

**Latvian logging companies  
– present state and development needs**

*Skogsavverkningsföretag i Lettland  
– dagsläge och utvecklingsmöjligheter*

Daniel Norström & Kristin Gustafsson





**Institutionen för skogens produkter och marknader**

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*Examensarbete 10 poäng, C-nivå i ämnet företagsekonomi  
Daniel Norström & Kristin Gustafsson, skogsingenjörsprogrammet 01/04*

*Handledare: Folke Bohlin*

# PREFACE

This report in business economics is written as a part of the Forestry Engineering Program at the Swedish University of Agricultural Sciences (SLU) and accomplished as a mission given by the Swedish Institute of Forestry Research. It contains the results from 14 qualitative interviews with Latvian logging companies acting on the domestic market. The report analyses the present state and development needs regarding the logging companies for a future better situation and an increasing profitability in the Latvian forestry.

The interviews have been carried out in co-operation with the University of Agriculture in Jelgava, Latvia, during three weeks in June and July 2003.

The work has been divided between the authors in such way that Daniel is primarily responsible for the parts of the report that concerns the companies' business activities, logging, customers, certifications, future logging, geographical working areas, production, planning, education and machinery. Kristin is primarily responsible for the parts that concerns the companies' history, foreign owners, participation in trade associations, economics, profitability, taxes, employees, subcontractors, staff functions, staff age allocation, salaries and benefits respectively illegal logging companies.

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Daniel Norström and Kristin Gustafsson

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# SUMMARY

Several Swedish forestry research institutions, the Nordic Council of Forest Operations Research (NSR), the Nordic Forest Research Co-operation Committee (SNS) and the Royal Swedish Academy of Forestry and Agriculture (KSLA) in co-operation with the Nordic-Baltic Forest-Operations Network has concluded that further discussions and activities concerning Baltic forest operations need more facts regarding the present state and development needs in the Baltic forestry. This study was undertaken to begin bridging this gap by a mission given by the Swedish Institute of Forestry Research.

The paper presents the findings of two B.Sc. students writing their C thesis in business economics at the Forest Engineering program at the Swedish University of Agricultural Sciences (SLU), supported by two B.Sc. students at the Forestry Engineering program in Jelgava, Latvia. Fourteen interviews were made in order to collect enough information about the logging companies and their situation in the Latvian forestry sector. The interviews have then been analysed to arrive at general conclusions.

The selection of logging companies, performed by the Latvian B.Sc. students and their supervisor, were based on prominent logging companies using relatively modern equipment such as modern harvesters and forwarders. The intention was also to have a wide geographical spread in order to see if any local differences could be distinguished. In addition to the interviews the report also contains a literature study, mostly based on Internet documents.

The overall aim of this study is to provide baseline information about logging performance and logging companies in Latvia. The main objective is to make a survey of the present state regarding business, organisation and the conditions the logging companies are working under. The aim of this study is also to ascertain the logging companies' development needs and possibilities in the Latvian forestry sector.

Fourteen qualitative interviews have been made with Latvian logging companies performing logging operations in final felling and in thinning as core business mostly by using their own logging machines. The logging companies also perform their own timber transports mainly by means of their own timber trucks. The logging operations in thinning are exclusively performed manually while the operations in final felling are fulfilled mainly by logging machines, but also manually, where width of stems and division of tree species decides which procedure of logging, manually or by machines, to be the most profitable. The use of subcontractors is common with main focus on thinning where motor manual labour and private machine owners with tractors and carts are used. A few logging companies use subcontractors with harvesters and forwarders in final felling and in timber transports either because of the lack of own logging machines and timber trucks or in cases of over employment, when more machines are needed. The motor manual subcontractors also perform other silvicultural activities such as planting and pre-commercial thinning.

The logging companies are characterised by a diversity of activities besides the core business where the ownership of sawmills is most frequent. Examples of other side activities are purchase of forestland, wood trading, fabrication of log houses and manufacturing of fence poles. Most companies were founded in the immediate period after the Latvian independence in 1991 while some companies originate from the state forestry during the Soviet occupation. Foreign forestry companies own three logging companies.

