Examensarbeten **2010:04**
Institutionen för skogens ekologi och skötsel

Illegal logging in Northwest Russia

- Export taxes as a means to prevent illegal operations

Tommy Johansson

Sveriges Lantbruksuniversitet Skogligt magisterprogram/Jägmästarprogrammet
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I denna rapport redovisas ett examensarbete utfört vid Institutionen för skogens ekologi och skötsel, Skogsvetenskapliga fakulteten, SLU. Arbetet har handletts och granskats av handledaren, och godkänts av examinator. För rapportens slutliga innehåll är dock författaren ensam ansvarig.

This report presents an MSc/BSc thesis at the Department of Forest Ecology and Management, Faculty of Forest Sciences, SLU. The work has been supervised and reviewed by the supervisor, and been approved by the examinator. However, the author is the sole responsible for the content.

Preface

This report has been conducted as a master thesis equivalent to 30 Hp in the subject of Forest Management at the Department of Forest Science and Management, Swedish University of Agricultural Sciences in Umea.

The author wishes to thank Dr Andreas Ottitsch, The national school of Forestry, University of Cumbria for his dedication and invaluable help regarding the topic at hand.

I also would like to thank my tutor, Professor Bjorn Hanell and my examinator, Dr Lars Lundqvist for their many good ideas and their support throughout the process.

Tommy Johansson

Abstract

The North-West of Russia is a region, where most of the Russian forest products export to Europe is originated. There are also several publications and papers which have indicated that illegal logging and the export of this illegally harvested wood are a major problem in this particular region. In an attempt to stimulate the domestic processing industry as well as reducing the amount of illegally harvested wood, Russia have decided to implement export taxes on round wood.

The purpose of this thesis was to examine if Russia's proposed export taxes on round wood would decrease the amount of illegally harvested wood in this region.

The method elected for this study was a literature study. The method of export taxes as a means to stop illegal operations in the forest sector has been conducted before, and the results from these countries have been analyzed and used to predict a likely outcome for the amount of illegally harvested wood due to this trade restriction.

The results from other countries show that export taxes have not reduced the illegal logging in a significant way. What we have seen in other countries is that the deforestation rate has gone down and at best we can assume that illegal operations are a part of this deforestation, and thus would be reduced in a small amount. There are however no evidence that supports that fact. Given the purpose of Russia's export taxes, which is to stimulate the domestic wood processing industry as well as decreasing the amount of illegally harvested wood I have reached the conclusion that the export taxes will not affect the amount of illegally harvested wood in North-West Russia. Instead, the illegally harvested wood will support the growing needs of the increased domestic processing.

Keywords: Illegal logging, Wood, Trade and export

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1. Introduction

1.1 Background

Illegal logging and the international trade in illegally logged timber is a major problem for many timber-producing countries in the developing world. It causes environmental damage, costs governments billions of dollars in lost revenue, promotes corruption, undermines the rule of law and good governance, and funds armed conflicts in many parts of the world. It also makes a big obstacle for sustainable development in some of the poorest countries. Illegally logged wood also leads into a state of uncontrolled destruction of forests which in turn will have a significant impact on the forest ecosystems – these are destroyed or degraded and can only be restored after a long period of time. All the above mentioned negative aspects give us the belief that illegal logging often has a negative impact on the livelihoods and welfare of the forest dwelling communities. This has lead to the fact that illegal logging now has become an issue of profound importance for all forest dwelling communities as well as becoming one of the most prominent global forest policy issues. This global awareness of the topic can be illustrated by the fact that the G8 Illegal logging Dialogue was launched in 2006, at the annual meeting of the World Bank and the International Monetary Fund. There are also several other international initiatives on illegal logging, which amongst other include the FLEGT (Forest Law, Enforcement, Governance and Trade) processes, The Food and Agricultural Organization of the United Nations (FAO) and the World Conservation Unit (IUCN).

Illegal logging as a concept is commonly used in different policy forums and literature to refer to a wide range of illegal forest activities (see chapter 3.1). Thus it is important to remember that this topic is not just about felling and/or cutting, but the problem is much bigger than this. In fact, one could argue that illegal logging is allowed to occur due to institutional problems and lack of government capacity. At the same time, the role of business also plays a major part in this equation. If there were no profits involved when exporting illegally logged timber, there would be no incitement for conducting these illegal operations. Vice versa, one could argue that with a better monitoring system and more adequate legal framework (i.e. better government capacity) illegal logging would be much harder to pursue and hence would exist in a much smaller scale.

When looking at this problem in Western Europe, there is little doubt that the origin of most of the illegally logged timber hails from the Russian Federation and particularly the northwest parts of Russia. This part of Russia is characterized by the most intensive wood harvesting in the entire Russian Federation, and a great amount of the timber produced here is exported to Europe. As

seen later in this thesis (see chapter 3.2), there are several publications that indicates illegal logging in this region to be a significant problem, which if not addressed properly could lead to severe ecological and economical impacts, not only for Russia but also for the entire European Union.

1.2 Aim of study

The purpose of this thesis is to present an overview of the complex problem of illegal logging in general and determine how the Russian Federations new export taxes on timber will affect the amount of illegally harvested timber in the northwestern parts of Russia in particular.

2. Methods and data

2.1 Qualitative approach

This thesis was conducted by:

1. Analyzing available information about other countries experiences in implementing higher export taxes or other forms of export restrictions.
2. Literature studies were also conducted in order to assess the current state of illegal logging activities in the particular study area. The data has been obtained both from official governmental reports as well as from NGO´s such as WWF Russia and estimates from other research projects.

From a scientific point of view, this should be described as a qualitative research approach. A qualitative research is mainly focused upon non-numerical data, hence meaning that with this type of research approach the focus is to describe and understand a certain phenomenon rather than to try and prove different hypothesis or measure complex relations with statistical tools.

When having a qualitative research approach, there is a number of different scientific ways to get hold of the data that should be examined. This is what we generally refer to as the research method. The most common type of research methods while conducting qualitative research are interviews and literature studies

One of the problems with qualitative research is that in general, the reliability is weaker than with a quantitative research. The best way to avoid that is to be very specific about how the study has been conducted. When it comes to the validity, I have been using multiple sources in order to

make sure that the data is reasonably true. This has also been supplying me with additional information.

The main advantage for using a qualitative research approach is that it is the only approach that can create an understanding of the problem as a whole.

2.2 Literature studies

Most of the literature used in this thesis was obtained by different searches via the library at The Swedish University of Agricultural Sciences (SLU) and its search catalogue LUCAS. I also conducted searches via Web of Knowledge and SamSok. In an attempt to broaden the horizon even more, I used different search-engines on the internet, like Google. The results from this search gave me a couple of articles, which also has been used in this thesis. Most of the literature was found abroad and thus had to be bought or borrowed. I have also been assisted by Dr Andreas Ottitsch, who has helped me a lot regarding this thesis. He is an expert on the area of illegal logging and is also the task manager at IUFRO regarding this topic. Dr Ottitsch has provided me with relevant data and a very useful insight in to the world of illegal logging. He has also been most helpful when answering questions regarding the data at hand.

As for regarding the comparisons between Russia and the other countries mentioned in this thesis (The Philippines, Indonesia and Vietnam), they have been selected due to the fact that these countries have had experiences in implementing export taxes as a trade restriction, hence providing valuable and relevant experiences which could be applied on the Russian federation.

3. Results

3.1 Understanding of illegal activities in the forest sector and their root causes

Illegal activities in the forest sector occurs when wood and timber is harvested, transported, processed, bought or sold in violation with the national laws. While illegal logging and trade of illegal wood products has gained global knowledge and attention there are many other illegal activities that may occur in the forest sector (Figure 1).

Illegal logging

- Logging in breach of contractual obligations
- Illegally obtaining concessions through corruption
- Logging nationally protected species without explicit permission
- Logging outside concession boundaries
- Logging in prohibited or protected areas such as forest reserves and river banks
- Removing under/over-sized trees
- Laundering illegal timber through a concession
- Extracting more timber than authorized

Timber smuggling

- Export/import of logs, lumber or other timber products in defiance of trade restrictions
- Unauthorized or unreported movement across state boundaries
- Movement of illegally logged timber from forest to market
- Export/import of tree species banned under national/international law such as CITES (Convention on International Trade in Endangered Species of Fauna and Flora) without appropriate permits

Illegal timber processing

- Processing timber without documentation verifying is legal origin
- Operating without a processing license
- Operating without other necessary licenses and approvals (e.g. effluent disposal permits)
- Failing to meet licence provisions, including pollution control standards

Misclassification

- Under-grading and misreporting harvest volumes
- Under-valuing exports
- Misclassification of species to avoid trade restrictions or higher taxes

Transfer pricing

- Profit reductions and reporting and manipulating revenues flows for services to avoid revenue and thus taxation

Grand corruption

Characterised by long-term, strategic alliances with high level of mutual trust. For example, companies providing support to political parties, senior politicians or other major components of the state's apparatus to:

- Obtain or extend a concession or processing licenses
- Avoid prosecution or administrative intervention for non-compliance with national legislation
- Negotiate favourable terms of investments

Petty corruption

Shorter-term, more tactical relationships. Often develops, in the long run to grand corruption. Most obvious as graft given to or solicited by junior officials to:

- Falsify harvest declarations
- Avoid reporting restrictions
- Overlook petty non-compliance with national legislation
- Ignore logging or laundering of logs from outside proscribed boundaries

Figure 1 *Illegal activities associated with the timber trade*
Source: FAO 2005

Illegal forest activities are today considered as one of the biggest threats to sustainable forestry and national economies worldwide (Ottitsch et al, 2005). It is often associated with deforestation, which in turn has led to significant losses of biodiversity. Deforestation and illegal logging also have a significant – and often negative – impact on the livelihoods and welfare of the forest-dwelling communities (Tacconi et al, 2007). The illegal activities within the forest sector thus have far reaching economic, social and environmental impacts including government revenue loss, ecological degradation and greater income inequality (FAO, 2005).

As described in Figure 1, the term illegal logging is commonly used to refer to a range of illegal activities related to forest ecosystems, forest industries, and timber and non-timber forest products (Tacconi et al, 2007). However, the international debate has focused mainly on the illegal harvest of timber. This is due to two main reasons: First, environmental nongovernment organizations (NGOs) are concerned about the ecological impacts of illegal logging. They regard

illegal harvested timber and illegal deforestation as having significant negative environmental impacts. Second, statistics on harvest volumes are more widely available than other information on forest management. Hence it is easier to estimate illegal harvest volumes than assessing other types of illegal activities. One must also, however, be aware of that even while the harvest data is available they too are not always complete. Not even in the so called well developed countries and in the well organized forest sectors. Anyway, the focus on the harvest data has also lead to the use of the term illegal logging to denote to the whole problem of the existence of illegal forest activities (Taconni et al, 2007). Nevertheless, it's important to remember that there are several different forms of illegal forest activities. In this thesis, however, the term illegal logging will be used to describe illegal harvest of logs in the northwestern Russia.

In order to understand the illegal logging, and to be able to design effective counter measures regarding this topic, one must first identify the causes to why this phenomenon occurs. Lindsay, Mekouar & Christy (2002) has identified five general factors (chapters 3.1.1 – 3.1.5) contributing to the occurrence of illegal activities in the forest sector.

