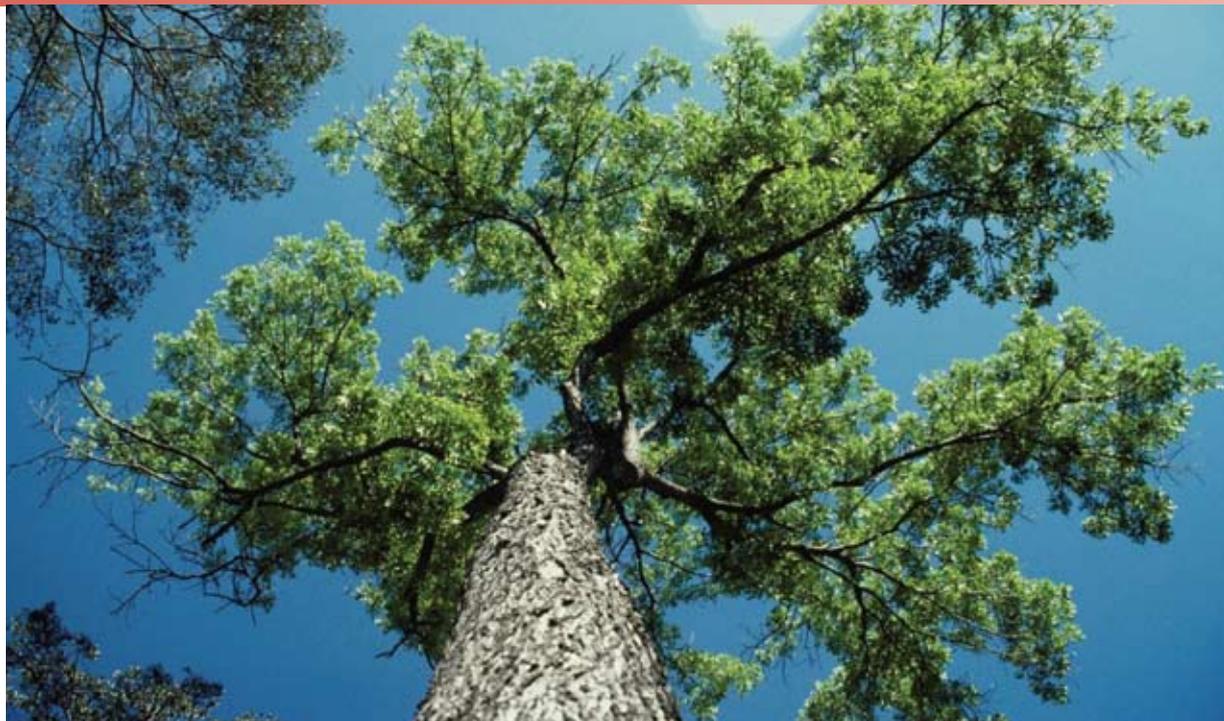
Converting mahogany

Peru's efforts to monitor trade and contribute to sustainability of an endangered timber species

By **Ivan Tomaselli¹** and **Sofia R. Hirakuri²**

¹ STCP Engenharia de Projetos Ltda., Director
tomaselli@stcp.com.br

² STCP Engenharia de Projetos Ltda., Senior Consultant
sofia@stcp.com.br



Tower of value: Large mahogany tree in Peru *Photo: ITTO*

Big-leaf mahogany (*Swietenia macrophylla*) is an important commercial timber species in Peru and other producing countries. Its natural range stretches from Central America to South American regions of Peru, Bolivia and Brazil. Peru has been in recent years the world's largest exporter of mahogany timber, and one of the last countries with significant wild populations of this species.

Mahogany has been heavily logged due to the high price it commands in the international market, which has encouraged, in some cases, illegal logging. Countries trading timber from this species are required to monitor their mahogany population because the exports are regulated by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), with the species listed in the CITES Appendix II since 2002.

Mahogany has been heavily logged due to the high price it commands in the international market, which has encouraged, in some cases, illegal logging.