The logging companies' acquisition of timber is mainly performed through contracts that imply a priority to purchases of felling-rights in the forests owned by the Latvian State. The types of state-contracts are long-term- and assortment-contracts. In the interviews, the logging companies have stated that the long-term contracts are more advantageous than the assortment-contracts, because of the contracts length of several years and the fact that the companies become the owner of the timber, which they can sell to a customer of their own choice. The assortment-contracts last for one year at the time and imply that the logging companies are just performing a service for compensation as a subcontractor to the state. With the exception for the one-year long period of contract the assortment-contracts are undeniably influenced by the contracts occurring between forest companies and logging contractors in the Swedish forestry. A part of the compensation to the logging companies are paid as estimated output from the production before logging, which after the logging is adjusted to the actual volume of produced timber received from the harvester computer. The Latvian State decides which assortments to be crosscut within the assortment-contracts in difference to the long-term contracts where the logging companies themselves decides what assortments to be crosscut, depending on demand from the customers.

The state does not renew the long-term contracts any longer but favour instead the assortment-contracts. Besides the contracts the state sells single felling-rights through bidding procedures at auctions. Private forest owners sell either single felling-rights or whole forest properties through bidding procedures advertised in Latvian newspapers. Apart from the competition between the logging companies themselves the companies also meet competition from unregistered illegal logging enterprises that afford purchases of felling-rights at a higher price than the legal logging companies, since they do not pay any taxes. The illegal enterprises buy felling-rights both from the state and private forest owners, which is why the legal logging companies demand more supervision and control from the state in this particular case. Such supervision would decrease the prices of the felling-rights.

Through the land reform many private former landowners has got their land properties back, and has by lack of interest or other reasons often chosen to sell their properties. A great part of the logging companies felling-rights are bought from private landowners, and when the price of the felling-rights sometimes do not to any appreciable extent differ from including the land, several of the logging companies have become considerable landowners. Another procedure in the acquisition of land, especially among the smaller logging companies, is to buy already final felled forestland without any standing forest on, as the price of the land is low. The reason why the companies intentionally purchase forestland has been mentioned as a step to be more self-supported with raw materials in the future; as several logging companies claim that the high rate of logging will result in a shortage of lumberable forests in the private forests within a few years time.

The logging companies' pulpwood customers are mainly Scandinavian pulpmills, saw logs are sold to domestic sawmills. The types of contracts that exist in the business relationships between the logging companies and their customers are in first hand long-term contracts and spot-contracts in second hand.

Most logging companies say they are profitable due to either incomes from the logging or the side activities. The most restraining facts regarding profitability are considered as the high prices of felling-rights and burdensome taxes of incomes from logging and taxes on fuel to the logging machines. Several logging companies are certified in accordance to the FSC-standard while many uncertified logging companies consider the incentives to be certified as inadequate, as the certified companies do not obey the certification. One reason of the lack of incentives to be certified are the wood trading between the companies with timber from both

certified and uncertified forests, which then are mixed in the certified companies' sawmills, and are sold as certified wood products. Another reason is the scarcity of demand of certified wood products from the logging companies' customers.

The competence of the personnel within the logging companies includes university degrees in economics and forestry among others within the companies' office staff and operative logging functions. The machine operators have all received courses and certificates in operating the logging machines and have an upper secondary school degree in forestry as highest education.

A majority of the logging companies own their own machinery that are of a relatively late year model and consists of harvesters, forwarders and in some cases scarifiers. Most logging companies also own trucks for timber logistics and to transport their machines. The most common incentive to make investments in new logging machines is reinvestments when the existing machines are old and often broken. The purchase occasions are often chosen when the companies' logging situation is convenient as when high production of timber occur.

The forest sector in Latvia has developed, and is still developing, from an institutional to a market adjusted system. Since the independence in 1991 lots of forest companies, of different sizes, have appeared as a result of free market forces and the land reform. Great changes in the forestry sector may appear in future. Some changes have already appeared as the state reorganises their contract-systems, which will force many companies to change their business concept in order to survive. Fewer companies will be given opportunities to get the state's assortment-contracts than has been given before as long-term contracts. Many more companies will try to buy felling-rights from private forest owners where the competition will force many companies to either close their logging enterprise or close the entire company due to the high prices of felling-rights. A potential positive result of the state's reorganisation of the contract-system concerning the logging companies, would be the disappearing of the illegal logging companies acting on the market. Except for the reorganisation of the contract-system is the future shortage of lumberable forests in the private forests threatening the logging companies due to the present high rate of logging. A future possibility to the logging companies in the Latvian forestry is a greater use of the FSC-certification on timber, which today has low demand from the companies' customers. A greater demand of certified Latvian wood products from foreign customers would, apart from just implying better environmental profits also lead to a higher value in itself are put on the Latvian forests and its timber. Finally, a higher value could involve an improved economical situation to the Latvian logging companies.

