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# LEGAL VERIFICATION SYSTEMS FOR WOOD SUPPLY BETWEEN RUSSIA AND CHINA

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## INTRODUCTION

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Companies that source wood from Russia face a high risk of it being illegally harvested. This report provides guidance on the verification systems and technologies suitable for the Russian context that could be deployed to diminish this risk. It is our hope that the report will be beneficial for a wide audience, ranging from forest managers, processors, and traders to importers and manufacturers.

The report is based on pilot case studies of two Chinese furniture companies importing wood from the Irkutsk region of Russia. For the purposes of confidentiality, both companies shall remain anonymous, referred to in this document as Company A and Company B. Company A produces a variety of furniture and home products. Company A has recently invested in a sawmill operation in the Irkutsk region. Heretofore, they relied exclusively on sub-suppliers to source sawnwood for them. Company A is much larger and has sawmill factories in Siberia and the Russian Far East.

In addition to providing specific details of the supply chain configurations of these two companies, the report scopes and evaluates verification systems that could be deployed. The goal of these systems is to: (a) verify that the timber was legally harvested and traded; and (b) track the timber from stump to factory to ensure that it is not mixed with illegally harvested timber.

Both pilot case studies and the challenges these companies face is instructive for all companies seeking to obtain “verified legal” timber from high risk countries, such as the Russian Federation. The focus of this report is on the furniture sector but the findings could be relevant for other companies importing timber as well.

This report is an outcome of the FOREST FUTURES WWF partnership project in Russia and China. This project is being implemented by WWF in partnership with IKEA.

## STRUCTURE AND METHODOLOGY

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This report is divided into three sections and an appendix. Section I provides an overview of Forestry in the Russian Federation, including summaries of the administrative structure, how forest use and harvest rights are acquired, and how timber transactions and exports are controlled. It also includes a description of legal wood supply chain in Russia, a basic typology of Russian-Chinese wood supply chains, and it assesses the risks at each control point (or node) of these chains.

Section II introduces wood tracking systems. It describes the basic types of tracking systems in-use, the vendors who provide them, and tailors a tracking system to be considered by the Russian Government and the private sector.

The structure of Section III centers around case studies of two Chinese companies both of whom are setting up sawmills in Russia. The section maps out the wood supply configurations of these companies, describes the challenges they face, and ends with steps each can take to secure legal wood supply.

Two international consultants, Josh Newell and George Kuru, were hired by WWF to prepare this report. A number of Chinese and Russian consultants also contributed. Companies A and B agreed to participate, opening up their supply chain to mapping and analysis. After the two companies provided an initial schematic of their respective supply chain configurations, the consultants traveled the length of the supply chains. The research carried them from Shandong Province to Inner Mongolia and finally to the Irkutsk region of Eastern Siberia. Russian and Chinese cities and villages that were visited include Beijing, Qingdao, Manzhouli, Irkutsk, and numerous villages in the Irkutsk region and in China. After these data were collected, the consultants prepared this draft report and received comments from expert reviewers including staff from relevant country offices of WWF and the two companies. The systems described relate to the specific supply configurations (set-ups) of the two supply chains investigated but will be applicable to many other, if not all, supply chains in Russia.

# 1. FORESTRY AND WOOD SUPPLY IN THE RUSSIAN FEDERATION

## OVERVIEW OF RUSSIAN FORESTRY

The Russian Federation has the world's largest forest resources comprising an estimated 288 million hectares of intact forests. This constitutes 22 percent of the Earth's total forest cover and more than half of its coniferous forest cover. In ecological terms, this represents 26 percent of the world's frontier or intact forest. In economic terms, this represents approximately 82 billion cubic meters of standing timber volume.

Russian forests are usually divided into four major geographic regions: European Russia, Western Siberia, Eastern Siberia, and the Russian Far East. Eastern Siberia has the most extensive timber resources (33.3 billion cubic meters), followed by the Russian Far East (20.6 cu. m). The Irkutsk Region (Irkutskaya Oblast) with 9.1 billion cu. m. has the most extensive timber resources of any administrative region in the Russian Federation and is annually among the top timber producing regions (see Table 1).

TABLE 1.1 TIMBER RESOURCES IN THE FAR EASTERN AND SIBERIA FEDERAL REGIONS

Region	Forest area (million ha)	Timber resources (billion cu. m)	including: mature and overmature (billion cu. m)	including softwood species (billion cu. m)
Far Eastern Federal District, <i>including:</i>	280.5	20.6	11.8	10.1
Khabarovskiy Kray	52.1	5.1	3.0	2.7
Primorskiy Kray	12.5	1.9	0.9	0.5
Amurskaya Oblast	23.3	2.0	1.0	0.9
Siberia Federal District, <i>including:</i>	273.6	33.3	19.2	15.5
Krasnoyarskiy Kray	52.2	7.8	4.9	3.9
Irkutskaya Oblast	61.7	9.1	5.3	4.6

Approximately 97% of the forests in the Russian Federation are state-owned and are referred to by Russians as belonging to the 'Forest Fund.' The remaining 3% of forests exist outside the Forest Fund and include municipal forests and forests controlled by the Ministry of Defense.

The Forest Code of the Russian Federation is the foundational body of laws and regulations controlling the management and use of forests. The first version of the Code was adopted in 1997. A new version of the Forest Code was put in force on January 1, 2007. This is not a law of direct action, and for its practical implementation,

approximately 50 pieces of legislation have to be adopted. Until new legislation is fully developed, many aspects of forest management procedures and practice will remain unclear. Generally speaking, the new Code will lead to devolution of powers and responsibilities from the federal government to the regional government. Regional governments will have increased powers to develop regional forest codes, allocate timber harvest rights, and determine regulatory standards.

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## ADMINISTRATIVE STRUCTURE OF FORESTRY IN RUSSIA

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The Ministry of Natural Resources has overall responsibility to develop government policy and forest legislation. The Federal Forest Agency (*Federalnoye Agentstvo Lesnogo Khozyaystva*) implements state forest policy and provides state services and state property management. The Federal Forest Agency is responsible for:

- Formulating forest policy, laws, and regulation
- Defining documentation.
- Defining harvesting procedures (30 different procedures).
- Monitoring forests (remote sensing) and inventory (forest mapping and stock assessment).
- Establishing regulations for taxes, royalties, stumpage and other forest fees.
- Controlling budgets for regional forest authorities.

Subjects of the Russian Federation (regions known as *oblast*, *krai*, or *okrug*) are delegated with almost all forest management responsibilities, including forestry planning at regional and local levels, allocation of felling sites and forest use organization, development of rent agreements, organizations of auctions for right to use forests, organization of forest conservation, protection and regeneration, and state forest control and monitoring. These responsibilities are discharged through regional forest services.

The state forests in each region are divided into Forest Management Units (FMU – known as *Leskhoz*). *Leskhoz* range in size from several hundred thousand hectares to several million hectares. They are further divided into sub-units known as *lesnichestvo*, which comprise the basic unit of silvicultural management. *Lesnichestvo* typically range between 200 to 800 ha in size. Under the old Forest Code, there were approximately two thousand *leskhoz*. Under the new Code, the number of *leskhoz* or FMUs will be reduced considerably, primarily through consolidation.

The Federal Forest Agency determines the annual allowable cut (AAC) for each region and FMU based on results of a forest inventory. Under the new Forest Code, the Federal Forest Agency only specifies the extent and number of FMU in each administrative region. Regional Forest Services then develop a Forest Plan describing the forest development areas and forest development activities for each FMU. Forest licenses provide use rights to part of a *FMU*. Under the new Forest Code, forest licenses are allocated by the Regional Forest Service.

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## ACQUIRING FOREST MANAGEMENT AND USE RIGHTS

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Most forest licenses provide use rights for between 10 and 49 years. The rights to use a forest area are obtained by auction using two separate mechanisms. First, a company can acquire a forest license (*Arenda*) allowing for long-term use of the license area. Second, a company can obtain the right to harvest specific compartments for a period of a year or less (*Auktsion*). The procedures for obtaining a forest license vary by administrative region, but generally require:

1. Pre-existence of forestry regulations for the FMU which describe the types of permitted forest use and logging ages, annual allowable cut, timing for forest use and restrictions, requirements for forest protection, conservation, regeneration and other characteristics.
2. Proper registration of the company in compliance to state and forestry legislation.
3. Legal registration of the forest license.

Once a forestry license has been obtained the company must implement the following to retain the license:

1. Prepare a forest development plan for the forest license.
2. Prepare an annual declaration on forest use, a report on forest use, and reports on forest protection, conservation, and regeneration to the Regional Forest Service in compliance with the regulations set by the Ministry of Natural Resources.

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## ACQUIRING PERMISSION TO HARVEST

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Until 1 January 2009, the respective FMU where the forestry license is located also may issue harvesting permits (*lesorubychnie billeta*). The harvesting permit provides them with the right to harvest in specified compartments in a specified year. Harvesting permits have to be annexed with the felling area allocation plan, a technical map, and outturn and harvest cost estimates.

An FMU conducts audits of harvest operations to ensure the companies adhere to forestry regulations. Harvest areas are inspected after logging operations and a formal report is prepared. In cases where violations of the logging rules are identified, the report includes actions to be taken by forest users to correct these violations. Harvesting permits can be issued either to the forest license holder or to third parties who have obtained harvesting rights from the forest license holder.

Harvesting for both commercial cutting and intermediate cutting (thinning conducted as part of the silvicultural schedule in the management plan) is scheduled in the forest development plan. The harvest permit enables the forestry license holder to implement an annual harvest plan.

FMUs also have the power to create harvesting permits for operations outside of those scheduled in the forest development plan of forestry licenses. This type of logging is referred as "other cutting." There are three types of reasons for issuing these permits:

1. Sanitary / Salvage cutting (*Sanitarnye rubki*) – thinning conducted for forest health reasons;

2. Reformation cutting (*Rubki pereformirovaniya*) – to change forest composition to other species;
3. Harvesting for non-forestry use (yet to be officially named) such as mining, roading, and residential construction.

Under the old Forest Code (1997), FMUs conduct this kind of logging themselves or contract local companies to do so. This kind of logging, allowed within protected and reserved territories, is exempt from lease payments and a portion of the stumpage fees.

After 1 January 2009, forestry license holders will no longer be required to apply for harvest permits from the FMU for main cutting and intermediate cutting. The forestry license holders will only be required to prepare a declaration describing the locations and production details for individual compartments to be harvested during the coming year. The procedures for this declaration are not yet finalized. It is not clear how “other cutting” will be managed under the new Forest Code.

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### CONTROLLING TIMBER TRANSACTIONS

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All sales of roundwood logs are subject to a sales contract (*Kontract*). The State provides guidelines as to the format of the sales contract, but the actual format used is at the discretion of the parties to the sale. Importantly, the responsibility for the legality of the supplies lies completely with the supplier of the logs. The supplier is under no obligation to provide information about the log source to the buyer.

Transported timber must be accompanied by a transportation invoice. The transportation invoice is issued by the sender. It provides information on the type, quantity, and value of the cargo as well as information on the sender and receiver of the goods. It does not provide information on the origin of the logs, i.e. the forestry license number, the compartment number or sales contract.

While the Forest Code provides the primary legislation governing forest management, another body of law governs the trade and export of timber. Although numerous, the most important of these is the Customs Code of the Russian Federation and other various legal acts of the Government of the Russian Federation.

To transport logs (not sawnwood) out of the Russian Federation, the exporter is required to submit a customs declaration form. The declaration form in turns needs the following supporting documents:

1. Sales contract
2. Export transaction contract
3. Commercial invoice
4. Specification
5. Phytosanitary certificate
6. Payment assignments on customs payments and railroad tariffs

The cargo transport declaration is submitted to customs and includes information on goods obligatory for declaring for transportation through the customs border of the Russian Federation. The cargo transport declaration is similar to the unified administration document, introduced at the European Union and countries of the

European Free Trade Association in compliance to the Convention on the Simplification of Formalities in Trade (1987).

The cargo transport declaration contains comprehensive information on supplier, cargo, supply contract and financial conditions. However, it does not including information on wood origin. There is generally a lack of trained customs staff to verify data on species, grade, volume, and cost of the declared timber.

In 2007 the Federal Customs Service of Russia developed and approved a new cargo transportation declaration (or transit declaration) form which significantly simplifies customs formalities. This cargo declaration form is in compliance with EU standards, which enables integration of Russian customs data into international databases.

The form and explanations of it can be found at <http://www.gtd.blank.ru>.

## STRUCTURE OF RUSSIAN-CHINESE WOOD SUPPLY CHAINS

Russian-Chinese wood supply chains vary considerably in terms of length, number of actors, and geography. Figure 1.1 maps out a generalized schematic of a typical Russian-Chinese chain, from the stump to the furniture factory. This model supply chain has six major “nodes.” For each of these nodes primary actors and sites are listed and the basic characteristics described.

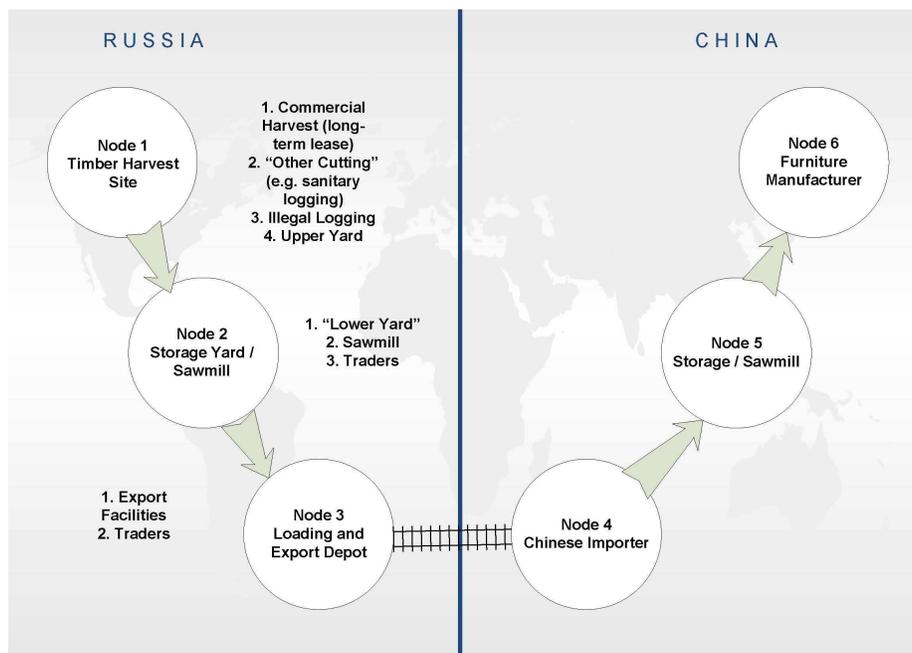


FIGURE 1.1 TYPICAL RUSSIAN-CHINESE SUPPLY CHAIN CONFIGURATION

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### NODE 1 TIMBER HARVEST SITE

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*Primary Actors:* timber harvest companies, illegal loggers, forest service inspectors, militia (district police)

*Primary sites:* Logging site, upper yards, logging road

Timber may be extracted at a commercial harvest site (long-term license), thinning site (special contract/agreement), or illegal logging site (no lease). Medium and large timber companies log using both long-term leases and thinning contracts. Smaller companies meanwhile tend to rely more heavily on thinning contracts. Russian timber companies have an “upper yard” — a clearing in the forest near the site of harvest where logs are stacked by species and may be labeled with paint.

