



CHINA AND FOREST TRADE IN THE ASIA-PACIFIC REGION:

IMPLICATIONS FOR FORESTS AND LIVELIHOODS

中国与亚太地区国家林产品贸易研究

NAVIGATING THE BORDER:

AN ANALYSIS OF THE CHINA-
MYANMAR TIMBER TRADE

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by Fredrich Kahrl, Horst Weyerhaeuser and Su Yufang

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SUMMARY

China's trade in timber products with Myanmar grew substantially from 1997-2002, from 295,474 m³ (round wood equivalent, RWE) in 1997 to 947,765 m³ (RWE) in 2002. Despite increased volume, timber product imports from Myanmar comprised only 2.5% of China's total timber product imports from 1997-2002. However, the small fraction of total imports masks two important features: i) timber imports from Myanmar are primarily logged in slow-growing natural forests in northern Myanmar; and ii) logging activities that support the China-Myanmar timber trade are increasingly concentrated along the border in northern Myanmar's Kachin State. This greater concentration of the timber trade has begun to have substantial ecological and socio-economic impacts within China's borders.

The majority of China's timber product imports from Myanmar are shipped overland through neighboring Yunnan Province – 88% of all imports from 1997-2002 according to China's national customs statistics. Of these, more than 75% of timber product inflows passed through the three prefectures in northwest Yunnan that border Kachin State. Most of these logging activities are currently concentrated in three areas — Pianma Township (Nujiang Prefecture), Yingjiang County (Dehong Prefecture), and Diantan Township (Baoshan Municipality). Logging that sustains the timber industry along Yunnan's border with Kachin State is done by Chinese companies that are operating in Myanmar but are based along the border in China. Logging activities in Kachin State, from actual harvesting to road building, are almost all carried out by Chinese citizens.

Although the volume of China's timber product imports from Myanmar is small by comparison, the scale of logging along the border is considerable, and border townships and counties have become over-reliant on the timber trade as a primary means of fiscal revenue. As the costs of logging in Myanmar rise, this situation is increasingly becoming economically unsustainable, and shifts in the timber industry will have significant implications for the future of Yunnan's border region. Importantly, a large proportion of logging and timber processing along the border is both managed and manned by migrant workers. Because of companies' and workers' low level of embeddedness in the local economy, border village communities are particularly vulnerable to swings in the timber trade. More broadly, timber trade has done little to promote sustained economic growth along the China-Myanmar border as profits, by and large, have not been redirected into local economies.

In addition to socio-economic pressures, the combination of insufficient regulation in China and political instability in northern Myanmar has exacted a high ecological price. The uncertain regulatory and contractual environment has oriented the border logging industry toward short-term harvesting and profits, rather than investments in longer-term timber production. Degradation in Myanmar's border forests will have an impact on China's forests, as wildlife, pest and disease management, forest fire prevention and containment, and controlling natural disasters caused by soil erosion all become increasingly difficult.

While political reform in northern Myanmar is a precondition for improved regulation and management of Myanmar's forests, the Chinese government has a series of economic, trade, security and environmental policy options that it could pursue to ensure its own ecological security and enhance the socio-economic benefits of trade. Potential avenues explored in this analysis include: i) promoting longer-term border trade and distributing benefits from the timber trade, ii) improving border control and industry regulation, iii) enhancing environmental security and strengthening environmental cooperation, and iv) exploring flexibility in the logging ban.

INTRODUCTION

Myanmar is rich in forest resources; half of the remaining closed forest in Southeast Asia can be found there (Brunner et al. 1998) as well as 60 % of the world's remaining teak forests.¹ Despite its wealth of timber resources, a growing body of evidence suggests that rampant logging is having severe ecological effects on different parts of the country (FAO 1997; Brunner et al. 1998; Global Witness 2003). In addition, the preponderance of benefits from Myanmar's timber exports are captured by a small segment of the population, and in many cases these benefits are being used for military spending that fuels the country's ongoing internecine strife (e.g. Brunner et al. 1998; Global Witness 2003).

Growing international demand for timber has put greater pressure on Myanmar's forests in recent years, with severe deforestation occurring increasingly in border areas (Brunner et al. 1998). Similarly, much of the recent increase in logging along Myanmar's northern border has served to meet demand in neighboring China. Official Chinese import statistics indicate a 218 % surge in China's overland imports of Myanmar roundwood from 1998 to 2000 (Sun et al. 2004). Beneath aggregate statistics, however, China's timber trade with Myanmar exhibits considerable intra-regional nuance, with differences in basic physical and market conditions leading to variation in timber import volumes, timber quality and species composition. As the Chinese government and the international community search for leverage points in the China-Myanmar timber trade in order to make strategic interventions, it is imperative that analyses of national trends are accompanied by a more sophisticated understanding and targeting of local differences.

This paper will provide an overview of salient patterns in the China-Myanmar timber trade, with a focus on China's imports of Myanmar timber products² from 1997 to 2002. At the same time, it will provide nuance to more sweeping generalizations about *China's* impact on *Myanmar's* forests and create a framework for exploring problems created by the timber trade, as well as potential solutions.

Adverse socio-economic and ecological effects of China's relatively unregulated timber trade with Myanmar – what has in some cases become a “timber rush” in northwest Yunnan Province – are beginning to take shape domestically in China. While political reform in northern Myanmar is a precondition for more sustainable forest management and trade development along the border, the Chinese government has a series of economic, trade, security and environmental policy options that it could pursue to ensure its own ecological security and enhance the socio-economic benefits of trade.

The information in this account is based on statistical analysis, a review of secondary data and interviews conducted with government officials, industry representative, and researchers in Yunnan

¹ Personal communication with Global Witness staff, 21 February 2004. Based on seminar paper presented by TEAKNET at the “Third Regional Seminar on Teak,” Yogyakarta, Indonesia, 31 July to 4 August 2002.

² Throughout this account, the term ‘timber products’ will be limited to the definition used by Sun et al. 2004, to include roundwood, sawnwood, board products and wood chips.

Province's Nujiang Prefecture, Baoshan Municipality and Dehong Prefecture. As a precaution, it should be noted that although statistical analysis is a helpful tool for understanding trends, the official import/export figures presented here should not be viewed as conclusive fact. As described below, Myanmar's export totals, as reported to the International Tropical Timber Organization (ITTO), are incomplete. The import data for China used below, while likely far more accurate, is based on a mixture of local Forestry Bureau import data and local and national customs statistics, and it is not clear that these are compiled from the same source.³ Additionally, in China both Forestry Bureau and customs data for overland imports are collected via "outbound" shipping and tax forms rather than "inbound" customs declarations,⁴ which may lead to discrepancies between the time timber products actually cross the border and when they are registered as imports. Lastly, while interviews give dimension to statistics, timber trade is a sensitive subject along the border and interview data should thus be kept in context.

LOGGING IN MYANMAR: A BACKGROUND

A SHORT HISTORY OF LOGGING AND ADMINISTRATIVE CONTROL ALONG THE BORDER

History is indispensable to understanding the drivers behind natural resources trade in Myanmar. During the tumultuous 1960s and 70s, border trade between Myanmar and China was brought to a virtual standstill as Myanmar plunged into civil war and China isolated itself in the Cultural Revolution. China reemerged from seclusion with its opening and reforms in 1978, but Myanmar's northern border with China remained in the hands of insurgent groups and largely beyond the reaches of its ruling military junta throughout much of the 1980's.⁵ Political and financial crisis in Myanmar in 1988, along with the sudden collapse of the Communist Party of Burma (CPB) in 1989, provided the impetus for ceasefires throughout the country, and Myanmar's new military regime — the State Law and Order Restoration Council (SLORC) — made extensive efforts to liberalize border trade and invite Thai and Chinese investments.

³ Problems in data collection may be responsible for apparent inconsistencies in national customs data. According to national customs data, 90 % of China's overland log imports from Myanmar in 2002 comprised hardwood species (Sun et al. 2004). However, evidence from this study suggests that a significant portion of overland log imports consists of softwoods from conifer forests in northern Myanmar's Kachin State.

⁴ Checkpoints where official documentation must be submitted are strategically located at major road arteries leaving border prefectures, making tax, fee and license payments virtually impossible to avoid.

⁵ This is not to say that border trade was non-existent in the 1980s. Yunnan Province's Dehong Prefecture, for instance, opened as a border trade region in 1985. However, Chinese government support to the CPB before 1989 obviated the need for more extensive logging and timber exports along the border (Brunner et al. 1998). Additionally, because of a lack of trade infrastructure, broader border trade never attained a marked scale.

Heavily in debt and desperate for foreign exchange from timber exports, the SLORC granted generous logging concessions to Thai companies along the Myanmar-Thai border in 1988. This move proved particularly disastrous, as concession terms were violated with impunity through over-logging. The SLORC cancelled the concessions in 1993 once the full scale of ecological devastation and economic loss became clear. After this experience, the SLORC, and later the State Peace and Development Council (SPDC),⁶ refused to grant further logging concessions. Importantly, as a consequence, the SPDC still denies the existence of extensive logging concessions to Chinese companies in northern Myanmar's Kachin State, and Myanmar's official timber export statistics by and large do not account for the prodigious volume of overland trade with China (Castrén 1999).

Timber trade with China boomed following ceasefire agreements with the United Wa State Army (UWSA) and the New Democratic Army (Kachin) (NDA-K) in 1989, and with the Kachin Independence Organization (KIO) in 1994. Several analyses have detailed distinctions in the SLORC's post-ceasefire attempts to control different insurgent groups.⁷ Although there is not space to explore this issue here, it is important to note that variance in what Walker (1999) terms 'regulated connections' between the SLORC/SPDC and insurgent groups has been instrumental in defining logging trajectories — no clear correlation exists between SLORC/SPDC influence and logging activity. For instance, increased SPDC control over the border region in northern Shan State beginning in 1998 was purportedly a major factor in reducing timber outflows. On the other hand, despite steadily increasing SPDC presence in KIO territory, KIO logging activities have increased dramatically since its loss of the Hpakan jade mines to SLORC interests in 1994 stripped away its largest source of revenue (Global Witness 2003). Meanwhile, the SLORC and more recently the SPDC have been content to leave NDA-K activities largely unregulated. Logging in NDA-K controlled territory has continued apace for decades and much of its forestland has purportedly been clear-cut (Moncreif and Myat 2001).

TIMBER TRADE DYNAMICS IN MYANMAR

According to Myanmar's customs statistics, India is the largest destination for Myanmar timber exports, comprising 76% (770,554 m³) of all hardwood log exports in 2001 (ITTO 2002).⁸ China, alternatively, comprised a meager 0.3% (3,237 m³) of Myanmar's official hardwood log exports (ITTO 2002). China's customs statistics instead paint a considerably different picture, recording 513,574 m³ of Myanmar hardwood log imports in 2001 (ITTO 2002). This enormous discrepancy suggests that illegal logging is taking place on a massive scale along Myanmar's border with China. Yet because of the SPDC's dominance over the timber industry (see "Forest and Trade Management:

⁶ The SLORC restructured in November 1997 and subsequently changed its name to the State Peace and Development Council.

⁷ See, for instance, Global Witness (2003).

Myanmar” below) and its continued countenance of logging by ethnic minority groups on the border, it is difficult to formulate a more meaningful objective definition of what constitutes *illegal* logging in Myanmar. Rather, examining characteristics among the points of origin of China’s timber product imports from Myanmar, as well as the different motives driving timber trade in greater Myanmar, provides a clearer picture of timber trade dynamics and control within the country.

As **Table 1** illustrates, China’s timber imports from Myanmar are logged in what can be roughly grouped into three areas. The majority of the logging that fuels timber trade through Yunnan (see detailed discussion below), is carried out in non-SPDC controlled areas, is only at times officially sanctioned, and is dominated by Chinese companies. However, it is important to note (see **Table 1**) that timber trade control in Myanmar extends beyond clusters of officially-recognized political groups.

Table 1: Points of Origin of China’s Timber Imports from Myanmar

Origin	Concession Control and Administration	Main Logging Operators	Officially Sanctioned?	Point of Entry into China
<i>Ceasefire areas</i>	Ceasefire groups	Chinese companies	Likely some	Overland into Yunnan Province
<i>Non-ceasefire areas</i>	Private businessmen	Chinese companies	No	Overland into Yunnan Province
<i>SPDC-controlled areas</i>	Myanmar Timber Enterprises (MTE)	MTE; Chinese companies	Yes	By sea to China’s eastern seaboard; some overland into Yunnan Province

Source: Personal communication with Global Witness staff, February 2004.

