Upside-down: Global forestry politics reverses directions of ownership in Peru-China timber commodity chains

Louis Putzel

In the context of globalized trade, the impact of international markets for timber on tropical forests is a major concern. Over the past 5 years, exports of timber from Peruvian Amazonia have grown 180%. With shifts in global commodity chains increasingly relocating production systems to China, the potential impact of that country’s timber transformation industry on Amazonian forests is great. Meanwhile, a major factor affecting trade is the globalization of forest policy through intervention by international institutions and bilateral trade arrangements. Peru, which encompasses over 12% of the total area of Amazonia, is susceptible to both the economic pressures of the forest trade and the political influence of institutions with a mission to regulate that trade and protect forests. Field observations support previous findings that these reforms do not adequately govern the logging industry and raise questions about the equitable distribution of its benefits. Using data collected from timber industry actors in Peru, this study describes the structure of Chinese timber supply chains in the Amazonian region and finds that control is shifting towards China as corporations adapt to new trade norms. Now that China has reached a bilateral free trade agreement with Peru that includes promises to look into these issues, a reexamination of China’s reliance on prevalent global mechanisms of control and verification of timber imports would potentially be useful.

Key Words: Peruvian Amazon; China timber trade; forestry law; commodity chains; timber certification

Introduction

Extending over an area of more than 5 million km², the forests of Amazonia are a repository of 25% of terrestrial biodiversity and play a vital role in regulating regional and global ecological systems (Dirzo and Raven 2003; Malhi et al. 2008; Oliveira et al. 2007). In addition to the direct damages caused by logging, timber extraction entails important secondary impacts on forests including facilitating access for conversion of land to agriculture and pastureland (Mattos and Uhl 2004; Nepstad 2004; Asner et al. 2005). Over 650,000 km² (>12%) of the Amazon forest area is located in Peru (Oliveira et al. 2007). Unlike Brazil, where timber exports have declined in recent years, Peru’s volume of annual timber exports increased 180% between 2004 and 2008 (Figure 1). For most of that time, Mexico and the United States were Peru’s largest importers of timber; in the first quarter of 2009, however, their timber imports from Peru declined by more than 60%, while Chinese imports increased 5% (Andina 2009), making China Peru’s largest timber importer (Figure 1B). Now, the second, third, and fourth largest exporters of Peruvian timber are Chinese-owned companies (Peru.com 2009).

Globally, in 2008, China imported 61% of the tropical logs and one third of all sawn wood traded internationally among members of the International Tropical Timber Organization (ITTO 2008), increasing its overall share in the world marketplace, and is now recognized as the center of a global timber commodity chain (Sun et al. 2004; White et al. 2006; Sun et al. 2008; Canby et al. 2008; Northway et al. 2009). More than half of China’s overall forest product imports and more than two thirds of imported logs come from the Russian Far East, while almost half of China’s imported plywood comes from Indonesia (Northway et al. 2009). The comparatively small proportion of imports from Africa (4-5% of China’s total since 2004) belies the huge impact on the forests and economies of individual countries: In 2005, for example, 89% of Mozambique’s total log exports were China-bound (Canby et al. 2008). Similarly, while the proportion of South American timber in the Chinese market is vanishingly small, China is now Peru’s largest trading partner in the timber trade.

The global impact of China’s growing timber imports, amplified by legislation curtailing domestic logging and subsequent tariff reductions in the late 1990s (Liu and Diamond 2005; Wang et al. 2007; Zhang & Gan 2007; Laurance 2008), has, not surprisingly, become the subject of substantial interest and debate. In part, differences in views on this topic are due to misconceptions about the activities of different national, ethnic, corporate, and individual entities. In
addition, the existence of national and international forest governance systems may not prevent Chinese timber traders from working within informal local timber provisioning structures that do not comply with these systems (Putzel et al. 2008). “China” as a unitary entity as well as “Chinese loggers” as a group have been criticized for their role in illegal logging (see, e.g. Economy 2006; Laurance 2008) though sometimes these criticisms are biased or ill-informed (Mawdsley 2008; Putzel et al. 2008).

![Timber Exports Amazonian Countries](image)

**Figure 1.** Annual timber exports from Peru increased from 153,000 m$^3$ in 2004 to 275,000 m$^3$ in 2008. Source: ITTO 2008 Annual Review data tables (author’s analysis).