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### NODE 2 SORTING/STORAGE/PROCESSING YARD

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*Primary actors:* company managers and staff, sawmill operators, timber transporters, traders, forest service officials, regional administration officials, militia

*Primary sites:* company branch office, lower yard, sawmills, forest service administrative offices, militia checkpoints.

Larger companies generally have branch offices situated in villages relatively close to timber harvest sites. These branch offices are not necessarily located near railroad crossings. Behind or next to these offices, there are “lower yards,” where logs are stacked by species and sometimes identified. In cases where companies have no lower yards, logs may bypass this node entirely, going directly to Node 3.

Some harvest companies, both large and small, have sawmills near these branch offices. There are also sawmill operations that do not have timber; they buy logs from other companies and process it. The case of Company A and Company B (see Section III) are examples of this latter model. The prevalence of sawmills close to the site of timber harvest is becoming more prevalent due to rising transport costs and a growing market for sawnwood in China.

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### NODE 3      LOADING AND EXPORT DEPOT

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*Primary actors:* transporters, customs officials, company executives, port and railroad workers, traders, buyers.

*Primary sites:* railroad spur or depot, port.

From the lower yards, logs are transported by truck to log depots, which are often large in size and almost always situated next to a railroad or seaport. At these depots, cranes load the logs onto train wagons bound for China or Mongolia or ships bound primarily for Japan, Korea, or China. In the case of railroads, log depots are not necessarily at the Chinese border but thousands of kilometers away. There can be hundreds of log depots in a single administrative region. There are also different ownership models for them. Some are owned and controlled by the large timber companies who, in addition to exporting their timber, also export on behalf of smaller companies. In other cases, these log depots are shared by many exporters.

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### NODE 4      CHINESE IMPORTER

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*Primary actors:* Chinese importers (large and small), traders/middlemen, customs officials, regional administration officials, transporters.

*Primary sites:* railroad yards, sea ports, truck crossings, company log storage and transport yards.

About 85 percent of Russian wood imported by China comes via rail, with the remainder by ship (13%) and truck (2%). The three major rail border crossings on the Chinese side are the cities of Manzhouli (29% of total wood imported from Russia), Suifenhe (22% of the total), and Erlianhot (8% of the total). Chinese importers operate from these border gateway cities. These companies range from quasi-state owned companies with hundreds of employees (including Chinese staff based in Russia) to small private companies. About 90% of the Russian log imports entering these gateway cities are distributed throughout China either by the importers themselves or by traders who buy logs wholesale from the importers. The remaining 10% is processed near the border; this percentage is increasing due to greater manufacturer capacity in the border cities, government policies that encourage processing, and rising transport costs.

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### NODE 5      STORAGE AND/OR WOOD PROCESSOR

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*Primary actors:* timber market employees, sawmill employees, traders

*Primary sites:* Wholesale timber markets, wood processing factories.

At this node there are two major sites: Chinese timber markets and wood-processing facilities. Major timber markets in China—including Dezhou (Shandong Province), Dalian (Liaoning Province), Beijing, and Shanghai—serve as distribution nodes for Russian logs and sawnwood. Most Chinese furniture manufacturers buy timber directly from an importer or middleman but from time-to-time they will also buy from these domestic timber markets. Dezhou, in particular, is a major distribution point for Russian softwood. About 1 million cu. m of Russian timber is traded in Dezhou yearly, about 80% of which is Scotch pine.

With exception of the largest Chinese furniture factories, most purchase semi-processed components, such as sawnwood and veneer. Some of this product comes from Russia but the most significant expansion of processing over the past decade has been on the Chinese side of the border. In Manzhouli, there are about 160 enterprises engaged in processing. About 80% of what is processed is Mongolian pine. Most is primary processing, but the trend is definitely moving toward semi-finished and finished wood products such as flooring blocks, decorative moulding, and furniture. The prospect of steep Russian tariffs on roundwood exports may significantly expand wood-processing capabilities in Russia.

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#### NODE 6 CHINESE FURNITURE MANUFACTURER

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*Primary actors:* Log and sawnwood vendors, furniture company executives and workers, transporters, representatives of global retailers (e.g. Walmart, Ikea).

*Primary sites:* furniture and flooring factories

Most export-oriented furniture manufacturers in China are not located in the border cities but along China's coastline, close to international shipping routes. These cities include Dalian, Qingdao, Yantai, and Beijing in the North, around Shanghai in the East, and in Guangdong region in the South. Harbin is somewhat of an exception, but it is located on a key railroad transect and product can be transport rather cheaply to Dalian.

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## RISKS OF ILLEGAL WOOD SUPPLIES – WHAT, WHERE, HOW

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This section assesses respective risk levels for illegal wood to enter into the supply chain at the six nodes outlined above.

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### NODE 1 TIMBER HARVEST SITE

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While large and medium sized timber companies may log without a license, mixing it in with their legally logged timber, this is fairly rare. It is more common for smaller firms (and individuals) to log without a license. Companies may log from multiple timber sites or obtain timber from nearby companies or illegal loggers, mixing it in at their upper yards. Field research, however, indicates this tainting of log supplies is far more likely to occur at Nodes 2 and 3.

The risk of mixing legally logged timber and illegally logged timber therefore is not significant at this node. The primary danger is that companies with timber harvesting permits are logging in violation of forestry regulations, such as logging on steep slopes and logging restricted species. This is particularly prevalent for those logging using thinning contracts (e.g. sanitary, salvage, or restoration).

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### NODE 2 SORTING AND STORAGE YARD/SAWMILL

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Because timber often travels vast distances in Siberia and the Russian Far East, these lower yards are consolidation sites prior to transfer (usually by truck) to Node 3. If short on supply and in need of timber to fill an order, companies will purchase logs from other companies. Sawmills may not have harvest concessions themselves and therefore may purchase timber from dozens of sellers, some of whom may be traders. Sawmills and lower yards are therefore critical controls points in the wood chain and vital to control if legal wood supplies are to be assured.

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### NODE 3 LOADING AND EXPORT DEPOT

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Logs are sorted here by species and grade. As with Node 2, this node is a critical point in the supply chain where logs are bought and sold. Companies may buy logs from smaller companies and illegal loggers at this node and integrate the purchased logs into their shipments. Some companies do not have lower yards (Node 2) and therefore consolidate logs here from their multiple harvest concessions.

In most regions of Russia, customs officials are required to check train wagons either after the logs or sawnwood has been loaded and/or just before entering China. Customs generally does not check for information on wood origin. For roundwood, they essentially check the declared consignment of timber (species, size, and amount) with what appears in the loaded train car (see requirements above).

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### NODE 4 CHINESE IMPORTER

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In large facilities of Chinese importers, shipments of different logs are sorted by species and diameter, thereby mixing shipments from the many Russian exporters they do business with. This is, therefore, another critical control point. At the train station, the logs may remain in the train wagon until they are purchased by a middleman or distributed further afield in China by the importer.

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## NODE 5 STORAGE AND/OR WOOD PROCESSOR

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Timber is segmented again by species and diameter at this node (again a critical control point), which is a consolidation point for many different kinds of shipments. After a furniture company places an order from one of the dealers in Dezhou, trucks are used to bring the logs or sawnwood to the buyer. Visits to Chinese processing facilities indicate the logs and sawnwood are generally not labeled, particularly if the diameter and species have been marked on the log in previous nodes.

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## NODE 6 CHINESE FURNITURE AND FLOORING MANUFACTURER

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Chinese furniture companies do not generally segment logs or sawnwood stored at their factories based on wood origin. Many of these companies will also buy from as many as 12 dozen suppliers, including traders, furniture component manufacturers, and so on. Finally, these supply sources can shift depending on cost and delivery time.

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## IMPROVING THE ADMINISTRATIVE FRAMEWORK FOR WOOD SUPPLY IN RUSSIA

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### REGULATORY CHANGE

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Currently the Russian Government is implementing a new Forest Code. Approximately 50 pieces of legislation have to be adopted and until new legislation is fully developed, some aspects of forest management procedures and practice will be unclear.

The laws formulated should foster the broad governance principles of accountability, transparency, predictability, and public participation. While detailed discussion of governance is beyond the scope of this report, we can provide some recommendations.

- Clearly describe the roles and responsibilities of central and regional governments and industry participants.
- Prepare a national set of standardized procedures allocation of FMUs, forest licenses, and harvesting permits.
- Prepare a national set of standardized documentation procedures to control transportation of forest products.
- Harvest concessionaires should be responsible for monitoring the total log production harvested from harvest permit area and to formally reconcile and report planned versus actual production.
  - All logs should be labelled in a way that clearly identifies their origin.
  - Transportation documents should identify their origin, immediate source, and destination of the logs being transported.
  - Organizations should be required to keep accounts of logs received and the destination.
  - Where logs are being processed, the organizations should be required to keep account of materials received and formally reconcile and report the conversion rates.

- All processed wood product should be packaged and labelled in a way that clearly identifies the origin of the processed wood product.

The introduction of the new Forest Code is likely to usher in major changes with respect to the roles and accountabilities. This provides an opportunity to introduce improved management systems and processes. The hope is Forest Code reform will lead to:

1. A stronger legal and policy framework;
2. Improved forest management planning;
3. Improved forest operations practice;
4. Increased transparency and stakeholder and public consultation.

Of particular relevance to verifying wood origin are the following:

1. Creation of an integrated regional-level database of forest information including the designation of FMUs, forest licences, and harvest permits. This database should be kept up-to-date and be made publicly available.
2. Implementation of clear procedures for issuing harvesting permits and harvesting rights;
3. Incorporation into law procedures and actions that require, enable and support chain of custody, e.g. mandatory log labeling and revising transportation and customs to include wood origin information.
4. Providing increased support and resources to government organizations that monitor and enforce the legality of wood supply chain.

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#### PROVISION OF IMPROVED ACCESS TO INFORMATION ON LICENSING AND HARVEST PERMITS

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In Russia, it would be extremely advantageous to have easy access to basic spatial data on sources of logs and processed wood. Easy access to data will be possible only when dedicated agencies begin maintaining comprehensive regional spatial databases of FMUs and compartment boundaries, license area boundaries and harvest permit locations, and other spatial forestry elements. Accurate, up to date and inexpensive information can then be made available to industry groups and the general public as either published hard and softcopy reports or through an Internet-based GIS tool.

GIS can be an invaluable tool in the context of establishing the legality of wood origin. In the Russian context, considerable spatial data is already available. Unfortunately access to the data is spread out amongst several organizations and there does not appear to be one organization with access to all of the information necessary for a complete system.

The Federal Forestry Agency maintains spatial databases on forestry resources throughout Russia. The Regional Forestry Services also maintain their own spatial databases on FMUs and license areas. In Irkutsk city, LANDSAT imagery, forest type classifications and forestry license boundaries can be obtained from Pribaykal Les Proekt for all of the Irkutsk region. The price of the information is approximately U.S. \$1375.

## 2. SYSTEMS FOR WOOD TRACKING

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### OVERVIEW OF WOOD SUPPLY AND WOOD TRACKING

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In a forestry context, the “wood supply chain” may be regarded as a series of handling and processing stages that begins with standing trees in the forest and ends with final wood products. A “wood tracking system” comprises a set of technologies, procedures, and documents that are used to provide information useful for managing this wood supply chain.

Using a well-designed system, the manager of a wood supply chain (or of any link in that chain) should be able to determine where the wood supply is coming from, where it is at any point in time, where it is intended to go, and when it is scheduled to arrive. Also information on species, volumes, and quality grades should be available, and the system should be able to trace the wood back to its origin so this information can be tied directly to forest management.

Properly applied, wood tracking systems can be used to expose log theft and to prevent unscrupulous operators from laundering illegally sourced logs with those of legal origin, a practice known as “log laundering.” Wood tracking systems are essential components of any effort to reduce illegal logging. But they are also of direct financial benefit to the forest industry because of the information they provide to managers, both in the forest and in manufacturing facilities.

To be effective, wood tracking systems for logs and processed wood products must be based on the principles of *identification*, *segmentation*, and *documentation*:

- Logs or other products must be *identified* using some type of labeling technology.
- At each point along the supply chain where material from a known source could potentially become mixed with material from unknown sources, it should be *segregated* and handled or processed separately.
- Finally, the labels affixed to the logs or other products must be linked to *documentation* so that information on wood volume, species, quality, and other attributes is available to managers of the supply chain.

### TECHNOLOGICALLY-BASED WOOD TRACKING TOOLS

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Technology based wood tracking tools can be classified into labeling tools and management information systems. They replace parts or all of manual documentation systems of the wood supply chain and serve two main purposes. First, technology can improve the efficiency and reduce the cost of the manual documentary processes. Second, it enables implementing complex, comprehensive solutions not possible using manual approaches.

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#### LABELING TECHNOLOGIES

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Labeling allows for identification of product and this is the starting point for verification of wood origin. Labels can either directly describe the source (company, forest location, and harvest area) or provide reference to an external database where those data are

stored. A variety of labeling options are available for logs and wood products. These include:

- **Conventional paint and chisel labels.** These can be used effectively if they provide comprehensive information keyed to associated documentation. The paint can be registered with the manufacturer or can be mixed with special dyes or materials to make it unique. Special tracers and micro-tagants can also be added to the paint.
- **Hammer branding** is perhaps the most widespread technology used for marking logs.
- **Conventional labels** made of paper or plastic on which barcode information has been imprinted. They can be scanned electronically or read manually if necessary. They are typically affixed to logs or other products with staples. Experience suggests that 1-5% of the labels will become detached during transport or handling. Procedures must therefore accommodate the fact that some logs will arrive at the destination without labels.
- **Nail-based labels** offer similar advantages as conventional labels, provided that they are imprinted with machine-readable (“barcode”) information. They have the additional advantage of being more robust and thus able to better withstand transport and handling. However, they can be more difficult to remove than conventional labels and are more expensive.
- **Radio-frequency identification (RFID)** labels represent a more advanced technology that holds considerable promise for use in wood chain of custody systems.
- **Microtaggant tracers** can be used together with other labels to provide additional security and to aid investigations of log theft or log laundering. They do not represent a stand-alone labeling technology but are used in conjunction with other types of labels.
- **Tracer paints** can be used to mark trees, logs, and other products in order to detect or track theft. Used in conjunction with other types of labels.
- **Chemical and genetic** fingerprinting allows identification specific individuals using unique chemical or genetic markers. Used in conjunction with other types of labels.

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## SPATIAL MANAGEMENT INFORMATION SYSTEMS

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Spatial databases are databases optimized to store and query data related to objects in space, including points, lines and polygons. The most commonly used spatial data in forestry are satellite images, aerial photographs, and maps of land boundaries, forest types, soils, transportation elements, and other geographic elements.

There are a wide range tools for analysing and processing spatial data and these are commonly referred to as geospatial technology. The most common and widely used tool are Geographic Information Systems (GIS). These systems capture, store, analyze and manage data and associated attributes that are spatially referenced to the Earth. There are many commercial GIS vendors on the market, with ESRI and MapInfo the leading system providers. Specialized GIS modules are available over the Internet and several

services, such as Google Earth and Microsoft Live Search Maps, provide internet based GIS mapping solutions.