This plurality of actors is accompanied by a correspondingly complex web of motives that ultimately drive timber exploitation in Myanmar. More generally, these motivations can be separated into:

- *government* – the need for foreign exchange to purchase imports;
- *insurgent groups* – (both with and without ceasefires) the need for cash to fund armed resistance and independent administration; and
- *individuals* – the desire to further personal interests.

The tendency to cluster these groups, particularly *government* and *individuals*, into a cohesive whole has led to the now pervasive myth that illegal logging in Myanmar is linked to a cash-strapped *government*

⁸ According to Myanmar’s official customs statistics, most of the country’s timber production is geared toward domestic consumption; from 1998-2002 26% of its 18,922,706 m³ in total production of timber products were exported (ITTO 2002).

in Yangon (e.g., Halstead 2001). While the need for foreign exchange is a significant driver of Myanmar's official timber exports — timber sales officially accounted for 20% of Myanmar's foreign exchange earnings from 1990 to 2000⁹ — what most would consider to be “illegal” trade is likely driven instead by *insurgent groups* and *individuals* rather than the *government's* need to generate foreign exchange to cover its operational budget. Although the *government* does operate some form of profit sharing with *insurgent groups*, the extent to which the *government* encourages logging among *insurgent groups* along the border to earn foreign exchange under these arrangements is unclear. Regardless, the effects of unofficial logging along the border have greatly exacerbated the regulatory difficulties in Myanmar's official timber market. Myanmar's Forestry Department has recently expressed concern that border timber trade with China has driven down the price of Myanmar timber in Hong Kong, Malaysi, and Vietnam below levels in Yangon (Global Witness 2003).

THE DRUG TRADE AND BENEFITS FROM THE TIMBER TRADE

Much like the timber trade, the opiate trade became a means for rebel armies to obtain funds for buying arms, and the drug and timber trades became inextricably interlinked. Logging roads, for instance, came to be used for drug trafficking, and opiates were often hidden in hollowed out logs. Alarmed at the increases in poppy derivatives entering its borders, the Chinese government made efforts to curtail the drug trade by promoting logging as a viable livelihood alternative. While such efforts have been unsuccessful — Myanmar is still the second largest opium producer in the world¹⁰ — some have argued that over-logging has actually encouraged poppy production by forcing farmers to return to their only profitable means of sustenance (Global Witness 2003). More recently, in 1999 and 2003 the Chinese government, through its line agencies in Tengchong County, has supported agricultural extension projects in Kachin State in attempts to provide alternatives to poppy agriculture.

Significantly, as the SPDC contends it does not have the legal authority as a transitional government to mete out longer-term agreements, *ceasefire* agreements crafted in the late 1980s and early 1990s are by and large not *peace* agreements, and much of the proceeds from post-ceasefire logging continue to be directed toward weapons procurement. In addition, the combination of concessionary logging and increases in the drug trade has served to create an elite among the insurgent groups, and it is this elite that has largely profited from and controlled border timber trade with China. Relatively few benefits have been realized by a broader portion of the population (Global Witness 2003), and the socio-economic situation in Myanmar is increasingly dire (Dapice 2003). In the most egregious example of the discordance between timber trade with China and local development, many parts of Kachin State still lack electricity, roads and other basic infrastructure.

⁹ Government of Myanmar, Ministry of Forestry website, http://www.e-application.com.mm/yangoncity/ministry/ministry_of_forestry.asp (1 December 2003).

¹⁰ See, for example, CIA Factbook, 2003. Online at: <http://www.cia.gov/cia/publications/factbook/geos/bm.html> (23 December 2003)

MYANMAR'S FORESTS

FOREST TYPES

Myanmar's unique topography and climatic variation endues it with an impressive range of forest types, ranging from sub-alpine snow forests in the north to semi-deciduous broadleaf rainforest in the south. In all, Myanmar harbors eight forest types — tidal, beach and dune, swamp, tropical evergreen, mixed deciduous, dry, deciduous dipterocarp, and hill and temperate evergreen (FAO 1997). Ecological variation in Myanmar flows outward from a core in a series of concentric circles. The country's central dry zone is ensconced by a ring of mixed deciduous forest, which in turn is encircled by tropical and temperate evergreen forest. Sub-alpine forests occur as the landscape extends north. Of Myanmar's forest types, mixed deciduous and hill and temperate evergreen are the most widely distributed, comprising 39 and 26% of total forest area, respectively, in 1995 (ITTO 1998).

Mixed deciduous forests play the most important role from an economic perspective, particularly teak (*Tectona grandis*) forests in southern and central Myanmar. Mixed deciduous forests also contain valuable hardwood species such as pyinkado [ironwood] (*Xylia dolabriformis*), padauk [rosewood] (*Pterocarpus macrocarpus*), and kanyin [keruing] (*Dipterocarpus spp.*). In 1995, these three comprised 99.7% of Myanmar's total official income from timber sales (Brunner et al. 1998). Further north, forests are populated with valuable hardwood species such as *xinanhua* (*Betula spp.*), *nanmu* (*Phoebe zhennan*), and mono maple (*Acer mono*). Important softwood species include yew (*Taxus mairei*), cedar (*Thuja spp.*), and Chinese hemlock (*Tsuga chinensis*).

DEFORESTATION

Aggregate decrease in Myanmar's national forest cover was estimated at 1.4% between 1990 and 2000, although such figures should be viewed with caution.¹¹ Similarly, claims that Myanmar remains approximately 50 %forested¹² require more intensive and transparent investigation, in addition to more rigorous classification. Although officially the main threats to Myanmar's forests are conversion of land for sedentary agriculture, shifting cultivation and particularly fuelwood collection (FAO 1997; Castrén 1999; Khin Swe Swe Aye 2001), the lack of forest monitoring in border areas precludes a more comprehensive understanding of sources of deforestation.

¹¹ See FAO website, <http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=5621&sitetreeId=22027&langId=1&geoId=40> (15 December 2003).

¹² See, for example, Associated Press Worldstream, "Myanmar government says its forests are safe," October 13, 2003. Online at: <http://three.pairlist.net/pipermail/burmanet/20031014/000278.html> (15 December 2003). According to FAO's Forest Resources Assessment 34,419 hectares of the country's total area of 65,755 hectares, or 52.3%, was forested in 2000.

Similarly, evidence that Myanmar's montane forests have been better preserved than lowland counterparts (MacKinnon 1996) should be updated. Due to a combination of relatively low population pressures and colonial neglect, Myanmar's northernmost Kachin State contains one of the world's last relatively intact tracts of natural forest (Brunner et al. 1998). However, over the past decade the area has received considerably more attention from the international logging industry and deforestation caused by logging has increased exponentially. With increased logging, there are well-founded concerns about the effects of forest fragmentation on the area's extensive biodiversity. In contrast to Kachin State, the scale of logging in neighboring Shan State is legendary, and its border with China has been largely depleted of forest resources. Observers allege that forests have often been cut 50 to 60 kilometers into the border and that remaining hills are almost entirely devoid of forest cover.¹³

Ecological devastation along the border has attracted the eye of the Chinese government. In 2003, a team commissioned by the Yunnan Science and Technology Department (云南省科技厅 | *kejiting*) began conducting a preliminary investigation of ecological and socio-economic change along Myanmar's border with China. The team is tasked with assessing the status of environmental security in China's border regions. More specifically, the group will evaluate the threats posed by potential transboundary environmental problems, such as pests and disease, forest fires and soil erosion.

BASIC TRADE GEOGRAPHY

BORDER GATES AND INLAND PORTS

China's border with Myanmar stretches for 2,185 km of often rugged mountainous terrain along China's Yunnan Province, abutting on Myanmar's Kachin State and the northern half of Shan State. Within Yunnan, 17 counties within 6 prefecture-level regions share a border with Myanmar (see **Table 2** and the map in **Figure 1**).

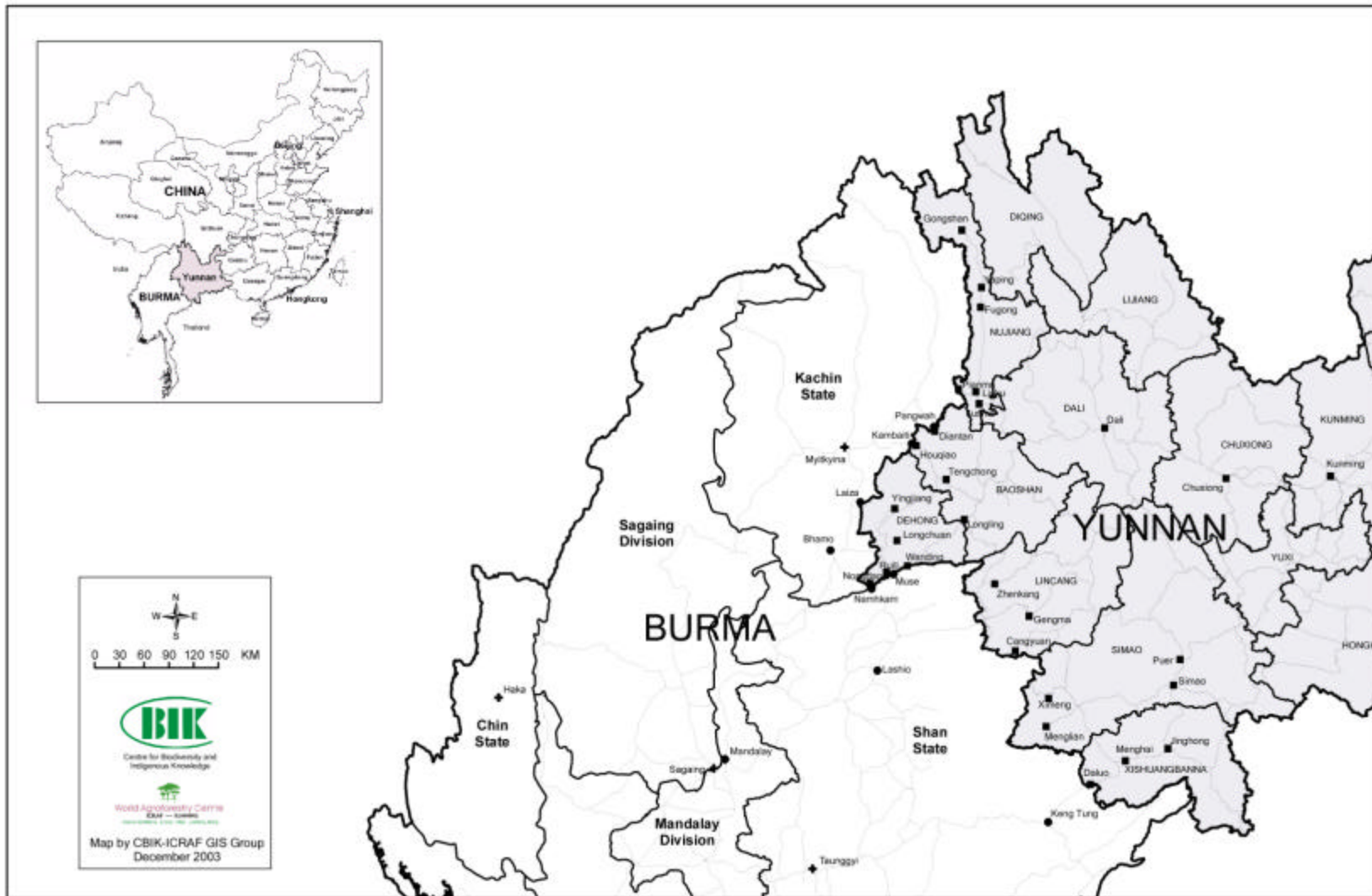
¹³ Personal communication with Yunnan University professor, December 2003.

Table 2: Prefectures and Counties in Yunnan that border Myanmar

Nujiang Lisu Autonomous Prefecture	Lincang District
Lushui County	Zhenkang County
Fugong County	Gengma Dai and Wa Autonomous County
Gongshan Dulong Autonomous County	Cangyuan Wa Autonomous County
Dehong Dai and Jingpo Autonomous Prefecture	Simao District
Ruili Municipality	Ximeng Wa Autonomous County
Longchuan County	Lancang Lahu Autonomous County
Yingjiang County	Menglian Dai, Lahu, and Wa Autonomous County
Luxi Municipality	
Baoshan Municipality¹⁴	Xishuangbanna Dai Autonomous Prefecture
Tenchong County	Menghai County
Longling County	Jinghong Municipality

¹⁴ While nominally a ‘municipality’ (? | *shi*), administratively Baoshan is considered a district/prefecture-level (? /? ? | *qu/zhouji*) unit.