# SAMMANFATTNING

Flertalet svenska skogsforskningsorganisationer, Nordiska Skogsrådet (NSR), SamNordisk Skogsforskning (SNS) och Kungl. Skogs- och Lantbruksakademien (KSLA) i samarbete med Nordic-Baltic Forest-Operations Network har uttrönt att fortsatt planering och diskussioner angående skogliga verksamheter i Baltikum kräver mer information beträffande dagsläget och utvecklingsbehoven i det baltiska skogsbruket. Detta arbete, på uppdrag av SkogForsk, strävar efter att fylla denna kunskapslucka.

Denna C-uppsats i företagsekonomi är ett examensarbete utfört av två skogsmästarstudenter vid Skogingenjörsprogrammet vid Sveriges Lantbruksuniversitet (SLU). Examensarbetet har genomförts med stöd av två skogingenjörstudenter vid Lantbruksuniversitetet i Jelgava, Lettland. I detta examensarbete presenteras resultaten av 14 kvalitativa intervjuer med lettiska skogsavverkningsföretag beträffande de förutsättningar och den situation som avverkningsföretagen upplever sig i dagsläget leva under samt de utvecklingsbehov som finns hos företagen. Företagen i studien har valts med utgångspunkt på framstående företag med avseende på hög mekaniseringsgrad, moderna maskiner och storlek samt bedriva skogsbruk som kärnverksamhet.

Skogsavverkningsföretagens kärnverksamhet är skogsavverkning i slutavverknings- och gallringsbestånd i huvudsak med egna skogsmaskiner och inhyrda underentreprenörer. Avverkningsföretagen ansvarar också i hög grad själva för timmertransporter med egna virkesbilar. Avverkningsarbetet utförs uteslutande manuellt i gallringsbestånd och mestadels maskinellt i slutavverkningsbestånd där stamdiameter och dominerande trädslag avgör lönsamheten i antingen maskinellt eller manuellt avverkningsarbete. Företagen använder i hög grad underentreprenörer såsom motormanuella skogsarbetare och privata traktorägare med skogsvagnar i avverkningsarbetet med tyngdpunkt på gallringarna. Ett fåtal företag använder sig av underentreprenörer med skördare och skotare i slutavverkningarna samt virkestransporter, antingen på grund av avsaknaden av egna skogsmaskiner och lastbilar eller arbetsanhopning. Underentreprenörerna utför även övriga skogsvårdsåtgärder såsom plantering och röjning.

Skogsavverkningsföretagen visar på en omfattande flora av verksamheter vid sidan av kärnverksamheten, där ägandet av sågverk är den mest frekventa. Sidoverksamheterna omfattar bland annat även köp av skogsmark, virkeshandel, tillverkning av timmerhus och tillverkning av stängselstolpar. De flesta företagen är grundade vid tiden omedelbart efter självständigheten 1991 medan ett fåtal har ursprung i det statliga skogsbruket under Sovjettiden. Tre intervjuade företag har utländska ägare.

Anskaffningen av virke sker främst från lettiska statens skogar genom kontrakt som ger förtur till köp av avverkningsrätter. Kontraktens formerna är långtidskontrakt och sortimentskontrakt. Långtidskontrakten anses av avverkningsföretagen som mer förmånliga än sortimentskontrakten med avseende på kontraktens längd på många år samt att företagen blir ägare av virket som de kan sälja till valfri kund. Sortimentskontrakten är ettåriga och innebär att avverkningsföretagen endast agerar entreprenör som utför skogliga tjänster åt staten mot ersättning. Förutom den årslånga kontraktslängden är sortimentskontrakten onekligen influerade av de i det svenska skogsbruket förekommande kontrakten mellan skogsbolag och skogsentreprenörer. En del av ersättningen till avverkningsföretagen utgår mot estimerat produktionsutfall innan avverkning som sedan justeras mot verkligt produktionsutfall från skördardatorn när avverkningen är slutförd. Lettiska staten bestämmer vilka sortiment som