3.1.1 Flawed policy and legal framework

This is an institutional problem more than anything else. A state that does not have the sufficient ability to deal with this problem lacks the governmental strength and capacity to develop legislation, to enforce the law and to guarantee fairness in the exercise of power. Laws may be technically unrealistic if they proscribe activities, procedures and institutional arrangements which are not matched by the states financial and human resources in government and civil society. Laws may also be perceived as unfair or might be considered as socially unacceptable. In many cases, laws are inconsistent or in direct conflict with other bodies of legislation and the consequences of implementing these laws are badly (if at all) assessed. When combining this with a lack of public participation in law design and forest-related decision-making processes, this can lead to long-term adverse social, economic and environmental impacts, often leading to a significant increase in the levels of illegal forest operations.

Contreras-Hermosilla (2002) has pointed out some key factors that are an expression of the lack of government capacity, and thus contributes to illegal logging. First, forestry operations take part in large and remote areas where there is no public presence or monitoring agencies. This

means that the government lacks the capacity to overview those areas. Second, the government forest agencies lacks the capacity to carry out accurate forest inventories, which in turn leads to a weak legal incitement to impose realistic forest management practices.

3.1.2 Poor implementation capacity of the public forest administration and enforcement agencies

Many forest laws are not utilized or under-utilized due to lack of political will, weak institutional capacity and corruption. Overall this leads to the fact that many governments lack the necessary human, financial and managerial capacity to effectively ensure forest law compliance. In turn, this leads to unclear forestry regulatory frameworks that often changes due to the lack of government capacity. As a result these laws are often open for individual interpretation and they are also easier to bend.

3.1.3 Insufficient data and information about illegal acts

In order to successfully develop and implement strategies and law enforcement to reduce the illegal activities in the forest sector, one must first have solid information about the forest resource and its utilization. This is something that many governments and general public in many countries lack (FAO, 2005). Forest inventories and forest management plans are non-existing or inadequate. Another factor that contributes to the lack of relevant forest data is that many of the forests are localized in remote areas, hence making it difficult to monitor the forests. The presence of this insufficient data forces governments to make decisions about annual cutting limits, without having real knowledge about the forest resource and its sustainable yield. This poor knowledge about the condition of the forest resource and its changes over time makes it difficult to identify and monitor the occurrence and evolution of illegal logging. Hence it's clear that in order to prevent illegal logging, one must first have a solid and adequate information base about the forest resource and the sustainable yield.

3.1.4 Corruption and lack of transparency

Many illegal activities in the forest sector are strongly correlated with the presence of corruption. A number of sources have noted this relationship (Callister 1999; Newell et al, 2000; Lawson, 2001). According to Contreras-Hermosilla (2002) there are several possible factors that contribute to the widespread corruption in the forest sector. First, governments adopt many

regulations to achieve a better use of forest sector. This proliferation of regulations generates the opportunity to involve corruption. Second, forests are remote from decision-making centers which, in turn makes field officers vulnerable to corruption, due to their discretionary power over the forest resource at hand. Third, government officials in both developed and under developed countries have low salaries, while controlling high-value products. Thus, there is a strong incitement for these government officials to be involved in corruption.

As noted from above, corruption is a complex social, political and economic phenomenon. According to Lindsay, Mekouar & Christy (2002), the corruption in the forest sector normally involves:

- Payment of bribes to government officials and politicians, in order to receive preferential treatment (for instance award of a timber concession)

- Financial extortion by officials from operators to artificially legalize illegal operations (for instance harvesting licenses, forest land use conventions and transportation permits)

- Official decisions that favor certain groups, where there is a mutual understanding that the group who enjoys the favor will eventually repay the favor later on.

- Timber companies who on a regular basis evade national regulations with relative impunity, thanks to the protection of powerful individuals. In some cases, this is an intrinsic part of the attempt of these powerful individuals to sustain their power.

The lack of transparency in the public forest administration and other agencies is also a strong factor that contributes to the presence of corruption. In figure 2, I will try to describe the relationship between corruption and suspected illegal logging activities from a wide spread of nations and regions. However, corruption is not a forest sector problem alone but it is usually a wider social and political phenomenon. Hence it is not realistic to assume that the forest sector alone can solve this problem.

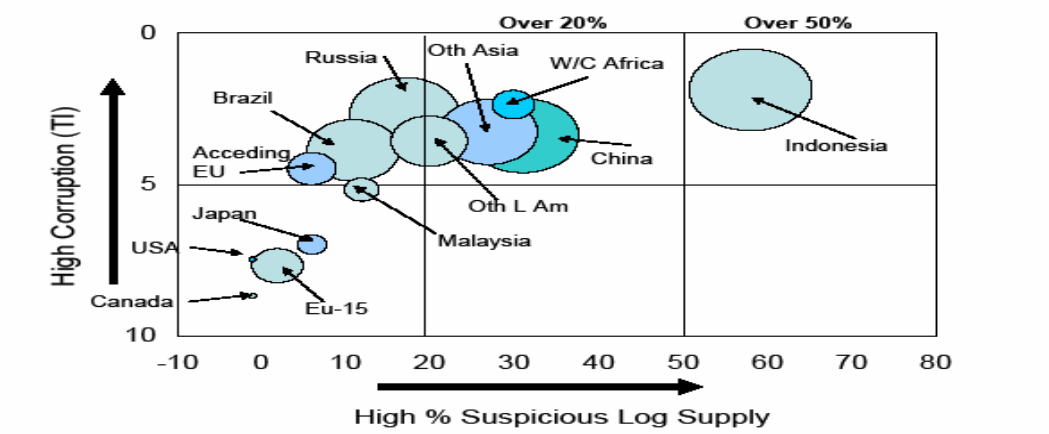

Figure 2 *Relationship between corruption and suspected illegal logging. Source:* Seneca Creek Associates and Wood Resources International (2004). *Note:* Size of the balloon represents the volume of suspected illegally logged timber (m3).

As seen from the figure 2, the corruption index should be interpreted as where 10 is a level of virtually no corruption and 0 is a level of very high corruption (www.transparency.org). As noticed from the figure, there is a clear relationship between low corruption and the levels of suspected illegal logging. For instance, in Canada where you have virtually no corruption at all there is a very low degree of suspected illegal logging. When comparing Canada to countries like the Russian Federation and Indonesia, where the corruption levels are very high, we can clearly see that in these countries the suspicious levels of illegally harvested timber are much higher. This can only be explained by the fact that the corruption in these two nations is apparent in much higher grade than in other countries, due to the facts that was previously explained in this section.

3.1.5 High demand for timber and the role of business

In some parts of the world, the increased demand for timber often contributes to overcapacity within the forest industry. This in turn can provide an incitement for increased levels of illegal operations. Thus it's fair to say that the role of timber trade in supporting illegal logging looms large. There have been many reports pointing out how illegally harvested timber has been exported to countries in America, Asia and Europe (Greenpeace 2000; Brack 2005). This leads to the conclusions that not only forest companies harvest illegally but they are fundamentally supported by non-environmentally sensitive markets that demand timber products without considering the origin of the timber or if the timber was logged according to regulatory incitements in the exporting country. Hence we can say that the demand for timber and the

possibility to make short-term profits from exporting the harvested timber is indeed a birth-place for illegal logging.

3.2 Assessment of wood of unknown origin (illegally harvested) from the Northwestern parts of Russia

The North-West of Russia is a region, where most of the Russian forest products export to Europe is originated. The region itself consists of nine different regions, or oblasts: Arkhangelsk, St Petersburg, Leningrad, Murmansk, Novgorod, Pskov, Vologda and Republics of Karelia and Komi. (Figure 3)

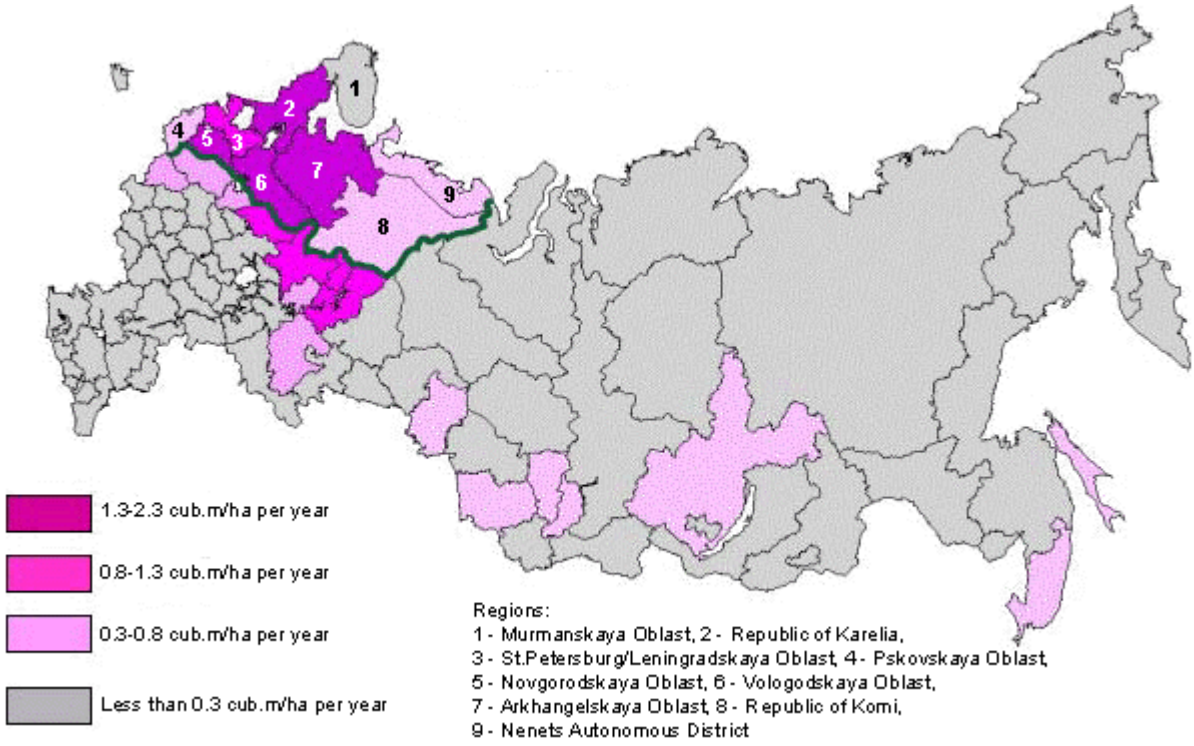

Figure 3 *the regions of Northwestern Russia and the intensity of wood harvesting*

Source: Lopina et al 2003

There are several publications and papers that have indicated illegal logging as a significant problem in this region. Different assessments exist on the scale of illegal logging- from less than 5 % to 35% (Ottitsch et al, 2005). Illegal logging in Russia is defined as given by *resolution no 14 of the Russian Federation Supreme Court of November 5, 1998* where it's stated that "Illegal forest felling operations (cutting) is cutting of trees, bushes and lianas without a felling ticket, order or cutting with a felling ticket, order issued with abuse of the existing cutting-practice

rules, as well as cutting carried out at the wrong site or beyond a site's borders, exceeding the set quantities, cutting of wrong species or of trees, bushes and lianas that are not subject to felling ticket order, before and after logging period fixed in felling ticket, order, logging of trees, bushes and lianas that are forbidden to log according to Resolution No.155 of the Government of the Russian Federation, June 1, 1998, or after the announcement of a decision about temporary prohibition, restriction or complete discontinuance of forest user activities or the right to use forest area". Note that this definition is related to the application of article 260 of the criminal code of the Russian Federation (Ottitsch et al, 2005).