Figure 1: Map of the Yunnan-Myanmar Border Region



Within these six prefectures, in turn, there are three national-level checkpoints (国境口岸 | *guojiaji kouan*), eight provincial-level checkpoints (省界口岸 | *shengji kouan*), and myriad border crossings (通道 | *tongdao*) on the Myanmar border (see **Tables 3 and 4** for national- and provincial-level checkpoints, respectively).

Table 3: Chinese National-level Checkpoints on the Myanmar Border

Port County/Municipality	Prefecture	Adjacent Port (Myanmar)	State (Myanmar)
Jiegao Ruili	Dehong	Muse (? ?)	Shan
Wanding Ruili	Dehong	Kyukok (? ?)	Shan
Houqiao Tengchong	Baoshan	Kambaiti (? ? ?)	Kachin

Table 4: Chinese Provincial-level Checkpoints on the Myanmar Border

Port County/Municipality	Prefecture	Adjacent Port (Myanmar)	State (Myanmar)
Pianma Lushui	Nujiang	—	Kachin
Zhangfeng Longchuan	Dehong	Lweje (? ?)	Kachin
Pingyuan Yingjiang	Dehong	Laiza (? ?)	Kachin
Nansan Zhenkang	Lincang	Kokang (? ?)	Shan
Mengding Gengma	Lincang	Kunlong (? ?)	Shan
Cangyuan Cangyuan	Lincang	Pangwai (? ?)	Shan
Menga Menglian	Simao	Pangsang (? ?)	Shan
Daluo Menghai	Xishuangbanna	Mongla (? ?)	Shan

The three national-level checkpoints listed above have been agreed upon by both the Chinese government and Myanmar’s military junta. In some instances, national-level checkpoints on one side of the border have not yet been upgraded on the other. For instance, Mongla is a national-level checkpoint in Myanmar, but its Chinese neighbor Daluo remains a provincial-level checkpoint in China.

PRIMARY SEAPORTS

Myanmar’s capital, Yangon, lies on the Andaman Sea, and its natural harbor is also the country’s primary commercial port. As described below, by law most of Myanmar’s timber product exports are

required to pass through Yangon, and a good deal of the country's timber product exports to China that are shipped by sea find their way to ports on China's eastern seaboard, particularly in Shanghai and Guangdong Province. Although Hong Kong will not be treated in this paper, further investigation should explore Hong Kong's role as an intermediary for timber product imports into China. According to one report (Castrén 1999), for instance, much of the timber exported to Hong Kong from Myanmar is likely re-exported through China. **Table 5** below lists the primary seaports handling timber product imports from Myanmar.

Table 5: Primary Seaports Dealing in Myanmar Timber Imports

Port City	Province
Shanghai	Shanghai
Guangzhou	Guangdong
Shantou	Guangdong
Huangpu	Guangdong
Shenzhen	Guangdong
Gongbei	Guangdong
Jiangmen	Guangdong
Nanjing	Jiangsu
Tianjin	Tianjin

AN ANALYSIS OF AGGREGATE IMPORT STATISTICS, 1997-2002

TOTAL FOREST PRODUCT IMPORTS FROM MYANMAR, 1997-2002

China's pulp and paper imports from Myanmar are insignificant; thus timber product imports are a better proxy for understanding Myanmar's relative importance among countries exporting timber products to China. As shown in **Table 6**, official timber product imports from Myanmar comprise a small but relatively steady proportion of China's total timber product imports. With China's total timber imports skyrocketing over the past six years, annual imports from Myanmar have largely kept pace, more than tripling from 1997 to 2002. Inter-annual fluctuations in timber product imports from Myanmar, however, have been more pronounced. Although Myanmar timber products comprise only a small fraction of China's total timber product imports — 2.5% in 2002 (Sun et al. 2004) — and an even smaller portion of its total forest product imports, statistical comparison conceals a critical detail. Much of Myanmar's timber product exports to China consist of logs from its slow-growing northern forests. In contrast, Russian timber exports to China, which comprised just under 42% of China's total timber product imports in 2002 (Sun et al. 2004), consist largely of faster-growing softwoods.

Table 6: China's Timber Product Imports from Myanmar vis-à-vis Total Timber Products Imports

Year	Timber Product Imports from Myanmar (m ³ RWE)	% Increase from Previous Year	% of Total Timber Product Imports	Total Timber Product Imports (m ³ RWE)	Total % Increase from Previous Year
1997	295,474	—	2.34	12,650,000	—
1998	266,613	-10	1.82	14,613,088	16
1999	463,266	74	2.25	20,605,848	41
2000	783,403	69	3.04	25,809,925	25
2001	794,805	1	2.83	28,115,740	9
2002	947,765	19	2.49	38,136,145	36

Source: Adapted from Sun et al. 2004; based on Chinese national customs statistics.

As **Table 6** illustrates, the bulk of China's increase in aggregate timber product imports from Myanmar occurred between 1998-1999 and 1999-2000. This two-year flare was due to a confluence of factors, which included: i) the implementation of China's national logging ban in 1998 (see "The Logging Ban in Yunnan" below); ii) marked reductions in China's forest product tariffs in 1999,¹⁵ and iii) the opening up of new tracts of virgin forest in Kachin State to Chinese companies in the late 1990s.¹⁶

Interestingly, this peak came at a time when demand for processed products was on the wane in China's key export destinations for timber products, as a result of the Asian Financial Crisis. In Myanmar's official timber market, for instance, non-teak timber prices plummeted 42% from 1997-1998 (Castrén 1999). This incongruity could suggest that the increased demand for Myanmar timber was driven by China's domestic market rather than its export industry. However, such a hypothesis conflicts with most of the anecdotal evidence gathered in this study, in which the preponderance of interviewees claimed that logging by Chinese companies in northern Myanmar is heavily dependent on the international markets for timber and timber products. Evidence to clarify this puzzle awaits a more precise analysis of the forces fueling the growth of timber product imports within greater China.

IMPORT COMPOSITION, 1997-2002

According to official import statistics, the great majority of China's imports of timber products from Myanmar have historically comprised unprocessed roundwood — officially 70% from 1997 to 2002 (see **Table 7**). The most obvious factor at work behind this trend is the dearth of processing facilities outside of Yangon, particularly in northern Shan State or Kachin State. With little in the way of

¹⁵ Most significant here, tariffs on logs and sawnwood were slashed from 2-8 % to 0 (Zhu, 2001).

¹⁶ Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003.

investment capital, financing for value-added production hinges on support from either the SPDC or Chinese companies, neither of which has been readily forthcoming. The SPDC has reportedly told the KIO to look to foreign sources for investment capital (Global Witness 2003). Chinese companies, alternatively, are still sufficiently deterred from making fixed investments by political instability and a lack of basic electricity infrastructure.¹⁷ Additionally, despite calls from the KIO for Chinese investment in upstream hardwood processing facilities in Kachin State,¹⁸ which would ostensibly cut transit costs for Chinese logging companies, it is not clear that local governments in China would be keen to facilitate such investment. Larger mills in northwest Yunnan are in competition for this business, and county governments are frantically attempting to reconstitute value-added revenues after huge losses in the late 1990s.

Table 7: Composition of and Patterns in China’s Timber Product Imports from Myanmar

Product	Imports 1997-2002 (m³ RWE)	% Total 1997-2002	%Increase 1997-2002	Largest Annual % Increase 1997-2002
Logs	2,489,166	70	194	96 (1999)
Lumber	1,014,201	29	278	90 (2000)

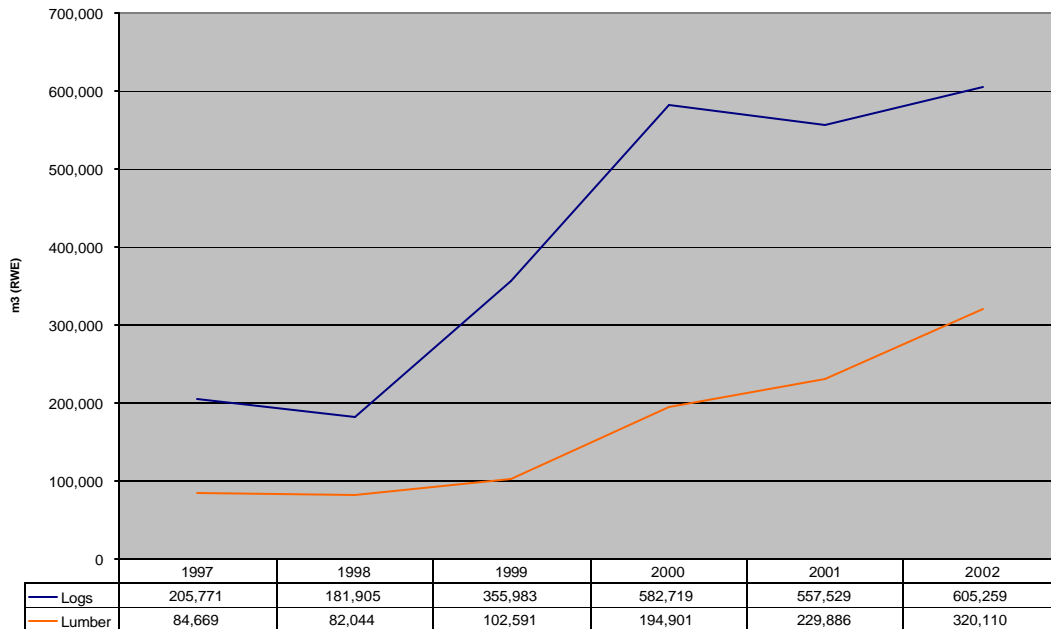
Source: Adapted from Sun et al. 2004; based on Chinese national customs statistics. Wood chips, wood-based panels, and veneer comprise roughly 1% of imports and are thus not included in the above table.

Logs and lumber encompassed 99% of China’s timber product imports from Myanmar from 1997-2002, consistently remaining above 97% as a percentage of annual timber product imports. Despite the preponderance of logs among imports, sawnwood imports actually increased at a faster rate than log imports from 1997-2002. As **Figure 2** shows, official sawnwood imports from Myanmar nearly quadrupled during this period, initially decreasing as a proportion of total timber product imports but quickly regaining ground.

¹⁷ Interview with Chinese logging company head, Diantan (Baoshan), October 2003.

¹⁸ See “Myitkyina Business Council Attracting Business and Investment,” Chinese Embassy Mandalay website. Online at: <http://mandalay.mofcom.gov.cn> [in Chinese] (13 November 2003).

Figure 2: China's Log and Lumber Imports from Myanmar, 1997-2002



Source: Adapted from Sun et al. 2004; based on national Chinese customs statistics.

PORTS OF ENTRY, 1997-2002

Almost 90% of China's timber product imports from Myanmar between 1997 and 2002 passed overland through Yunnan Province. In addition, despite SLORC restrictions mandating that all processed timber exports must pass through Yangon and be shipped by sea,¹⁹ from 1997-2002 85% of China's processed timber imports from Myanmar crossed the border into Yunnan (Sun et al. 2004). The vast majority of these imports does not remain in Yunnan, particularly along the border, and is shipped principally to value-added mills, wholesalers, and retailers in Shanghai, Guangdong and overseas.

¹⁹ In February of 1999, the SPDC granted the Ministry of Forestry's commercial arm, Myanmar Timber Enterprises (MTE), the authority to begin limited exports to Yunnan. These exports, however, were restricted to non-teak hardwood logs.

Table 8: Primary Entry Ports of Myanmar Timber Products Exported to China

Province/ Municipality	Customs Port	China's Total Timber Product Imports from Myanmar 1997-2002 (m ³ RWE)	% of China's Total Timber Product Imports from Myanmar 1997-2002
Yunnan	Kunming	3,120,262	87.9
Shanghai	Shanghai	157,050	4.4
Guangdong	(Total)	131,246	3.7
	<i>Guangzhou</i>	<i>79,300</i>	<i>2.2</i>
	<i>Shantou</i>	<i>18,716</i>	<i>0.5</i>
	<i>Huangpu</i>	<i>27,128</i>	<i>0.8</i>
	<i>Shenzhen</i>	<i>4,646</i>	<i>0.1</i>
Jiangsu	Nanjing	27,310	0.8

Source: Adapted from Sun et al. 2004; based on national Chinese customs statistics.