On the other hand, a growing number of studies attempt to provide the requisite detail to understand the interactions of companies, ethnic trade networks, regulatory structures, and extractive systems that together form the China timber trade. White et al.’s pioneering study (2006), for example, emphasizes that the responsibility for ecological and social concerns associated with China’s demand for timber is shared among many parties—from private actors to global institutions and from producer nations to end consumers in Europe and the United States. Notwithstanding, the report states that the China/global forest product industry must improve its practices or risk “losing its license.” Sun et al. (2008) provides a commodity chains analysis with case studies from Russia and Mozambique to elucidate the structure and benefit flows associated with Chinese timber acquisition, providing the basis for a set of detailed recommendations towards meeting international standards of accountability and sustainability. There is evidence that China and a number of Chinese companies are responding to these demands: for example, in December 2007, China and the US concluded a memorandum of understanding committing to address the problem of the illegal timber trade (USDOS 2009). A growing number of Chinese timber and timber processing companies including major hardwood flooring manufacturers, are obtaining forest management and chain-of-custody certifications from Forest Stewardship Council (FSC)-approved certifiers, some with endorsement from conservation programs such as the WWF’s Global Forests and Trade Network (see, e.g. FSC 2007; WWF 2008).

Until recently, the timber supply chains linking Peruvian forests to the Chinese market were Peru-based and producer-driven (see, e.g. Gereffi et al. 2001 for an explanation of producer- vs. buyer-driven commodity chains). Numerous actors with access to the resource, operating in isolation from the main instruments of international oversight, sought opportunities to market timber in China and managed sourcing and exporting from bases near the transnational shipping center on the Pacific coast or from Amazonian sawmill towns. However, as China and its larger corporations endeavor to comply with the requirements of global institutions and national laws vis-à-vis the timber trade, there is evidence that the rules of the game may now be changing. The most apparent change is the appearance of new buyer-driven supply chains owned by large multinationals headquartered in China, thereby shifting the directionality of ownership and control from Peru to China. With this shift comes an implicit redistribution of responsibility for the ecological, economic and social roles...
impacts of the timber trade away from a wide range of decentralized actors in Peru towards a smaller number of larger actors in China as well as global institutions that validate their activities. In this paper, I will describe the prevalent and changing structures within Chinese supply chains for Peruvian timber, and discuss how those structures relate to both the Peruvian forestry system and international norms.

Logging in Peru: External influences on legislation, enforcement, and oversight - Peru's timber exports occur in the context of a changing landscape of national legislation and enforcement as well as the global mechanisms of international intervention and oversight which can be collectively called the tropical timber trade regime (TTTR) (Gale 1998). In 2000, Peru passed a new forestry law (Law no. 27308) based on conservation and sustainable management principles, and favoring larger timber companies (Smith et al. 2006; Granoff 2008). Since its implementation in 2002, up to 88% of logging in Peruvian Amazonia has been conducted under illegal, or “informal” conditions (WB 2006). This failure is in part due to the reluctance or inability of loggers and logging companies to conform to the new national rules (Smith et al. 2006). In its restructuring of Peru’s forest industry, the new law may have introduced a higher degree of inequity into the industry, engendering resistance among some stakeholder groups, particularly small companies and landholders (Granoff 2008).

TTTR institutions such as conservation NGOs played a role in formulating the new forest law, and in executing key elements of its implementation such as the awarding of concessions to timber companies. WWF-Peru, with funding from the United States Agency for International Development (USAID), participated actively in designing and activating the legislation (White et al. 2005; Granoff 2008; WWF 2009). The new concession system has been the basis for the awarding of forest management and chain-of-custody certification to a number of logging companies, which enables them to sell timber to the most restrictive and lucrative markets; the goal is to have 2 million ha of concession forest under certification by 2011 (WB Bank 2006).

During negotiations towards a new US-Peru free trade agreement (FTA), a lawsuit against a large exporter of mahogany from Peru to the US (Hebert 2006) elucidated problems associated with the application of the new forest law. A subsequent amendment to the FTA contains an eight-page addendum (Annex 18.3.4) on Forest Sector Governance, requiring that Peru increase the power of its mechanisms to enforce its forest law failing which US customs will reject questionable shipments of Peruvian timber (PUSFTA 2006). In response, Peru passed legislative Decree No. 1085 which increases the authority of the timber industry oversight body OSINFOR (Organismo Supervisor de los Recursos Forestales Maderables), and modified the penal code (effective January 1, 2009) to increase the penalties for infractions to up to six years prison (Ortiz 2008). These changes removed the final impediment to implementation of the US-Peru FTA, which was finally implemented in February 2009, and facilitate Peru’s compliance to market restrictions – embodied in an amendment of the US Lacey Act (USDA 2009) and Europe’s voluntary FLEGT licensing scheme (EC 2008) – on illegally logged timber.