CITES trade controls entered into force for big-leaf mahogany in November 2003 and exports of mahogany are authorized by the respective national CITES Management Authority, which based on a non-detriment findings (NDF) report, issues an export permit. Many countries are adapting their legislations in order to fully implement the CITES regulations. Properly making NDFs is a relatively complex issue, as it requires information on the existing population and its dynamics, and thus many mahogany producer countries have claimed to face difficulties to fully comply with the CITES regulations.

Peru has been constantly revising its regulations to improve forest management, including logging and trade control. The country recently revised and reformulated its legislation with a new Forest Law enacted through a decree on 30 June 2008.

Despite the attempts to improve its legislation and trade rules, and the fact that volumes and importance of mahogany trade in Peru has been greatly reduced, the issue remains controversial and Peru mahogany trade was until recently included in the CITES Review of Significant Trade (RST) process.

Forest law in Peru

Logging in Peru had been, until recently, governed by Law N° 27308 of 2000 and its complementary regulation, the *Decreto Supremo* 014/2001-AG, promulgated in 2001. Based on this law, logging is only allowed after having a Forest Management Plan and an Annual Operating Plan (*Plano de Operación Anual* - POA) approved by the competent authority. The management plan considers several criteria, including a minimum harvesting DBH of 75 cm and that 10% of the trees are kept to facilitate adequate regeneration (seed trees). In 2002, taking into consideration the need to ensure the sustainability of the national forests, and based on a national debate, Peru adopted a new forest strategy (ITTO 2006).

CITES regulations and the recent ratification of the Free Trade Agreement (FTA) / *Tratado de Libre Comercio* (TLC) signed in 2006 with the U.S.A., forced the Government of Peru to adopt stricter measures to control mahogany trade. The FTA has a special chapter dealing with the forest industry, and Peru was required to put into force new regulatory and control mechanisms. Furthermore, despite the efforts of the Peruvian government to improve its laws and regulations to implement the CITES regulations, the Peruvian legislation is currently classified under "Category 2" of the CITES classification regarding the effectiveness of legislation, and several changes to improve legislation and create new mechanisms to improve control on the origin of timber to be exported are needed to move up to "Category 1".

Main features of the new forest law

The recently signed FTA with the U.S.A. has been a driving force to change the Peruvian Forest Law, as well as to introduce other changes that are also generally in line with CITES requirements. Some of the proposed changes go beyond the forest legislation, but they are also important as they include provisions of the penal code to enforce forest legislation, regulatory measures related to confiscated timber and other aspects. A decentralization of the forest administration took place at the end of 2008, spurred by the swift enactment of the new forest law and other related laws regulating forest resources. The main decisions and changes that are to be introduced in the institutional and legal frameworks, and in the administrative procedures affecting forest management and forest products trade are:

- INRENA, based on the new Forest Law, was replaced by the National Forestry and Wildlife Authority under the Ministry of Agriculture (MAG);
- The National Forestry and Wildlife Authority together with 25 regional governments will be directly responsible to manage and control the forest sector;
- OSINFOR (*Organismo Supervisor de los Recursos Forestales Maderables*) will have its role expanded, will act as a “national auditor” and will be responsible for the definition of export quotas for protected timber species, for field checking and approval of the POAs and other issues;
- All CITES-listed timber species must be field verified prior to logging;
- Protected areas and other forest environment related issues will be under the Ministry of Environment; and
- All harvesting and timber transportation equipments (e.g. skidders and trucks) must have a GPS to be used in a tracking system.

Some other strategic issues under consideration by the government and relevant to the forest sector and CITES include:

- The Penal Code will be revised to incorporate specific provisions related to international and national trade of protected specimens and species, and provisions for investigation;
- Revision of legislation has been considered important to:
 - i) Avoid/prevent the creation of unnecessary transaction costs, especially in the forest law in dealing with forest management plans;
 - ii) Reduce restrictions and control on plantation forests, timber and other products from forest plantations.
- Finding appropriate alternatives for handling confiscated wood.

Forest Administration

The National Institute for Natural Resources (INRENA), established in 1992, was the CITES Management Authority for Peru until recently. Under the new Forest Law, the National

Forestry and Wildlife Authority is the new Management Authority, while the National Agrarian University of La Molina (*Universidad Agraria La Molina – UNALM*), Faculty of Forestry, will continue to act as the CITES Scientific Authority.