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## INFORMATION SYSTEMS FOR MANAGING TIMBER TRANSACTIONS

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Managing timber transactions essentially involves documenting timber production and transportation processes. Most forestry is based in rural areas and this poses special challenges in implementing systems that can provide accurate, timely and cost efficient management of data. There are three types of information systems for timber production and distribution:

- **Log production and transportation systems:** Systems for recording the production of logs in the forest and their transportation from the forest to and between different locations. A basic system will record the identity of log seller, the log source, the destination of the logs, the log buyer and the quantity of logs sold. Systems may record the total quantity of logs delivered in one consignment or they may record information on each individual log, which are log tracking systems. The main control documents are usually:
  - Log list of daily production
  - Truck waybill / trip ticket / transportation docket
  - Log list for the transportation docket
- **Log stock control systems:** Systems for recording control of log stocks in log yards. Log stock inventory systems record incoming and outgoing stock and calculate stock on hand. For forest certification, certified logs must be stored and accounted for separately. The main control documents are usually:
  1. Transportation docket and log list for incoming logs
  2. Transportation docket and log list for outgoing logs
  3. Daily / shift / batch list for logs going into the mill
  4. Log stock estimates from periodic stocktaking
- **Processed wood stock control systems:** Systems for monitoring the production of processed wood products and their sale and distribution. Processed wood stock inventory systems record incoming unprocessed product, outgoing processed wood products and processed product on hand. For forest certification purposes, certified unprocessed product should be processed separately from other materials and in separate processing batches. The outgoing certified product must be labelled to identify it separately from uncertified product.
  1. Transportation docket and stock list for incoming materials
  2. Daily / shift / batch list for materials going into the mill
  3. Daily / shift / batch list for materials produced by the mill
  4. Transportation docket and stock list for outgoing materials
  5. Log stock estimates from periodic stocktaking

## VENDORS OF WOOD TRACKING SYSTEMS

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There are several system providers who provide forest industry specific log and timber production and transportation information systems. We describe several of these below:

### TRACELITE

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CI World is a system developed by Helveta for timber chain of custody under the brand name of TracElite. Their systems are developed using Sybase Ianywhere technology.

Information is captured using handheld devices equipped with Helveta's proprietary mobile device management software – CI Mobile™. CI Mobile combines handheld data entry with data from GPS, RFID and bar code readers. CI Mobile transmits data from the site to forest to CI World servers located in Europe via internet connection. Processed reports and analysis are available directly from CI World through browser-based access by authorised users.

CI World can be hosted on Helveta's servers or installed on customer hardware. As soon as data arrives on the servers, CI World processes it to generate inventory maps, management reporting and audit history for transactions relating to changes to the timber assets managed in the system.

The CI World rules engine allows data received to be analyzed for compliance with pre-determined rules. For example:

- Logs failing to move along the supply chain within a prescribed time frame
- Logging outside a defined cutting block
- Conversion rate drop offs in the factory
- Production volume deficiencies at a particular machine

All these business problems are identified automatically by the system and notifications issued automatically to management.

### ALDATA SOFTWARE

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Aldata Software, based in Edmonton, Alberta, Canada, offers a product called Custody Manager. An onboard computer is installed in the loader in the field. The CM Companion Software is installed on a desktop at the office. The CM Companion Software interfaces with the log accounting system or scale system to import setup data (e.g. contracts, truck configurations, etc.). The CM Companion Software then creates a loader-specific database for the onboard unit. Updates to the setup data are then emailed to the unit in the field via satellite.

The loader operator enters the data for each load. Custody Manager validates the data against the contract details and creates a load record. Each load record is stamped with the GPS coordinates of the loading point. Custody Manager prints the load data and GPS coordinates on a bar-coded trip ticket. At the scalehouse, the driver scans his trip ticket data into the scale system to generate a scale receipt.

In addition, Custody Manager utilizes 3D motion data to build a loading profile while the loader works in the field. This profile can be utilized day and night to review each loader's activities and identify any unauthorized activity. Applying Custody Manager to an operation is a tool to combat illegal logging, track chain of custody for any certification programs, and deter the theft of logs from the field.

### FORESTECH RESEARCH AND DEVELOPMENT<sup>3</sup>

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Forestech, based in Christchurch, New Zealand, offers a product called FMS. The system has three main modules, one for forest resource management, one for logging and log transportation management, and one for wood processing and processed wood sales and marketing. The databases are installed on local area network servers or made available through thin client web-based access. Data can be captured on Windows-based PDA devices or directly entered into the databases themselves.

The logging and transportation module records both truck transportation documentation as well as individual log measurement and tracks movement of logs between the harvesting sites and various destinations. The wood processing module records the processing of logs and other raw materials into finished product and the sales and distribution of those products.

### IDENTEC SOLUTIONS

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Identec Solutions is a Canadian provider of truck scales and weighing systems in Ville St. Laurent, Quebec. It provides forestry tracking and management systems that uses RFID and GPS technology. Identec Solutions provides RFID interrogators (readers) and tags for the Virtual AT solution, which facilitates the loading and weighing of logging trucks. An RFID tag installed on the truck cab's dashboard automatically transmits data the logging company can use to track the truck and its load—and to calculate how many hours the driver worked.

While a crane called a loader lays logs onto a truck in the forest, a computer and RFID reader on the loader writes data onto the vehicle's 915 MHz active tag. This data includes the driver's name and license number, the loading location (determined by a GPS device onboard the loader), and the species of tree that was cut. During 2008, the company intends to expand its RFID capabilities to log bundle and wood chips management.

### CAMBIUM-FORSTBETRIEBE

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Cambium-Forstbetriebe, a German forestry company, has implemented an RFID system for tracking logs from the forest to the sawmill. The system is based on Progress Real Time Division's RFID Accelerator technology, combined with a custom-designed application from DABAC, a German firm near Heilbronn.

With Cambium's RFID system, a forest worker uses a specially designed hammer to pound into the end of a trunk a passive RFID 125 kHz inlay embedded in a plastic nail. Produced by Sokymat, of Granges, Switzerland, the RFID-enabled nails are 35.5 millimeters (1.4 inches) long and 4 millimeters (0.2 inch) in diameter, made of polyamide reinforced with glass fiber. They cost about 25 cents apiece.

The chip carries a unique ID number on it. It is scanned using handheld computers along with information about the type of tree, length, diameter and quality, together with the ID number from the nail, is entered. The handheld scanners can be used to stocktake logs at different locations as well as capture log information during transportation.

### TIMBERSMART

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<sup>3</sup> George Kuru, co-author of the report, declares here an interest in Forestech Research and Development Ltd. He is Managing Director of the company.

Timbersmart Limited is a company based in Auckland New Zealand. They produce a database system for wood processing businesses. Their system tracks in-coming logs, monitors wood processing and sawmill production, and sales and distribution activities. The systems provide inventory management and chain of custody functionality. The core database systems can be supported by PDA / data logging systems for data capture in the mill and in the field.

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#### JADE SOFTWARE CORPORATION

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Jade Software Corporation produces port management software called Jade Master Terminal (JMT) for management of all logistics operations in a port. One module of this software controls log marshalling operations. It is used in several countries and is currently used to track approximately 90% of log exports in New Zealand. It is currently the largest individual log tracking system in the world.

All logs are barcoded, then scanned, measured and graded using handheld computers. The logs are scanned as they are moved around the port and onto ships. The information is then used for inventory control and generate shipping manifests.

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#### CERTISOURCE

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Certisource has a system for extracting the DNA of logs and using this to trace the source of logs. The system uses genetic profiles to match individual cut logs at the saw mill with individual stumps at the concession. Currently the system is an auditing tool based on sampling of trees. In the longer term our DNA database will be used to record and map spatial genetic variations within concessions and also on a regional and global basis.

### 3. ESTABLISHING LEGAL WOOD SUPPLY

#### ESTABLISHING LEGAL AUTHORITY TO MANAGE AND HARVEST FORESTS

The following components are required to obtain the right to manage and harvest forests:

TABLE 3.1 KEY COMPONENTS RELATED TO TIMBER HARVEST AND MANAGEMENT

<i>Component</i>	Requirement
<i>Leskhoz (FMU)</i>	Legal registration of Forest Management Units (FMU). <i>Leskhoz</i> range in size from several hundred thousand hectares to several million hectares. They are further divided into sub-units known as <i>lesnichestvo</i> , which comprise the basic unit of silvicultural management. <i>Lesnichestvo</i> typically range between 200 to 800 ha in size. Under the new Forest Code, the Federal Forest Agency only specifies the extent and number of FMUs in each administrative region. Regional Forest Services then develop a Forest Plan describing the forest development areas and forest development activities for each FMU.
<i>Arenda</i>	Legal registration of the forest license for long-term use of the license area. Forest licenses provide use rights to part of a <i>FMU</i> . Under the new Forest Code, forest licenses are allocated by the Regional Forest Service.
<i>Registration</i>	The company must be registered in compliance to state and forestry legislation.
<i>Lesorubynie billet</i>	Harvesting permit issued by the FMU. The harvesting permit provides the forest licence holder with the right to harvest in specified compartments in a specified year. Harvesting permits have to be annexed with the felling area allocation plan, a technical map, and outturn and harvest cost estimates. The harvesting permits are issued in accordance with the forest development plan for the license area. The use of harvesting permits will end on 1 January 2009.
<i>Rubki</i>	Permits for “other cutting” issued by FMUs for harvest operations outside of those scheduled in the forest development plan of forestry licenses. There are three types of reasons for issuing these permits: <ol style="list-style-type: none"> <li>1. Sanitary / Salvage cutting (<i>Sanitarnye rubki</i>) – thinning conducted for forest health reasons;</li> <li>2. Reformation cutting (<i>Rubki pereformirovaniya</i>) – to change forest composition to other species;</li> <li>3. Harvesting for non-forestry use (yet to be officially named) such as mining, roading, and residential construction.</li> </ol> <p>FMU auctions the rights to these permits and they usually represent a significant component of FMU revenues.</p>

## ESTABLISHING LEGALITY OF OPERATIONS

### COMPLIANCE WITH RUSSIAN OPERATIONAL MANAGEMENT REGULATIONS

The following components are required in compliance with forest management and harvesting of license areas:

TABLE 3.2 KEY COMPONENTS RELATED TO FORESTRY REGULATION COMPLIANCE

<i>Component</i>	<i>Description</i>
<i>Forest Management Regulations</i>	
<i>Annual declaration</i>	Annual declarations are required from license holders on forest use, a report on forest use, and reports on forest protection, conservation, and regeneration prepared by the licence holder and submitted to the Regional Forest Service in compliance with the regulations set by the Ministry of Natural Resources.
<i>Timber Harvest Regulation</i>	
<i>Kontract</i>	All sales of roundwood logs are subject to a sales contract. The State provides guidelines as to the format of the sales contract, but the actual format used is at the discretion of the parties to the sale. Importantly, the responsibility for the legality of the supplies lies completely with the harvest permit holder . The supplier is under no obligation to provide information about the log source to the buyer.
<i>Timber Transportation</i>	
<i>Transportation Invoice</i>	Transported timber must be accompanied by a transportation invoice. The transportation invoice is issued by the sender. It provides information on the type, quantity, and value of the cargo as well as information on the sender and receiver of the goods. It does not provide information on the origin of the logs, i.e. the forestry license number, the compartment number or sales contract.
<i>Logging ticket</i>	All truck loads must be accompanied with logging ticket with original hologram
<i>Vedomost</i>	All logging tickets must include a <i>Vedomost</i> - a manifest of species and quantities on the logging ticket.

<i>Timber Export</i>	
<i>Customs declaration form</i>	Submitted by the exporter to the customs department
<i>Export transaction contract</i>	Sales contract
<i>Commercial invoice</i>	Provides confirmation sale and commercial value of the sale.
<i>Specification</i>	Payment assignments on customs payments and railroad tariffs
<i>Phytosanitary certificate</i>	Certificate from independent agency verifying that the product has successfully cleared inspection for pests and diseases.

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### SECURING FOREST AND LAND RESOURCES

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In addition to compliance to with regulations, companies must secure their lands and forests from illegal activities.

One approach to securing forests is implementing a system of physical controls that limit the opportunities for illegal activities. These include the use of fences, gates, boundary markers and guards. In the Russian context, the effectiveness of physical controls are limited because of the vast scale of the forest resources and the basic right of all citizens to access State forests. In these circumstances, often the best protection is to limit access to, and the extent of, transport routes in the forests.

Any system of physical barriers to access needs to be supported by “on the ground” policing, remote surveillance, and the use of the local community to monitor and report activities.

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### SUPPLY CHAIN SIMPLIFICATION

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Russian-Chinese wood supply chains are generally long, fragmented, and convoluted. Logs and sawnwood may change hands up to eight or nine times before reaching the furniture manufacturer. These manufacturers may also shift supplies sources abruptly depending on cost, wood species needed, and delivery time. This is compounded by the reality that transactions between these entities are often informal and decentralized with no official record keeping. Payment by cash is a prevalent practice.

Adding to this complexity is the reality that in Russia administrative and regulatory regimes vary considerably by region. Different ‘gatekeepers’ may be involved. Gatekeepers include those within the state security apparatus (e.g. forest service officials, militia, border guards, and customs officials) who regulate the transport of timber along its many stages (e.g. harvest site, wholesale yard, border customs), and who facilitate (or hinder) operators in the purchase and transfer of timber. It is still unclear whether this variation will increase with the new Forest Code.

In sum, the sheer number of commercial entities involved, the often abrupt shifts by manufacturers to new supply sources, and varying regulatory regimes can make it exasperating for companies wishing to ensure legality in their supply chains. As a result, we recommend companies strongly consider simplifying supply chains. In addition to

legal wood sources, this can have many benefits that companies may have not foreseen: better quality control, more timely delivery, and in cases reduced costs. For example, by eliminating the multiple traders and other intermediaries that currently separate the harvester from the Chinese furniture manufacturer, significant cost savings may be achievable.

In light of this, there are steps that companies can take to simplify and increase transparency in their supply chains. Simplifying and shortening the supply chains will require training and the active participation of all parties. Chinese suppliers, for example, will need assistance linking up with preferred harvesters and exporters. Listed below are just a few of the steps companies can take.

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#### IDENTIFY RUSSIAN TIMBER HARVEST COMPANIES

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Chinese manufacturers generally rely on traders and importers for their wood supplies. Even in the case of Company B and Company A, who both have sawmills in Russia, there is a tendency to rely on Chinese traders rather than going directly to the wood source—Russian timber harvesters. These are the companies with the long-term concessions to the type of wood that your company needs. Identifying these Russian companies and building supplier relationships with them is probably the single most effective step Chinese manufacturers can take to shorten and simplify their supply chains.

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#### 'RISK RATE' RUSSIAN TIMBER COMPANIES

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After identifying these Russian companies, you will need to 'risk rate' them to develop a preferred supplier list. The Keep It Legal (KIL) Manual identifies a number of criteria upon which to risk rate these suppliers:

1. Requesting suppliers to complete and return questionnaires
2. Analyzing the returned questionnaires using scenario tables
3. Providing feedback to suppliers and monitoring for continuous improvement
4. Data management

With respect to the Russian context, we identify the following risks:

1. **Use caution with logs harvested using thinning contracts** (e.g. sanitary and reformation logging ). Companies that rely heavily on sanitary logging licenses are more likely to be short-term companies, as they may not have access to long-term resources. For companies, this can entail continually 're-mapping' supply chain configurations to account for this shift in supply locations. Russian NGOs consider a significant portion of timber logged with sanitary logging licenses to be illegal, as the primary purpose of these licenses is for forest restoration and maintenance, not commercial harvest.
2. **Avoidance of log and processed wood traders.** Log origin is most easily determined when the logs are purchased directly from logging companies. Similarly wood processing businesses that purchase directly from logging companies can most easily produce product with a proper chain of custody. In Russia, log and lumber suppliers do not usually have systems in place to verify legality of supply, nor are they required by law to supply this information.
3. **Giving preference to companies that both harvest and export.** These are generally larger companies that have long-term timber concessions or leases as

well as the infrastructure and necessary licenses to export. Taking such a position may hinder access of smaller companies to the market, however, and this may have implications for the social guidelines and requirements of your company.