skall apteras inom sortimentskontrakten till skillnad mot långtidskontrakten, där avverkningsföretagen själva avgör vilka sortiment som skall apteras beroende på kundönskemål. Långtidskontrakten förnyas inte längre till sortimentskontraktens favör. Staten säljer vid sidan av kontrakten också avverkningsrätter genom auktionsförrättningar. Privata markägare säljer antingen enskilda avverkningsrätter eller hela skogsmarksinnehav till avverkningsföretagen genom anbudsförfaranden från annonser i lettiska tidningar. Förutom konkurrensen om avverkningsrätter avverkningsföretagen emellan, konkurrerar dessa även med oregistrerade illegala företag, som kan betala ett mycket högre pris för avverkningsrätterna än de legala avverkningsföretagen eftersom de inte betalar någon skatt. De illegala företagen köper avverkningsrätter både av privata markägare och staten, varför de legala avverkningsföretagen efterlyser mer övervakning och kontroll från statens sida, varigenom priserna för avverkningsrätterna skulle kunna sänkas.

Genom landreformen har många privata före detta markägare återfått sina egendomar och har av ointresse eller annan anledning sedan valt att sälja dessa. Avverkningsföretagen köper till stor del avverkningsrätter av privata markägare och då priset på en avverkningsrätt inte skiljer sig nämnvärt mycket från att även inkludera marken, har detta inneburit att en del avverkningsföretag också blivit betydande markägare. Andra förvärvssätt, speciellt hos de mindre företagen, är att köpa redan avverkad skogsmark utan rotstående skog då priset för ren mark är lågt. Anledningen till att företagen avsiktligt köper skogsmark har nämnts som ett sätt att bli mer självförsörjande med virkesråvara i framtiden, då flera avverkningsföretag hävdar att avverkningstakten som bedrivs i den privata skogssektorn i dagsläget kommer att resultera i brist på avverkningsmogen privatskog inom några år.

Avverkningsföretagens kunder med avseende på massaved är främst skandinaviska massaproducenter. Sågtimret går till inhemska sågverk. Kontraktsformerna som förekommer i affärsrelationerna avverkningsföretagen och virkesförbrukarna emellan är i första hand långtidskontrakt och engångskontrakt i andra hand.

De flesta avverkningsföretagen säger sig vara lönsamma antingen av virkesinkomster från skogsbruket eller av sidoverksamheterna. De största vinsthämmande faktorerna anses vara höga priser på avverkningsrätter samt skatter på virkesintäkter och bränsle till maskinerna. Flera avverkningsföretag är certifierade enligt FSC-standarden medan många av företagen anser sig sakna incitament att bli certifierade eftersom certifieringen inte efterlevs. Den av avverkningsföretagen nämnda bristen på efterlevnad sker genom att företagen handlar med både certifierat och ej certifierat virke sinsemellan som sedan blandas, sågas och säljs som certifierat virke. En annan anledning till avsaknaden av incitament att bli certifierad är att det i dagsläget inte är någon stor efterfrågan på certifierat virke från avverkningsföretagens kunder.

Kompetensen inom avverkningsföretagen består i universitetsexamina i bland annat ekonomi och skogsbruk för kontorspersonal samt operativ drivningsledning respektive en ettårig gymnasial skogsutbildning som högst hos skogsmaskinförarna, vilka samtliga fått utbildning i handhavande av skogsmaskinerna.

Majoriteten av avverkningsföretagen äger egna skogsmaskiner bestående av skördare, skotare och i några fall markberedare, vilka alla är av relativt ny årsmodell. De flesta avverkningsföretagen äger också egna lastbilar för virkes- och maskintransporter. Den orsak som främst ger incitament till köp av nya skogsmaskiner är när de redan existerande maskinerna i företaget upplevs gamla och slitna. De mest frekventa skogsmaskinmärket hos avverkningsföretagen är Timberjack då företagen upplever en bättre service och kortare väntetider för reservdelar än hos andra maskinmärken.