When trying to assess the amount of wood with unknown origin from this region, there are three main information channels: The Ministry of Natural resources of the Russian Federation (the official statistics), Greenpeace Russia and WWF Russia. When analyzing this material, there are a couple of factors one must understand: Firstly, the official statistics only show crime levels that were officially reported; hence the official statistics does not reflect the problem in full. However, these statistics is useful when it comes to analyze illegal logging trends – for instance changes in volumes of illegally harvested timber and number of registered breaches as well. Secondly, the volumes that NGO´s reports are usually based upon indirect methods to estimate the amount of illegally logged timber. A popular method of estimating these volumes is to compare the production and consumption statistics, in order to identify and illustrate the magnitude of illegal logging.

3.2.1 Official estimates of quantities of illegally harvested timber in the North-West Russia

The Ministry of Natural Resources estimates illegal logging through the share of harvest activities for which trespasses against harvest regulations has been reported and registered. This would thus mean, as an indicator of illegal logging, that there would be a 100% detection rate for these illegal forest activities. In addition this figure is sensitive to the level of administrative resources available to monitor the harvesting activities and the felling areas, and to their capacity to detect and register offences against regulatory frameworks. While considering the fact that administrative resource is an important factor, some sources (Kakizawa, 2001) claims that these illegal activities cannot be carried out without some sort of co-operation with the officials. Hence we have the problem of corruption. In these regions it is also worth noticing that some forest management districts clearly admit that that local forest services "are some of the worst violators

against forestry regulations and rules" but that these discipline problems of officials are not officially confirmed by the proper authorities (Kakizawa, 2001).

According to the official statistics, illegal harvesting constitutes for around 90 % of all forest-related abuses (Ministry of Natural Resources of the Russian Federation, 2003). Approximately 20% of all forest-related abuses are turned over for investigation, 16% are being taken to court and a mere 3% are actually being found guilty (WWF, 2002). Here it's worth noticing that in order to take a case to court, a persons guilt should be proved according to the law. In the case of forestry regulations violations a protocol should be followed according to the Regulations of Goskomleskhoz (the forest management district of Goskom) of USSR issued in 1986. If this protocol is not followed in proper order, it looses its legal power in total. This is a reason why many cases are turned down.

Illegally harvested timber come from different regions in the North-Western parts of Russia (figure 4).

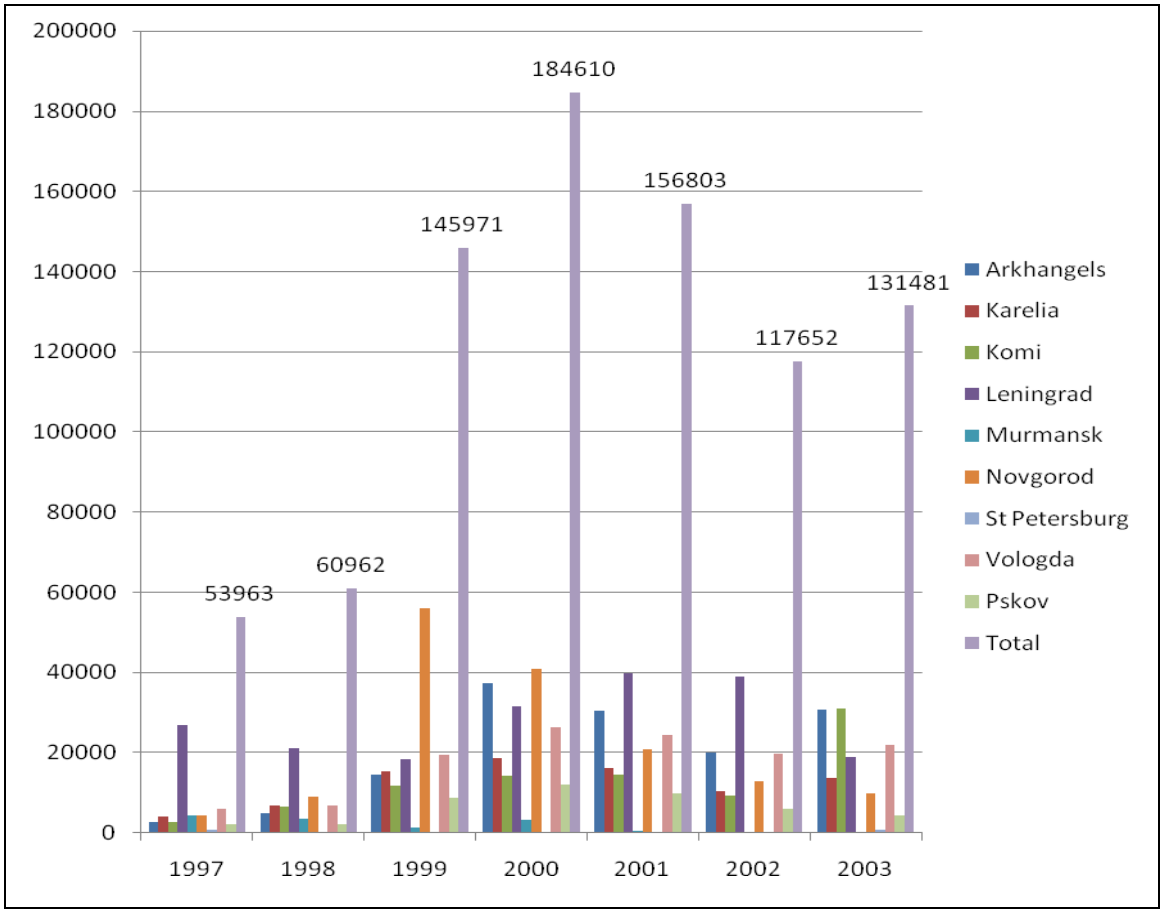

Figure 4. *Total amount of illegally harvested timber from the North-Western regions of Russia, ranging from 1997-2003 (quantities in m³).Source:* The Ministry of Natural Resources of the Russian Federation (2003).

According to the official data, illegally harvested timber ranges from approximately 54 000 m³ up to 184 000 m³ from this particular region. It's also worth noticing that according to official statement illegal logging was not an issue during the Soviet times. Apparently the problem has appeared just after the collapse of the Soviet Union.

3.2.2 Estimates of quantities of illegally harvested timber in the North-West Russia as made by WWF Russia

WWF Russia is probably the main resource when it comes to information about illegal logging in North-West Russia. WWF estimates that there is a difference of 11, 2 million m³ between total legal industrial round-wood harvested and imported and consumed and exported in NW Russia (Table 1). This estimation was based upon the wood harvested in the region with the total wood consumed and exported from this region- If all the wood had been legally harvested, the volume of harvested wood would have been equal to the volume of consumed wood in the region and exported wood plus wood delivered from other regions to the country. The data was obtained by the State Statistics Committee (ROSSTAT). According to this data, the situation in NW Russia for the year 2001 was as follows from Figure 4.

Table 1. *Production and consumption of round-wood in NW Russia*

Source: Lopina et al 2003

	million m3
Roundwood used for pulp production	14
Roundwood used for sawnwood production	13,9
Roundwood used for plywood production	1,6
Roundwood used for construction purposes	0,7
Roundwood export	13
Total consumption and export, roundwood	**43,2**
Total production of industrial roundwood	31
Delivery from other regions of Russia	1
Total production of industrial roundwood	**32**
Difference	**11,2**

According to WWF Russia, this difference between legal industrial round-wood and the total consumption might be illegally harvested (wood from unknown origin). Hence the possible

volume of illegally harvested timber is approximately 11 million m³. This figure accounts for the fact that almost 36% of the harvested timber could actually be illegally harvested.

One must remember that these numbers are based upon an indirect method, called production-consumption comparisons and will actually only show the differences between the statistics, thus only showing the amount of wood from unknown origin. This method does not contain information about the cause of these discrepancies.

3.2.3 Estimates of quantities of illegally harvested timber in the North-West Russia as made by Greenpeace Russia

Greenpeace Russia estimates the scale of illegal logging in Russia to be approximately 20 % (Morozov 2000). (Greenpeace does not specify the scale of illegal logging activities within different regions). Unfortunately, most of the papers published by Greenpeace concern illegal logging in the Russian Far east, and there is not much information about illegal logging in the European Russia. However, it is useful to point out that these 20 % could be considered as an indicator of the amount of illegally logged wood in Russia, and thus could be applied for the European Part of Russia as well according to Greenpeace.

3.2.4 Analysis about the volumes of illegally harvested timber from North-West Russia

After reviewing the different assessments of the amount of illegally logged wood and timber it is possible to draw some conclusions. First, if we look at the total official harvesting volumes from this region (see table 2, figure 5) and we compare that to the official volumes of illegal harvested timber there are some notable facts.

Table 2. *Total harvesting volumes from all types of felling in the North-West region of Russia (quantities in 1000 m³)*

Source: The Ministry of Natural Resources of Russia 2003

Harvesting volumes;	Karelia	Komi	Arkhangelsk	Volograd	Leningrad	Murmansk	Novgorod	Pskov	S:t Petersburg	
Final felling	6143	5551	10242	8352	5239	130	2847	1141		0
Intermediate felling	443	242	961	450	1441	41	238	187		0
Other felling	284	394	189	246	719	8	253	202		0
Total	6870	6187	11392	9048	7399	179	3338	1530		0