The combined influence of global institutional involvement and conditions attached to bilateral trade on Peruvian forestry legislation and implementation is important. Not only have these forces contributed to changes in where and how Peruvian logging can legally be carried out, but also who is legally able to log. Together with the higher standards of FSC-certification, which is increasingly imperative, the market may be further divided into groups who can log profitably, and those who cannot.

Triangular relationships: China, Peru, and the TTTR - China’s large and growing market for commodities and resources represents both opportunities and threats to developing economies such as Peru. Increasingly, China’s role in the global market centers on processing imported raw materials, which has been termed “verticalized trade.” This has increased from 5.7% of 1981 to 48% total trade in 2003 (Kaplinsky and Messner 2008). To developing countries, increased demand for natural resources can improve their overall terms of trade, while verticalized Chinese production, mostly dominated by foreign companies such as large multinational retailers, decreases prices of manufactured imports (Jenkins et al. 2008). The opportunities associated with China’s demand for developing country resources is paired, however, with the threats of competition in export markets for labor-intensive manufactured goods as well as competition for global foreign direct investment. Thus, countries (such as Mexico) whose economies are dependent on manufactured goods exports to third markets are likely to lose out, while countries (such as Peru) whose exports are dominated by natural resources may see a net economic benefit (Jenkins et al. 2008).

The policy of China towards the internal affairs of other countries has traditionally been one of non-intervention; according to Jeffrey Sachs “China gives fewer lectures and more practical help” (Polgreen 2006). However, this may be changing as China seeks to secure strategic resources to fuel its growing export-oriented production system and domestic market (Radke 2007; Pehnelt 2007).

Like the US, in 2009 China also established an FTA with Peru (PCFTA 2009). The agreement, which has yet to come into force, contains a commitment to increase sustainability in Peru’s forest sector. In particular, Article 162 of the FTA promises bilateral cooperation in the forestry sector, training and studies for sustainable forest management, improvement of rehabilitation and sustainable management of forests, studies on the sustainable use of timber, and technological development for the transformation and processing of forest products, among other things. In contrast to the US-Peru FTA, which came into effect in February 2009, the China-Peru FTA does not require changes to the Peruvian forest law, proof
of compliance thereof, or mechanisms of enforcement such as rejection by customs of shipments deemed to violate said mechanisms. No mention is made of controlling illegally extracted timber, nor is any commitment made to favor timber certified by third parties.

Within China, however, certification is increasingly seen as a means to protect the timber processing industry’s position within the global market (Wang et al. 2007). It is recognized that foreign legislation such as the Lacey Act favors certification by third parties; the most prevalent certification program in China is the Forest Stewardship Council (FSC) (CIBC 2009), which has not only certified timber plantations within China, but also companies that transform imported timber. To date, FSC has issued 776 certificates to Chinese companies including a number of flooring manufacturers that process tropical hardwood species. Particular timbers listed on Chinese company chain-of-custody certificates include Amazonian species such as Dipterey spp., Tabebuia spp., Hymenaea spp., and Terminalia amazonia. This listing facilitates their re-export, following processing, to increasingly restrictive and lucrative North American and European markets (Guéneau and Tozzi 2008). Operating in complement to FSC certification, the WWF defines the Global Forest Trade Network - China, which promises to facilitate transnational business connections for Chinese timber companies that include certified timber in their product lines, while improving their “corporate image” (WWF 2009b).

In sum, the bilateral trade of timber between Peru and China is subject to fewer binding restrictions than that between Peru and the US or Europe. It is unclear exactly how the China-Peru FTA will affect timber acquisition by China or sustainable forest management within Peru. However, TTTR leverage on markets and market actors might be expected to have an impact on the structure of trade between the two countries, as companies seek to comport to the new realities of the global marketplace.