Skogssektorn i Lettland har utvecklats, och utvecklas fortfarande, från ett institutionellt till ett marknadsanpassat system. Sedan självständigheten 1991 har många avverkningsföretag av varierande storlek uppstått som ett resultat av de fria marknadskrafterna och landreformen. Omfattande förändringar kommer att inträffa i framtiden vilka till viss del redan påbörjats genom lettiska statens omorganisation av kontraktssystemen, vilket kommer att tvinga många skogsföretag att förändra sina affärsverksamhet för att överleva. Färre företag kommer att ges möjlighet att få sortimentskontrakt mot antalet företag som tidigare erbjudits långtidskontrakt. Fler företag kommer att försöka köpa avverkningsrätter av privata markägare där konkurrensen kommer att tvinga många skogsföretag att antingen lägga ned avverkningsverksamheten eller hela företaget på grund av för höga priser på avverkningsrätter. Ett potentiellt positivt resultat av statens omorganisering av kontraktssystemen beträffande avverkningsföretagen är att de illegala avverkningsföretagen förhoppningsvis försvinner från marknaden. Förutom omorganiseringen av kontraktssystemen hotar även virkesbrist att drabba privatskogsbruket och avverkningsföretagen på grund av den höga avverkningstakt som i nuläget bedrivs. En framtida möjlighet för de lettiska avverkningsföretagen är FSC-certifieringen på virke, vilken idag är sparsamt efterfrågad av företagens kunder. En ökad efterfrågan på certifierade lettiska skogsprodukter från utländska kunder skulle kunna, vid sidan av rent miljömässiga vinster, också leda till att den lettiska skogen samt virket därifrån får ett högre värde i sig. I slutändan skulle detta kunna innebära en förbättrad ekonomisk situation för de lettiska skogsavverkningsföretagen.

# **1 INTRODUCTION**

## **1.1 Background**

This report stems from an initiative by the Nordic Council of Forest Operations Research (NSR), and partly sponsored by the Nordic Forest Research Co-operation Committee (SNS) and the Royal Swedish Academy of Forestry and Agriculture (KSLA).

A meeting in Estonia in January 2003, held by the Nordic-Baltic Forest-Operations Network, concluded that further discussions and planning activities need more facts regarding the present state and development needs in Baltic forest operations. A study was proposed, by the Swedish Institute of Forestry Research, concerning the contracting and performance of forest operations in Estonia and Latvia respectively.

## **1.2 Aim**

The overall aim of this study is exploratory. It is to investigate a very little known sector to provide baseline information about logging performance and logging companies in Latvia. Our main objective is to make a survey of the present state regarding business, organisation and the conditions the logging companies are working under. The aim of this study is also to ascertain the logging companies' development needs and possibilities in the Latvian forestry sector.

## 2 BACKGROUND

This chapter presents the overall conditions in Latvia. The parts regarding forestry, legal logging, taxes and investments have a deliberate purpose to point out some of the conditions the Latvian logging companies are living under.

### 2.1 The State of Latvia

#### 2.1.1 History

Since written information is limited, especially up to date information, this account is largely based on two Internet documents published by Kvinnolobbyn and Latvian Institute (*Web 2003a*)(*Web 2003b*).

The country of Latvia has had a varied history, from the province Livonia under German rule in the 12<sup>th</sup> century, continuing to the golden days in the 15<sup>th</sup> century when two colonies were established, one in the Caribbean ocean and one island in Gambia River. In 1621 Gustaf II Adolf resumed the war in Livonia. Riga was now under Swedish rule and became the largest and most developed city belonging to Sweden. During this time the Vidzeme duchy was known as Sweden's livelihood, because of the great amount of wheat that was produced.

“The great Nordic war” broke out in the beginning of the 18<sup>th</sup> century. The reason for that was that the Russians claimed the, in our days, Latvian territory. One of the goals was to ensure the famous and rich city of Riga. In year 1710 the Russian tsar, Peter the first, succeeded. In the end of the century whole Latvia was under Russian rule, and they had free passage through Latvia to the rest of Europe. The industrial sector developed rapidly and the number of inhabitants increased. Latvia became Russia's most successful province. The war and the plague affected the Latvians in a very bad way, and in Riga 90% of the population died. But even so, the conditions of the Latvian farmers improved during the 19<sup>th</sup> century, thanks to a softening of the Russian laws. In the later part of the century free Latvian farmers even succeeded to buy two fifths of the Latvian land back from Russia.