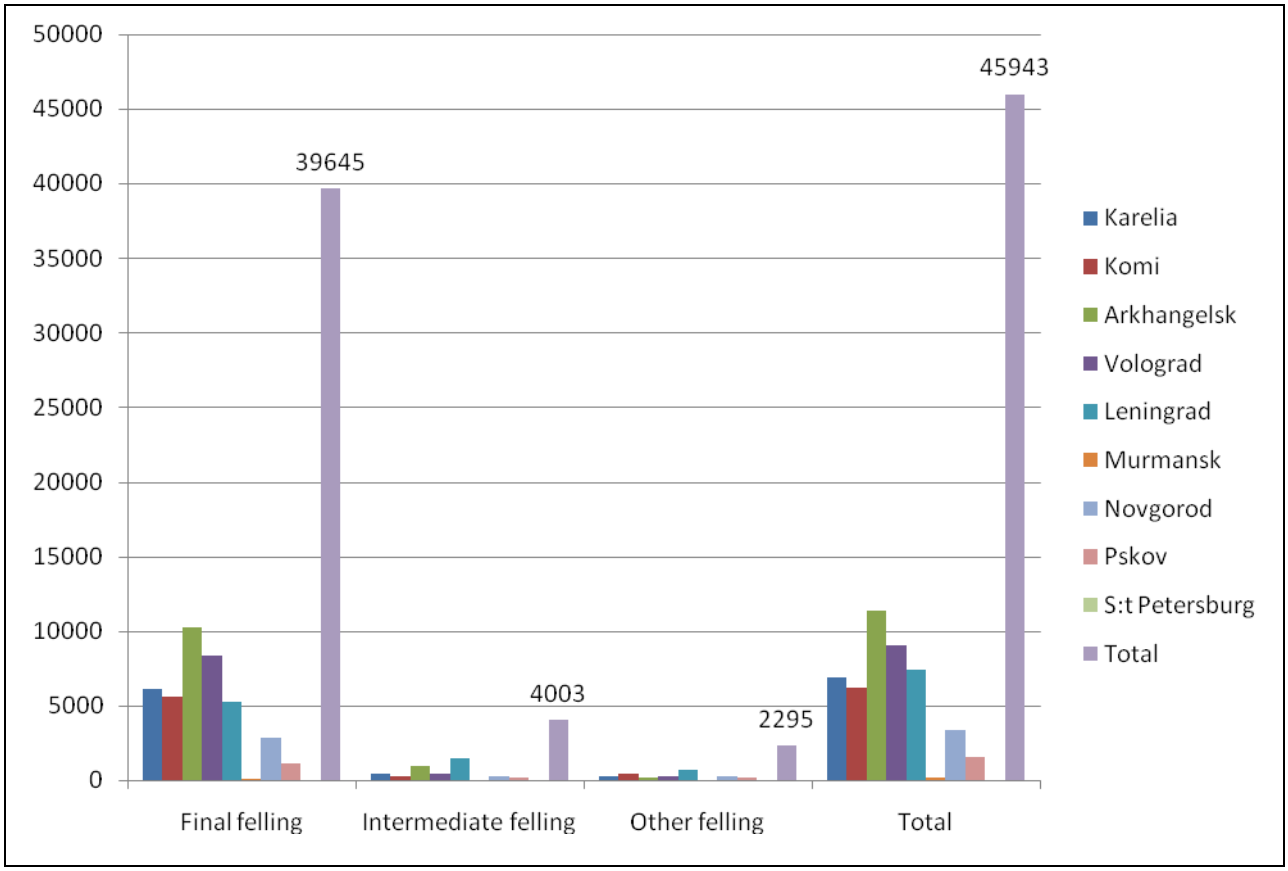

Figure 5. *Total harvesting volumes from all types of felling in the North-West region of Russia (quantities in 1000 m³).*Source: The Ministry of Natural Resources of Russia 2003

According to official data in 2001, the North-West region in total, harvested approximately 45.943.000 m³. While comparing this data with the official data of illegally harvested timber for the year 2003 (see figure 3), the volume of illegally logged timber for this region was approximately 131.481 m³. Hence a simple calculation where we simply divide these numbers gives us the following result (the percentage of illegal logging in North West Russia according to official data):

156.803/45.943.000 = 0, 35%

Thus, according to official data, the total amount of illegally logged timber in the North West region is a mere 0.35 % of totally harvested volumes.

When looking at the data presented by WWF Russia (see chapter 4.2.2), the conclusion made in their rapport was that approximately 11.200.000 m³ was thought to be "possibly obtained by illegal logging". When using the same calculation as we did before we arrive at these numbers:

11.200.000/45.943.000 = 24.4%

According to WWF Russia, 24.4 % of the total harvested volume in North West Russia is possibly illegally logged. This is when we compared the difference between legal industrial round-wood and its consumption (11, 2 M m^3) and the official harvested volume. However, according to WWF Russia the total production in 2001 for this region was only 31 M m^3. Thus we have a difference between the official data and the data obtained by WWF. While looking in to these numbers, we get an even bigger percentage of wood that might have been illegally logged:

11.200.000/31.000.000 = 36%

Hence, according to WWF Russia the amount of illegally logged wood is either approximately 24 % or even as high as 36 %.

While looking at the data from WWF Russia and Greenpeace, and comparing their data with the official data (see table 3) we can clearly see that for the year 2001 there is a significant difference between the estimations made by the different organizations.

Table 3. *Comparison on main information sources on illegal logging in North-West Russia*

Source	Year	Percentage	Volume, m3
Official data	2001	0,35	158.803
WWF Russia	2001	24-36	11.200.000
Greenpeace Russia	2001	20	Not indicated

As can be seen, the Ministry of Natural Resources clearly gives much lower estimates than either one of the NGO´s. This difference can only be explained by the different approaches when estimating these numbers. The governmental figures are based upon actually registered trespasses, while WWF uses an approach based on comparison of timber production and consumption. The figures estimated by Greenpeace are based upon estimations made by local experts, for which unfortunately there is no methodological approach described.

Available estimates like these indicate another factor to be considered: There is no consensus on the definition of illegal logging. The estimates given by different organizations differ because various estimation methods are applied. The estimates given by state authorities (based on their statistics) usually refer to trespasses against forest law in general and harvesting regulations in specific. Normally they do not cover violations of transports, tax laws or processing. However, the estimates made by the NGO´s often gives a much higher estimation, due to the fact that they

include the very same thing (like violations of transport and tax laws) that state authorities do not cover. Hence the NGO´s estimations often include violations against a wider range of legislation, then that of the state authorities (Ottitsch et al).

3.2.5 Conclusions about the volumes of illegally harvested wood in Russia

As noted from chapter 4.2.4, there is a big uncertainty about the volumes of illegally harvested wood in this particular region. The NGO´s estimates the amount of illegally harvested timber to be approximately 20-25 % (in some cases even higher) while the official data only counts for 0, 35 % illegally harvested wood. Which party is telling the truth?

In the year 2006, the Chief of the Federal Forestry Agency of the Russian Federation (Mr Valery Roschupkin) openly stated that in the year 2005 the official statistics showed documented illegal logging of approximately 0,89 million cubic metre. This, alongside with remote-sensor monitoring which actually identified 1.16 million cubic meters in addition to the 0.89 million which was officially reported gives us approximately 2 million cubic metres (note that this should account for the entire Russian Federation) of wood from documented illegal logging operations. He also notes that the indirect estimates given by different NGO´s estimates the total amount of illegally harvested timber to be approximately 10 % of total annual wood harvest in Russia. Hence he acknowledges that the actual level of illegal logging operations is substantially higher than the officially documented level (Roshchupkin, 2006). In 2006, Mr Roschupkin summarized the results of the forest monitoring system, which was originally initiated in 2004 for the purpose of detecting illegal operations in Russia. This satellite based system for monitoring illegal operations had in the year 2006 covered approximately 100 million ha of forest land in Russia (Maslov 2007). These results indicated that the total country-wide volume of illegal logging amounted to approximately 10-15 % of the total volume logged in Russia (Maslov 2007). Since the illegal logging takes place in the near-border region of Russia: The Far East, The Northwest and Siberia, the illegal logging is directly linked to the export of illegally harvested timber to international markets and hence these numbers should be applied to the specific region in this thesis, the Northwest of Russia (Roshchupkin, 2007) Thus we can establish that the official authorities in Russia today estimates the total amount of illegally harvested wood in this region to be approximately 10-15 % of the total volumes logged.

While looking to other estimates, made by several others NGO´s and organizations (Ottitsch et al 2005, Lopina 2003, Contreras-Hermosilla 2002, Laestadius 2005 and Tacconi et al 2003) they

find these volumes to be fairly correct, although there might be some suspicion that the actual amount are even higher. However, all the above mentioned sources have acknowledged that the range from 10 to 15 % is a realistic result. Thus my conclusion is that approximately 15-20% of the harvested wood in the Northwest Region of Russia is illegally harvested. This account for approximately 5-7 million cubic metres, if we use the official volumes from the year 2001 (see figure 5). This number is also supported by Ottitsch et al (2005), who claim that approximately 4.8 – 7.1 million m³ annually is wood from unknown origin in this region, and thus could be illegally harvested. However, it is important to point out that we cannot automatically assume that all of the wood from unknown origin is illegally harvested.

3.3 The trade and export with illegally logged wood from the North-West Russia

Most of the illegal logging in Russia takes place in the near-border regions of Russia: Thus the Far-East, Siberia and the Northwestern parts are areas particularly exposed to illegal forest operations. Hence, the illegal logging is directly linked to export of timber to international timber markets. Therefore it is important to take a look at the total production of industrial round-wood in Russia and then compare it with the total export of round-wood from Russia in order to examine how much of the round-wood is exported. Then we will examine the total amount of export from the North-western regions, and thus conclude how much of the exported volumes from this region are illegally harvested.

According to FAO, the total export of industrial round-wood from Russia is as follows from table 4 and figure 6.

Table 4 *Total export of industrial round-wood from the Russian Federation during the year 2002-2006 (all volumes in million m³ without bark).* Note that the letter C in the table below stands for coniferous wood and thus NC stands for non-coniferous wood and tropica means wood with tropical origin
Source: FAO 2008

Year	**2006**	**2005**	**2004**	**2003**	**2002**
Exports Quantity Ind Rwd (C)	36,3	34,7	31,2	28,1	28,4
Exports Quantity Ind Rwd (NC) Other	14,5	13,3	10,4	9,5	8,4
Exports Quantity Ind Rwd (NC) Tropica	0,0	0,0	0,0	0,0	0,0
Total sum of exported Ind. Rwd	50,8	48,0	41,6	37,6	36,8

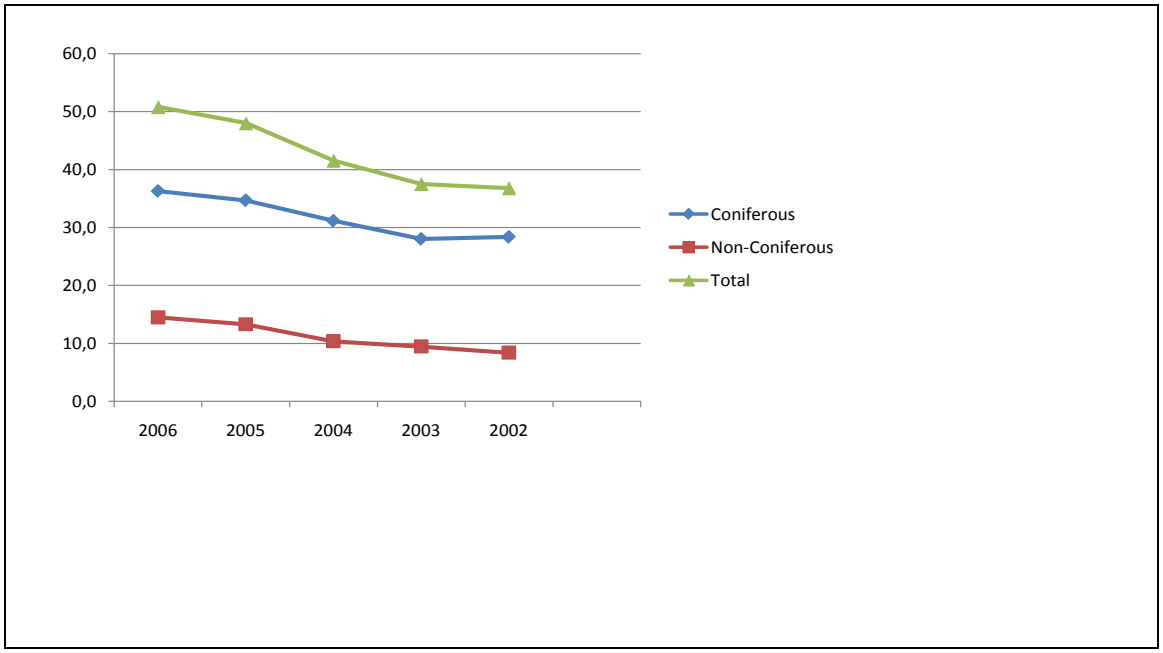

Figure 6 *Total export of industrial round-wood from the Russian Federation during the year 2002-2006 (all volumes in million m³ without bark.*
Source: FAO 2008

One particular notable fact is that the export from the Russian Federation has increased with more than 20 % (or approximately 14 million m³) between the years 2002 and 2006.