As **Table 8** illustrates, most of China's timber product imports from Myanmar that are shipped by sea dock in Shanghai and in Guangdong Province's plethora of ports. As in Yunnan, much of this cargo is destined for domestic wholesale and international export. Unlike Yunnan, however, a much greater proportion of it is designated for local consumption. In Shanghai, for instance, demand for timber products is high, and the burgeoning housing sector is consuming 500,000 m³ of timber products annually (Shi et al. 2000).

THE LOGGING BAN IN YUNNAN

China's Natural Forest Protection Program (NFPP | 天然林保护工程 | *tianranlin baohu gongcheng*) with its attendant logging ban, was implemented nationally in 1998, resulting in an 18.2 million m³ plunge in China's roundwood production from 1997-2000 (Zhu 2001). In Yunnan, 60.98% (13 prefectures and 66 counties) of the province's total land area was included in the NFPP,²⁰ dropping industrial wood production by 1,251,000 m³, or 58%, from 1998-2000 (Yunnan Statistical Bureau 1999 & 2000). Similarly, the program has had a devastating effect on the timber product and furniture industries in Yunnan, cutting total sales among major producers by 92% and 74% respectively from 1998-2000 (Yunnan Statistical Bureau 1999 & 2002). The furniture industry, in particular, experienced severe setbacks.

Although it is tempting to draw a direct causal link between NFPP implementation in Yunnan and large increases in timber product imports from Myanmar, post-program changes in demand patterns across greater China are likely much more complex. More specifically, it is difficult to ascertain whether the *primary* impetus for greater timber imports from Myanmar was the decrease in timber

²⁰ See, for example, Yunnan Forestry Department website, <http://www.ynly.gov.cn/trlbhgc.asp> [in Chinese] (27 April 2004).

production in Yunnan, or whether such drivers emerged from other regions across China. Statistically, the answer is ambiguous: Yunnan's total timber product imports from Myanmar increased by 564,563 m³ (RWE) from 1997-2001 (Sun et al. 2004), while industrial roundwood production in Yunnan fell by 809,100 m³ over the same period (Yunnan Statistical Bureau 1998 & 2002). During this interval, Yunnan's percentage of China's total timber product imports from Myanmar remained steady at just below 90% (Sun et al. 2004).

Within Yunnan, and particularly along the Myanmar border, implementation of the NFPP has been uneven. Additionally, areas that were not included in the NFPP have seen their timber production plummet as production quotas have become more rigid. Baoshan Municipality, for example, was not targeted for NFPP inclusion, but shrinking logging quotas plunged its industrial roundwood production by 80% from 1998 to 2000 (Yunnan Statistical Bureau 1999 & 2001). In other prefectures, such as Simao, industrial roundwood production decreased by a comparatively mild 28% from 1998 to 2000, and its production of wood-based panels actually increased 30% (Yunnan Statistical Bureau 1999 & 2001). The most obvious effects of the NFPP can be seen in Nujiang Prefecture, where virtually the entire prefecture has been included in the program. Nujiang's timber product imports increased 756% between 1997 and 2002,²¹ while industrial roundwood production had dropped to 0 by 2001 (Yunnan Statistical Bureau 2002).

THE TIMBER PRODUCTION CHAIN: INTRODUCTION

Loosely reflecting the production structure of the timber trade along the China-Myanmar border, this analysis, for heuristic purposes, will disaggregate the production cycle into its upstream components: extraction, processing and distribution. In addition, detaching the different components of production highlights intra-regional differences in trade conditions. The geographic focus here will be on northern Myanmar and the three prefectures in China that border it — Dehong Prefecture, Baoshan Municipality and Nujiang Prefecture. Collectively, these three prefectures comprised more than 70% of Myanmar's total trade in timber products with China in 2002 and more than 75% of the timber product trade through Yunnan.²² Although Lincang District, Simao District and Xishuangbanna Prefecture are all involved in the timber trade with Myanmar, their import volumes are small by comparison and will not form a major focus here.

²¹ Official statistics from the Nujiang Forestry Bureau, 1996-2002.

²² Of China's 947,765 m³ (RWE) and Yunnan Province's 855,021 m³ (RWE) in total timber product imports from Myanmar in 2002 (Sun et al. 2004), Nujiang comprised 308,300 m³ (Forestry Bureau statistics) and Dehong 259,503 m³ (Dehong customs statistics). Although statistics from Baoshan were not available, Forestry Bureau officials estimated total timber imports at between 100,000 and 150,000 m³ annually.

THE TIMBER PRODUCTION CHAIN: EXTRACTION

LOGGING COMPANIES

Chinese timber companies on the Yunnan-Myanmar border can essentially be divided into “logging companies” and “processing companies,” although in all prefectures there are at least one to two large-scale vertically integrated firms that log, transport and process. Smaller companies that exclusively log are concentrated along the area bordering Kachin State, in and north of Dehong Prefecture’s Yingjiang County. Chinese logging companies have more limited access to Shan State. Notwithstanding, the majority of the logging that supports Yunnan’s timber product imports from Myanmar is done by Chinese companies with Chinese equipment and Chinese workers, often supported with basic supplies from China. Logging roads and frequently even major roads are built by Chinese logging companies. At all levels, Chinese involvement is ubiquitous. In Baoshan’s Tengchong County, for instance, over half of the county’s population has allegedly at some point been involved in logging in Myanmar.²³

Of the hundreds of logging companies along the border, only a few larger companies in each border prefecture are legally licensed to operate. For instance, in Pianma Township there were only four legally-registered companies in 2003.²⁴ In order to contract timber to harvest, pay taxes, obtain shipping permits, and complete customs procedures, smaller companies are forced to affiliate themselves with and work through larger counterparts. While this arrangement allows larger umbrella companies to spread risk, these companies also require more substantial investments in resources and time than the companies operating below them. In addition to having to spend large sums on building roads, larger companies must also handle a series of often difficult relationships with relevant authorities in both Myanmar and Yunnan.

Myriad small-scale logging companies have sprouted from a lack of active regulation and enforcement along the Chinese border. Importantly, smaller-scale companies are typically much more concerned with quick proceeds than investing in longer-term organizational capacity and profitability. Smaller logging companies additionally often lack the equipment and methods to harvest efficiently. However, this analysis does not explore more specific links and trade-offs among logging, livelihoods, environmental degradation and the relatively lax regulatory environment — a topic that warrants further research. As discussed in “Timber Trends by Prefecture” below, nascent migration patterns, in particular, muddy the waters.

Chinese logging companies face considerable adversity and risk²⁵ in northern Myanmar. For example, when northern border areas first opened up for logging in the late eighties and early nineties, scores of companies began extractive operations; in Tengchong more than 80% are reportedly now out of

²³ Interview with Forestry Bureau official, Tengchong (Baoshan), October 2003.

²⁴ Interview with Chinese logging company staff, Pianma (Nujiang), April 2004.

²⁵ The converse is also often true, as Kachin officials, businessmen, and villagers at times find themselves swindled by Chinese companies. Personal communication with Global Witness staff, 21 February 2004.

business.²⁶ Business turnover has been especially high in Pianma Township, a provincial-level checkpoint in Lushui County, Nujiang Prefecture, and home to the largest-scale logging operations along the border. Difficulties and risks vary widely between prefectures, but more generally these can be grouped into four categories:

- *Contractual uncertainty.* As a result of northern Myanmar's political uncertainty, concessions are not guaranteed. Concession contracts are frequently annulled or sold to other companies without prior notice. In addition, the physical boundaries of concessions often overlap, leaving companies to negotiate among themselves. Particularly once logging teams have already been sent into Myanmar, contractual risk becomes extremely expensive to manage.
- *Numerous and increasing fees.* As shown below, companies face myriad taxes and tariffs in Myanmar, in addition to the relatively minor fees in China. Increasing fees were cited as a primary reason for the continuing bankruptcy saga among logging companies along the border.
- *Resource shortages.* Myanmar's once bountiful border forests are in ever scarcer supply, and companies are increasingly hard pressed to find timber that they can cost-effectively harvest.
- *"Traitors" (?? | hanjian):* There is a sense among companies that peoples of Chinese origin are assisting individuals and governments in northern Myanmar to gain an upper hand on the Chinese companies working there.

CONTRACTUAL ARRANGEMENTS

There are generally two types of arrangements through which Chinese companies purchase concessions in Myanmar. In the first, companies are charged per hill or area and are granted the rights to cut anything within physical boundaries specified in the contract. In the second, companies are granted concessions for entire hills, but are charged by both species and volume of what is actually felled. Contracts are generally for one to five years, depending on the size of the hill.

In combination with the chaos of an abundance of actors mentioned above, contractual uncertainty exacts a heavy ecological price. In many areas, hills are purportedly logged quickly before concessions change hands, often with no concern for forest regeneration and longer-term productivity.²⁷ In fairness, the absence of a more stable legal and corporate environment in Myanmar means that it is often more cost-effective for Chinese companies to purchase short-term contracts for hills rather than to make longer-term investments.

²⁶ Interview with Chinese logging company head, Diantan (Baoshan), October 2003.

²⁷ Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003. See also Pomfret 2001.

COSTS AND FEES

The primary expense facing Chinese logging companies operating in northern Myanmar is the cost of building new roads. The rugged terrain throughout northwestern Yunnan and northern Myanmar, particularly in the upper Nujiang Valley and northern Kachin State, is not conducive to constructing the higher-grade roads necessary for heavy goods transit. The price tag for road building is non-trivial; logging roads in Myanmar near Pianma, for instance, cost companies between 80,000 and 140,000 yuan per road,²⁸ depending on conditions. Additionally, frequent bouts of inclement weather often destroy roads and bridges. Recently, for example, landslides in Baoshan washed away two bridges along timber transport routes in Mingguang Township. With logging roads, in particular, companies discover that maintenance and repair costs make longer-term, cost-effective extraction exceedingly difficult.

“Hill prices” (山价 | *shanjia*) — timber costs — also form a significant proportion of logging companies’ expenses. Hill prices are based on species and contractual arrangement, as mentioned above. The prices paid by logging companies, however, can be as high as 300% more than official prices listed by authorities in Myanmar. For instance, the official price of cedar wood is 300 yuan per truckload (about 40 m³), while companies in Pianma often pay 1000 yuan per truckload.²⁹ Hill prices also vary significantly between prefectures and species. In late 2003, prices for *shuidonggua* (*Adina racemosa*) were almost three times higher for logging companies in Pianma (130 yuan per m³) than for companies in Tengchong (30-40 yuan per m³). For *xinanhua* (*Betula alnoides*), disparities were less pronounced — logging companies in Pianma (150 yuan per m³) paid around twice the going rate in Tengchong (80 yuan per m³).³⁰

Miscellaneous fees and taxes levied by the authorities in Myanmar are abundant, as shown in **Table 9**, covering virtually all aspects of the logging cycle.

²⁸ Most prices here will be left in yuan. At the standard rate of 8.28 yuan/\$, this cost comes to approximately \$9,500-\$17,000.

²⁹ Interviews with Chinese logging company staff, Pianma (Nujiang), December 2003.

³⁰ Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003.

Table 9: Other Logging and Shipping Fees in Northern Myanmar*

Item	Amount (yuan)	Amount (US\$)	Per Unit
Checkpoint construction fund (?????)	90	10.87	Truck
Customs tax (???)	72	8.70	Truck
Transportation Bureau fee (????)	70	8.45	Truck
Environmental Protection Bureau fee (????)	10	1.21	Truck
Trade tariff (??)	90	10.87	Truck
Daily necessities fee (?????)	20-50	2.42-6.04	Truck
Oil fee (??)	5 20	0.60 2.42	25 Liters Over 200 Liters
Chainsaw fee (???)	450	54.35	Chainsaw
Logger fee (???)	2	0.24	Person
Transaction tax (???)	200	24.15	Truck
Late border crossing fee (???)	10-20	1.21-2.42	Truck
Road use fee (???)	210	25.36	18 km / Truck
Snow shoveling fee (???)	100	12.08	Truck

Source: Interviews with logging company staff in Pianma (Nujiang), December 2003.