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### IMPORT PROCESSED WOOD FROM RUSSIA

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Importing semi-processed wood from Russia may simplify and shorten your supply chain if the distance from the harvest site to the sawmill is much shorter. In some instances the harvester and the wood-processor will be the same company. Importing semi-processed components can also have the added benefit of reducing transport costs, both of which are rising in China and Russia. Since international retailers generally have high-quality standards, this might necessitate investment in sawmill facilities and/or training in Russia. But if proposed tariffs on Russian logs are phased in, then it may not be cost effective to import logs from Russia in the near future.<sup>4</sup>

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### CONSOLIDATE SHIPPING OPERATIONS

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Large retailers such as IKEA could work on behalf of their Chinese suppliers and consolidate multiple orders for wood (e.g. pine and birch) into one large shipment. In addition to making this wood easier to track on the Russian side, it would also eliminate numerous middlemen on the Chinese side. Such measures are likely to reduce costs. Interviews with furniture manufacturers in Shandong indicate they commonly use middlemen to source timber and they expressed great interest in importing wood directly from Russia. Import of Russian logs by ship is soaring, with more than 3 million cu. m. of Russian logs shipped in 2006.<sup>5</sup> Lanshan Port in Shandong Province is a major port for Russian logs. If sawnwood is sent by ship, it would need to be packed in containers.

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### IMPROVED SALES ADMINISTRATION

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The core wood tracking activities involve securing timber transactions and production activities. This is commonly referred to as sales administration and has two main purposes. Firstly it prescribes the procedures of administration that enable efficient harvesting, transport and processing operations. Secondly it creates transparent, controlled, and documented procedures that can be policed, enforced, and audited both internally and by third parties.

Securing timber transactions requires design and implementation of a robust timber sale administration process. This entails combining good management practices with appropriate technology. Common approaches to securing timber transactions include:

1. Ensuring all harvesting is authorised with a valid harvest permit and that the relevant documents are available at all times as proof of harvesting rights.

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<sup>4</sup> On February 5, 2007, the Russian government published Resolution #75 (to enter into force on July 1, 2007) which will increase the export tariff on coniferous logs to not less than 10 euros per cubic meters. On April 1, 2008, the tariff will increase to not less than 15 euros per cu.m and on January 1, 2009 to not less than 50 euros per cu.m.

<sup>5</sup> ITTO, "China: Ocean imports of Russian logs soar", ITTO Tropical Market Report, dated August 12, 2006.

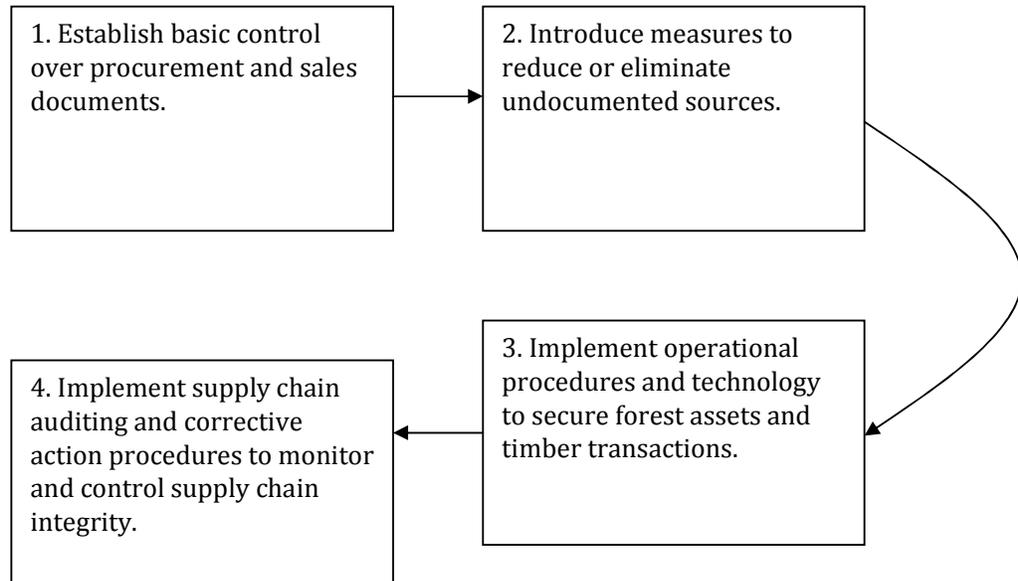
2. Closely monitoring harvesting activities to ensure the integrity of the operations. Some monitoring activities include:
  - Regular harvest area inspections. These are the first line of defense against timber theft and timber laundering. Harvest area inspections should include checking that the correct trees have been harvested and that only logs from the harvested area are included in sales documents for that area.
  - Ensuring sellers know what is being sold. This includes inventory estimates of yield compared with actual removals and revenue. Information should be summarized in an accessible format and be represented on maps showing the harvest area and key transport infrastructure and routes.
  - Ensure sellers pay relevant taxes. This includes taxes specified in the contract and government taxes.
3. Controlling access to the forests by transport vehicles. All trucks authorised to transport forest products should be known, preferably using a registration system. All registered transport vehicles should be clearly marked with unique identification it can be used to link the vehicle on the ground and transport documentation. Various technologies are available to identify and track vehicles. Identification Automatic License Plate Recognition (ALPR) is an advanced form of automated vehicle identification. Smart cards and RFID truck labels perform a similar function.
4. Monitoring all vehicle movements to evaluate whether the vehicles are involved in legitimate transport operations. Vehicle movements can be directly tracked by GPS or using overt and covert surveillance methods. The truck movements, transport routes taken and transportation times are information that can be used to monitor compliance and flag suspicious activities.
5. Securing cargo loads. There are several ways to secure loads of logs and processed wood:
  - Issuing load tags for all loads. Load tags are pre-numbered labels that are affixed to a load at source and recorded on the transport logbook at the harvest site. They provide a link between the dispatched loads at source and the delivered volumes.
  - Using a seal that can be broken only after the load has been properly identified.
  - Reconciliation of load records, e.g. loading sheets, log manifests, and mill scaling sheets can be used to identify discrepancies in transported quantities along the supply chain.
6. Using tamper proof and uniquely labelled transportation documents to protect against counterfeiting.
7. Using various labels to identify and track of individual logs and units of processed product. These technologies are discussed in detail later in the report.

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## ESTABLISHING TRANSPARENT DOCUMENTATION SYSTEMS

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The third stage in creating legal wood supply is to establish documentary systems that support and strengthen operations and provide transparent evidence of legal compliance. The specific systems needs of private sector forestry companies differ depending on the business model, position in the supply chain and the level of competency and preparedness. However, implementing wood supply tracking systems involves several critical processes:



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## ESTABLISHING BASIC CONTROL OVER PROCUREMENT AND SALES DOCUMENTS

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Before an organization can begin to introduce improved procedures and systems, it needs to establish basic control over its sales administration documents. The organization can then use this set of controlled documents as a springboard to improve supply and sales procedures and as the base dataset for new management systems. We recommend a document filing system that includes the following:

1. A file on each supplier that provides basic business and contact information, records of log sales contracts and transportation documents.
2. Lists of transportation documents of log and sawn timber sales for each customer.
3. Regular log and processed wood procurement reports by supplier and source. These should be prepared as weekly and monthly summaries.
4. Regular reports on sales that summarize dispatched volumes of logs and sawn timber by customer. These should be also prepared as weekly and monthly summaries.

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## REDUCING OR ELIMINATING SUPPLIES FROM UNDOCUMENTED SOURCES

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Legality of source requires the purchaser to be able to demonstrate that purchased materials come from legal sources and have not been mixed with materials from unknown origin. In practice, legal source can be documented as follows:

1. When logs are sourced directly from the forest, the forest source is usually recorded on transportation documents.
2. When logs are procured through a intermediary such as a log trader, then the log trader must have a filing system / data management system that records the source of the logs.
3. When purchasing processed wood, the supplier of the materials must have a chain of custody system in place that demonstrates the wood comes from a known source.

In order to be able to achieve chain of custody, the first step is to eliminate supplies of logs and sawn timber from unknown or uncertain sources. Usually this requires improving the standard of transportation documents for incoming goods and working with suppliers to improve the standards of their documentation. In some cases though, it may also mean stopping trading with suppliers who are incapable or unwilling to improve their own documentation systems.

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## PRIVATE SECTOR TOOLS FOR VERIFYING LEGAL SOURCE

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### OVERVIEW

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**Forest certification and certificates of legal origin:** Forest certification is a process that leads to the issuance of a certificate by an independent auditor, attesting that an area of forest is managed to a defined standard. Chain of custody in association with credible forest certification schemes provides a comprehensive approach to verification of legal source.

Full certification of forests to sustainable forest management standards is a slow process. Several auditing firms have responded by offering services that establish legal compliance and/or legal origin of wood products. If a given product shipment meets all audit requirements, the auditing body will provide a certificate of legal origin or a certificate of legal compliance confirming that the relevant requirements have been met. These certificates do not affirm that the forest from which the products originated meets the standards required for certification as a sustainably managed forest, but they do attest to legal conformance up to the point where the certificates are issued. In most cases this requires verification that the chain of custody for the wood has been maintained.

**Outsourced forest sector monitoring:** Various governments have contracted external parties to verify industry compliance with the laws in a particular sector (e.g. forestry) or a particular function of government (e.g. customs collections). In doing so, these governments have openly acknowledged lack of capacity or conflicts of interest that inhibit their own ability to verify compliance, enforce legislation, and monitor the relevant sector.

For example, SGS Group offers a service called Mandatory Legal Timber Validation (MLTV). MLTV is designed for implementation as a national scheme enforcing a programme of continuous monitoring and verification of wood production and tracking information, also capturing any imports. Key activities of MLTV:

- Timber Flow Control consists in tracking and physical inspection of products and documents, using advanced technology to identify and monitor the domestic, import/transit and export flows of forest products.
- Forest Management Auditing & Monitoring uses documents and field checks to investigate how resource management is planned and implemented.
- Land Use Control & Forest Surveillance is a GIS-based scheme in which data from remote sensing imagery and ground verification are collected and interpreted to monitor changes in land cover or use, and verify them against planned land use.

**Ethical procurement policies and codes of conduct:** Procurement policies and codes of conduct are “soft tools” through which companies can communicate a commitment to avoiding illegally sourced products. They can be specific to individual companies or they may serve as a membership requirement for a trade or industry association.

**Supplier warranties:** These are contractual arrangements that require suppliers to meet standards of quality as specified by the buyer. A simple mechanism is to require the supplier to warrant that the wood in the product was sourced in compliance with relevant laws and to state its place of origin.

**Watchdog monitoring by civil society groups:** “Watchdog” groups play an important role in exposing illegality, corruption and other forms of egregious conduct in the forest sector – by private or public sector actors. As well as exposing illegal behavior these organizations also highlight activities of responsible operators. They provide a service to legitimate systems for verifying legal compliance by pinpointing circumstances where more rigorous due diligence is required. They also maintain the credibility of robust systems by exposing bogus or easily manipulated verification systems.

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## IWAY PROGRAM

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The IKEA Way on Purchasing Home Furnishing Products (IWAY) is a Code of Conduct for its suppliers. IWAY covers IKEA’s minimum requirements in the following three areas of the Outside Environment, Social & Working Conditions (including Child Labor) and Wooden Merchandise.

IKEA's long-term goal is to source all wood in the IKEA range from verified responsibly managed forests that have been certified according to a forest management standard recognized by IKEA. To reach this long-term goal, IKEA works with a staircase model with four levels to establish minimum requirements on wood material and to step by step place higher demands on the suppliers.

The table below shows the Russian documentation processes required to meet level 1 (start up) and level 2 (minimum IWAY requirements). In addition, to comply with Level I, participants will need to establish that wood does originate from intact natural forests (INF) or high conservation value forests (HCVF) unless area certified to Level 4 standard recognized by IKEA.

TABLE 3.3 IKEA 'IWAY' LEVELS OF COMPLIANCE

Level I – Start-up requirements	<p>Implementation of action plan to achieve:</p> <ol style="list-style-type: none"> <li>1. Known wood origin</li> <li>2. Must not originate from intact natural forests (INF) or high conservation value forests (HCVF) unless area certified to Level 4 standard recognized by IKEA.</li> </ol>
Level II	<p>Fulfillment of minimum requirements, IWAY Standard</p> <ol style="list-style-type: none"> <li>1. Wood must be produced in compliance with national and regional forest legislation and other applicable laws.</li> <li>2. Wood must not originate from protected areas (national parks, nature reserves, forest reserves, etc.) unless independently verified as coming from well managed forests.</li> </ol>
Level III	<p>Implementation of 4Wood</p> <p>Wood procurement routines approved according to IKEAs 4Wood standard.</p>
Level IV	<p>Verified responsibly managed forests</p> <p>Forest management and Chain of Custody in compliance with official standard recognized by IKEA.</p>

TABLE 3.4 RELEVANT RUSSIAN DOCUMENTATION FOR IWAY PROGRAM

<i>Documentation</i>	<i>Start Up</i>	Minimum requirements
Leskhoz	✓	✓
Arenda	✓	✓
Forest development plan	✗	✓
Annual Declaration	✗	✓
Lesorubynie billet	✗	✓
Rubki	✗	✓
Kontract	✗	✓
Transportation Invoice	✓	✓
Logging ticket	✓	✓
Vedomost	✓	✓
Customs declaration form	✓	✓
Kontract	✓	✓
Export transaction contract	✓	✓
Commercial invoice	✓	✓
Specification	✗	✓
Phytosanitary certificate	✗	✓

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### GLOBAL FOREST TRADE NETWORK PROGRAM

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The Global Forest Trade Network (GFTN) is a WWF's initiative to eliminate illegal logging and improve the management of valuable and threatened forests. All participants make a public, documented commitment to responsible forestry and credible forest certification. The GFTN prescribes a phased implementation through a step-wise approach according to the following levels:

TABLE 3.5 'GFTN' STEPWISE LEVELS

<i>Known source</i>	Entry level compliance -Sufficient documentation to establish the source of the wood can be traced back to the source forest.
Legal source	Establishment of legal right to harvest.
In-progress towards certification	Entry into a program with a recognized and credible forest certification program.
Credibly certified	Attainment of certification under a credible forest certification standard.

Participants need to commit to achieving credible certification of at least one Forest Management Unit (FMU) within 5 years, and all other FMUs they manage within 10 years. The table below shows the Russian documentation processes required to meet the first 2 steps in the GFTN stepwise program.