On January 26, 1921 Latvia was internationally recognised as an independent state. Latvia's starting position after the First World War was very difficult. One fourth of the agricultural land was a fallowed field. The first and greatest the independent Latvia did was to carry through a land reform. The manors were nationalised and were given out to 145 000 small farmers and landless farm workers. The reformation was motivated by political and social reasons, and it was an economical success. During the 1930:s Latvia experienced a time of prosperity and they had on of the highest standards of living in Europe. On August 23, 1939, Germanys and Soviet unions Ministers of foreign affairs signed the so-called Molotov-Ribbentrop act. It divided Eastern Europe between the both dictatorships and it was the fall of the Baltic States. In September 1939 Latvia's government representatives were called to Moscow. They were forced to accept Soviet troops in their territory and to open naval bases in Liepaja and Ventspils. On June 17, 1940 Latvia was occupied. On June 20 a new pro-Soviet government, who had been handpicked by Stalin's special representative Andrej Vysjinskij, came to be in hold. On August 5, 1940, Latvia was “granted” entry to the Soviet folk union.

After Michael Gorbachov became the leader of the Soviet Union in 1985, and proclaimed glasnost (openness) and perestroika (conversion) Latvian oppositional forces started to notice a difference. On August 23, 1989, 50 years after the terrible Molotov-Ribbentrop act, the Baltic States wanted the rest of the world to pay attention to their destiny. They formed a human chain that reached from Tallinn, through Riga and down to Vilnius, 600 km long. This was the symbol of their common goal, independence. In spring 1990, the first relatively free elections were organised, in which 2/3 of the population voted for the Popular front, which demanded the independence of Latvia. Immediately after the elections, the independence of Latvia was declared. The parliament of Latvia officially declared its independence in August 1991. Soon after the reintroduction of independence Latvia became a member of the UN and went back to be an independent, democratic state.

### **2.1.2 Political system**

The republic of Latvia regained its independence from the Soviet Union on August 21, 1991. Since then the government of the Republic of Latvia has implemented economic reforms based on principles of free trade, with the goal of integrating Latvia into the economic, political and cultural spheres of Europe. On September 17, 1991, the Republic of Latvia was granted full membership in the United Nations (UN). In May 1992 Latvia joined the International Monetary Fund and in February 1994 the Government of Latvia signed North Atlantic Treaty Organisation's NATO's Partnership for Peace Program. On February 10, 1995, the Republic of Latvia became the 34th member of the Council of Europe. In 1999 Latvia joined the World Trade Organisation (WTO) (*Anon 2003a*). In 2004 Latvia became a member of the European Union (*Web 2003c*).

### **2.1.3 Economic situation**

The first years of independence and economic transformation were distinguished by a dramatic output decrease. In March 1993 the Latvian currency LVL (Latvian Lat) was introduced. The exchange rate of the LVL has been relatively stable in relation to the ECU. In 1998 the inflation was down in 6%, compared to 1992 when the inflation reached 930% (*Web 2003d*).

The careful finance politics has, as well as the fact that the state is no longer a big borrower on the domestic market, led to a decrease of the commercial rate of interest and that the money lending business from commercial banks to the private sector has increased (*Web 2003e*). Latvia's GDP grew by 7.6% in 2001, which was more than any other, at that time, EU candidate country. Inflation was under 3% for three years running. According to the Central Statistic Bureau the unemployment rate in June 2003 was 8.6% (*Web 2003f*).

Like many countries in the region, the Latvian economy suffered setbacks during the Russian economic crises in 1998 but Latvia's rapid recovery enabled it to join the World Trade Organisation (WTO) in 1999 - the first Baltic country to do so. Further reforms, foreign experience and the growth of other branches of the economy, spurred the recovery and development of the Latvian banking system (*Web 2003g*).

Latvia exported in 1997 principally pulp and pulp products (29.9%), textile and textile products (15.6%), provisions (up to 14.5%) and mechanic and electric equipment (9%). The importance of the European Union as export market has during 1997 increased and represents about 50% of Latvia's total export (*Web 2003e*).