* The fees listed here are fees paid by logging companies based in Pianma; fees vary greatly by region. This list is not meant to be exhaustive and these taxes and fees are likely subject to considerable fluctuation.

In addition to fees and taxes in Myanmar, Chinese companies pay varying fees upon domestic return, determined by county governments. Fees for Nujiang's Fugong County are listed in **Table 10**.

Table 10: Fees Paid by Logging Companies in Fugong County, Nujiang Prefecture

Item	Amount (yuan)	Amount (US\$)	Per Unit
Shipping permits (?????)	1.5	.18	0.5-5 m ³
Quarantine fee (???)	3	.36	m ³
Management fee (???)	50	6.04	m ³
Resource fee (???)	360	43.48	m ³

Source: Interviews with logging company executives in Fugong (Nujiang), December 2003.

SPECIES

Species imported vary by region, although there is overlap. Table 11, below, lists some of the main species imported into each region. With the exception of Pianma, in which logging is done continuously, most logging is done in the dry season, beginning around November.

Table 11: Main Timber Species Imported from Northern Myanmar

Species (English)	Species (Latin)	Species (Chinese)	Prefecture
<i>Jiayumu</i>	—	???	Dehong
Chempaka	<i>Manglietia spp.</i>	?????	Dehong
Padauk (Rosewood)	<i>Pterocarpus spp.</i>	???	Dehong
Ramin	<i>Gonystylus spp.</i>	???	Dehong
Keruing	<i>Dipterocarpus spp.</i>	???	Dehong, Baoshan
Teak	<i>Tectona grandis</i>	??	Dehong, Baoshan
<i>Huangyunxiang</i>	—	???	Dehong, Baoshan
Tamalan	<i>Dalbergia spp.</i>	???	Dehong, Baoshan
<i>Nanmu</i>	<i>Phoebe zhenan</i>	??	Dehong, Baoshan, Nujiang
Birch	<i>Betula spp.</i>	???	Dehong, Baoshan, Nujiang
<i>Shuidonggua</i>	<i>Adina racemosa</i>	???	Baoshan, Nujiang
Mono Maple	<i>Acer mono</i>	???	Baoshan, Nujiang
Fir	<i>Abies spp.</i>	??	Baoshan, Nujiang
Black Walnut	<i>Juglans nigra</i>	???	Baoshan, Nujiang
Chinese hemlock	<i>Tsuga chinensis</i>	??	Baoshan, Nujiang
Cedar	<i>Thuja spp.</i>	??	Baoshan, Nujiang

Source: Interviews with logging company staff in Baoshan and Nujiang, October and December 2003; timber company advertisements. This list is not meant to be exhaustive.

THE TIMBER PRODUCTION CHAIN: PROCESSING

PROCESSING COMPANIES

The timber processing industry in northwest Yunnan's border prefectures was devastated by the logging ban. The number of timber processing companies in Nujiang, Baoshan and Dehong with annual incomes exceeding 5 million yuan dropped from 123 in 1997 to 12 in 2001 (Yunnan Statistical Bureau 1998 & 2002). However, while larger sawmills experienced shortages in raw materials, the logging ban encouraged throngs of small-scale sawmills to set up along the border in order to take advantage of the influx of roundwood imports from Myanmar. Many of these smaller mills are now struggling to recover their initial investments. In Tengchong, for instance, there are reportedly more than 500 timber processing companies;³¹ only a handful of these have attained significant scale and as many as 30 % are allegedly out of business at any given time.³² According to one industry representative, the processing industry along the border is facing another round of consolidation, and many small-scale mills will soon be forced out of business because of rising wood prices and falling prices for primary forest products.³³ Fugong County is apparently trying to facilitate this process and has taken active steps to discourage smaller-scale sawmills.³⁴

The amount, degree and quality of processing vary widely among and within prefectures. Baoshan and Dehong have several large-scale processing companies, while Nujiang has only two. Within prefectures, most processing is concentrated in larger cities away from the border. Along the border, the main processing centers are in Ruili and Yingjiang in Dehong Prefecture, Tengchong in Baoshan Prefecture and Liuku in Nujiang Prefecture. However, as mentioned above, there are hundreds of small-scale sawmills in border towns that do minimal processing to reduce transit costs. Some of the larger of these towns include Wanding, Zhangfeng and Nongdao in Dehong; Diantan, Guyong, Houqiao and Mingguang in Baoshan; and Pianma, Fugong, and Gongshan in Nujiang. In some cases, logs are directly shipped to major processing and wholesale centers in Kunming and Guangdong, although there are non-trivial shipping costs involved.

Processing arrangements take several forms and it is at this link that international influence begins to be more conspicuous. Malaysian and Taiwanese companies, in particular, are active in providing finance and corporate structure. In most cases, buyers come from outside of Yunnan. These buyers, a plurality from Guangdong Province, strike deals with:

- *Logging Companies.* Timber processing companies come to border areas and make agreements with logging companies to cut specific volumes of specific species; the processing company

³¹ See, for example, "Tengchong's Border Trade Reaches Unprecedented Highs," Jinyin Online, <http://www.gog.com.cn/gzrb/g0303/ca422551.htm> [in Chinese] (8 January 2004). Also, interview with Forest Bureau official, Tengchong (Baoshan), October 2003.

³² Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003.

³³ Interview with processing company staff, Liuku (Nujiang), December 2003.

³⁴ Interview with processing company head, Fugong (Nujiang), December 2003.

then arranges for either the timber to be first shipped to small-scale sawmills for crude processing or for timber to be directly shipped to the company's own sawmills for value-added processing.

- *Small-scale Sawmills.* Timber processing companies come to border areas and make arrangements directly with small-scale sawmills; the mills select timber at the border based on instructions from the processing company, cut it into easily transportable sawnwood and then ship to the company for further value-added processing.
- *Large-scale Sawmills.* Processing companies or wholesalers make arrangements with larger sawmills to purchase high-quality sawnwood or finished products.

VALUE-ADDED PRODUCTS

Although production materials differ, there is considerable overlap in value-added timber products along the border, as mills in Dehong, Baoshan and Nujiang all produce solid wood doors and floorboards. Moving east toward Kunming, however, the degree of value-added processing is more substantial and products such as furniture are more abundant. Major products for each of the three prefectures include:

- *Baoshan* — solid wood doors, floorboards, veneer, laminated board, furniture parts and wooden handicrafts;
- *Dehong* — solid wood doors, floorboards, veneer and laminated board;
- *Nujiang* — solid wood doors, floorboards, laminated board and wooden blinds.

WASTE

Because of the surfeit of small-scale sawmills along the border, waste is pervasive within the processing industry. Smaller processors typically have neither the equipment, management capacity nor the financial incentives to make more efficient use of their raw materials. Recovery rates for smaller mills can be as low as 40-50 percent.³⁵ Larger processors, such as the Hongta Changqing Wood Industry Co., Ltd. (?????) in Liuku, Nujiang Prefecture, are considerably more efficient. Hongta's recovery rates are reportedly over 80 percent.³⁶

³⁵ Interview with processing company staff, Pianma (Nujiang), April 2004.

³⁶ Interview with Hongta Changqing Wood Industry Company representative, Liuku (Nujiang), December 2003.

THE TIMBER PRODUCTION CHAIN: DISTRIBUTION AND EXPORT

TRANSPORT INFRASTRUCTURE

Although road infrastructure development has taken place at frenetic pace in both northwestern Yunnan and northern Myanmar over the past decade, according to the vast majority of interviewees the largest constraint to timber development in the area is still a lack of adequate roads. While road construction provides a necessary condition for timber extraction, however, other factors hold greater sway in determining the extent to which logging actually occurs — the connection between roads and increased logging is ultimately ambiguous. After the upgrading of a road from Diantan to Pangwa in 2000, for instance, timber imports have steadily declined (see “Timber Trade Trends by Prefecture” below).

Significantly, all major road connections between China and Myanmar link south of Myitkyina, with major highway arteries even further south. The Asian Development Bank (ADB) has played a significant role in the construction and upgrade of arterial highways connecting Yunnan and Myanmar through its Greater Mekong Sub-region (GMS) road network. The ADB provided a US\$150 million loan for the construction of the 200-kilometer Yunnan Expressway connecting Dali and Chuxiong and is in the final stages of approving a US\$250 million loan for the 77-kilometer Western Yunnan Roads Development Project upgrading the road Baoshan and Longling, scheduled for completion by 2007 (see **Figure 1**). Both are sections of the historic Highway 320 (?? 320 | *guodao320*)³⁷ connecting Kunming and the Myanmar border at Ruili, part of China’s National Trunk Highway System (???? | *guodao zhuganxian*) and the GMS R4 corridor connecting Kunming to Lashio. All primary logging regions along the border are linked to the expressway via provincial highways (?? | *shengdao*). In Myanmar, the expressway connects with a recently upgraded 163-kilometer toll highway from Muse to Lashio, part of the Mandalay-Lashio-Muse Union Highway that extends to Yangon. These improvements promise to encourage overall freight flows, and the ADB further argues that improved road infrastructure will discourage illegal logging by lowering transport costs and increasing freight transparency (ADB 2003).

Despite enhancements in overall transport infrastructure, rail lines in northwest Yunnan and northern Myanmar are still significantly underdeveloped. Kunming currently has a rail link that extends to Xiaguan in Dali, but none of Yunnan’s border prefectures have rail capacity. Myanmar’s rail lines extend from Mandalay north to Myitkyina and east to Lashio. ADB’s proposed GMS RW5 Yunnan Province-Myanmar Railway Project linking Lashio or Myitkyina to Kunming through Dali would presumably greatly enhance freight capacity between Myanmar and China, but the project has since been shelved. Again, the effects of rail development on timber trade volumes are difficult to predict. However, as geophysical constraints make it prohibitively expensive to build rail lines to

³⁷ Also known as the Yunnan-Myanmar Expressway (??? | *Dianmian gonglu*).

Liuku, such a link would ostensibly have a considerable effect on timber distribution routes, shifting shipping lines from Nujiang and Baoshan back through Dehong.

In addition to large-scale transport infrastructure connecting Yunnan and Myanmar, a number of smaller road projects, largely within northern Myanmar, portend changes for the trade landscape. Roads extending from Kachin State's capital of Myitkyina, in particular, are seen as key for the state's development.³⁸ However, the 459-kilometer road upgrade north to Sumprabum and Putao, in the heart of northern Kachin State, has purportedly met with unanticipated delays (Global Witness 2003). Further east, a forthcoming upgrade to the 88-kilometer road from Myitkyina to Kambaiti should greatly improve transport between Myitkyina and Baoshan Municipality. Prefecture officials in Nujiang are also keen on building a road link between the prefecture's lone border checkpoint, Pianma, and Myitkyina, as a means to diversify Pianma's current over-reliance on the timber trade (see "Timber Trade by Prefecture" below).

Chinese logging companies are often involved in road construction via "roads for resources" deals, whereby companies build roads in exchange for timber concessions. For instance, the Huaxing Company (????) in Fugong signed a contract with authorities in Myanmar to log 50,000 m³ annually for 15 years in exchange for, *inter alia*, building 30 million yuan (US\$3.6 million) worth of bridges and 40 million yuan (US\$4.8 million) worth of roads into northeastern Kachin State. Despite some Chinese logging companies' claims that they are coming to the aid of deeply impoverished people in Kachin through road building,³⁹ the majority of the roads built by logging companies are reportedly scattered and fragmentary⁴⁰ and do little to meet local people's transport needs.

MAIN TRADE ROUTES

Nearly all timber imports from Myanmar pass through Kunming on their way to domestic and international ports. As described above, different degrees of processing occur at different stops along the way. The main domestic routes from each prefecture are listed below (see also **Box 2**).

- Within Nujiang, timber imports from border crossings in Pianma Township, Fugong County, and Gongshan County pass by truck through Liuku. From Liuku, timber trucks pick up the Yunnan-Myanmar Expressway to Xiaguan or Kunming where timber is further sent by rail to Shanghai and Guangdong.
- In Baoshan, timber is transported by truck from border checkpoints in Diantan, Houqiao, and Mingguang — often passing through sawmills in Tengchong — to the Yunnan-

³⁸ See, for example, "Developing Kachin State," Embassy of China in Mandalay website, http://mandalay.mofcom.gov.cn/article/200307/20030700112278_1.xml [in Chinese] (8 January, 2004).