TABLE 3.6 RELEVANT RUSSIAN DOCUMENTATION FOR GFTN PROGRAM

<i>Documentation</i>	<i>Start – Known Source</i>	<i>Legal Source</i>
Leskhoz	×	✓
Arenda	×	✓
Forest development plan	×	✓
Annual Declaration	×	✓
Lesorubynie billet	×	✓
Rubki	×	✓
Kontract	×	✓
Transportation Invoice	✓	✓
Logging ticket	✓	✓
Vedomost	✓	✓
Customs declaration form	✓	✓
Kontract	✓	✓
Export transaction contract	✓	✓
Commercial invoice	✓	✓
Specification	×	✓
Phytosanitary certificate	×	✓

## 4. COMPANY A

This final section outlines the wood supply chain configurations of Company A. A brief background for the company is given, followed by a detailed analysis of the wood supply sources of its suppliers and their respective sub-suppliers. The potential scope for illegal wood entering the system is provided, followed by detailed recommendations of procedures and technologies that could be applied to ensure legal verification.

### COMPANY A WOOD SUPPLY CHAIN CONFIGURATION

#### COMPANY BACKGROUND

Company A is a furniture manufacturing company based in Qingdao, China that sells product to international retailers. They are currently expanding their factory production, with a 40,000 sq. m facility currently under construction. The company has also invested in a sawmill in the Irkutsk region of Russia to work towards stable wood supplies and to increase transparency in their wood supply system.

#### WOOD SUPPLY

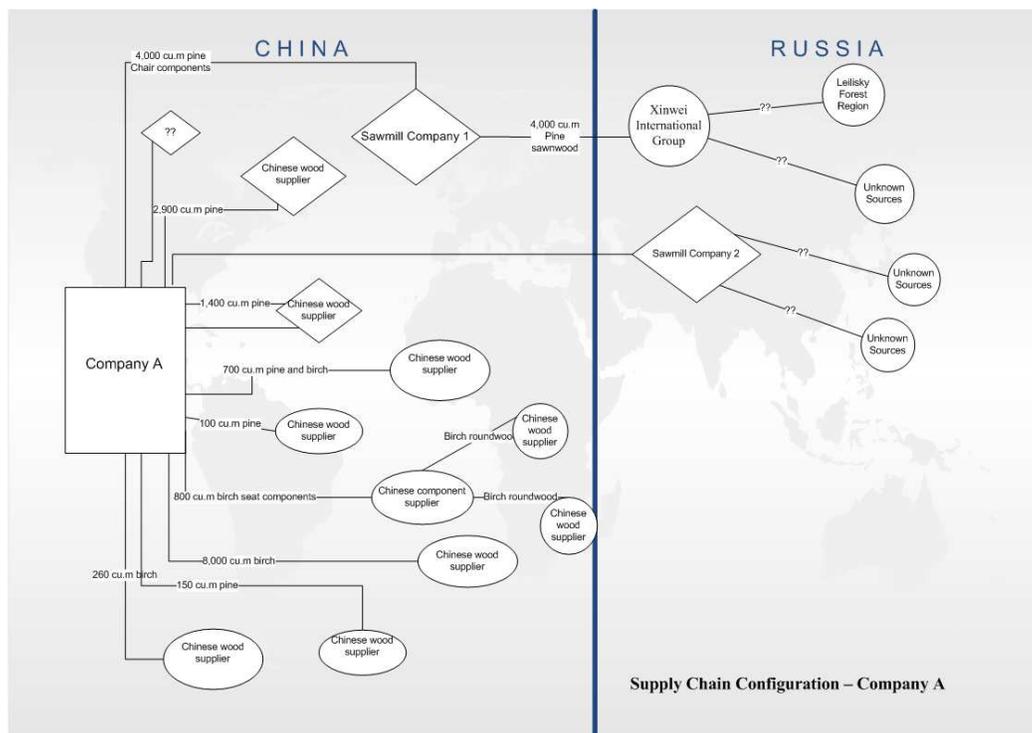


FIGURE 4.1 SUPPLY CHAIN CONFIGURATION - COMPANY A

As shown in Figure 4.1, Company A has approximately ten suppliers who provide the company with primarily sawnwood and furniture components composed Russian pine, birch, and Chinese oak. The company imports an unknown quantity of timber. About

95% of the pine that they use comes from Russia (Eastern Siberia, especially the Irkutsk and Chita Regions), with the remaining 5% from a plantation in Fushun, Liaoning Region (China). Company A imports primarily sawnwood. Between 60 and 70 percent of the sawnwood imported by Zhucheng is processed in Russia, with the remaining percentage exports as logs and processed in sawmills in Manzhouli, China before being delivered to Company A.

At least three suppliers supplying Company A source wood from Russia:

1. Sawmill Company 1 – Described later.
2. Sawmill Company 2
3. Trading Company 1

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## SAWMILL COMPANY 1

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Previously Company A bought all of its sawn timber in the Irkutsk region from 20 to 30 sawn timber suppliers—either from sawmills or trading companies. Trading Company 1 was one of its principal suppliers. Reportedly, Sawmill Company 1 now produces 100% of its timber in Irkutsk Region from its sawmill located in village of Tulun. This mill operates two milling lines and each line includes one breakdown bandsaw and one resawing bandsaw, both of which are hand-fed. Sawmill Company 1 commenced cutting sawn timber in May 2007.

Sawmill Company 1 currently produces approximately 2400 m<sup>3</sup> of sawn timber per month. The species mix of the sawn timber depends on the orders received. Currently 70% of the production is Scotch pine and 30% is white birch (flexible and depending on orders). The mills only produce rough sawn green timber. All of the sawn timber produced in the sawmills is sent to Company A in China. Previously, Company A used agents to manage export. Now the company reportedly manages its own export operations.

The plan is to increase sawn timber production by adding two new mill lines at the current mill and to construct two new mills near Tulun. The new sawmills will operate two mill lines each. This will quadruple milling capacity to a planned production level of 10,000 m<sup>3</sup> per month.

About ten log suppliers currently sell about 5000 m<sup>3</sup> of logs to Sawmill Company 1 per month. These suppliers are all individuals who themselves act as harvesters, primarily using thinning harvest licenses and, to a lesser degree, timber concession licenses. Sawmill Company 1 reportedly does not procure logs from trading companies, only logging firms.

The timber is first taken from the mill to the export railway yard in Tulun. The timber is then transported by train to Manzhouli, China. The timber is then forwarded from Manzhouli to Company A.

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## SAWMILL COMPANY 2

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Established in 2002, Sawmill Company 2 is a small private enterprise (approx. 40 employees). They bought their existing sawmill from the local government. This factory's sole product is glu-board (component of a chair) for Company A, for which they produce about 3,400 m<sup>3</sup> each year. They have no other clients. When they purchase wood, there is no contract, just a cash transaction.

All of Sawmill Company 2's pine comes from Eastern Siberia. They import about 4000 m<sup>3</sup> of Scotch pine (*Pinus sylvestrus*) sawnwood (no logs) each year. Their sole supplier of this sawnwood is Xinwei Corporation, which has its head office in Chita city, Eastern Siberia. Xinwei is a conglomerate that has interests in property, furniture, chemicals, and wood. The head office is in Chita, Russia, with a branch office in Manzhouli, China. Xinwei annually imports about 180,000 of Scotch pine and larch from Eastern Siberia, primarily the Chita region. About 70,000-80,000 cubic meters is imported as sawnwood, with the remaining 100,000 cu.m. or so as roundwood. About 50,000 m<sup>3</sup> of the imports comes from a known timber-concession – Leilisky forestry industry – that they either control, have investment in, or good relations with. Leiliskiy village is about 200 km east of Chita. The remaining 130,000 m<sup>3</sup> is bought from other traders and sources. Some of these sources include the following towns/regions in the Chita region: Golymuska,

Novinskiy, Ululika. It appears that these towns are places that have sawmills that Xinwei likely has investment in.

Xinwei does not have a dedicated log yard in Manzhouli. They sell directly to other traders. A serial number is recorded on the train car which indicates which is their timber. They sell wood to companies all over China. Once it enters China it is either sold immediately to these companies or stored in a temporary log yard and then sold.

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## SAWMILL COMPANY 1 OPERATIONS

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### MILL CONFIGURATION

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The sawmill is located in the Irkutsk Region. It comprises of two individual sawmill lines. Each line comprised of two band saws – a breakdown saw and a resaw. All saws used hand powered carriages and have manual set works.

Under this configuration, the first band saw cuts the logs into wide slabs which are then fed into the second saw for re-sawing. The majority of sawn timber is cut into large dimension lumber and exported green and rough sawn.



FIGURE 4.2 THE BREAKDOWN SAW AT SAWMILL COMPANY 1, IRKUTSK REGION

*Note: The carriage is hand-powered and the saw has manual set works.*

Each mill line is reported to produce approximately 25 m<sup>3</sup> of green rough sawn timber per day based on an 8 to 12 hour working day. This production rate appears to be high considering the type of mills being deployed, the difficult working conditions and the observed work rates of the operations. The office facilities were basic. The offices had electricity but not landline telephones or faxes. All tracking was recorded using hardcopy documentation. The mill office had no computers. GSM-based mobile phone networks were available at the mill. There is limited availability of GPRS mobile data

services in Irkutsk but such services are unlikely to be available at the Sawmill Company 1 sawmill site. We assume that Internet accessibility at the mill will only be reliably available in the immediate future using satellite communications.

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### DOCUMENTATION AND WOOD TRACKING PROCESSES

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Sawmill Company 1 had some log sales and transportation documentation but the document filing systems appeared disorganized and generally incomplete. The mills were able to show examples of sales contracts for log purchases. The companies retained copies of the transportation invoices which are produced by the supplier.

Sawmill Company 1 claimed that they only procured logs from licensed areas operating under authorized logging permits but the documentation was generally disorganized and we were unable to verify this.

Sawmill Company 1 had reasonable processes for receiving logs, log scaling to measure log volume, and processing documents for receipting and payment. However, the mills did not appear to keep organized records of log supplies by log supplier.

None of the logs inspected at the mills were labeled in any form. Some logs had the diameter and length measurements written on the end using crayons but no other log markings were seen. All logs were stacked according to species and there was no other product segmentation. Therefore the mills are unable to differentiate logs from suppliers.



FIGURE 4.3 STACKS OF PINE AND BIRCH LOGS STACK AT SAWMILL COMPANY 1 IN IRKUTSK REGION

*Note: No markings or labels on logs.*

The timber is stacked in the timber yard until it is ready for trucking to the railway yard from transport to the secondary mills in China or Russia. At the railway yard timber was

stacked loosely into rail carriages and there was no bundling, packaging or product labeling.



FIGURE 4.4 PINE ROUGH SAWN TIMBER STACKED AND READY FOR TRANSPORT TO RAIL DEPOT

In summary, it was not possible for the consultants to reliably establish the source of log supplies based on the records shown to us. The logs are not segmented and so it is not possible to differentiate between known or legal sources. As a result the sawn timber produced cannot be realistically or credibly verified as coming from known or legal sources.

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## STATUS OF WOOD TRACKING SYSTEMS AT SAWMILL COMPANY 1

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### CHAIN OF CUSTODY

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Sawmill Company 1 claims to only purchase from logging companies with approved logging permits. Unfortunately, Sawmill Company 1 does not have adequate systems in place to substantiate their log supplier claims.

The logs themselves are not marked or labeled and so it is generally not possible to trace the source of the logs from visual inspection. The logs are not segmented at the mill so that the mill log yard so it is not possible to easily identify the suppliers of the logs.

Sawn timber produced by the mill cannot be segmented by supplier because of the issues regarding log labeling and log storage described above. The sawn timber itself does not appear to be packaged or labeled prior to dispatch, and this may present problems in establishing chain of custody for sawn timber in subsequent stages of the supply chain.

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## SYSTEMS REQUIREMENTS FOR COMPANY A

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### IMPROVING DOCUMENTATION MANAGEMENT PROCEDURES

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At the moment, Sawmill Company 1 does not appear to have appropriate document management procedures in place. Therefore the log supply cannot be adequately monitored nor audited. We recommend that following simple documentation corrective actions be implemented:

1. *Maintenance a sales administration file for each supplier.* The supplier file should contain:
  - A record of key company information such as contact details and registration information from the company's office and Regional Forestry Authority.
  - Copies of the Sales Contracts for each log and sawn timber supplier with reference to the respective Forestry License and Harvesting Permit (if this information is available). It is preferable for separate supply contracts to be issued for each harvesting permit as this provides a direct link to the source of the materials.
  - List of transportation documents of delivered log and sawn timber consignments for each supplier. These should include sale contract reference number which can in turn be used to identify the source of the materials. In practice each transportation document should be recorded at one line in the list.
2. *Maintain lists of transportation documents of log and sawn timber sales for each customer.*
3. *Producing regular reports on purchase that summarized delivered volumes of logs and sawn timber by supplier and source.* These should be prepared as weekly and monthly summaries.
4. *Producing regular on sales that summarized dispatched volumes of logs and sawn timber by customer.* These should be also prepared as weekly and monthly summaries.

These documents can be used as the starting point for all subsequent systems development activities from supplier review through to introduction of new chain of custody technology. A manual documentation system could be rapidly implemented starting with a short training course and probably 1-2 days training for deployment and a follow-up meeting one month later to work through end of month reporting.

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### SIMPLIFYING THE SUPPLY CHAIN

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As noted previously complex supply chains make identification of sources difficult and in many cases impossible. Furthermore, complex supply chains are susceptible to failure due to accidental or deliberate entry of illegally sourced product into the wood supply chain.

We recommend that Sawmill Company 1 implement a program of supplier review and monitoring similar to the procedures described in the WWF Keep It Legal (KIL) manual. Specific measures should include:

- Procure only from Russian timber harvesting companies operating using valid harvesting permits.
- Avoid log traders wherever possible. When using log traders, they should be required to provide credible evidence of log sources in terms of sales contracts and product labeling.

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## SEGMENTATION

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Segmentation involves the separate storage, processing and packaging and labeling of wood from known sources. In the case of the two mills, segmentation would involve, separate stacking of logs by known and unknown source, separate processing in batches of the two log supplies, and the separate packaging and labeling of the processed wood product.

Company A sawmill manager's claim that all their wood comes from known source however cannot provide credible evidence through their current wood supply chain systems. Therefore segmentation can play a role at Company A sawmill. Specifically, as the Company A progressively implements a review of its suppliers, it can segment wood from suppliers as they are progressively approved.

Introduction of segmentation would require probably a week of technical support and capacity building services. There would be no significant added operational costs of the implementation.

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## PRODUCT LABELING

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Labeling of logs and sawn timber could simplify the identification of source for individual logs and assist in the implementation of supply chain of custody.

Unfortunately labeling would be difficult to implement. There are numerous suppliers and it would be extremely practically difficult and expensive to deploy a labeling system at all of these suppliers.

Our initial recommendation is that Company A deploys an inexpensive and rapid labeling system **at the mill** to record supplier ID and perhaps delivery date and log ID on each log. Initially this could involve using a log crayon, paint or a branding hammer to record the supplier. The system could be extended into the field on a progressive basis. This type of log labeling would enable rapid, simple and inexpensive segmentation in the log yard. Operationally it would benefit the company because production information such as sawn timber quality could be related back to individual suppliers. The costs of basic log labeling are in the order US\$0.05-\$0.15 per cubic meter, including labels and labor.