Research Approach

Commodity Chains Analysis - Processes of timber extraction, processing, and exporting were observed between 2006 and 2009 by following movements of Dipperex spp. timber from two timber concessions and 4 smallholder communities in the regions of Ucayali and Loreto in Peruvian Amazonia to Pucallpa, the main center of primary processing located in the province of Coronel Portillo, Ucayali and the point from which timber is transported by road to the trans-Pacific port in Callao, Lima. Dipperex was selected as the focal species of this study because it is the species subject to the highest demand from China. A detailed analysis of trade data, which will be presented elsewhere, shows that Dipperex represents ca. 70% of timber exports from Peru to China and that ca. 80% of Dipperex exports between 2004 and 2008 were China-bound.

Through semi-structured interviews with 92 informants, actors in the Dipperex trade were categorized according to their roles in the Chinese trade and to their position within the structure of the Peruvian timber industry. Interviews focused on identifying buyer-seller relationships among actors and between them and third parties, on corporate hierarchies, and on distribution systems. Based on the data acquired about these relationships, general models of commodity chains relevant to 22 Chinese companies operating in Peru were developed.

Results

Categorization of actors - The following table describes the types of companies and individual actors that play key roles in the Dipperex market, and the number of such actors represented in interviews conducted during the study.

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiservice timber company</td>
<td>17</td>
<td>Plays multiple roles in the industry, from extraction to exporting and distribution. May have concession contract.</td>
</tr>
<tr>
<td>Concessionaire</td>
<td>9</td>
<td>Owns forest concession contract and produces management plans and logging operation plans.</td>
</tr>
<tr>
<td>Saw mill</td>
<td>23</td>
<td>Mills timber for own company or for third parties.</td>
</tr>
<tr>
<td>Extractor</td>
<td>16</td>
<td>Extracts timber using heavy equipment. May be subcontracted by other parties, or work independently.</td>
</tr>
<tr>
<td>China exporter</td>
<td>24</td>
<td>Sells and ships timber to China.</td>
</tr>
<tr>
<td>Small Entrepreneurs</td>
<td>30</td>
<td>Including small “artisanal” producers, transporters and millers of Dipperex on the informal market.</td>
</tr>
</tbody>
</table>

General market conditions - The observed Dipperex supply chains from Peruvian Amazonia to China range from highly vertically integrated to horizontally dispersed. In a vertically integrated supply chain, a large multiservice timber company may log its own concession, transport logs using a barge to its own mill, transform the logs into parquet flooring, dry the parquet in kilns, prepare the timber for shipping, and ship the timber to its own distributor in an overseas market.

2 Information acquired through searching FSC’s online database (www.fsc-info.org) by country and by species.
In horizontally-dispersed supply chains, companies purchase wood from extractors or small entrepreneurs. These range from large professional extractors to smallholder farmers who fell trees and cut them into blocks using chainsaws, then transport the blocks by hand to the nearest riverbank or road. They may sell the timber to a remote buyer or pay a small cargo boat or truck to transport it to Pucallpa where they are sold to a mill. At the mill, the chainsawed blocks are transformed into boards. The boards are purchased by exporters, who may kiln-dry them or export them undried to a factory in China. They may be purchased with or without legal documentation.

The ability of any particular agent to fulfill any number of the described stages from extraction to distribution of the wood in the final market depends on economic and organizational capacity; virtually any configuration can be found in the marketplace. At any given step in the process the wood may change hands, moving from a relatively horizontally organized group of actors to a company that also owns its own vertically organized supply chain(s), or vice versa. In vertically integrated systems, companies sometimes follow the processes specified in the forest law and, if they are certified, the criteria established by the FSC; other times, as is generally necessary in the horizontal systems, they purchase paperwork from concessionaires to “legalize” their timber.

These documents, attesting to the legal origin, extraction, and transport of timber, become increasingly necessary at each stage in the process, and absolutely obligatory by the time timber leaves Pucallpa by road on its way to Lima. The price of the documents, which may be purchased from concessionaires and bear the seal of the natural resource authority, varies according to the volume of timber to be laundered and the availability of “volume” for sale by concessionaires, among other factors. In May, 2009, documentation for a truckload of *Dipteryx* timber (24 m³) bound for Lima could be purchased for ca. US$450.

Since 1995, the number of ethnic-Chinese owned timber companies incorporated in Pucallpa has grown to 21 companies. This number does not include buyers that come from China to place orders (Figure 2).