While looking at the total production of industrial round wood (table 5 and figure 7), and then use some simple calculations we are able to estimate the percentage of total production that goes to export from Russia.

Table 5 *Total production of industrial round wood in the Russian Federation during the year 2002-2006 (all volumes in million m³ without bark).*Source: FAO 2008

Year	**2006**	**2005**	**2004**	**2003**	**2002**
Prod. Quantity Ind Rwd (C)	12,1	11,6	12,4	12,8	6,1
Prod. Quantity Ind Rwd (NC)	2,7	2,5	2,3	8,4	4,0
Prod. Quantity pulpwood(C)	37,5	35,9	34,0	37,8	31,0
Prod. Quantity pulpwood (NC)	18,5	17,6	14,0	13,1	20,4
Prod. Quantity saw/veneer (C)	58,2	55,5	54,6	41,3	44,1
Prod. Quantity saw/veneer (NC)	15,6	14,9	13,3	13,2	13,0
Total sum of produced Ind. Roundwood	144,6	138,0	130,6	126,6	118,6

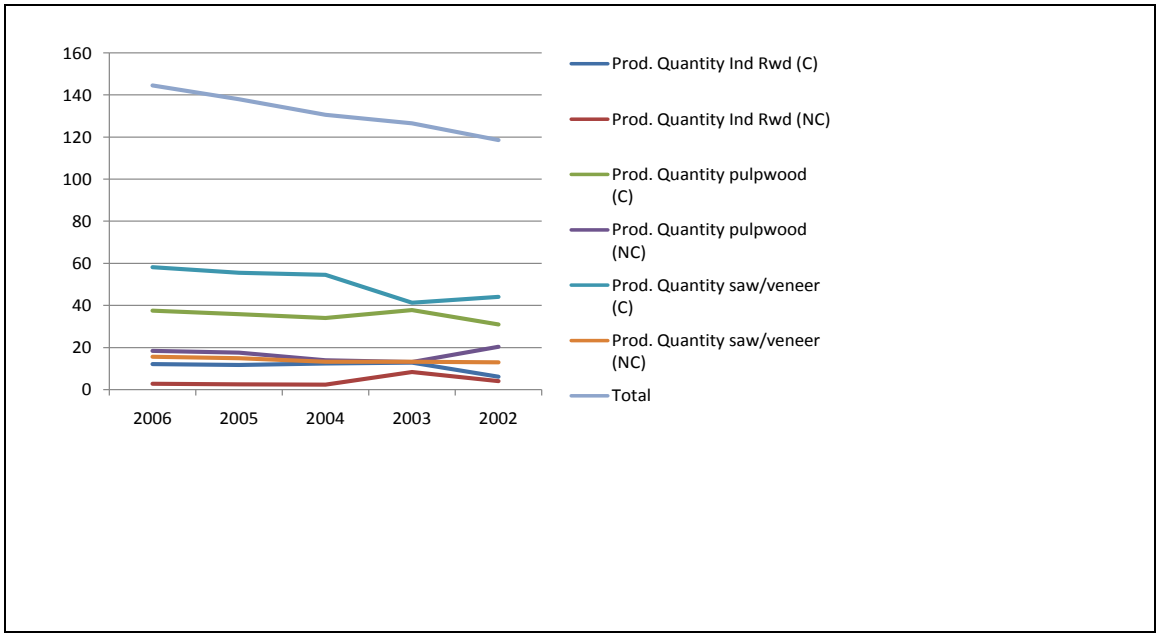

Figure 7 *Total production of industrial round-wood in the Russian Federation during the year 2002-2006 (all volumes in million m³ without bark)*
Source: FAO 2008

One interesting fact here is that the production has increased with approximately 26 million m³ between the years 2002-2006.

With these numbers we can easily estimate the total export in percentage of industrial round-wood from Russia between the years 2002-2006.

Table 6 *Percentage of the produced Industrial round-wood that is exported from Russia between the years 2002-2006 (all volumes in million m³ without bark)*
Source: FAO 2008

Tot.prod of Ind. Rwd	144,6	138,0	130,6	126,6	118,6
Tot. Exp. of Ind.rwd	50,8	48,0	41,6	37,5	36,8
Export (%)	35,1%	34,8%	31,9%	29,6%	31,0%

This show that the percentage of industrial round wood which is exported from Russia is fairly stable (Table 6), and does not differ that much. Hence we can draw the conclusion that approximately 30-35% of all produced round wood in Russia is exported, according to the FAO (FAO 2008). But what about the Northwest region? How much is exported from this particular region? In order to find out about that, we have to take a closer look at some studies that has been made.

Gerasimov and Karjalainen (2006) claim that during the year 2002 the total production of Industrial Round wood in the Northwest was approximately 45 million m³. They have arrived at this number by using a calculation model which can be expressed as:

$$RWP = \sum_{k=1}^{2} \sum_{j=1}^{8} \sum_{i=1}^{4} (FC_{ijk} + IC_{ijk} + OC_{ijk})$$

Where RWP = Round Wood Production in Northwest Russia, solid m³ under bark per year
FC= Final cut, solid m3 under bark per year
IC = Intermediate cut, solid m³ under bark per year
OC= other cut, solid m³ under bark per year
i = species
j = region (i.e. Archangel, Komi, Karelia, Leningrad, Novgorod, Vologda, Pskov, Murmansk)
k = responsible forest manager (Ministry for Natural Resources)

Ottitsch et al (2006) on the other hand estimates the production of industrial round-wood in the Northwest for the same year to be approximately 41.5 million m³. They have arrived at this number by using a model where the industrial round-wood production in estimated on the basis of the region specific share of industrial round-wood from total round-wood production. This is based on data obtained from the State Statistics Committee (ROSSTAT) as well at data from the Ministry for Natural Resources.

WWF Russia (Lopina et al 2003) claims that the total industrial round-wood production in 2001 was 32 million m³, and that differences between the years should only create a small difference in the production. The source of the data to this report is ROSSTAT. While comparing these numbers obtained from different sources its safe to say that we have a rather big difference in production volumes, especially between Gerasimov and Karjalainen and Lopina et al. Now how can this be? Well, the most significant factor contributing to this difference is explained by the fact that while the Ministry of Natural Resources looks in to all harvest volumes, the ROSSTAT only records data from the large and medium sized enterprises which leaves a considerable amount of harvested wood unrecorded. As a comparison, we can use the data from The Ministry of Natural Resources (2002) and compare it with the data from ROSSTAT (2002) regarding the harvest volumes. According to ROSSTAT, the harvested volume in Russia (2002) was 98.1

million m3 but according to The Ministry of Natural Resources the harvested volume was approximately 164.9 million m³ (Ottitsch et al 2005).

The conclusions here must then be that the ROSSTAT coverage of harvested volumes is insufficient and hence we will use the MNR data instead (in this case the numbers which has been produced by Gerasimov and Karjalainen as well as Ottitsch et al). Thus the production of industrial round-wood in the Northwest region is approximately 45 million m³ for the year 2002.

Gerasimov and Karjalainen (2006) has been able to identify the amount of industrial round wood from each of the regions in the Northwest which has been exported and thus the amount that has been utilized within the region (Table 7, Figure 8).

Table 7 *the distribution of industrial round-wood use in Northwest Russia in percentage*
Source: Gerasimov & Karjalainen 2006

	Archangel	Komi	Karelia	Leningrad	Novgorod	Vologda	Pskov	Murmansk
Export from the region	4,6	19,7	65,4	67,9	62,1	62	79	82
Utilisation in the region	95,4	80,3	34,6	32,1	37,9	38	21	18

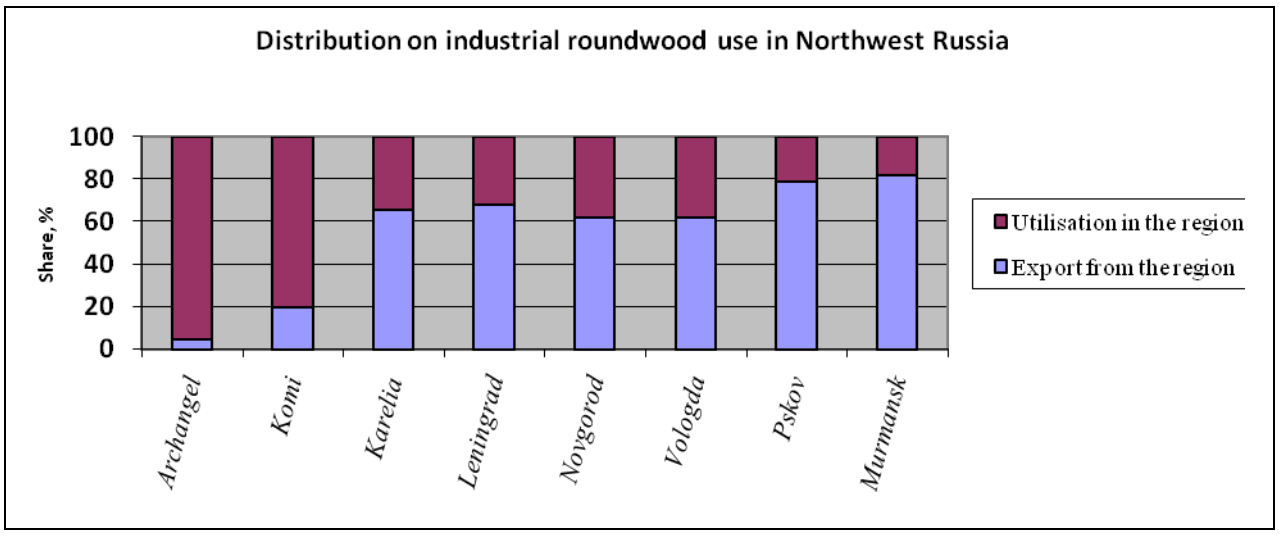

Figure 8 *the distribution of industrial round-wood use in Northwest Russia.* Source: Gerasimov & Karjalainen 2006. In the table the region of St Petersburg has vanished, but this is due to the fact that Leningrad and St Petersburg is geographically considered the same region, hence the amount from Leningrad is also valid for St Petersburg (hence the amount of 0 m³ for St Petersburg in Table 2 and Figure 5)

As seen from Table 7, there are some regions in particular that serve as a base for the export from this area of Russia. The export oriented regions in particular are Leningrad, Karelia, Pskov and Murmansk.