³⁹ Personal communication with logging company executive, Tengchong (Baoshan), October 2003.

⁴⁰ Interviews with Chinese logging company staff, Pianma (Nujiang), December 2003.

Myanmar expressway and on to Xiaguan or Kunming. From Kunming timber travels by rail to Beijing, Xian, Hunan, Shanghai and Guangdong.

- Timber from Dehong's Ruili, Wangding and Zhangfeng heads northeast along the Yunnan-Myanmar Expressway, passing through Luxi, Longling and Baoshan. From Yingjiang, timber trucks head northeast to Tengchong and east on to the expressway. Once on the expressway, trucks head toward Xiaguan or Kunming before timber is shipped by rail to other domestic destinations.

Box 2: Primary Routes en route to Kunming*

Nujiang: Gongshan → Liuku → Dali → Chuxiong → Kunming
 Fugong → Liuku → Dali → Chuxiong → Kunming
 Pianma → Liuku → Dali → Chuxiong → Kunming

Baoshan: (Kambaiti) → Houqiao → Tengchong → Baoshan → Dali → Chuxiong → Kunming
 (Pangwa) → Diantan → Tengchong → Baoshan → Dali → Chuxiong → Kunming

Dehong: (Muse/Namkham) → Jiegao/Longdao (Ruili) → Luxi → Longling → Dali → Chuxiong → Kunming
 (Laiza) → Yingjiang → Tengchong Baoshan → Dali → Chuxiong → Kunming
 (Kyukok) → Wanding → Luxi → Longling → Dali → Chuxiong → Kunming

** This diagram is meant to show routes, and not stops. Only major routes are shown. Major Myanmar border towns are in parenthesis, if any.*

Trade routes are susceptible to redirection. For instance, as reported by the Chinese Consulate in Mandalay, many businesses are changing shipping routes to avoid paying redundant tariffs at the increasing number of checkpoints along major thoroughfares in Myanmar. Avoiding historically high volume roads from Muse and Kyukok into Ruili and Wanding, companies are now shifting trade routes to previously less popular border destinations, such as Diantan, Houqiao, Yingjiang, Zhangfeng and Qingshuihe.⁴¹ As discussed below, timber imports have shifted largely to Diantan, Yingjiang and points further north.

EXPORTS

Anecdotal evidence gathered in this study suggests that the international markets for timber and timber products have a significant bearing on Chinese logging in Myanmar. South Korea, Japan and

⁴¹ “Cooperation Brief: Trade between China and Myanmar in northern Myanmar,” 27 March 2002, Embassy of China in Mandalay website, http://mandalay.mofcom.gov.cn/article/200203/20020300009666_1.xml [in Chinese] (8 January, 2004).

Taiwan are perceived to be the largest destinations for China's processed exports of Myanmar timber. As noted above, most Myanmar timber eventually bound for international ports as finished products passes through Shanghai and Guangdong, and Guangdong in particular is a key hub for timber processing, wholesale and retail. Guangdong has two main timber markets: Dongguan and Shunde. Dongguan Municipality is the largest furniture manufacturer in all of Asia (SFA 2002), and both markets are among the largest buyers of Myanmar timber products from Yunnan.⁴² Shunde mostly services the domestic market and, to a lesser extent, Europe and North America. Dongguan primarily distributes to South Korea, Japan, Taiwan and Southeast Asia.

TIMBER TRADE TRENDS BY PREFECTURE

As indicated above, both inter- and intra-prefecture variation in timber market conditions among Dehong, Baoshan and Nujiang is pronounced. In southern Dehong Prefecture, for instance, a combination of stronger SPDC control of neighboring forests, a history of serious over-logging in Shan State and extensive road networks reaching into southern Myanmar have shifted the timber industry toward higher-quality raw materials and production. Further north, in southern Nujiang Prefecture, where border trade is much more reliant on timber, the relatively lax regulatory environment on both sides of the border has led to a timber rush catering to a market much less concerned with quality. Within prefectures as well conditions are marked by distinct. Dehong's Yingjiang Township, bordering Kachin State, has a booming timber trade, while further south in Ruili Municipality, bordering Shan State, timber trade has slowed dramatically. Similarly, Nujiang's Pianma Township has a burgeoning timber trade, whereas the prospects for logging companies further north in Fugong County are comparatively bleak.

Border trade and timber trade development potential are similarly different among prefectures. In Dehong and Baoshan, for instance, infrastructure development could significantly augment the prefectures' roles as transit and processing hubs, thereby increasing both fiscal revenue and employment opportunities despite decreases in logging along their borders with Myanmar. In Nujiang, where the large-scale logging that has sustained nascent economic growth will become unprofitable in the next five to ten years, longer-term options for diversifying and strengthening border trade are more limited.

It is important to note that timber trade development along the border has been intimately accompanied by seasonal and permanent industrial migration, the broader patterns of which have become reasonably predictable. In Pianma, for instance, timber workers and executives come from throughout greater China. Within this amalgam, however, the logging industry is dominated by men from Tengchong; the processing industry is largely men from Sichuan. While timber prospects north

⁴² Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003.

of Pianma have apparently not warranted large-scale migration, just south of Pianma in Tengchong County, this broader configuration, where many loggers are instead local, still holds. Region-wide, however, local embeddedness of both companies and workers is relatively low throughout the border timber industry. Additionally, migration has significant livelihood implications for interventions — providing alternative livelihood options to timber industry workers is not necessarily a viable intervention for steering markets, but when interventions are made to shift markets concomitant livelihood implications will have to be taken into consideration.

DEHONG DAI AND JINGPO AUTONOMOUS PREFECTURE

Until 2001, Dehong Prefecture was the primary destination for timber products from Myanmar. Dehong's border cities of Ruili and Wanding were early entrants into the China-Myanmar timber trade, and Ruili in particular earned an odious reputation as being a haven for, *inter alia*, timber smuggling. While Ruili and Wanding still import Myanmar timber products, timber product inflows have shifted greatly north toward Yingjiang, which conducted over 96% of the prefecture's timber business in 2002.⁴³ More generally, trade has stabilized and overall import volumes of timber products have fallen since peaking in 1995-96. Most Myanmar timber products arriving in Dehong are now higher-quality teak, keruing, chempaka, *jiayoumu*, *xinanhua*, *nanmu* and *huangyunxiang*, some already manufactured into floorboards and furniture.⁴⁴

A combination of factors is purportedly responsible for this northward shift, the most important factor being increased SPDC control over Shan State, which borders Ruili and Wanding. The SPDC, perceived by Chinese companies as eager to “do business,” has become more sophisticated in its border control and taxation, setting set up numerous checkpoints on the Union Highway into Ruili to tax the logging industry.⁴⁵ Force has also played a role, as the SPDC has established a stronger military foothold in Shan State (Global Witness 2003). Additionally, Shan State, historically the source for much of Ruili's and Wanding's timber product imports, has experienced severe over-logging in its northern forests, in addition to a forest fire that allegedly ravaged the border in 2000.⁴⁶ According to one report (Global Witness 2003), in November 2000 the SPDC decreed that all logging in northern Shan State was illegal. Further north, Yingjiang, which borders KIO territory in southern Kachin State, is now China's second largest importer of Myanmar timber products.

⁴³ “Dehong's Border Timber Import Situation,” faxed memo by the Dehong Economic Institute, 18 December 2003 [in Chinese].

⁴⁴ Interviews with Chinese logging company staff, Tengchong (Baoshan), October 2003, and with processing company staff, Ruili and Yingjiang (Dehong), April 2004. Also, “Dehong's Border Timber Import Situation,” faxed memo by the Dehong Economic Institute, 18 December 2003 [in Chinese].

⁴⁵ Interview with Chinese logging company employee, Tengchong (Baoshan), October 2003. See also, “Cooperation Brief: Trade Between China and Myanmar in northern Myanmar,” 27 March 2002, Embassy of China in Mandalay website, http://mandalay.mofcom.gov.cn/article/200203/20020300009666_1.xml [in Chinese] (8 January, 2004).

⁴⁶ Interview with Baoshan Forestry Bureau staff, Baoshan (Baoshan), October 2003.

Timber imports encompassed a comparatively small 12% of Dehong's total border trade with Myanmar in 2002,⁴⁷ and broader border trade forms one of the four pillars of Dehong's future economic hopes.⁴⁸ In 2001, border trade accounted for more than 70% of the prefecture's gross domestic product (GDP) and more than 60% of provincial border trade.⁴⁹ In 2002, total border trade between Dehong and Myanmar was almost US\$327 million, 77% of which were exports.⁵⁰ Dehong's strategic location as a transit hub between northern and southern Myanmar provides access to overland routes to India through northern Myanmar and sea routes to India and the Middle East via ports in Bhamo and further south along the Irrawaddy. Despite promise, a recent Chinese government crackdown on smuggling has reportedly stultified trade through Dehong and dimmed the prefecture's economic prospects.⁵¹ Prefecture officials, in addition, maintain that formidable constraints to more extensive border trade remain, including: an underdeveloped commercial market in Myanmar, frequent policy and regulatory changes by Myanmar's decision-makers, and immature and inefficient border industries in China.⁵²

BAOSHAN MUNICIPALITY

Before the development of roads from northern Myanmar into Nujiang Prefecture, Houqiao, in Baoshan's Tengchong County, was the primary destination for timber from northern Kachin State. Much of this timber came across the historic Burma Road from Myitkyina, passing through the Kambaiti pass and into Houqiao. Beginning in 2000, however, Baoshan's timber product import totals from Myanmar have steadily declined, and timber volumes have shifted to a much smaller border crossing further north at Diantan. Current import levels fluctuate between 100,000 m³ and 150,000 m³ annually.⁵³

Explanations given for the decrease in prefecture timber product imports include: increasing costs of timber extraction (rising tariffs and taxes in Myanmar, in particular), lower timber and timber product prices abroad (specifically through increased competition with Malaysia, which reportedly has driven down prices since 2000), a global rise in wood substitutes, increased rainfall that shortened the harvesting season and the occurrence of the severe acute respiratory syndrome (SARS). Tengchong's timber industry has been hard hit as a result. At least one major logging company has begun to explore other business opportunities, with a company employee forecasting that Baoshan's timber

⁴⁷ "Dehong's Border Timber Import Situation," faxed memo by the Dehong Economic Institute, 18 December 2003 [in Chinese].

⁴⁸ "Thinking about Dehong's Industrial Growth," Duan Xiaoguang, 9 August 2003, online at: <http://61.166.95.68/pubnews/doc/read/wx2/943578287.82136721/index.asp> [in Chinese] (8 January 2003).

⁴⁹ Ibid; see also. Yunnan Statistical Bureau 2002.

⁵⁰ "Dehong's Border Timber Import Situation," faxed memo by the Dehong Economic Institute, 18 December 2003 [in Chinese].

⁵¹ Personal communication with Yunnan University professor, 31 January 2004.

⁵² "Thinking about Dehong's Industrial Growth," Duan Xiaoguang, 9 August 2003, online at: <http://61.166.95.68/pubnews/doc/read/wx2/943578287.82136721/index.asp> [in Chinese] (8 January 2003).

⁵³ Interview with Tengchong Forestry Bureau official, Tengchong (Baoshan), October 2003.

trade will be negligible by 2005. Smaller processing facilities have borne the brunt of the shortage of source material, which has pushed many to the brink of bankruptcy.

Despite decreases in timber imports, Baoshan's overall border trade is expected to remain strong. Border trade reached US\$48 million in 2002 and trade volumes are growing 10% annually in Tengchong, which comprises 90% of Baoshan's total border trade.⁵⁴ Improvements in the Mkitkyina-Kambaiti road should facilitate more general trade development. Further west in Myanmar, a 2001 bilateral agreement to upgrade the historic Stillwell Road (????? | *Shidiwei Gonglu*), linking Tengchong to Ledo, India through Myitkyina, will enhance Baoshan's competitive advantage as a hub for Chinese exports to India.