![Figure 2. Number of Chinese companies established in Pucallpa, Peru.](image)

*Structure of Chinese timber supply chains* – The structural characteristics of ethnic Chinese-owned *Dipteryx* exporters in Pucallpa can be described by three business models: labeled A, B, and C. The three models (illustrated in Figure 3.) are geared towards producing boards for China’s flooring industry, and all are specialized in hardwoods such as *Dipteryx* spp. In all models, companies own distributorships in China and some in other locations such as in the United States. In A and B, the companies are headquartered in Pucallpa, whereas in C, a newly observed model, companies are headquartered in China and own subsidiaries in Peru. In most other aspects, the configurations of B and C resemble those of traditional Peruvian timber companies; in particular the illustration of Model B is roughly equivalent to Peruvian companies encountered, except the latter do not own distributorships in China.

*Model A.* Owners of model A companies are specialists in the export business, rather than forestry or logging experts, and come from a diversity of professional backgrounds. In model A, companies purchase timber on the market in
Pucallpa, from either large traditional timber companies or on the more horizontal market of small producers. The timber they purchase may be logs, chainsawed blocks, or milled boards (either kiln-dried or undried). When purchasing unmilled timber, model A companies generally outsource milling, though a number of them are gradually acquiring the capital to do their own milling. In purchasing timber from microempresarios working in the informal market, model A companies increasingly prefer to purchase milled boards that come with full documentation to avoid sanctions by the natural resource authority. Most A companies either have or are now installing kilns to dry timber before packing it and shipping it to customers (often friends or family members) in China. Those without kilns often export “wet” timber.

Model B. Owners of model B companies are best described as industrialists. These companies have a vertically integrated extraction team and a barge for river transport. The extraction team logs areas by contract with numerous local communities and individual landowners. In order to make an extraction expedition cost-effective, these companies often work with groups of landholders to help them to formalize their land titles and support them during the process of obtaining the necessary logging permits, which are generally permits to remove timber for conversion to agriculture. After extraction, B companies transport their timber by barge and truck to their Pucallpa-based mill headquarters. It is processed fully using imported equipment and shipped ready-to-use to company-owned wholesale distribution centers in China and other countries. These centers are generally managed by friends and family. At least one Model B company has attempted to acquire timber concessions, and is likely to succeed in the short term.

Model C. Run by businessmen and financiers, model C is a multinational corporate model with headquarters based in China. It is the most recently established model, having appeared within the past two years. Model C companies have their own timber concession contracts obtained by transfer from Peruvian concessionaires. Like B, they employ extractive teams, and are developing sawmill operations. However, final milling is conducted in their China factories. An interesting phenomenon that emerged from this new configuration was the purchase of large blocks of *Dipteryx* from a certified third-party concession for direct export to China. In order to maintain a certified chain of custody prior to the establishment of a certified plant in Peru, the timber was exported in a less-processed state and a portion of value-added was lost to Peru.

In practice, there is substantial overlap among the three business models. In particular, B and C companies purchase timber from the horizontal market or from A companies when their own production is insufficient to fill standing orders. Several A companies purchase from B companies and even share office space within their mills, while C companies have purchased entire A companies to increase their supply options.

An emerging trend is for C companies to seek (and obtain) FSC forest management and chain-of-custody certification. In interviews with C company personnel, the primary reason cited to establish extractive activities was to develop certifiable chains of custody in order to maintain FSC certification. In addition to better access to more lucrative markets for certified timber, another reason to be FSC-certified mentioned was to increase a company’s attractiveness towards investors in preparation for a public listing on the stock market.
Figure 3. Illustration of the configuration of ethnic-Chinese exporters of *Dipteryx* timber operating in Pucallpa, Peru. Black boxes indicate the location of the headquarters of companies or conglomerates. Light gray arrows connecting boxes indicate the vertical processes owned by the main company and the direction of timber flows. Small black arrows represent the horizontal trading and movements of timber among different actors in the industry. Arrow with dotted line indicates a developing chain.
Discussion

Several generalizations can be drawn from the observation of the structure of Chinese timber commodity chains in Peruvian Amazonia. First, the wide range of practices observed among Chinese actors within the Peruvian market are not unique to them. Both the legal and informal methods of timber extraction and trade are widely used by Chinese and non-Chinese timber companies. Companies that have mostly verticalized their timber acquisition also deal in the horizontal market.