We also recommend that the company implement improved practices for packaging and labeling of sawn timber. The current observed method is to pack timber loose in containers. Segmentation of product is impossible in these circumstances. Furthermore loosely stacked timber green timber is prone to damage and theft. The sawn timber should be placed into packs, with each layer separated using fillets / stickers and strapped using wire or band strapping. The timber packs can be labeled using labels that are glued to the timber or attached to the strapping. The costs of packaging labeling are estimated to be US\$0.25-\$0.50 per cubic meter, including materials and labor.

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## ADVANCED TRACKING TECHNOLOGIES

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We do not recommend the immediate introduction of advanced tracking technologies. There are several reasons for this:

1. The manual systems described above are relatively easy to implement and should be sufficient to meet the requirements of Level 2 of the IKEA wood supply programs.
2. The implementation of the manual systems described above can be introduced with only minimal changes to its internal operating procedures and no changes to its supplier's procedures – it is low cost and low risk.
3. The companies do not have computer systems or communications systems to support the use of advanced technologies.
4. Implementation of advanced tracking technologies would require adoption of significantly different operating procedures both internally and in its numerous suppliers. Advanced tracking technologies would require significant training input, procurement and support of field equipment, office computers and communications systems and probably the construction of suitable offices – this is a high risk and high cost.

However, we believe that once the manual systems are in place, the companies will be in the position to adopt new technologies as and when they are ready, perhaps as early as 6 months after the successful implementation of manual systems. The type of systems that should be seriously considered at the appropriate time includes:

1. *Database systems for stock control at the mills.* These systems should support processing of sales and transportation documents, capture of sawn timber production information, and sawn timber sales and distribution. It should be able to manage information about segmented log and sawn timber stocks and produce procurement and sales reports by supplier and customer.
2. *Log labelling at source.* Initially, this could involve using a log crayon, paint or a branding hammer to record supplier. We feel though bar-coded labels could be adopted at the outset even if the labels are not electronically scanned to begin with. The cost of this type of label is low and its use at an early stage will enable rapid deployment will enable rapid and easy implementation electronic data capture at a later time.
3. Electronic field data collection using PDA's combined with appropriate data communications.

## CAPACITY BUILDING FOR SAWMILL COMPANY 1

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TABLE 4.1 CAPACITY BUILDING FOR SAWMILL COMPANY 1

Capacity Building Process	Time (days)	Costs (USD)
Develop procedures and standard documents for log source documentation in Russian and Chinese. <ul style="list-style-type: none"> <li>- Documentation</li> </ul>	12	\$12,000
Implementation of training program for labeling of logs and processed wood. <ul style="list-style-type: none"> <li>- Course preparation</li> <li>- On-site training</li> </ul>	3	\$3,000
	2	\$1,000
On-site support for documentation and labeling at 1-3 mills	5	\$5,000
Travel and accommodation expenses		\$10,000
Total		\$32,000

## 5. COMPANY B

This final section outlines the wood supply chain configurations of the Company B. A brief background for the company is given, followed by a detailed analysis (aided by flow chart diagrams) of the wood supply sources of its suppliers and their respective sub-suppliers. The potential scope for illegal wood entering the system is provided, followed by detailed recommendations of procedures and technologies that could be applied to ensure legal verification.

### COMPANY B WOOD SUPPLY CHAIN CONFIGURATION

#### COMPANY BACKGROUND

Company B is a Chinese furniture manufacturing company with two furniture factories in China, and a furniture factory and a laminated lumber factory in Russia. The Russian furniture factory sells all its product in Russia, while the laminate factory sends most of its product to the Chinese factories.

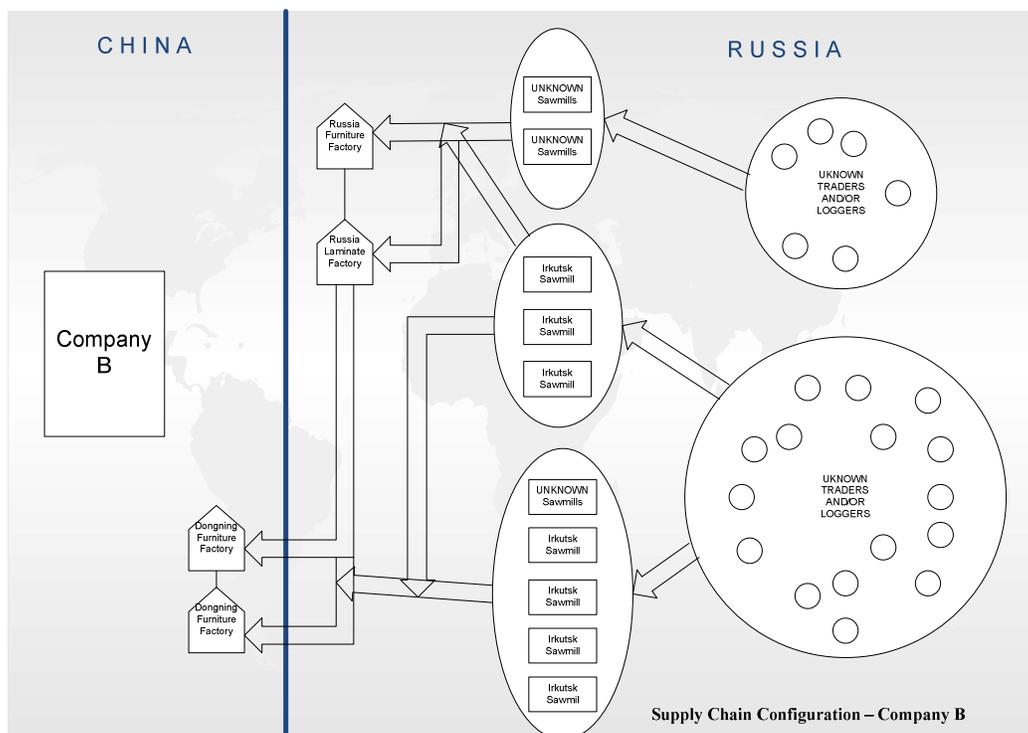


FIGURE 5.1 SUPPLY CHAIN CONFIGURATION - COMPANY B

#### WOOD SUPPLY

As illustrated in Figure 5.1, Company B sources timber for its Russian and Chinese factories from at least four supply chains:

1. Sawn timber sourced directly from sawmills in Irkutsk Region. All of these sawmills are either owned or controlled by Company B.
2. Laminated lumber supplied Company B's China factories from its lamination plant in Russia.
3. Sawn timber sourced from other sawmills in Irkutsk Region
4. Sawn timber sourced sourced from two sawmills in the Ussuri region of Primorsky Region.

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### COMPANY B SAWMILLS IN IRKUTSK

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Company B owns or controls seven sawmills in Irkutsk Region. Four of the sawmills are located within 380 km of Irkutsk city in four towns. These sawmills process primarily Scotch pine and white birch. These sawmills reportedly do not procure logs from trading companies. Instead they are supplied by 30-40 individuals involved in logging in forest management units (FMUs). The sawn timber is transported by train to Suifenhe, China and then by truck to Company B's two furniture factories near Suifenhe. Company B uses primarily export agents to handle this trade. Table x shows the number of production lines and estimates of the current and planned production capacity of these mills.

TABLE 5.1 ZALARI SAWMILL: CURRENT AND PLANNED CAPACITY

Mill	Current Capacity 2007 (m3)			Planned Capacity 2008 (m3)		
	Lines	Per month	Per year	Lines	Per month	Per year
Mill 1	5	7,000	84,000	7	10,000	120,000
Mill 2	2	2,400	28,800	4	5,000	60,000
Mill 3	2	2,400	28,000	3	3,750	44500
Mill 4	3	7,000	84,000	3	7,000	84,000
Mill 5	12	18,800	224,800	17	25,750	308,500

*Note: Mill 5 operates 2 shifts and therefore produces significantly more sawn timber per line.*

The other three Company B sawmills are located in north of Irkutsk Region and comprise a separate supply chain. These sawmills are also supplied by individuals involved in logging in FMUs. These sawmills are reportedly larger than the other four sawmills but no information on their production capacity was available. Some sawn timber from these sawmills are sent directly to the Chinese furniture factories, with the rest sent by rail to the Russian furniture and laminate factories.

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### COMPANY B'S FURNITURE AND LAMINATE FACTORIES

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The timber sent to Company B's furniture and laminate factories in Russia, comes entirely from its Russian sawmills. The product from the furniture factory is reportedly sold on the domestic Russian market. Most of the laminated lumber from the lamination factory is sent to Company B's furniture factories in China. The remaining laminated lumber is sold locally and on the export market.

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## SAWN TIMBER FROM OTHER SAWMILLS

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Company B procures sawn timber from other sawmills in the Irkutsk Region. This sawn timber is consolidated with the product from Company B's Irkutsk sawmills and exported along the same transportation network.

Company B also procures sawn timber from two sawmills from Ussurisk in the Primorsky Region. The major species used in the two Ussurisk sawmills is willow, oak, poplar, and white birch—much of it likely sourced in the Primorsky and Khabarovsk Regions in the Russian Far East. No information about the sawmills that supply these factories was provided.

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## COMPANY B SAWMILL OPERATIONS

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### MILL CONFIGURATION

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The Company B sawmills that were visited were basically identical in terms of the types of sawmilling equipment and configurations. Each mill comprised a number of individual sawmill lines. Each line comprised of two band saws – a breakdown saw and a resaw. Almost all saws used hand powered carriages and had manual set works.

Under this configuration, the first band saw cuts the logs into wide slabs which were then fed into the second saw for re-sawing. Only one of the mills visited had kilns for timber drying and finishing facilities. The majority of sawn timber is cut into large dimension lumber and exported green and rough sawn.



FIGURE 5.2 TYPICAL RESAW BAND SAW AT COMPANY B MILL, IRKUTSK REGION

Each mill line is reported to produce approximately 25 m<sup>3</sup> of green rough sawn timber per day based on an 8 to 12 hour working day. This production rate appears

considering the type of mills being deployed, the difficult working conditions and the observed work rates of the operations.

The office facilities at each mill were basic. The offices had electricity but not landline telephones or faxes. All tracking was recorded using hardcopy documentation. None of the mills had computers and only one mill had a small photocopy machine. GSM based mobile phone networks were available at all the mills. There is limited availability of GPRS mobile data services in Irkutsk but such services are unlikely to be available at any of the mills sites. We assume that Internet accessibility at the mills will only be reliably available in the immediate future using satellite communications.

### DOCUMENTATION AND WOOD TRACKING PROCESSES

The Company B sawmills had some log sales and transportation documentation but the document filing systems appeared disorganized and generally incomplete. The mills were able to show examples of sales contracts for log purchases. The companies retained copies of the transportation invoices which are produced by the supplier.

Company B sawmills generated a receipt at the when receiving logs. The receipt recorded the truck details, the sales contract number, a description of species and the quantity, the price and purchase value. This document could be used to trace the origin of the logs provided origin is recorded on the sales contract.

ЗАПИСКА № 1			
Ф.И.О. Макаренко, Анатолий Григорьевич		ДАТА 1. Октября. 2007	
НОМЕР МАШИНЫ № 3842 МТ 38		ДОГОВОР № 4. 25.10.2007	
ЛЕСБИЛЕТ № 38	ЛЕС Сосна	ДЛИНА 6	М
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КАЛЬКУЛЯТОР:	3842 38		
ПОЛУЧИТЕЛЬ ПОЯСИС ✓ Макар			

FIGURE 5.3 EXAMPLE OF COMPANY B LOG RECEIPT

All mills had reasonable processes for receiving logs, log scaling to measure log volume, and processing documents for receipting and payment. However, the mills did not appear to keep organized records of log supplies by log supplier.

None of the logs inspected at the mills were labeled in any way. Some logs had the diameter and length measurements written on the end using crayons but no other log markings were seen. All logs were stacked according to species and there was no other product segmentation. Therefore the mills are unable to differentiate logs from suppliers.

The timber is stacked in the timber yard until it is ready for trucking to the railway yard from transport to the secondary mills in China or Russia. At the railway yard timber was stacked loosely into rail carriages and there was no bundling, packaging or product labeling.

In summary, it was not possible for the consultants to reliably establish the source of log supplies based on the records shown to us. The logs are not segmented and so it is not possible to differentiate between known or legal sources. As a result the sawn timber produced cannot be realistically or credibly verified as coming from known or legal sources.

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## STATUS OF WOOD TRACKING SYSTEMS AT COMPANY B SAWMILLS

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### CHAIN OF CUSTODY

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The log supply chains into Company B sawmills are often complex involving numerous suppliers, many of whom cannot provide documentary evidence of log source, trace the logs back to the source, nor practically guarantee the legality of log sources.

The logs themselves are not marked or labeled and so it is generally not possible to trace the source of the logs from visual inspection. The logs are not segmented at the mill so that the mill log yard so it is not possible to easily identify the suppliers of the logs.

Sawn timber produced by the mill cannot be segmented by supplier because of the issues described above regarding log labeling and log storage. The sawn timber itself does not appear to be packaged or labeled prior to dispatch, and this may present problems in establishing chain of custody for sawn timber in subsequent stages of the supply chain.

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## COMPANY B COMPLIANCE WITH WWF FTN WOOD TRACKING PROGRAMS

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Currently Company B sawmills purchase many of their logs from known sources but they also procure a significant proportion of their log and sawn timber supply from unknown sources. Therefore Company B does not meet the known source or legal source criteria on the FTN program.

To reach step one of the FTN stepwise program, “known source”, the following options are available:

1. Where possible, improve of the procedures and standards of documentation so that the source of logs can be identified.
2. Segmentation and labeling of logs and processed wood products coming from known sources.
3. Elimination of logs from unknown sources from the supply chain.

A critical issue with both Company B sawmills is that they do not have adequate systems in place to provide a transparent record of their supply chain. Without this type of system, the company will not be able to easily monitor, control or demonstrate legality of their source and sawn timber supply. Therefore they may not make or support any credible claims that they are compliant with the steps in the FTN program.

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## SYSTEMS REQUIREMENTS FOR COMPANY B SAWMILLS

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### IMPROVING DOCUMENTATION MANAGEMENT PROCEDURES

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At the moment, Company B sawmills do not appear to have appropriate document management procedures in place. Therefore the log supply cannot be adequately monitored or audited. We recommend that following corrective actions be implemented:

1. *Maintain a sales administration file for each supplier.* The supplier file should contain:
  - A record of *key company information* such as contact details and registration information from the company's office and Regional Forestry Authority.
  - *Copies of the Sales Contracts* for each log and sawn timber supplier with reference to the respective Forestry License and Harvesting Permit (if this information is available). It is preferable for separate supply contracts to be issued for each harvesting permit as this provides a direct link to the source of the materials.
  - *List of transportation documents* of delivered log and sawn timber consignments for each supplier. These should include the sale contract reference number, which can be used to identify the source of the materials. In practice each transportation document should be recorded as one line in the list.
2. *Maintain lists of transportation documents of log and sawn timber sales for each customer.*
3. *Produce weekly and monthly summary reports detailing purchase* that summarize delivered log and sawn timber volumes by supplier and source.
4. *Produce regular sales reports that summarize dispatched log and sawn timber volumes by customer.* These should be also prepared as weekly and monthly summaries.

These documents can be used as the foundation for all subsequent systems development activities ranging from supplier review to the introduction of new chain of custody technology. A manual documentation system could be rapidly implemented, beginning with a short training course and approximately 2 days training for deployment and a follow-up meeting one month later to provide training in 'end-of-month' reporting.