If we look at the official harvesting data for the year 2001, we can use the estimation made by Gerasimov and Karjalainen (2006) and thus establish the amount of wood actually exported from The North-West.

Table 8 *Estimation of the total export from the different regions of North-West Russia during the year 2001(quantities in 1000 m³)*

	Archangel	Komi	Karelia	Leningrad	Novgorod	Vologda	Pskov	Murmansk
Export from the region	4,6	19,7	65,4	67,9	62,1	62	79	82
Utilisation in the region	95,4	80,3	34,6	32,1	37,9	38	21	18
Total harvest volume	11392	6187	6870	7399	3338	9048	1530	179
Export volume	524,032	1218,839	4492,98	5023,921	2072,898	5609,76	1208,7	146,78
Total Export Volume								**20297,91**

This estimation gives us that approximately 20.3 million m³ is exported from the Northwest (or approximately 44% of total harvest volumes) for the year 2001.

3.3.1 The export of illegally logged wood from the North-West

According to the World Bank (Blaser et al 2005), the illegal log exports from Russia are estimated at about 25 percent of total log exports, but for Russian exports to China, the proportion is probably higher, reaching approximately 40 percent (Blaser et al 2005). According to this number (and from the fact that most of the timber exported from the North-West ends up in Western Europe instead of China) we can assume that 25% of the total log exports is actually made up by illegally logged wood. This is also an assumption which is made by most of the NGO´s, where export share equals national share. Hence in this case we can use a simple calculation to estimate the amount of illegally logged wood being exported from The North-West:

25 % x 20.297.910 m3 = 5.074.478 m³

This gives us an estimation of approximately 5 million m3 is illegally harvested and exported from this particular region every year. While comparing this estimation, with the conclusion made in chapter 3.2.5 about the volume of illegally logged wood in the North-West we can thus make another conclusion: A big percentage of the illegally harvested wood is being exported and thus reaches the international markets.

3.4 The Russian export taxes

In February 2007, The Russian Federation announced that it plans to raise the export taxes on logs over the next two years. In short, the export taxes will be raised according to the following schedule:

- July 1, 2007: 20% increase, but not less than 10 Euro/m³
- April 1, 2008: 25% increase, but not less than 15 Euro/m³
- January. 1, 2009: 80% increase, but not less than 50 Euro/m³

As can be seen from the above, there are some variations regarding the increase in total but in any case this is a dramatically trade restriction that will have a significant effect on the global wood market. This assumption is supported by the following facts:

- Russia is today the world largest exporter of both coniferous and non-coniferous logs. The Russian coniferous wood export stands for approximately 40 % of the world total export. (CIBC, 2007)
- Russia has over 20% of the worlds timber resources (Roschupkin 2006)
- There is a significant possibility for Russia to increase their harvesting volumes over the next couple of years. According to the Federal Russian Forestry Agency, there is a potential incremental increase of 120 million m³ per year or approximately 90 % on the current harvest (CIBC 2007)

The Russian increase of the export taxes must be seen in the context of the fact that over the last 10 years they have increased their export significantly (see chapter 3.3). According to CIBC, the export of logs (or industrial round-wood) has increased about 2.5 times over the last 10 years (CIBC 2007). At the same time, the neighboring countries has made huge profits on Russian unprocessed wood while the Russian Federation have been doing very little to develop their own

wood processing industry. Hence the Russian Federation is very short of processing capacity and as a result their import of wood and paper has been growing every year (Table 9)

Table 9 *Import quantities of wood and paper products to the Russian Federation between the years 2001-2006 (Round-wood in m³ without bark, the others in solid volume)*
Source: FAO 2008

Year	2006	2005	2004	2003	2002	2001
Ind. Roundwood (1)	514000	730000	1004000	852000	220000	200000
Paper & Paperboard (2)	1287000	1065000	883000	776000	638000	495000
Sawnwood products (3)	13000	24000	13000	11000	16000	15000
Wood-based panels (4)	2007200	1126400	983400	982400	601000	567000

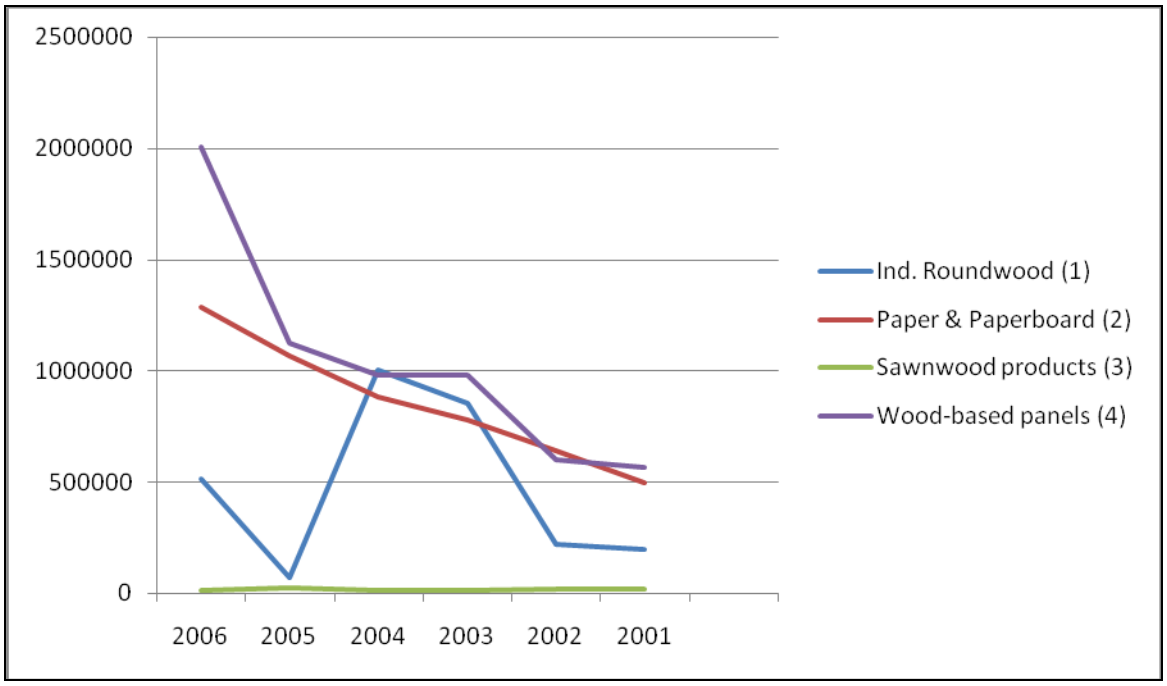

Figure 9 *Import quantities of wood and paper products to the Russian Federation between the years 2001-2006 (Round-wood in m³ without bark, the others in solid volume)*
Source: FAO 2008

This fact gives us the simple conclusion that Russia, who has the biggest forest resources in the world has been depending on import of forest products. This is a paradox, but nevertheless a fact. This is something the Russian Federation wishes to change, hence the export taxes. Thus we can conclude that the intent of the export taxes is that The Russian Federation wants to stimulate the domestic processing of timber as well as stimulate greater investments within the Country. This conclusion is also supported by a statement made by President Putin on April 6, 2006.

*"We export this unprocessed wood in huge quantities. Russia's share of the world wood trade is less than three percent in terms of foreign currency earnings, but its 22 percentage for round timber. Our neighboring countries make billions of dollars out of Russia's forest while we are doing little to develop our own wood processing industry. We still have not put in place new customs duty regulations that would encourage the establishment of processing facilities on Russian soil rather than export of unprocessed wood" (*CIBC, 2007)

There are some other possible factors contributing to the dramatic increase in the export taxes. One is that Russia is becoming more aggressive in asserting control over its natural resources (CIBC 2007) and another possible factor is that the desire to reduce the illegal logging is a major motivator for the dramatic increase in export taxes.

3.4.1 The export taxes as a trade restriction

Log export taxes and related export restrictions are often used in producer countries to allow domestic processors access to lower-cost logs and to increase value added activities as well as employment within the producing country. Undoubtfully, the export taxes will have a severe effect on the trade with the Russian timber. Given the sheer magnitude of the export tax increase and Russia's large share of the global log market, there will be significant effects world wide. Fripp (2004) has identified the most common effects on the trade, while implementing log exports ban. She claims that the producing countries often argue that a trade restriction like this enables them to develop the domestic log processing industries, which in turn fosters economic development and lessen their need to over- exploit the natural resources. This is in strong correlation with the Russian Federations statements regarding their export taxes. Fripp (2004) has listed a number of effects that such a trade restriction will have. She claims that:

- In the short term a log export ban is likely to result in an increase in the amount of logs available on the domestic market. This will, in turn, lowering the domestic price which in turn will stimulate the expansion of the domestic processing industry. This will help to increase the timber-derived income of the country and thus providing employment opportunities. However, this is, in effect, providing a subsidy to the processing industry and may also lead to an increase in the rate of log production to meet the growing capacity of the domestic processing operators.

- The lower price undervalues the forest resource, making it difficult for legal log producers (who is assumed to pay all relevant taxes) to be financially sustainable. Hence the trade restriction could act as incitement for illegal logging operators to increase their activity.
- On the international market there will be a decline in the amount of logs available, and as a result there will be an increase in prices (but only if the exporting country is a significant player in the export market. Now, since we have already proven that Russia is a major factor in this type of business, hence this assumption is very much relevant and true for Russia.
- A long-term log export ban or trade restriction could limit the harvest as long as the restriction is not temporary, but the fall in the log harvest will most certainly be less than the amount of banned exports because of the expansion of the domestic processing industry. There is also a possibility that the harvesting volumes of logs will increase, if domestic processing expands beyond the sustainable levels of supply.

In terms of reducing illegal logging and pursuit the concept of sustainable forest management, the effects of export taxes as a trade restriction has been widely debated. It can be argued that efforts to control the international trade are counterproductive; that much illegal logging stems from land clearance (however not relevant when looking at Russia), or low-level subsistence-oriented activities where the products do not enter the international market, and that therefore mitigation activities should focus on altering the domestic environment which stimulates this illegal behavior. Up to a point, this is true; shutting out illegal timber and wood products from international markets cannot *wholly* end illegal forestry practices, corruption in the allocation of concessions, illegal land clearance and so on. But as argued, this is only true up to a point. It is clear that many enterprises, in developed and developing countries alike, enjoy substantial profits arising from illegal activities, that producer country governments are being robbed of equally substantial revenues that could be used for the benefit of their populations, and that the rate of destruction of forest resources is being significantly accelerated by illegal behavior. Shutting out the products of such criminal activity from international markets should be seen as a means of mobilizing the resources of consumer country law enforcement agencies against illegal logging, and bringing external pressure to bear on the perpetrators of forest crimes. (Brack et al 2002)

3.5 Experiences from other countries

3.5.1 The Philippines

Historically, the forests in the Philippines have been of big importance to the country's GDP. In 1974, the trade of forest products accounted for approximately 33% of total foreign exchange earnings. The combined contribution of agriculture, forestry and fishing amounted to 30% of total GDP from the 1970´s to the late 1980´s. In addition to making money out of exporting forest products, it was also a major source of employment of approximately 300.000 people. However, as it turned out the farming was of bigger interest for the government due to the simple fact that more than 1 million people was employed in the agricultural sector and in need of open forest lands. This, together with an insufficient forest management policy and utilization lead to another fact: The deforestation rate (which included both legally as well as illegally harvested wood) was one of the highest in the world, landing at approximately 300.000 ha per year (Tumaneng-Diete et al 2003). This deforestation had reduced the forest land area from 56% in the 1930´s to approximately 20% of total land area in the beginning of the 1990´s. As a result, flooding, soil erosion and degradation pegged at 100,000 tons of soil yearly, loss of species diversity and genetic material, loss of human lives and properties and aesthetic and recreational loss were at their worst.