Second, the evolution of structural norms governing the timber industry appears to be affecting the different models in different ways. Model A companies, while dealing heavily within the informal horizontal market, distance themselves from risk by requiring their suppliers to acquire the necessary documentation prior to the delivery of timber. In effect, their strategy to adapt to new rules is to further horizontalize their operations and deal only in timber that is legal or that has been “legalized”. These companies support a great number of small entrepreneurs.

Model C companies, meanwhile, are vertically integrating entire production chains, from logging in Peru to production of flooring in China, in order to demonstrate compliance not only to the Peruvian legal structure but to the institutions that provide international certification. This change represents some fundamental changes in the landscape of Peruvian logging. It could be described as a reverse in the polarity of commodity chains, from producer-driven and Peru-based to buyer-driven and China-based chains. The impacts of such a shift on local people within Peruvian Amazonia and on the Peruvian timber economy have not been studied, but could be assumed to decrease value added to timber in Peru and channel greater profits towards China. This is especially true in cases where certified timber is exported in less-processed forms in order to avoid damaging the timber’s chain of custody by having it milled in a non-certified plant in Peru.

The polar shift is also changing the nature of Chinese companies: companies that were once dedicated to producing flooring from imported timber are now trying their hand at running logging operations in Peruvian Amazonia.

Conclusion

Compliance with Peru’s forestry law remains inconsistent nearly 10 years after it was passed. Although it is too early to ascertain the effects of the more rigorous enforcement mechanisms designed to bring Peruvian forestry in line with the US-Peru FTA, the Lacey Act and FLEGT, the underlying configurations of the customary system have so far proven to be highly resilient. As new mechanisms of control are introduced, informal actors (with their many business connections to formal-appearing actors) develop new ways to avoid them.

The actual structure of Peruvian logging, as opposed to the structure designed by legislation, may be too flexible to ensure that the system of timber certification cannot be manipulated. If this is the case, then the dilemma facing the institutions that embody the TTTR is as follows: Is it acceptable in the name of promoting sustainability in the timber industry, once it is determined that the sustainability “brand” is not entirely reliable, to offer advantages – in the form of certification and access to markets for certified timber – to a subset of larger companies that have the capacity to produce some evidence of compliance to a set of imposed norms? If one of the fundamental problems of Peruvian forestry legislation is that it produced inequity, and that inequity is a reason for continued disregard of the law, then it seems important to ensure that third party certification systems do not exacerbate the problem by causing the marginalization of additional groups of actors.

Finally, in comparing the requirements of the US versus the Chinese FTAs, the former required modification to and greater enforcement of the Peruvian Forest Law, while the latter includes a more general promise of promoting sustainability in forestry and the forest trade. As a first step towards achieving that, the results of this study suggest that Chinese decision makers and researchers need to understand the current status of the Peruvian timber industry and not take for granted that the established structures imposed on the forestry system will guarantee the sustainability and economic fairness of their imports.

Acknowledgements:

The author is grateful to Christine Padoch, Tony Tate, and Andrew Roberts for their careful readings of this paper and their thoughtful advice; to Miguel Pinedo-Vasquez, Robin Sears, Medardo Miranda, Victor Miranda, Gino Cardenas and Monica Romo for their invaluable orientation to and keen insights on the timber trade in Peru; to Christopher Barr for his generous sharing of literature and knowledge; to doctoral
committee members Charles Peters, Joseph Rachlin and Dwight Kincaid for reviewing and discussing research plans; and to the numerous timber companies and traders who agreed to take part in this study. This study was made possible by funding from the National Science Foundation (Grant 0727187).

References:

PCFTA. 2009. Peru-China Free Trade Agreement. Available at: www.sice.oas.org/TPD/PER_CHN/Texts_28042009_e/index_e.asp


PUSFTA. 2006. Peru–United States Trade Promotion Agreement. Available at: www.sice.oas.org/Trade/PER_USA/PER_USA_e/Index_e.asp


USDOS 2009. U.S.’s initiative against illegal logging: Protecting forests and the livelihoods that depend on them. Washington, DC, USA, United States Department of State. Available at: www.state.gov/g/oes/rls/fs/2009/120036.htm


WWF 2009b. Benefits for membership. Available at: gftn.panda.org/gftn_worldwide/asia/china_ftn/china_benefits