NUJIANG LISU AUTONOMOUS PREFECTURE

In 2001, Nujiang overtook Dehong Prefecture as the largest importer of Myanmar timber products among border prefectures. From a modest 36,000 m³ in 1997, the prefecture's timber imports ballooned to 308,300 m³ in 2002.⁵⁵ Within Nujiang, the border town of Pianma mentioned above has become the heart of the China-Myanmar timber trade, particularly since 1998. As of November, Pianma comprised 94% of Nujiang's annual timber product imports for 2003.⁵⁶ Pianma plays an important fiscal role as well, reportedly making up more than 60% of Lushui County's tax revenues,⁵⁷ and thus more than 25% of total prefecture fiscal revenues in 2002 (Yunnan Statistical Bureau 2003).

Pianma's relatively advantageous topographic conditions provide it with a competitive edge over its northern neighbors, with roads connecting from all three of its border villages directly into Myanmar's customs stations. Despite an influx in timber trade volumes, the town's socio-economic fortunes are more difficult to gauge. Financial inflows have pushed up consumer prices to levels similar to the provincial capital in Kunming, but civil infrastructure development has been largely unable to keep pace. Migration flows have similarly outpaced civil management capacities, engendering staggering business turnover and often unhealthy competition.⁵⁸

Gongshan and Fugong, Nujiang's two other counties on the Myanmar border, had annual combined timber import volumes equaling only 6 % of Pianma's as of November 2003.⁵⁹ According to sources within the Fugong Forestry Bureau, it is unlikely that either Gongshan or Fugong's timber trade prospects will ever near Pianma's. Despite initial promise, Myanmar-focused logging ventures based in Fugong have fallen radically short of expectations. An international conglomerate comprised of

⁵⁴ "Tengchong's Border Trade Reaches Unprecedented Highs," Jinyin Online, <http://www.gog.com.cn/gzrb/g0303/ca422551.htm> [in Chinese] (8 January 2004)

⁵⁵ Official statistics from the Nujiang Forestry Bureau, 1996-2002.

⁵⁶ Official statistics from the Nujiang Forestry Bureau, 1996-2002.

⁵⁷ Interview with Forestry Bureau official, Liuku (Nujiang), December 2003.

⁵⁸ Interview with Forestry Bureau official, Pianma (Nujiang), December 2003. Lushui County is the county seat for Nujiang Prefecture.

⁵⁹ Official statistics from the Nujiang Forestry Bureau, 1996-2002.

private timber companies — Huaxing Company, mentioned above — made significant investments in logging operations across the border near Fugong in the hopes that the logging ban would drive up timber prices in China. The company signed a 15-year contract in Myanmar to extract 50,000 m³ annually, but in the three years from 2001 and 2003 the company has only been able to extract a total of 20,000 m³ and its annual logging volumes are not likely to exceed 30,000 m³. Problems abound: operating costs are prohibitive because of rough terrain, roads are difficult to maintain and wood quality is poor. Timber is reportedly “easy to cut but hard to get out.” Indeed, shipping costs from Myanmar to Fugong equal almost half of the shipping costs from Fugong to Kunming. Because of low wood quality and high humidity, most of the logs extracted near Fugong are shipped directly to Kunming without any processing.⁶⁰

Despite a brisk 52% increase in prefecture GDP from 1997 to 2001 (Yunnan Statistical Bureau 1998 & 2002), the economic future of Nujiang’s border counties is uncertain, particularly as the prefecture has traditionally received little financial assistance from the provincial government. Logging companies based in Pianma claim that logging activities in Myanmar can only continue at their current scale for the next five to ten years. Facilitating more diversified border trade along the lines of Baoshan and Dehong will be more difficult for Nujiang, as Myanmar is sparsely inhabited along the Nujiang border. Officials in Pianma as well as prefecture officials are cognizant of the longer-term financial uncertainties and are currently in discussions about Pianma’s future development course. The most promising option for Pianma is presently perceived to be creating a market and providing incentives for mineral resources extraction in Myanmar. Officials are also keen to build a road from Pianma to Myitkyina, although costs and lack of financing are currently presenting obstacles to this.⁶¹

BORDER AND TRADE ADMINISTRATION: CHINA

ADMINISTRATIVE DIVISIONS

Border administration in China involves a variety of actors, foremost among which is the Border Trade Bureau (?????? | *Bianjing Maoyi Guanli Ju*). The Border Trade Bureau, usually at the county level, is responsible for managing, guiding and coordinating border trade activities. In addition, the Border Trade Bureau has a subsidiary arm, the Checkpoint Office (????? | *Kouan Banshichu*), which handles day-to-day administration. Other relevant border institutions include the Kunming Customs Bureau (???? | *Kunming Haiguan*), Yunnan Provincial Border Patrol (?????? | *Yunnansheng*

⁶⁰ The preceding discussion is based on an interview with Fugong Forestry Bureau official, Fugong (Nujiang), December 2003.

⁶¹ Interviews with officials from the Forestry Bureau, Liuku (Nujiang), December 2003.

Bianfang Zongdui), Kunming Flora and Fauna Quarantine Bureau (???????? | *Kunming Dongzhiwu Jianyi Ju*), Yunnan Provincial Import and Export Commodity Inspection Bureau (???????????? | *Yunnansheng Jinchukou Shangpin Jiancha Ju*), Kunming Sanitation and Disease Control Bureau (???????? | *Kunming Weisheng Fangyi Ju*), and local branches of the State Forestry Administration (????? | *Goujia Linye Ju*).

The Kunming Customs Bureau, directly under the China Customs Bureau, has 15 branches on the Myanmar border. Many of these (six) are situated in Dehong Prefecture, and branch distribution is relatively uneven. Nujiang Prefecture did not have a permanent customs branch until 2003, as customs inspections were instead done by intermittent patrol from Baoshan. In 2003, a customs branch was established in Pianma.⁶²

TIMBER TRADE MANAGEMENT

Timber trade between China and Myanmar is steered in large part by the State Forestry Administration (SFA). At checkpoints in base prefectures and several others on the road to Dali and Kunming, timber companies are required to show shipping permits distributed by the SFA, as well as other SFA documents, such as certificates of origin, demonstrating that their cargo is both safe and originates outside of areas included in the logging ban. Shipping permits are particularly important, as allocations for timber product imports rely on them. The provincial Forestry Department allocates shipping permits to local-level Forestry Bureaus based on a configuration determined and allotted by the SFA. Local-level bureaus, often at the county level, are charged with selling these permits to timber companies. Timber companies, in turn, are required to have a shipping permit to transport their goods. As noted previously, monitoring and data collection is done at checkpoints leaving prefecture borders.

⁶² Border checkpoints are not equivalent to customs branches. For instance, Pianma became a provincial-level checkpoint in 1991, but, as noted above, did not have a customs branch until 2003.

FOREST AND TRADE ADMINISTRATION: MYANMAR

ADMINISTRATIVE DIVISIONS

Myanmar's complex and chaotic internal politics frequently blur the line between individuals and institutions. In many situations, it is individual power that prevails fundamentally over institutional restraints (Global Witness 2003).⁶³ In the most visible manifestation of this dynamic, forest management in Myanmar is persistently dominated by internal power struggles between the Ministry of Forestry's conservation and management arm — the Forestry Department — and its production and commercial arm — Myanmar Timber Enterprise (MTE). While the Forestry Department is responsible for sustainable forestry management through an annual allowable cut (AAC), MTE, with ties to elite officers within the SPDC, often supersedes it (Castrén 1999). Because of this overabundance of power vested in individuals, institutions exercise only limited control over Myanmar's forests.

Myanmar's national forestry management regime will be described only briefly here, as previous analyses have covered this topic in much greater detail.⁶⁴ The current management system has its roots in the British colonial period. The Brandeis Selection System (BSS), which later became the Myanmar Selection System (MSS), stipulates rules for harvesting based on a 30-year felling cycle. One of its most characteristic features is a fixed annual yield, the AAC. Importantly, as the Ministry of Forestry has been at times unable to work in parts of the country outside of SLORC/SPDC influence, an AAC based on the entire country has often been applied to a small fraction of it, ultimately leading to over-logging (Castrén 1999). For harvesting and export purposes, forest products are classified into two categories — 'teak' and 'other hardwoods' — a distinction particularly significant in trade regulation. Despite the rigor required to maintain this system, the Forestry Department currently faces both deteriorating institutional capacity and a lack of resources (Global Witness 2003).

The ruling military regime has historically used MTE to control all aspects of timber production and commerce — harvesting, milling, value-added processing, marketing, trade and retail. Even so, increased private sector involvement in non-teak hardwood operations is a key part of the country's 1995 Forest Policy, and some commercial non-teak hardwood activities are contracted out to private enterprises (Global Witness 2003). In addition, MTE has several joint venture arrangements with foreign companies, both extractive and processing. By law *all* teak logs must be shipped through Yangon; other hardwoods have to pass through Yangon only if they are intended for export. According to official statistics, as of 1999 most timber exports were indeed passing through Yangon, with a small fraction exported overland into Thailand (Castrén 1999). In 1999, the SPDC gave MTE

⁶³ For a more detailed account of the extent of this imbalance, see Global Witness 2003. Even in situations where the Forestry Department is meant to have sole jurisdiction over forests, private interests can often triumph.

⁶⁴ For example, see Brunner 1998; Castrén 1999; and Global Witness 2003.

the authority to experiment with overland trade through Yunnan on a limited basis, although more detailed information on official quotas is not available.

LEGAL AND POLICY FRAMEWORK

Recent legislative developments have modernized Myanmar's forest management system, but skepticism over the actual effectiveness of these tools abounds (Brunner et al. 1998; Castrén 1999; Global Witness 2003). Recognizing the economic, environmental and social value of forests, Myanmar's Forest Law of 1992 calls for decentralization of forest management, private sector involvement in reforestation and trade, and a participatory approach to forest planning and use. In addition to the Forest Law, the country subsequently approved a Forest Policy in 1995 which emphasizes the need and outlines measures for a more balanced approach to forest management in Myanmar.⁶⁵

Myanmar has also ratified a number of international agreements governing the stewardship of its forest resources, including the: Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES | 1979), Convention on Biodiversity (CBD | 1994), and International Tropical Timber Agreement (ITTA | 1996). In addition, Myanmar is a member of the International Tropical Timber Organization, having joined in 1993. Despite its commitments on the international stage, room for engaging the military junta through international agreements is limited (Brunner et al. 1998). Indeed, evincing the difficulties of engagement, Myanmar's National Commission on Environmental Affairs, which is responsible for implementing the country's National Environmental Policy, is perplexingly located under the Ministry of Foreign Affairs (Myint 2002).

Forest certification has made scattered progress in Myanmar. The Timber Certification Committee (TCC) was established in 1998, along with a working group in 1999 to explore the potentials and requirements of a certification regime. Despite attempts to obtain approval from the Forest Stewardship Council (FSC), political obstacles have hindered these efforts and Myanmar is currently without an internationally-recognized certification standard. The TCC's focus has since turned to promoting a national certification scheme as a means to overcome "irresponsible attitudes" within the international community (Thinn 2002). It should be noted that forest certification in Myanmar is currently driven by market demands on its maritime exports, rather than its overland exports to China.

COMMUNITY FORESTRY AND PLANTATIONS

Community forestry has emerged in discrete areas of Myanmar as a viable forestry management option. Successful models include projects in Rakhine State (CARE-Australia) and southern Shan

⁶⁵ See the FAO's website, www.fao.org, for further details about Myanmar's relevant laws and policies.

State (United Nations Development Programme | UNDP). Current community forestry arrangements, however, are typically designed to satisfy local demand for fuelwood and other forest resources, and local communities are not actively involved in selling timber across the border into China. Community forest arrangements along the China-Myanmar border in Kachin State typically take the form of leased concessions to Chinese companies rather than community production.⁶⁶

Teak plantations, begun by the British, arrived in Myanmar in 1856 and large-scale plantation planting began in 1980. Plantations currently cover over one-half million hectares, 35.5% of which are teak. Commercial plantations primarily include teak, pyinkado and padauk. Investments further north have largely not kept pace, however. Along the China-Myanmar border there are currently few plantations, and most of these have been established and are operated by Chinese companies.⁶⁷

DEVELOPMENTS WITH POTENTIAL IMPLICATIONS FOR THE CHINA-MYANMAR TIMBER TRADE

ADMINISTRATIVE AND POLITICAL CHANGES

Ultimately, political reform in northern Myanmar is crucial to more sustainable forest and trade management along the China-Myanmar border. Without more stable institutions across the country, forestry and trade in Myanmar will continue to be plagued by uncertainty and volatility. In perhaps the most glaring example of the venality to which the border has succumbed, reportedly even the environmental protection offices in NDA-K territory along the border near Pianma can be “contracted” to individuals or companies in Myanmar, China, or a venture between the two⁶⁸

Recent initiatives by the SPDC — in particular the Road Map to Democracy proposed in August 2003 — may signal efforts at genuine reform, but it is unclear whether there will be any real political breakthrough. In particular, the SPDC’s refusal to provide a timeline for political change leaves room for doubt. As a first step in the Road Map, in 2004 the SPDC plans to convene the National Convention, previously suspended via stalemate in 1996, to draw up a constitution. As of the end of 2003, all the ethnic minority groups along the Chinese border — the KIO, NDA-K, and UWSA — had agreed to participate in upcoming National Convention talks. National reconciliation and integration could provide a platform of stability necessary for more effective border control and forest monitoring and management. Alternatively, if not handled with care, upcoming talks could lead to further conflict and environmental degradation.