OSINFOR was created in 2000 by Law N° 27308 and became part of INRENA, acting as the responsible agency for monitoring compliance with forest management plans in timber-producing concessions. With the advent of the new Forest Law, OSINFOR became an independent agency (Decreto Legislativo N° 1085, of 28 June 2008), and now it is expected to play a much broader role, covering supervision, control and forest law enforcement, including the establishment of export quotas and other aspects.

Institutional limitations

The major institutional weaknesses affecting the ability to implement CITES regulations in Peru are related to the lack of funding, lack of human resources (especially qualified personnel), and weak infrastructure in the field.

Proper implementation of CITES regulations requires a structure capable to make NDFs (a scientific procedure that provides evidence that harvesting does not threaten the species' survival), which entails a gathering of a significant amount of information. Peru, like many other countries where mahogany occurs, does not yet have a reliable inventory of mahogany; nor does it have sufficient information on its silviculture, population dynamics and other aspects, which creates difficulties in making accurate NDFs for the species.

In spite of the problems, Peru has made some progress. In 2006, for instance, UNALM informed the CITES Mahogany Working Group (MWG) that the country was improving its ability to make NDFs, based mainly on an ITTO-funded project to implement a specific study on mahogany populations. The establishment of a Technical Committee to support the Scientific Authority has been suggested as a way to increase its capacity. This would be an option to involve other stakeholders, including representatives of NGOs and of the private sector, and could be a way to reduce conflicts and increase the transparency of the process.

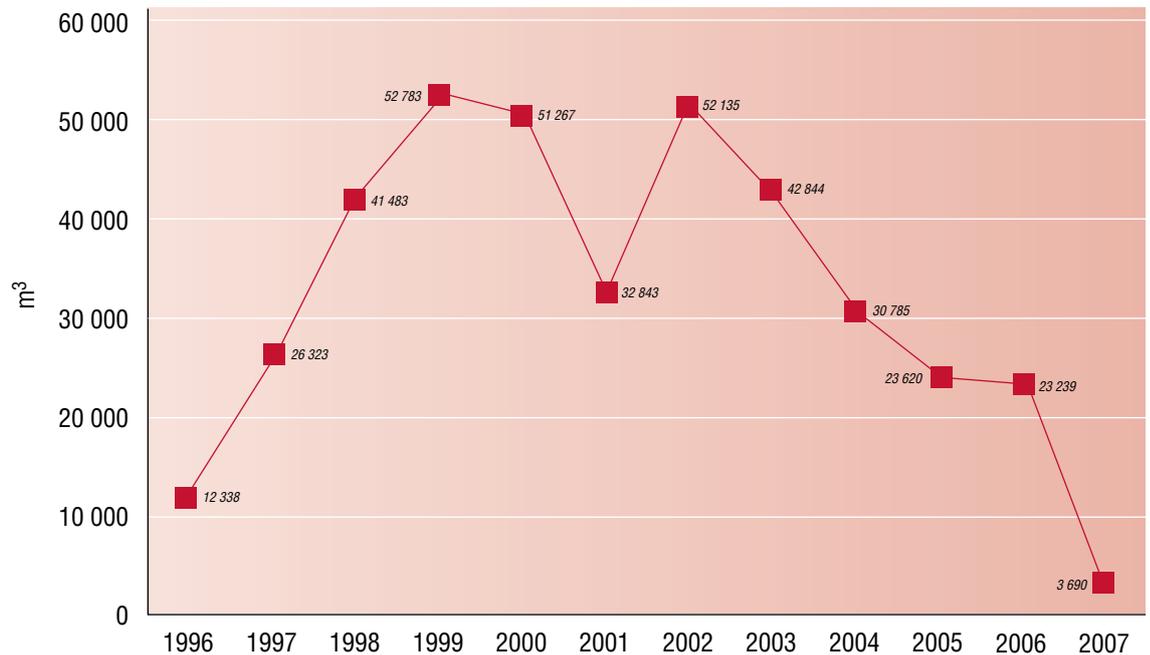
Trade

Peru's forest industry exports are mostly sawnwood from a relatively limited number of species. Exports of sawnwood have represented on average about two-thirds (in value terms) of all exports of timber products over the last few years. Mahogany export is fairly important and until recently has represented around 80% of the total value of sawnwood exports.