However, in an effort to revitalize the wood industry the country adopted measures during the 1990´s to improve its sustainable forest management. These included bans on log exports from old growth forests and they introduced export taxes on logs and lumber (Tumaneng-Diete et al 2003).

Tumaneng-Diete et al (2003) conducted a study which evaluated the effects on the Philippine´s forest sector of the policies that were implemented during the 1990´s. As for regarding the export taxes on logs and lumber, they were able to draw some significant conclusions:

- The export taxes on logs greatly reduced the economic benefits from the forest, due to the fact that the export taxes served as disincentives to export. Hence the export volume and export earnings decreased.
- On the other hand, the export taxes seemed to have a positive effect on the forest resource. The deforestation rate was reduced, and the nature conservation goal in the Philippines was achieved. Hence the deforestation rate (where we could argue that the illegal logging is playing a role) of wood and logs declined.

To summarize the results from the Philippines, we can say that the export taxes had a negative impact on the export earnings (which would be expected), which also lead to a reduction in value added to the country.

3.5.2 Indonesia

Illegal logging is not a new phenomenon in Indonesia. These activities (in various forms) have occurred for many years. However, since the mid 1990s, illegal logging has appeared to be more widespread across the country, conducted in a more open way, and its magnitude to have increased in a big way. Illegal loggers have also been more eager to sell their logs to foreign buyers, such as China and Malaysia, who are willing to pay more than domestic buyers (EIA, 2002). However, the amount is still most likely smaller than the amount domestically marketed (Obidzinski, 2005).

By the early 2000s, illegal logging was one of the main issues in the Indonesian forestry sector, as the estimated amount reached approximately three times the amount legally harvested, pushing the rate of deforestation to almost double that of the early 1990s. Hence, illegal logging in Indonesia was causing a higher rate of deforestation than otherwise would have been the case and there was a need to slow this rate down (Palmer, 2003). The government reacted to this by imposing a log export ban. The aim of the log export ban was to pursue the twin goals of forest conservation and economic development. Note that the export ban here means that no logs at all were allowed to be exported, and thus the situation differs slightly from The Russian Federation and their export taxes. However, one could argue that these export taxes (if implemented in full) will actually serve as an export ban due to the dramatic rise in export from Russia.

The main reason Indonesia imposed this policy was the fact that forest managers believed that imposing an log export ban policy would greatly encourage the development of local forest-based industrialization with a strong export orientation. The development of local forest-based industry was expected to create greater value-added as well as more job opportunities in the country. Furthermore, Forest managers expected that a country currently exporting large amounts of primary products (such as logs) would in turn increase its exports of forest-based industrial products, rather than primary products and thus this also would increase its export revenues in total. While looking at the other goal, which was forest conservation, the conservationists believed that this form of policy would

become a good forest policy that would reduce the amount of timber exploitation, since the log exports would decline, thus reducing the rate of deforestation. And more recently, both the forest managers and conservationists see this log export ban as a measure that is relatively easy to enact in combating illegal logging, since most such logs are exported. The environmental argument for the log-export ban seems to be strengthened when linked to the prevalence of illegal logging in various developing countries. In those countries, there is a strong belief that most of the illegal log-harvesting is merely in response to increasing log demand by processing mills abroad which are willing to pay higher than domestic prices. The magnitude of illegal logging was expected to decrease, following the implementation of the log export ban, because lower domestic prices eliminate the incentive to conduct such a risky operation (Resosudarmo & Yusuf, 2006).

Resosudarmo and Yusuf (2006) found out that a relatively high export tax was (compared to other options like for instance a complete log export ban) a favourable option in the long run. It clearly indicated that a high export tax induced the highest total GDP gain and it also was able to reduce the amount of harvested logs, hence achieving both the conservation and the economical goals. The conclusion made in this study, is that it's more favorable to impose a high export tax rather than having a total export ban. If we look at their experience in conservation, the results indicate that a log export ban would have a negative effect on the forests due to the fact that an increase in the domestic wood-processing industries would increase the pressure on the forest and in the long run might require more wood to be harvested than before in order to support the domestic industry. However, in the short run a log export ban would also be a good policy in conservation terms, due to the fact that the harvesting rates would fall significantly. In the long run, illegal logging would be conducted more frequently in order to support this growing domestic industry. Export taxes, on the other hand, would actually reduce the harvesting levels both in the short term and the long term, when comparing with the export ban policy.

Tacconi et al (2007) also conducted a study about the illegal logging and the timber trade in Indonesia. They showed that the rates of illegal harvest have increased between the years 2000 and 2003, despite the national and international attention given to the topic. In other words, he claims that the government policy to address the issue of illegal logging has not had the desired effect. The same study shows that international trade restrictions alone are unlikely to stop the illegal logging in Indonesia. Instead the government must act to control the sale and export of the illegally harvested wood and control the illegal activities in the fields in order to fight the illegal logging in Indonesia. The main conclusion about the illegal logging in Indonesia is that unless global trade restrictions are

implemented through which all importing countries restrict the import of non-verified wood, the illegal logging will continue. And since the global adoption of trade restriction seems to be unlikely in the near future (due to the fact that certification processes and trade restrictions cost a lot of money, which in turn definitely will affect the global adoption of verification of wood and hence there will always be countries resisting to impose the trade restrictions on the import of wood with non-verified origin. Another factor that tells us that global restrictions are unlikely is that they would mean that all national and international timber trade has to be certified or verified and thus even a farmer, who is selling timber to the local mill, would actually need the same amount of paperwork as someone trading timber with other countries. This means that there is a major concern that the illegal logging will continue in Indonesia.

The Indonesian experience would then be that a high export tax is actually a rather strong alternative for both forest conservation and for economic development, reducing illegal logging and inducing the GDP for the country. It is important however, that this export tax does not become a log export ban since this could actually endorse illegal operations in the long run.

3.5.3 Vietnam

In Vietnam, the forest and the forest resources is owned and controlled by the state. This control could be exercised directly through government agencies or through leases to specific individuals or groups who then receive the rights to the forest for a given period of time. If we look at the background in Vietnam, large-scale logging and a massive over-exploitation of the forests in the 1980s and early 1990s caused significant forest loss. At its peak, up to 4.5 million cubic metres of logs were felled in natural forests in one year. Such chronic exploitation led the Vietnamese government to begin imposing controls on the logging industry in 1992, including an 80 per cent reduction in the logging quota and a log export ban. These policies reduced the timber supply by approximately 200.000 cubic meters from natural forests. By 1997 Vietnam had closed down around three-quarters of its state-forestry enterprises. However, despite the domestic logging controls, Vietnam rapidly developed and increased the domestic timber processing sector hence creating a need for more raw timber (EIA, 2008). This has lead to an increase in illegal operations; due to a huge gap between the raw material needed by the domestic processing industry and the small amounts of “legal” wood supplied by Vietnam´s own forest.

In the study made by Environmental Investigation Agency (EIA, 2008) the efforts made by Vietnam in controlling domestic logging operations were acknowledged. So was the fact that Vietnam (as well

as other countries in the Mekong Region) has imposed trade restriction as a mean to fight the illegal operations, and promote wood from verified sources. However, the conclusion made by EIA is that the measures taken to control the illegal harvesting operations is often undermined (and thus worthless) due to the poor governance in this country. In other words this means that these illicit activities continue despite a series of regional initiatives aimed at improving forest management. In 2001, Cambodia, Laos, Thailand and Vietnam all supported the East Asia Forest Law Enforcement and Governance (FLEG) Bali Declaration, committing countries to take action against illegal logging and trade in illegally-sourced timber. In 2004 the four countries, under the banner of the Association of South-East Asian Nations (ASEAN), agreed to the Vientiane Action Programme, which sets a target of eradicating unsustainable forest management practices by 2010. Despite such commitments, recent field investigations by EIA reveal that illegal logging and timber smuggling continues to thrive in Vietnam.

Dufournuad et al (2000) attempted to apply an equilibrium model in order to test three different policy models, and the difference in outcome between them. More specifically, they examined how the outcome would be if Vietnam imposed an export ban, an increase in the ad valorem royalty by 100 % or a big raise in export taxes (100 %). Note that this study was originally supposed to examine the economical effects of these policies, but the economical effect is likely to have a big impact on the forest ecosystems, due to the facts mentioned below.

Just like its neighboring countries, Indonesia and The Philippines, Vietnam relied heavily on the forest sector to generate capital and foreign exchange. The forest sector is a major contributing factor to the development of the nation. Hence we can argue that the forests in Vietnam are strongly linked to social and economical development such as issues of employment, population growth, income and economic stability. All of these factors, including the fact that harvested forest land was being used for agricultural purposes instead lead to even higher pressure on the forest. And with this high pressure, the forest resource was being eliminated in order to gain short-term economical profits.

Statistics from Vietnam showed that the deforestation rate was significantly higher than in other, similar countries and thus it is safe to say that the concept of sustainable forest management was rather unknown in Vietnam during this time. And as already concluded before: Illegal logging is a big threat to sustainable forest management, and a big factor in the deforestation. If we interpret this é contrario, we could then argue that an improvement in the sustainable forest management and a decrease in the deforestation would also mean a decreased in the illegal operations.

The results (Dufournuad et al, 2000) indicate that:

- An export ban clearly stopped the rate of deforestation, which would be of benefit to the society in the long-run, providing existence benefits for both current and future generations. This would indicate that the illegal logging would be declining, and hence this would actually be a good policy in order to combat illegal logging.

- The raise of the ad valorem royalty would have the effect that the deforestation rates would also decline, because the forestry output would decrease and thus the forest export would decline as well. This would lead to a decline in deforestation. However, the authors saw this particular policy as an incitement to promote the illegal logging in Vietnam. This would be due to the fact that the ad valorem royalty (a royalty charged on a unit basis for harvesting or a "stumpage fee") policy would lead to a decrease in domestic income for the households, which in turn would promote illegal operations.

- With a 100 % raise in the export taxes, the deforestation rate also declined and hence the illegal logging would be declining. In contrast to the ad valorem royalty, this type of policy change the domestic income would not be affected (the cost of the export tax is being placed on foreign consumers, rather than domestic consumers) and hence this policy would be a better choice if we look at it from the view of fighting the illegal logging operations.

- The economical benefits from the forests were greatly reduced, since most of the wood where indeed exported to other countries.