⁶⁶ Personal communication with Global Witness staff, 19 April 2004

⁶⁷ Interview with Chinese logging company staff, Tengchong (Baoshan), October 2003.

⁶⁸ Interviews with Chinese logging company heads, Pianma (Nujiang), December 2003. Once leased, contracting organizations reportedly set their own rates, raising them frequently, and this lack of standardized and stable rates is said to be responsible for recent hikes in fees paid by logging companies.

Sanctions by western governments, in particular renewed U.S. sanctions in August 2003 prohibiting all imports from Myanmar, are unlikely to force regime change or even modest political reform in the short term. Conversely, sanctions are more apt to exacerbate Myanmar's many political factions' over-dependence on natural resources as a primary revenue generator (Global Witness 2003). In Kachin State, decreasing SPDC support has already forced political leaders into a greater dependency on the private sector in China.

PARTICIPATION IN REGIONAL GROUPINGS

Myanmar's involvement in regional fora will likely spell changes for its forestry and trade management regimes, although the broader implications of this involvement will require some time to materialize. Principally, Myanmar's participation in the Common Effective Preferential Tariff (CEPT) system of the Association for Southeast Asian Nations (ASEAN's) China-Asian Free Trade Area (China-AFTA) will necessitate greater consistency and predictability in its export procedures. While requiring Myanmar to reduce all import tariffs below 5% by 2008, the CEPT will also seek to reduce non-tariff barriers to trade, the abundance of which have thus far served to limit the scope of its timber trade with China. In addition, in September 2003 Myanmar acceded to the GMS Cross Border Transport Agreement which seeks to simplify and harmonize border procedures regulating the flow of people and goods. Between China and Myanmar, the agreement will entail piloting single-stop customs inspection procedures between Ruili and Muse. Replication further north would ostensibly require greater centralization in Myanmar's customs regime, which is currently characterized by regional control. Significantly, Myanmar's more recent participation in regional economic schemes, locking it into *financial* commitments with China and its Southeast Asian neighbors, will likely require changes in the Asian community's traditional non-interventionist approach to Myanmar.

CONCLUSIONS AND RECOMMENDATIONS

While institutional reform is a necessary condition for improved forest management in Myanmar, Chinese agencies cannot afford to wait for the SPDC and regional governments to undertake administrative and regulatory changes before dealing with the socio-economic and ecological problems that will soon begin to have a more noticeable impact within China's borders. Socio-economically, instability fueled by short-term business practices will threaten social cohesion and longer-term economic growth in some border towns. Ecologically, over-logging in northern Myanmar will hinder forest management efforts in northwest Yunnan. In fact, there are many options available — ranging from domestic policy to environmental diplomacy — with which the

Chinese government can make strategic interventions in the timber market and guide it toward more sustainable footing. Ultimately, however, the sustainability of these efforts themselves depends on the stability of Myanmar's institutions. Thus, although Chinese researchers have long decoupled discrete interventions in Myanmar from the larger political context, future interventions should be coordinated with longer-term political efforts to promote institutional and economic stability in Myanmar.

Numerous interrelationships between and among potential environmental, economic and social objectives in border development suggest that interventions should take into account a range of factors. For example, without further regulating and consolidating the timber industry along the border in China, government efforts to improve ecological security will be difficult to sustain. Conversely, increased timber industry regulation to achieve environmental goals — without attention to attendant impacts on livelihoods, fiscal revenue and demographics — might have adverse economic and social consequences. Interventions will similarly have to take into account intra-regional differences in resource and trade conditions. Furthering border trade as a means to offset losses in tax revenue and absorb excess labor from a consolidating timber industry, for example, might be a viable option in Baoshan and Dehong, but currently not in Nujiang.

The China-Myanmar timber trade is unique among China's international timber inflows. Hence, not all of the potential options listed here have national ramifications and some avenues might thus be more appropriately explored at a provincial level. For instance, China's timber imports from Myanmar are distinct in the sense that the vast majority of logging is done by Chinese citizens working in Chinese companies. Because of its limited geographic scope, further research into logging industry regulation in northwest Yunnan would presumably either be best done at a provincial level or as part of a national study with regional subsections. Transboundary environmental threats and management arrangements, with their provincial, national and multinational implications, would obviously be best explored jointly by provincial and national authorities in cooperation with their international counterparts.

PROMOTING LONGER-TERM BORDER TRADE AND DISTRIBUTING BENEFITS FROM THE TIMBER TRADE

In recent years, Myanmar has emerged to become Yunnan's second largest trading partner (Yunnan Statistical Bureau 2002), but border trade between Myanmar and China is only in its infancy. Opportunities for urban and rural communities on both sides of the border will continue to grow in Dehong and Baoshan with improvements in infrastructure, policy and management. Increased trade links would help to offset revenue loss and absorb excess workers from a consolidation of the border timber industry, decreasing border prefectures' reliance on the timber industry as a primary source of employment and fiscal revenue. Seizing on border trade growth, the Chinese government should continue to — and the international community should begin to — promote agricultural extension

and experimentation in Kachin communities along the border as a means to strengthen the border economy and trade potential in Myanmar, but also to reduce local communities' dependence on poppy production. More diversified trade, coupled with environmental and regulatory initiatives, would greatly reduce the pressure on Myanmar's forests.

In Nujiang, the socio-economic benefits from timber trade have not been broadly distributed and in Pianma longer-term economic and social stability is being sacrificed for short-term fiscal stimulus. This situation is not sustainable, and timber trade through Pianma warrants greater regulation and oversight. As described above, Pianma is an illustrative example of how efforts to liberalize border trade, while well-intentioned, may not provide direct long-term benefits to local people without more active and appropriate intervention. Building for the township's future requires exploring avenues for increasing local taxes on timber imports and reinvesting these in basic service provision. Further research should also be done to better understand the effects of changing market conditions on migration patterns and non-migrant livelihoods in Pianma.

IMPROVING CUSTOMS MANAGEMENT AND INDUSTRY REGULATION

More fully utilizing Yunnan's strategic position as a gateway to Southeast Asia and the Indian sub-continent requires improvements in border administration to modernize Yunnan's border management regime and increase the rigor and effectiveness of customs data collection. In particular, agencies involved in border trade administration should review the efficacy of data collection methods to improve coordination between lower and higher levels of government. More advanced information collection and management mechanisms for timber product imports and exports would greatly enhance the SFA's knowledge base and management capacity, particularly at a national level. Lastly, increased transparency in trade statistics would benefit Yunnan's as well as China's potential as a regional economic hub by allowing for improved policy formulation, regional planning and economic research.

As in many other industries in many other regions across China, county, prefecture and provincial agencies face a seemingly stark trade-off between employment and environmental and economic efficiency in regulating the timber industry along the China-Myanmar border. However, while more efficient operations will inevitably mean fewer companies at some level, the effect of industry consolidation on medium-term industry and broader local employment trends is less clear and warrants further research. In addition, regulatory initiatives will require a better understanding of intra-industry distinctions, local economic differences, migration patterns and potential spillover effects. In short, the same sort of socio-economic analysis of the domestic timber industry that preceded and has accompanied NFPP implementation could be conducted on the timber industry along the Chinese border with Myanmar.

As an immediate step, interventions should focus on the large-scale logging in northern Myanmar's Kachin State. As noted above, timber product inflows are currently concentrated in three areas along

the border: Pianma, Yingjiang and Diantan, all of which border Kachin State. These three towns in particular are currently over-reliant on the timber trade and both the quality and sustainability of their economic growth is uncertain. Massive business turnover in the logging industry in Pianma, for instance, has led to industry instability and has likely encouraged contractual malfeasance in Myanmar. The result is a timber rush mentality that is neither economically, socially, nor environmentally sustainable. Without sensible intervention, such as incrementally raising the costs of market entrance, over time this volatility will have pronounced effects on the economic growth, demographic stability, and border ecology of the prefecture as a whole.

In the medium-term, the post-NFPP timber processing industry in provincial and greater China warrants more systematic research and better policy direction. For instance, although market pressure from more efficient sawmills in Kunming, Guangdong and Shanghai has already begun to force many companies along the Myanmar border out of business, the extent to which this trend is structural or cyclical is unclear. The livelihood implications of a “second wave” of industry consolidation deserve attention and appropriate intervention. Efforts to maintain and in some cases promote the small-scale border timber processing industry as a longer-term livelihood option — particularly on the Myanmar border — are not based on longer-term strategic assessments and may actually have detrimental effects in the near future.

ENHANCING ENVIRONMENTAL SECURITY AND STRENGTHENING ENVIRONMENTAL COOPERATION

Environmental problems are not constrained by political boundaries, and transboundary management regimes are often an indispensable part of domestic environmental management (e.g., Badenoch 2002). If present trends continue, ecological devastation in northern Myanmar will hinder domestic efforts to protect ecosystems in northwest Yunnan. For instance, the habitat destruction pursuant to deforestation will exacerbate wildlife, pest and disease management for Yunnan’s forests. Forest fires are particularly severe and spread more rapidly in deforested areas (Siegert et al. 2001), and forest ecosystem degradation in Myanmar will similarly frustrate forest fire prevention and containment in northwest Yunnan. Natural disasters caused by soil erosion, the grounds for China’s own logging ban, will likely increase along the border with continued over-logging in Myanmar.

In response to these threats, efforts to explore the ecological impacts of logging along the border are underway. The Yunnan Science and Technology Department and the SFA should consider the opportunities and challenges of creating “ecological buffer zones” as a means to improve domestic environmental management. As these investigative efforts continue, Chinese agencies should review the considerable domestic and international experience with transboundary environmental management with a view to extrapolating principles, lessons and potential models.⁶⁹ A buffer zone

⁶⁹ Internationally, the Border Environmental Cooperation Commission (BECC), in particular, might be an interesting point of comparison for joint border management regimes. The BECC, frequently lauded as one of

along the border with Myanmar could form an experimental structure that might be extended into Laos and Vietnam along Yunnan and Guangxi Provinces or replicated elsewhere in China.

In the longer term, attempts at joint management would require an extensive amount of harmonization and coordination among respective forestry departments in Myanmar and China. In the short term, however, promoting cooperation and exchange between and among forestry bureau officials in both countries would do much to reduce the substantial information gap between bureaus and would form an improved basis for decision-making. As a second step in collaborative efforts, both the SFA and the international community could support community-led reforestation efforts in northern Myanmar.

EXPLORING FLEXIBILITY IN THE LOGGING BAN

Although it is difficult to draw direct cause-effect relationships between the logging ban and increased logging by Chinese companies in Myanmar, the logging ban doubtlessly has played a considerable role in this context. With a more sophisticated assessment of domestic and bilateral timber markets and ecological conditions, the SFA could explore options for introducing more flexibility in the logging ban. For instance, some of the interviewees in this study felt that the ban should exclude faster-growing small diameter trees, such as *shuidonggua*, in northwest Yunnan. More broadly, responding to calls for the need to develop advanced silvicultural management in China (CCICED 2002) with concrete incremental improvements would do much to strengthen and stabilize domestic timber production and reduce incipient pressure on neighboring countries' forests. Such improvements might include exploring and experimenting with greater harvesting and marketing autonomy for collective forests; improving the efficiency and quality of state-owned plantation forests; building capacity among prefecture, county and township staff; and exploring administrative and regulatory frameworks that allow national and provincial policy to be more sensitive to local conditions while meeting national ecological criteria and regional priorities.

the more successful models for cross-border administration, manages environment and development along the border between the United States and Mexico.

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