Data on production of mahogany sawnwood in Peru are scattered and have differed among the available sources (ITTO 2004, WWF-Peru 2002, INRENA 2007). In the 1950s, production of sawnwood reached around 10 000 m³ per year, and in 1975, the production reached 15 000 m³. From 1975 on the production increased at a faster rate, reaching a record of 77 552 m³ in 1995. In the following years the production constantly declined to 61 588 m³ in 1999, 44 246 m³ in 2005, and to 30 705 m³ in 2006.

Slashed

Volume of mahogany exports from Peru (1996-2007)



Source: Adex 2008

The mechanism adopted by Peru to comply with the CITES regulations is based on sawnwood export quotas. Since 2004, the Government of Peru has set an export quota every year based on a report issued by the national CITES Scientific Authority.

The chart above shows the evolution of the total annual export volume from 1996 to 2007. In 2002, sawn mahogany exports peaked at slightly over 52 000 m³, worth US\$55 million. The increase in volume was mostly a result of restrictions on mahogany exports imposed by Brazil. The export volume dropped to less than 43 000 m³ in 2003, but the value remained high at about US\$47 million (ITTO 2004) due to price increases. Since then, mahogany export has declined drastically, and only about 3700 m³ was exported in 2007. Export volumes declined further in 2008.

Peru has defined its mahogany quotas taking into account the number of trees that can be harvested.

The Exporters Association of Peru (ADEX) considers that the reduction in mahogany exports shows the commitment of the country to ensure the sustainability of the species, and affirms that all Peruvian exported mahogany timber in recent years comes from legal sources.

The Peruvian CITES Scientific Authority established a mahogany quota of 4983 m³ for 2007, but the exported volume was lower (approximately 3700 m³). This difference was claimed to consist of stocks in the production chain that were to be exported in 2008. For 2008, the Scientific Authority initially agreed on a quota of 755 trees, but this number was reviewed and the official quota is now 715 trees, which based on the

conversion factors adopted by the government, represents a volume of 3475 m³ of sawnwood to be exported.

The quota has been established based on harvesting areas located in 13 concessions and 3 special harvesting permits. INRENA has reported that the quota, based on UNALM estimates, represents only 2% of the total number of commercial mahogany trees.

Peru has defined its mahogany quotas taking into account the number of trees that can be harvested. Conversion factors were used to convert tree volume into final product volume, thereby defining the quota in cubic meters that can be exported. Other countries have taken a similar approach in different situations, and the discussion on how reliable and efficient such conversion factors can be in dealing with timber is becoming topical.

Roundwood to sawnwood conversion factors

The establishment of the conversion factors used to set mahogany export quotas in Peru has been controversial. The conversion factors used to set the export quotas have been reduced, indicating that Peru recognized that the coefficients used in the past were too high. In 2008, INRENA established, based on the *Resolution Jefatural* N° 002-2008, new conversion factors for mahogany. The new coefficients are:

- From the tree volume to the harvested log: yield of 71% (considering 29% as loss due to natural defects of tree);
- From the log to sawnwood: yield of 52%;
- Export grade: 70% of the total sawnwood produced.

Therefore, only 26% of standing tree volume can be considered in establishing export quotas for sawnwood. It is interesting to note that the sawnwood conversion factor was reported in a FAO study carried out in 1978 (over 30 years ago), and the exportable percentage was based on US-based National Hardwood Lumber Association (NHLA) grading information. There is no technical evidence that these coefficients are representative for Peru.

The use of conversion factors as a basis to control the timber industry and to define export quotas have been discussed in many countries, usually with few practical application perspectives. It should be noted that conversion factors can be affected by log quality, log dimensions, harvesting efficiency, processing efficiency, technology, training, market requirements and other factors.

The difficulties in developing useful conversion factors can be seen in a recent report prepared by Kometter and Marvi (2007). The report outlines a methodology to estimate yield of export grade sawnwood on a per tree basis for mahogany. Equations were developed based on 255 mahogany trees with DBH ranging from 75 to 160 cm. The results show that the yield coefficient for trees within a certain diameter class can vary by more than 50%.