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## SIMPLIFYING THE SUPPLY CHAIN

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As noted previously, complex supply chains make identification of sources difficult and in many cases impossible. Furthermore, complex supply chains are susceptible to failure due to accidental or deliberate entry of illegally sourced product into the supply chain.

We recommend that Company B sawmills implement a program of supplier review and monitoring similar to the procedures described in the WWF Keep It Legal (KIL) manual. Specific measures should include:

- Procurement only from Russian timber harvesting companies operating using valid harvesting permits.
- Avoiding log traders wherever possible. When using log traders, they should be required to provide credible evidence of log sources in terms of sales contracts and product labeling.
- To use particularly caution with logs harvested from thinning contracts (e.g. sanitary logging). These licenses are short-term permits (usually less than 1 year), making cost-effective tracking difficult due to frequent shifts in harvest location.

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## SEGMENTATION

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Segmentation involves the separate storage, processing, and packaging and labeling of wood from known sources. In the case of the two mills, segmentation would involve, separate stacking of logs by known and unknown source, separate processing in batches of the two log supplies, and the separate packaging and labeling of the processed wood product.

Segmentation should be an essential component of the Company B operations because Company B procures a significant proportion of its wood supply from log and sawn timber traders and this wood is extremely difficult to track back to its original source.

Introducing segmentation would require approximately one week of technical support and capacity building services. There would be no significant added operational costs in implementing these segmentation practices.

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## PRODUCT LABELING

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Labeling logs and sawn timber could simplify the identification of source for individual logs and assist in the implementation of supply chain of custody. Unfortunately labeling would be difficult to implement. There are numerous suppliers and it would be extremely difficult and expensive to deploy a labeling system for all of these suppliers.

Our initial recommendation is that Company B sawmills deploy an inexpensive and rapid labeling system *at the mill* by recording supplier ID and perhaps delivery date and log ID on each log. Initially this could involve using a log crayon, paint, or a branding hammer to record the supplier. The system could be extended into the field on a graduated basis. This type of log labeling would enable rapid, simple and inexpensive segmentation in the log yard. Operationally it would benefit the company because production information such as sawn timber quality could be relayed back to individual suppliers. The costs of basic log labeling are between US\$0.05-\$0.15 per cubic meter, including labels and labor.

We also recommend the company implement improved practices for packaging and labeling of sawn timber. The current observed method is to pack timber loose in containers. Segmentation of product is not possible under these circumstances. Furthermore, loosely stacked timber is prone to damage and theft. The sawn timber should be placed into packs, with each layer separated using fillets/stickers and bound using wire or band strapping. The timber packs can be labeled using labels that are glued to the timber or attached to the binding. The costs of packaging labeling are estimated to be US\$0.25-\$0.50 per cubic meter, including materials and labor.

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### ADVANCED TRACKING TECHNOLOGIES

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We do not recommend immediate introduction of advanced tracking technologies for several reasons:

1. The manual systems described above are simple to implement and should be sufficient to meet the Stage One requirements of GFTN wood supply programs.
2. The implementation of the manual systems described above can be introduced with only minimal changes to internal operating procedures and no changes to supplier's procedures: it is low cost and low risk.
3. The companies do not have computer systems or communications systems to support the use of advanced technologies.
4. Implementation of advanced tracking technologies would require adopting significantly different operating procedures both internally and in its numerous suppliers. Advanced tracking technologies would require significant training input, procurement and support of field equipment, office computers and communications systems and likely the construction of suitable offices: this is high risk and high cost.

However, once the manual systems are in place, the companies will be in a position to adopt new technologies when they are ready, perhaps as early as 6 months after successful implementation of the manual systems. Systems that should be seriously considered at the appropriate time include:

1. *Database systems for stock control at the mills.* These systems should support processing of sales and transportation documents, capture of information on sawn timber production, and sawn timber sales and distribution. It should be able to manage information about segmented log and sawn timber stocks and produce procurement and sales reports by supplier and by customer.
2. *Log labelling at source.* Initially, this could involve using a log crayon, paint or a branding hammer to record supplier. Bar-coded labels could be adopted at the outset even if the labels are not electronically scanned to begin with. The cost of this type of label is low and its use at an early stage will enable rapid deployment at a later date.
3. *Electronic field data collection using PDA's combined with appropriate data communications.*

## CAPACITY BUILDING FOR COMPANY B SAWMILLS

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TABLE 5.2 CAPACITY BUILDING FOR COMPANY B SAWMILLS

Capacity Building Process	Time (days)	Estimated Costs (USD)
Develop procedures and standard documents for log source documentation in Russian and Chinese	12	\$12,000
Implement training program for labeling of logs and processed wood.	3	\$3,000
- Course preparation	2	\$2,000
- On-site training		
On-site support for documentation and labeling at 7 mills	15	\$15,000
Travel and accommodation expenses		\$6,000
Total		\$38,000

## 6. KEY FORESTRY AND TRADE DOCUMENTS

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This section provides suppliers, retailers, and other relevant parties with information on the crucial Russian documents necessary for timber harvest and transport. Basic descriptions of each document, including identification of the key strength and weaknesses is provided. For the documents most relevant for tracking wood origin and transport, sample documents have been provided in Russian and English.

### RENTAL AGREEMENT

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The rental agreement is issued by the forest service for all forest areas that are rented or leased by a timber company. The period of this lease is from between 10 and 49 years. The agreement sets forth the conditions of the lease, with the respective responsibilities of the forest service and the leaseholders defined. This includes information on how both parties can amend or cancel the agreement, as well as any specific conditions of the lease. It also includes a forest inventory description and location of the lease forests, the annual allowable cut, the type of logging to be undertaken, and the cost of the leases. Except for a rent agreement, a logging plan and a felling permit are other documents which permit logging at a leased area.

When the new Forest Code is completely enforced, felling permits will be abolished. A forest user will need to prepare a forest area development plan, submit a declaration and – at the end of the year – a report on forest use.

#### Strengths

- Provides legal rights for timber harvesting, contains information on forest areas rented by a timber company, sets financial issues of forest use.

#### Weaknesses

- Rent agreements do not imply requirements to and responsibilities of forest users to prevent illegal logging;
- Companies may not be willing to share them with a third-party.

## FELLING PERMIT OR FOREST PERMIT (LESNOY BILET)

---

This document provides a forest user with the right to log, determines location of logging, allowable logging volume, felling area size, timing, forest regeneration requirements and other forestry conditions for logging (storage, transportation and etc.). Felling permits are issued by a forest management unit, issuing of this document is strictly regulated. Data of each felling permit on allowable logging volume, species and factual timber outturn is registered in a timber outturn book – this helps to control felling areas and volumes of logged timber.

### Strengths

- The document permits logging; it contains complete information on location and areas of felling sites, volumes and quality of timber, forestry requirements and time of logging.
- A copy of a felling permit is an obligatory document required for timber transportation;
- High level of security (special paper, holograms, microtext, individual number, strict reporting and etc.)

### Weaknesses

- There is no control of data specified in a felling area corresponds with timber factually logged.
- Usually a felling permit is valid for a year. One felling permit can be used to transport unlimited volume of timber, including those of unknown origin.
- There is no intermediate control and discrepancies of felling permit data from actual logging could be found, if ever, only after the timber has been harvested and sold
- The use of originals is restricted, only copies are used, this provides more room for fraud.

1

Серия А1

№ 620

Выдается лесопользователю



МИНИСТЕРСТВО ПРИРОДНЫХ РЕСУРСОВ РОССИЙСКОЙ ФЕДЕРАЦИИ

# Лесорубочный билет № 48

Российская Федерация

26 августа 2006

*Брянский край*  
(республика, край, область, автономная область, автономный округ)

Лесхоз	Способ рубки <i>сплошн. выборочной</i>
Лесничество	Способ учета <i>по площади</i>
Вид пользования <i>хозяйств</i>	

На основании *договора аренды № 001 от 24.02.1997 г.*  
 разрешается *ООО "Брянсклесхоз"* с/х-му хозяйству *г.п.к.т. от 05.01.05*  
 вырубить в счет лесосечного фонда 20 *кат. распушки и сучьевой* древесины.  
 Лесотаксовый пояс *4* разряд такс *6*  
 Скидка предоставляется на основании *нет*

Группа лесов	№№ кварталов	№№ делянок	Площадь делянок га	Хозяйство	Обеспечить сохранение подроста		Масса древесины в плотных куб. м				Лесная подь (такса) в рублях				Причисляется к уплате в рублях <i>ст. ф. 14</i>
					на площади га	количество тыс. шт. на 1 га	деловой	дровяной	хвороста и сучьев	итого	деловой	дровяной	хвороста и сучьев	итого	
<i>И</i>	<i>32</i>	<i>12/1</i>	<i>12,9</i>	<i>26</i>	<i>12,9</i>	<i>8,0</i>	<i>6385</i>	<i>1056</i>	<i>-</i>	<i>7441</i>	<i>15763</i>	<i>859</i>	<i>-</i>	<i>166482</i>	<i>224674</i>
		<i>12/2</i>	<i>16,3</i>	<i>26</i>	<i>16,3</i>	<i>1,9</i>									
		<i>29,2</i>			<i>29,2</i>		<i>6385</i>	<i>1056</i>	<i>-</i>	<i>7441</i>	<i>15763</i>	<i>859</i>	<i>-</i>	<i>166482</i>	<i>224674</i>
		<i>Итого ...</i>													

Сроки внесения в бюджет платы за заготавливаемую лесопroduкцию *согласно договору аренды*

Рубке не подлежат *молодняки хвойных пород диаметром менее 10 см; деревья с диаметром до 10 см в бурьях и сорняках*  
(количество семенников, семенных куртин и других деревьев по каждой делянке)

Срок окончания заготовки *25 августа 2006 г.*

Места временных складов

Вывозка разрешается *одновременно с заготовкой*

Срок окончания вывозки *25 августа 2006 г.*

FIGURE 6.1 SAMPLE FELLING PERMIT - RUSSIAN (SIDE 1)

Досрочная рубка разрешается нет

Сроки окорки или химической обработки древесины с 15.05.06г. по 15.08.06г. при оставлении древесины на протяжении не более 10 дней

Способ очистки сбор порубочных остатков на волоке с последующим измельчением и утилизацией ходом трактора

Разработку лесосек произвести согласно утвержденным технологическим картам.

Особые условия обеспечить сохранение подроста жаймак  
перод



Директор лесхоза [Signature]

Инженер [Signature]

Лесопользователь обязан строго соблюдать Правила отпуска древесины на корню и Правила пожарной безопасности в лесах Российской Федерации. За нарушение указанных правил, а также при уклонении лесопользователя от очистки мест рубок государственные органы лесного хозяйства могут в установленном порядке приостанавливать заготовку древесины и иные работы, проводимые лесопользователями.

С правилами отпуска древесины на корню и правилами пожарной безопасности ознакомлен.

В соответствии со ст. 35 Основ лесного законодательства Российской Федерации лесопользователь обязан произвести следующие лесовосстановительные работы в 20\_\_ году:

посадка леса \_\_\_\_\_ га,

посев леса \_\_\_\_\_ га,

содействие естественному возобновлению сохранение подростка 29.2 га.

Подпись лесопользователя [Signature]

Отметки о предоставлении отсрочек по заготовке и вывозке \_\_\_\_\_

м.п.

Директор лесхоза \_\_\_\_\_

МТ Гознака. 2001.

FIGURE 6.2 SAMPLE OF A FELLING PERMIT - RUSSIAN (SIDE 2)

Series \_\_\_\_ Coat of Arms of Russia 1. Provided for a forest user  
# \_\_\_\_\_ 2. Provided for a local f-st division  
3. Left in a forest management unit

\_\_\_\_\_  
(a name of a federal body for forest management)

Felling Permit # \_\_\_\_\_

"\_\_" \_\_\_\_\_ 2006

Subject of the Russian Federation \_\_\_\_\_

Forest management unit _____	Type of felling _____
Local forest division _____	_____
Type of use _____	Type of accounting _____

Justified by \_\_\_\_\_  
it is permitted \_\_\_\_\_  
to cut \_\_\_\_\_ of timber  
Forest fares region \_\_\_\_\_ fare grade \_\_\_\_\_  
Discount is justified by \_\_\_\_\_ for \_\_\_\_\_%

F-st protect.	## quarters	## of felling sites	Felling sites area, ha	Type of f-st use	Ensure preservation of young generation		Timber volume in dense m3				Charges in rubles		To be paid in rubles	
					Area, ha	amount thousands per ha	commercial	firewood	brushwood and twigs	total	Minimal prices	Approved prices		
Total														

Distribution of fares: federal budget \_\_\_\_\_  
rubles, budget of a subject of the Russian Federation \_\_\_\_\_ rubles,  
budget of a municipality (local budget) \_\_\_\_\_  
rubles, forest management unit \_\_\_\_\_ rubles

Schedule of payment \_\_\_\_\_  
(schedule and percentage)

Logging is(not)permitted \_\_\_\_\_  
(amount of seed trees, seed groups,

\_\_\_\_\_

groves, forest strips and other trees at each felling site)

---

Locations of short-term storage yards for timber accounted by volume

\_\_\_\_\_

Transportation is permitted \_\_\_\_\_

End of harvesting and transportation " \_\_ " \_\_\_\_\_ 2006

Opposite side of a felling permit

Activities for forest protection and conservation and their schedule

\_\_\_\_\_

Schedule of barking, barking in strips, or chemical processing of timber

\_\_\_\_\_

Cleaning of felling sites has to be accomplished at the same time with logging, time difference between logging and cleaning can not be longer than 15 day in snowless period, and also spring additional cleaning \_\_\_\_\_

(methods of cleaning)

\_\_\_\_\_

Felling has to be accomplished in compliance with technological maps approved by a forest management unit.

Special conditions \_\_\_\_\_

\_\_\_\_\_

Submit a felling area (site) in the following condition

Stamp | \_\_\_\_\_

Director of the forest management unit \_\_\_\_\_ Forest engineer \_\_\_\_\_

Informed on Regulations on Timber Allocation in Forests, Fire Safety Rules, in accordance to the Article 90 of the Forest Code of the Russian Federation I guarantee to accomplish in the year of \_\_\_\_\_ the following forest regeneration activities at the expense of

\_\_\_\_\_

planting \_\_\_\_\_ ha,

(method)

seeding \_\_\_\_\_ ha,

(method)

assistance for natural forest regeneration \_\_\_\_\_ ha.

(method)

Signature of the forest user \_\_\_\_\_

Transportation delay notes \_\_\_\_\_

\_\_\_\_\_

Special notes \_\_\_\_\_

\_\_\_\_\_

Director of the forest management unit \_\_\_\_\_

FIGURE 6.3 ENGLISH TRANSLATION OF A FELLING PERMIT

## FELLING AREA MATERIAL AND COST ESTIMATION

---

Felling area material and cost estimation is a document which sets volume and minimal prices of timber on a felling site for individual species and timber grades.

### **Strengths**

- Concise information on a timber company, volumes and material and cost estimation of timber on an area, outturned for logging.

### **Weaknesses**

- Factual data of cost and material estimation can be higher (14-20%), the same is with timber quality. Accuracy of assessment depends on methodology and quality of inventory work. This provides room for a fraud to escape from rent and other fees for forest use.

## TECHNOLOGICAL MAP AND FELLING AREA ALLOCATION PLAN

---

These documents are cartography materials with principal characteristics of a felling area, developed on the basis of forest inventory and other field research. They contain information on types of logging, specific features of a logging technology, felling area location, boundaries, transport infrastructure. To verify timber origin legality and compliance to forest legislation requirements it is worthwhile to study technological map of a felling area and its allocation plan.