This study shows that all three different policy simulations would lead to a decrease in deforestation and should be imposed as a step towards sustainable forest management. The different policies that were examined all contribute in different ways to the country's economical development. The authors in this study thus claims that the export ban delivers the best economical benefits to the domestic economy as well as a significant decrease in deforestation, while the export taxes does not contribute in the same way if we look at the economical benefits. This would support the theory that an export ban has a big impact, both economically and ecologically in the short-run. As in Indonesia, an export tax would probably be the best alternative in the long-run.

The situation in Vietnam is very much depending on the governance capacity. There is a strong will to fight the illegal operations, and given the simulations made by Dufournuad et al (2000) the implications of these policies if carried out in full would probably benefit Vietnam in terms

of controlling illegal logging. However, with such weak governance and a lack of implementation capacity the illegal logging will continue in Vietnam, unless other methods are being imposed as well.

3.5.4 Conclusions about the different countries experiences of the export taxes as regarding a tool against illegal logging

First, the export taxes seem to be a success when trying to stop the deforestation and the exploitation of the forests in these countries. (Resosudarmo and Yusuf 2006, Dufournuad et al, 2000). If we then make the assumption that the deforestation rate is linked with the illegal logging operations, we could argue that this would lead to a decrease in illegal logging. Hence the export taxes would actually be an efficient tool against illegal logging operations. But this is only if we assume that the deforestation is linked to illegal logging operations. If the deforestation is separated from the illegal operations and there is no correlation at all between them, the export taxes as a tool against illegal logging would have no effect.

However, what we also can say is that in the countries that have adopted this policy, the domestic processing industry has become far much bigger than initially. This has actually led to a situation where the domestic industry demands more wood than “legally” can be supplied within the country. This should account for the fact that the export taxes also could provide an incitement for illegal operations.

The conclusion then must be that the export taxes (given the right circumstances) can contribute to reducing illegal operations (if we assume that illegal logging accounts for a big part of the deforestation) and stopping deforestation, but that there is a possibility that the incitements (created by the tool itself) also could endorse illegal operations. Thus we cannot say that the export taxes will decrease illegal logging.

4. Discussion

The most of the material, which I have been studying, is made up of reports from different sources. The main sources of information about the illegal logging in Russia are the official data obtained from the Russian Federation and the different NGO´s (WWF and Greenpeace). All of these sources have given me a lot of information about the situation at hand.

Regarding the subject of Illegal logging, there is quite a deal of research surrounding this subject, but there has been no definitive research about the connection between illegal logging volumes and the impact of different trade policies. However, there have been quite a number of studies about the deforestation of tropical countries and the policies implemented there, in order to stop the deforestation rates.

Since most of the literature has its origin from abroad, the reports were mainly conducted on English.

Thus, Literature studies were done to determine the current state of illegal logging operations and wood from unknown origin in the North-West of Russia. The data obtained in this thesis includes official estimates, estimates given by NGO´s and assessments made by different research organizations. This should account for good validity in the data itself. However, describing the validity and the reliability in the data after using a qualitative research approach than after using a quantitative research approach is rather difficult. In this thesis the validity and the reliability is strongly linked to the description of how the data has been obtained, and processed during the progress of the thesis. As for the credibility in this thesis, one has to look at the collection of data and the data sources. I have used several different sources of data and I have analyzed and compared these sources carefully. This means that the credibility of the data obtained increases, since they come from different sources. But can we then say that the data is reliable? The reliability of the data is dependent on the quality of the instruments that have been used to produce the data and there have been some difficulties with this. Especially the NGO´s have had difficulties providing accurate data, since they have relied on information obtained by ROSSTAT, which does not cover all harvesting volumes (Chapter 3.3). Therefore I have used the data obtained by the Ministry of Natural Resources, since I believe this data is the most accurate. Another thing worth pointing out is that the estimates of illegally harvested wood are normally produced by using a production-consumption method that only compares statistics. This method only shows us the volumes of wood from unknown origin, but not the actual volumes of illegally

harvested wood. To summarize the data, I have tried to obtain data with as high credibility, validity and reliability as possible.

So, if the export taxes lead to a desired increase of foreign and domestic investments into domestic processing, how can this contribute to a decrease in illegal logging?

First, we have to consider the effects of the export taxes. If Russia will go ahead and impose the new export taxes, this will probably have a huge impact on the market prices of the world (the prices will raise, both on raw logs as well as the commodities for which logs make up the bulk of the variable costs, for instance plywood and lumber). Also worth noticing is the fact that the upward pressure on the prices of logs in Europe is being reinforced by the increasing demand for wood-fiber for the production of bio-energy. The combination of these two factors will seriously hurt the profit margins in the North European wood industry, and this can most probably lead to closure of some industries. All of these factors would indicate and reinforce an upward trend in log prices. This will in turn force the market to look for cheaper ways to get hold of the material. We already know that illegal operations are cheaper than legal ones, and hence this will actually lead to increased incentives for illegal operations. This is due to the fact that the financial profits for the "shady operators" will increase even more and there is likely to be an imbalance between the industrial supply demand from Europe and the supply from the North-West Russia. These two incentives for illegal operations could actually increase the pressure on the forest, and hence the illegal operations will continue to flourish and hence this will actually lead to increased incentives for illegal operations.

The Russian Federations desire to increase the domestic processing within the country also will lead to an increase in demand for wood (this is one of the purposes of the export taxes, to increase the domestic demand for round-wood by forcing the domestic processing). Also note that the Russian government does not want to decrease the timber available, but instead they want the timber to be processed in Russia. For this to happen, this would require investments (by foreign investors or by Russian companies) into processing facilities in Russia. Unless these processing plants run some sort of certification or "chain of Custody"- system it would actually make it more difficult to trace the origin of the raw wood. If the Russian government achieves what they aim for, namely that more processing capacity will be installed, this will increase domestic demand (from these new sawmills and pulp mills) and hence the domestic prices will also increase. This would create more than enough demand for illegal material to compensate for the loss of the "export market" (and with considerably less barriers against illegal procedures, as

there is no need to produce an export license). Thus, one could argue that the export taxes could actually provide an incitement for illegal logging as well.

Furthermore how will the rest of the world be affected by the export taxes and what effects are likely to come out of this new Russian policy. This can be discussed in terms of two different impacts, the economic impact and the impact of forests in other countries. From the economic perspective the prices of raw logs and lumber will definitely rise, hence causing a big economic impact for many countries. In terms of national economic impact, the winners will be other large log-exporting countries (like for instance North America) while the main losers are the large log-importing countries (especially those who today are depending upon Russia for their forest supply, for instance Finland, Japan and China). As some reports indicate, there is already an increase in many countries for domestically harvested wood. Japan and China, for instance are already attempting to increase the volumes of domestic harvested wood, and so do Finland. Many countries are also looking at North America for their future wood supply, since the wood supply from Europe will decrease. There is however a strong possibility that the wood from North America will be insufficient to cover the loss of the European wood supplies, due to the Mountain Pine Beetle. This will however not be examined or discussed here). However, since many of these countries have been depending on the wood supply from Russia for their industry, their industry demand is well beyond the domestic supply possibilities and hence they have to look at other possibilities for their industry wood supply. For many countries in Europe, this is just a matter of mobilization. Throughout Europe, on average only 2/3 of the annual growth is harvested (Dr Andreas Ottitsch, University of Cumbria). Therefore there is considerable potential for increase in the harvesting volumes, which actually could make up for the loss of the Russian wood in some way. The main problem here is that many private forest owners are difficult to mobilize. To conclude this, the Russian's closed export is likely to have some effect on the forests in other countries.

So how will the upward trend in log prices affect the forests? There is a strong possibility that the increase in the global price of logs will put higher pressure on the forests, and due to the same increase in global prices of logs there is a strong possibility that the illegal logging in other countries will increase. This is particular true in countries with weak governance and poor forest management systems. This is also related to the fact that many of those countries which are today depending on Russia for their wood supply has to look elsewhere to find the wood necessary to maintain their domestic industry (if they fail to mobilize the wood necessary within the country).

This will increase the pressure on the forests in other countries, which on a global basis can lead to an increase in deforestation. All this points to an interesting paradox:

- All known studies claim that illegal logging is reducing world timber market prices. Most of these studies are based on econometric models, which assume that illegal logging increases the supply of wood on the market, which then results in lower prices.
- A reduction of illegal logging would thus increase the prices on the market.
- Increased prices on the other hand provide a higher incentive for illegal operations.
- So, the only policy to avoid this circle would be to accompany any reduction of illegal logging with policies that increase the supply of legal material. Yet, unless this is done by some sort of government intervention (like for instance increased harvesting on state owned land) it cannot be expected from private suppliers to bring more raw materiel to the market if the prices are lower.

5. Conclusions

The rates of illegal logging in Russia is amongst the highest in Europe and much of the illegally logged wood that reaches Europe has it's origin in North-West Russia. Approximately 15-20 % (-or about between 5-7 million m^3) of all exported wood from this particular region every year is considered to be illegal in some way. There are many reasons to why the illegal logging operations in this particular region have been so successful for many years. Perhaps the most prominent factors to this are the lack of sufficient data and information about the sheer volumes of illegally logged wood (see chapter 3.1.3). The Russian Federation has just recently started developing a system for remote sensing forest monitoring. This new remote sensing technology is thought to improve the data collection and analysis methods and hence it will make it harder for illegal operators to conduct their work undetected, in the years to come. Another strong factor is the relatively closeness to the markets in Europe, thus making it easier to quickly export the illegally logged wood. After all there is a reason why most of the illegal operations take place in near-border regions (Laestadius, 2008). Other factor that must be considered is the wide-spread corruption and the poor implementation capacity of the public forest administration and enforcement agencies in this region. Many reports indicate that one of the main reasons to why the illegal logging operations in Russia have been so prominent is the corruption. This has made it possible for illegal operators to conduct their business relatively safe from being detected. This

is also strongly linked with the poor implementation capacity from the public forest administration.

The export taxes in Russia are likely to have the effects discussed in the previous chapters. This would mean that:

- The domestic processing will be significantly higher in Russia in the years to come, and the export will almost cease. This will lead to an increased market price on logs and wood. This increase is also driven by the increased need for bio-energy, thus putting extra pressure on the forest. This “price-rally” creates larger incitements for conducting illegal operations within the forest sector, due to the fact that there is less profitability to conduct legal operations.

- The increased domestic demand will increase the domestic prices on logs, also creating more incitements for conducting illegal forest operations. Another factor contributing here is the fact that the increased domestic demand makes sure that the illegal operators does not have to go through the trouble of getting an export license. This in turn makes it more difficult for the Russian Government to monitor the trade with the illegally harvested wood. This is due to the fact that it is easier to monitor the export at the border rather than harvests in the field.

- There is no experience from other countries that say that the export taxes have reduced illegal logging. What they have showed is that the deforestation rate has gone down, but we cannot make the assumption that the deforestation is the same thing as the illegal logging. At best we can probably assume that the illegal operations are a part of the deforestation, and in that case could be reduced by a small amount. However, there is no evidence that supports that fact.

My conclusion, based on the experiences from other countries and the discussion is that the export taxes will not reduce the illegal logging in the North-West Russia. Instead the illegally harvested timber will support the growing needs of the domestic processing industry. The illegal operators will simply sell to the domestic processing plants, and they also have the added benefit that they will not have to bother about getting an export license.

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