Such factors cannot be applied at the company level. In fact, if the average conversion factor is applied at company level, it can generate penalties for those timber companies that are more efficient in timber processing and may open a window for illegal wood to enter the market. Thus, the adoption of country-wide conversion factors can also stimulate illegality and corruption.

Conversion factors can be an important tool for forest managers, but their effectiveness will depend on how they are developed, and especially how they will be applied. It seems to be unlikely that a single conversion factor will ever be able to represent all situations taking into account all particular factors; the cost of developing conversion factors for all situations would be too high. A possible alternative is to consider the use of conversion factors as an initial criterion for judging compliance with regulations and/or quotas, and in the case of significant deviation from the norm decide on the need for further field auditing.

Analysis and conclusions

In spite of many efforts and some progress, the Government of Peru has found it difficult to put in place a cost-effective and efficient regulatory system to avoid illegal logging. Permits for exports of CITES regulated species like mahogany are given year by year, with no long-term strategy, and this has limited investments in the sector. Furthermore, many forest concessions are not operational and the portion of timber coming from small land owners has increased. This makes control even more difficult.

The CITES Scientific Authority presented a report (Lombardi 2008) for the establishment of an export quota for mahogany.

The report is largely based on the results of the ITTO project (PD251/03) implemented over the last few years, which analyzed estimates of the mahogany population and undertook succession studies. The quotas have been established based on number of trees to be harvested, with the conversion factors presented above used to define sawnwood export volume quotas. The use of conversion factors to estimate a national export quota does not seem to be a problem, but problems arise when applying such factors at the individual company level.

Conversion factors are affected by a large number of variables, and simply working with average values is not appropriate for assessing compliance with CITES and other requirements at company level. The conversion factors at company level should only be used as an initial evaluation criterion, with significant deviations from the average needing further investigation. Enforcing forest laws based on a general national conversion factor might penalize timber companies that are more efficient in sawmill processing, and this can also open a window for illegal wood in the market and to stimulate corruption.

ITTO and CITES are implementing a multi-year program to build capacity of countries to implement CITES listings for tropical timber species, with one activity being a recently convened regional workshop on the use of conversion factors to establish export quotas. Visit www.itto.int for more information on the program including the report of the conversion factor workshop (Spanish only).

References

- ADEX (Asociación de Exportadores do Peru). 2008. *Trade Data 2008*. Lima, Peru.
- Grogan, J. and Barreto, P. 2005. *Big-Leaf Mahogany on CITES Appendix II: Big Challenge, Big Opportunity*. Conservation Biology, vol. 19, No. 3, June 2005, pp.973-976.
- ITTO. *Evaluación del las Existencias Comerciales y Estrategia para el Manejo Sostenible de la Caoba (Swietenia macrophylla) en el Peru*. Project PD 251/03 Rev.3 (F), Yokohama, Japan.
- ITTO. 2004. *Making the Mahogany Trade Work*. Report of the workshop on capacity-building for the implementation of the CITES Appendix-II listing of mahogany. ITTO Technical Series 22, International Tropical Timber Organization, Yokohama, Japan. 54p.
- ITTO. 2006. *Status of Tropical Forest Management 2005*. ITTO Technical Series 24. International Tropical Timber Organization, Yokohama, Japan. 302p.
- Kometter, R. and Maravi, E. 2007. *Methodology for Developing National Volume Conversion Tables (Standing Volume and Export Grade Sawnwood)*. The World Bank and the Comisión Centroamericana de Ambiente y Desarrollo, Washington D.C., USA.
- Lombardi, I. and Huerta, P. 2007. *Monitoring Mahogany. ITTO Tropical Forest Update 17/3* pp.5-9.
- Lombardi, I. 2008. *Informe Sobre el Estado de las Poblaciones de Swietenia macrophylla en el Peru*. Manuscript prepared by INRENA, Lima, Peru.
- INRENA. 2007. *Plan de Acción Estratégico para la Implementación del Apéndice II de la CITES para la Caoba en el Peru (PAEC - PERÚ)*. Lima, Peru.
- WWF-Peru. 2002. *National Mahogany Production 1997-2001*. Cited in NRDC, Peru Forests. Visited on: 26 May 2008; available at: <http://www.peruforests.org/documents/>