### **Strengths:**

cartography materials are useful to control compliance of location, areas and logging technologies.

### **Weaknesses:**

Usually the quality of these documents is poor and it is hard to use them for verification of a logging technology and timber transportation.

## FELLING AREA INSPECTION ACT

---

After the end of logging a forest management unit “accepts” a felling area from a forest user through a felling area inspection act. Three copies of the act are developed by a forest management representative and people, attending the inspection. The act identifies all violations noticed and amount of forfeits (until 2007). The act contains requirements of the forest management unit for elimination of violations identified. Officials responsible for low quality felling areas inspection are subject for disciplinary punishment.

### **Strengths:**

*felling area inspection helps to identify all violations and discrepancies committed by a forest user at logging and it is the way to make them to eliminate violations.*

### **Weaknesses:**

forest management units and authorized staff is not interested in quality inspection, it could be formal, without field mission and with no necessary measurements and calculations.

## TRANSPORTATION INVOICE

---

The transportation invoice is the obligatory legal document that is required for transportation of cargos by cars. All operations of organizations have to be supported by receipts and other primal accounting documents which are a basis for financial accounting.

### Strengths

- The transportation invoice is used together with a felling permit for timber transportation, this helps to identify a logging company, logging sites location and volumes of harvested and transported timber, compliance of quality and species composition of transported timber.
- The transportation invoice is a primal document for development statistical reports on timber transportation.

### Weaknesses

- It is difficult to assess compliance of data in the transportation invoice.
- The transportation invoice form is too complicated, not all required information is filled in usually.

**ТОВАРНО-ТРАНСПОРТНАЯ НАКЛАДНАЯ**

**М-659**

№


Грузоотправитель **ИП Сухоруков В.Ю.**

Грузополучатель **ОО «Металлик», Огородная, 14**

Плательщик

полное наименование организации, адрес, номер телефона

полное наименование организации, адрес, номер телефона

полное наименование организации, адрес, банковские реквизиты

серия

Дата составления

по ОКПО

по ОКПО

по ОКПО

• I. ТОВАРНЫЙ РАЗДЕЛ (заполняется грузоотправителем)

Код продукции (номенклатурный номер)	Номер прејскуранта и дополнения к нему	Артикул или номер по прејскуранту	Количество	Цена, руб. коп.	Наименование продукции, товара (груза), ТУ, марка, размер, сорт	Единица измерения	Вид упаковки	Количество мест	Масса, т.	Сумма, руб. коп.	Порядковый номер записи
1	2	3	4	5	6	7	8	9	10	11	12
070417	сосна	круглая			27,5						

Товарная накладная имеет продолжение на \_\_\_\_\_ листах, на бланках за № \_\_\_\_\_ и содержит \_\_\_\_\_ порядковых номеров записей

\_\_\_\_\_ прописью

Всего наименований \_\_\_\_\_ прописью      Масса груза (нетто) \_\_\_\_\_ прописью

Всего мест \_\_\_\_\_ прописью      Масса груза (брутто) \_\_\_\_\_ прописью


T

T

Наценка, %	
Складские или транспортные расходы	
Всего к оплате	

Приложение (паспорта, сертификаты и т.п.) на \_\_\_\_\_ листа  
прописью х \_\_\_\_\_

Всего отпущено на \_\_\_\_\_ руб.  
прописью . \_\_\_\_\_ коп.

Отпуск разрешил \_\_\_\_\_  
должность **Чай** подпись **И.К.** расшифровка подписи **р** подпись \_\_\_\_\_ расшифровка подписи \_\_\_\_\_  
Главный бухгалтер

По \_\_\_\_\_ от « \_\_\_\_\_ 20 \_\_\_\_\_ г.  
 доверенности \_\_\_\_\_ » \_\_\_\_\_  
 выдан \_\_\_\_\_  
 Груз к перевозке \_\_\_\_\_  
 принял \_\_\_\_\_  
должность \_\_\_\_\_ подпись \_\_\_\_\_ расшифровка подписи \_\_\_\_\_

(При личном приеме товара по количеству и ассортименту)

FIGURE 6.4 SAMPLE OF A TRANSPORTATION INVOICE - RUSSIAN

Form on All-Russia Classificatory of Approved Documents' Forms  
**TRANSPORTATION INVOICE** \_\_\_\_\_ **M-659** \_\_\_\_\_ #  
 series \_\_\_\_\_ Date of compilation \_\_\_\_\_

Supplier **Individual proprietor V.Yu.** on ARCID<sup>6</sup>  
 \_\_\_\_\_  
 Recipient **“Metallik” business** on ARCID  
**company, 14 Ogorodnaja St.**  
 \_\_\_\_\_  
 Payer \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ On ARCID

Codes		
0345009		

Complete name of organization, address, telephone number, banking

I. PRODUCT SECTION (filled in by supplier)

Code of product (nomenclature number)	Number of price list and amendments	Number on price list	Quantity	Price, rubles, kopeks	Name of product, goods (cargo), technical specifications, mark, size, grade	Unit of measurement	Type of packaging	Number of cargo units	Weight, tons	Sum, rubles, kopeks	Registration number of a note in warehouse register (for supplier, for recipient)
1	2	3	4	5	6	7	8	9	10	11	12
070417	pine	round			27.5						

Transportation invoice is continued on \_\_\_\_\_ pages, on forms # \_\_\_\_\_  
 and has \_\_\_\_\_ number of registered lines Interest, % \_\_\_\_\_

<sup>6</sup> All-Russia Classificatory for Industrial Documents

	In words					
Total number of products' names	Cargo weight (net)	ton	s	Costs of transportation or storage		
	In words					
Total number of units	Cargo weight (gross)	ton	s			
	In words			Total sum for payment		
Additional documents (passports, certificates and etc.) on	In words	pages		On authorization # _____ of " " _____ 20 .		
Total price for products provided	In words	rubl es		issued _____		
Loading authorized	In words	Senior (chief) Financial manager		_____ cargo accepted for transportation		
	position	signature	name	position	signature	name
	I.K. Chaus			(When products are accepted by a person according to quantity and assortment)		
Loading fulfilled				_____ Cargo is accept. by recipient		

FIGURE 6.5 ENGLISH TRANSLATION OF A TRANSPORTATION INVOICE

## CARGO CUSTOMS DECLARATION

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The cargo transport declaration is a document necessary for customs declaration of cargos. It is submitted to the customs and includes information on goods obligatory for declaring for transportation through the customs border of the Russian Federation.

A participant of the foreign trade declares principal information on products: name, cost, volume, information on packaging, product nomenclature codes, customs regime and etc. The cargo transport declaration is an analogy of the unified administration document, introduced at the European Union and countries of the European Free Trade Association in compliance to the Convention on the Simplification of Formalities in Trade (1987).

In 2007 the Federal Customs Service of Russia developed and approved a new cargo transportation declaration (or transit declaration) form which significantly simplifies customs formalities. The form of this declaration is in compliance with the unified administration document of the EU. The form has several pages, the first page is provided in the Annex 8. The complete form and necessary explanations can be found at <http://www.gtd.blank.ru>.

### **Strengths**

- The cargo transport declaration contains comprehensive information on supplier, cargo, supply contract and financial conditions.
- New cargo declaration form is in compliance to EU standards, it enables integration of customs data into an informational system, integrated to the EU's one.

### **Weaknesses**

- The customs does not use data of other departments to verify timber origin legality.
- Lack of trained customs staff to verify data on species, grade, volume and cost of declared timber.
- The order of customs documentation development disables a customs official to assess cargo visually and verify its volume and quality.



ГРУЗОВАЯ ТАМОЖЕННАЯ ДЕКЛАРАЦИЯ/  
ТРАНЗИТНАЯ ДЕКЛАРАЦИЯ (ТД 1)

00000000

А ОРГАН ОТПРАВЛЕНИЯ/ЭКСПОРТА

1 Экземпляр для страны отправления/экспорта	2 Отправитель/Экспортёр №				1 ДЕКЛАРАЦИЯ	
	3 Формы		4 Отпр. спец.			
	5 Всего т-ов		6 Всего мест		7 Справочный номер	
	8 Получатель №				9 Лицо, ответственное за финансовое регулирование №	
	10 Страна первоого назнач.		11 Торг. страна		13 ЕСП	
	14 Декларант/Представитель №				15 Страна отправления/экспорта	
			15 Код страны отпр./эсп.		17 Код страны назнач.	
			16 Страна происхождения		17 Страна назначения	
	18 Идентификация и страна регистрации трансп. средства при отправлении		19 Конт.		20 Условия поставки	
	21 Идентификация и страна регистрации активного трансп. средства на границе		22 Валюта и общая сумма по счету		23 Курс валюты	
		24 Характер сделки				
25 Вид транспорта на границе		26 Вид транспорта внутри страны		27 Место погрузки		
		28 Финансовые и банковские сведения				
29 Орган выезда		30 Местонахождение товаров				
31 Грузовые места и описание товаров		32 Товар №		33 Код товара		
		34 Код страны происх.		35 Вес брутто (кг)		
		37 ПРОЦЕДУРА		38 Вес нетто (кг)		
		39 Коэфт				
		40 Общая декларация/Предшествующий документ				
		41 Дополнит. единицы				
44 Дополнит. информации/Представл. документы/Сертификаты и разрешения		46 Статистическая стоимость				
47 Исчисление платежей		48 Отсрочка платежей		49 Ревизиты склада		
Вид		Основы начисления		Сумма		
СП		В ПОДРОБНОСТИ ПОДСЧЕТА				
Всего:						
50 Принципал №		Подпись:		С ОРГАН ОТПРАВЛЕНИЯ		
51 Предлагаемые органы (и страна) транзита		представленный				
		Место и дата:				
52 Гарантия недействительна для		Код		53 Орган (и страна) назначения		
D ОТМЕТКИ ОРГАНА ОТПРАВЛЕНИЯ		Печать:		54 Место и дата:		
Результат:		Подпись и фамилия декларанта/представителя				
Наложённые пломбы:		Номер:				
Тип:						
Срок доставки (дата):						
Подпись:						

FIGURE 6.6 SAMPLE OF A CUSTOMS CARGO DECLARATION FORM

Cargo transport declaration

Transit declaration (TD1)

Registration # 177258

A. Supply \ export agency

1. Declaration
2. Supplier \ exporter
3. Forms
4. Loading specification
5. Total number of products
6. Total number of units
7. Reference number
8. Recipient
9. Focal point for financial issues
10. Country of the first destination
11. Sale country
- 12.
13. United total payment
14. Declarer \ representative
15. Country of supply \ export
15. Code of the supply \ export country
  
16. Country of origin
17. Destination country
18. Identification and a country where means of transportation is registered at loading
19. Contract
20. Conditions of delivery
21. Identification and a country where means of transportation is registered at the border
22. Currency and total sum for the invoice
23. Exchange rate
24. Character of the deal
25. Type of transport at the border
26. Type of transportation inside the country
27. Loading point
28. Financial and banking information
29. Agency of departure
30. Location of products
31. Cargo units and description of products  
Marking and quantity – Numbers of containers – Number and specific characters
  
32. Products #
33. Code of products
34. Code of the origin country
35. Gross weight (kg)
- 36.
37. Procedure
38. Net weight (kg)
39. Quote
40. General declaration \ preceding document
41. Additional units
- 42.
- 43.
44. Additional information \ Provided documents \ Certificates and permissions  
Code of additional information
  
- 45.

46. Statistical cost  
47. Calculation of payments  
Form  
Justification for payment  
Rate  
Sum  
Total payment  
Total  
48. Delays for payments  
49. Information on place of storage  
B. Details of calculations  
50. Principal  
#  
Signature  
Submitted by  
Place and date  
C. Supply body  
51. Planned body (and country) of transit  
52. Warranty is not valid for  
Code  
53. Code (and country) of destination  
54. Place and date  
Signature and name of declarer \ representative  
D. Remarks of a supply body  
Stamp  
Result  
Seals  
Numbers  
Type  
Period of delivery (date)  
Signature

FIGURE 6.7 ENGLISH TRANSLATION OF A CUSTOMS CARGO DECLARATION

## 7. APPENDIXES

### GLOSSARY OF TERMS IN ENGLISH AND RUSSIAN

TABLE 7.1 GEOGRAPHIC ADMINISTRATION TERMS

<i>English Term</i>	<i>Russian Translation</i>	<i>Description</i>
Region	Oblast	
District	Rayon	
City, Town, Village	Gorod	

TABLE 7.2 FOREST ADMINISTRATION TERMS

<i>English Term</i>	<i>Russian Translation</i>	<i>Description</i>
Forest Fund		97%
Forests outside Forest Fund		Municipal forest 3%, can be privatized.
Federal Forestry Agency	Federalnoye Agentstvo Lesnogo Khozyaystva	<p>Policy, laws and regulation, definition of documentation, harvesting procedures (30 different procedures for each region). Monitoring (remote sensing) and inventory (forest mapping and stock assessment). Establish taxes, royalites, stumpage and other forest fees.</p> <p>Control of budgets for regional forest authority.</p>
Regional Forestry Authority	Different names in each region.	<p>Management and ownership of most of the forests.</p> <p>Development of rules for use of forests by citizens.</p> <p>Administration of fees / payments for forest use.</p> <p>Management of forest management units under federal ownership.</p> <p>Reforestation after harvesting – in practice by FMU / Licence holder.</p> <p>Licensing, monitoring, regional</p>

		development planning.
Forest Code	Lesnoy Kodex	
FMU	Leskhoz	Name for FMU under the old Forest Code. Organized by Federal Forestry Agency.  Control of silviculture and harvesting in the FMU, management of forests outside not issues to companies.
	Lesnichestvo	Name for FMU under the new Forest Code. Organized by Regional Forestry Authority.
Forest License	Arenda	License issued to companies provided use rights for of an FMU.  Under the old forest code, the licence was allocated by the FMU on behalf of the Federal Forest Agency. It provided use rights for between 1-99 years. All of these licenses will transfer to the new code in 2008.  Under the new forest code, the the license is allocated by the Regional Forestry Authority. This licence provides use rights for between 10-49 years.
Compartment	Quartel	The individual management units for forests. Mostly square in shape ranging from 200-800 hectares in area.  Part of silviculture of FMU. Thinning and done in Quartel.

TABLE 7.3 FOREST PRODUCTION TERMS

<i>English Term</i>	<i>Russian Translation</i>	<i>Description</i>
Thinning	Rubky Promezhutochnogo Polzovaniya	Thinning conducted as part of the silvicultural schedule in the FMU.
	Sanitarnye rubki	Sanitary / Salvage cutting – thinning conducted for forest health reasons
	Rubki pereformirovaniya	Reformation – for conversion to other species.
	No name for this yet. Mentioned in forest code but no laws or regulations to define it.	Harvesting for non-forestry use, e.g. mining, roading, residential construction.
Upper yard	Verkhniy sklad	A clearing in the forest nearby to logging site where logs are stacked.
Lower yard	Nizhniy sklad	Log storage area used by the logging company to store logs and consolidate volumes.
Forest road	Lesnaya doroga	Forests roads are owned by company during logging. Ownership transferred to municipality after logging.
Contractor	Podryadchik	Principal logging contractor
Subcontractor	Subpodrydchik	Logging sub-contractor