## 2.1.4 Short geography of Latvia

The country is the intermediate country between Estonia and Lithuania. Latvia covers an area of 641 000 km<sup>2</sup>. The distance from the North to the South, at its greatest distance, is 210 km, and 450 km from East to West. The landscape is typical lowland with hills and the major part of the country is situated lower than 100 m above sea level (*Web 2003h*). Latvia has more than 300 lakes and more than 1200 rivers. The biggest lake is Lubanas, 82 km<sup>2</sup> and the deepest is Dzirsis with a depth of 65 m. The biggest river is Daugava, 1020 km long, of which 365 km is through Latvia (*Web 2003a*).

The climate in Latvia is affected by the nearness to the sea. It changes between high- and low pressure and the yearly precipitation is about 600 mm. The average temperature in Riga is in the summer 18 degrees Celsius, and in the winter -5 degrees Celsius. The warmest month is July and the coldest is February (*Web 2003h*).

Latvia is situated in a border zone between the vegetation of Northern and Middle Europe. Due to its geographical location, fertile moraines and sandy soils, the vegetation of Latvia is quite diverse. Forests cover more than 40 percent of the territory. Predominantly mixed forests grow in the middle of the country, but along the coast coniferous forests grow (*Anon 2001a*). Latvia has rich vegetation, approximately 7850 different vegetable species, 320 different birds and 69 different kinds of animals. Latvia is the country with the greatest number of otters and most packs of wolfs in whole North and West Europe together. It is also a big chance to see the rare black stork (*Web 2003h*).

**Area:** 64 578 m<sup>2</sup>

**Regions:** Kurzeme, Zemgale, Vidzeme, Latgale and Lielriga (the area around the capital Riga).

**Latvia's coastline to the Baltic Sea:** 494 km

**Latvia's circumference:** 1862 km

**Biggest lake:** Lubans, 82 m<sup>2</sup>

**Deepest lake:** Dzirsis, 65 m

**Longest river:** Daugava, 1020 km (365 km in Latvia)

**Highest point:** Gaizinkalns, 311.6 m

**Border states:** Belarus, 141 km, Estonia, 267 km, Lithuania, 453 km, Russia, 217 km.

**Population (2002):** 2 351 400

## 2.2 Latvian forestry

### 2.2.1 History of the Latvian forestry sector

The account below is based primarily on André, 1999. Before the First World War, Germans owned lots of large estates in Latvia. These Germans developed their ideas of forestry in their own farms, which soon influenced the whole forestry in Latvia. When Latvia became independent in 1918 great reforms were introduced. The German properties were split into smaller farms and the forests earlier owned by the Russian tsar now became state-owned. The Latvian State was now the largest owner of forestland with 80% of the total forested area. Companies and legal holders owned the remaining 20%.

Great areas were clear-cut because of the need of repairing material to the damages the First World War caused. In these times the forests were well managed and successfully regenerated by pine mainly. During the period of independence between 1920-1940 the area of forestland increased from 24% to 27% of the total area.

In June 1940 Latvia was occupied by the Soviet Union. All private forests and farms became collectivised and were formed to state-owned or collective agricultural and forestry companies. Agricultural forests were also formed and were managed by the state-owned or the collective farms. The forestry was organised by the Ministry of Forestry headquarters in Moscow and managed by the Ministry of Forestry in Riga, which had 34 regional management offices and 230 forest districts as subordinates.

The economic system and the collectivisation led to negative changes within the Latvian forestry management. Many valuable old forest stands were cut and the number of stands that could be logged for valuable timber decreased. Among the most important causes was the rebuilding of Latvia after the Second World War, the Soviet industrialisation and the Russian immigration.

As the numbers of inhabitants decreased during and after the war, many farms were abandoned and the agricultural land started to be afforested naturally. It was a convenient time to create new forestland. The forestland in 1923 was 24.7% of the total area and the same figure in 1988 was 40.8%. The increase was especially marked during the collectivisation period between 1949-1961, and continued to the independence even though the numbers decreased. During the years between 1935-1988 forestland increased with 62%, the average volume per hectare increased from 109 to 175 m<sup>3</sup> and the wood stock increased 2.5 times.

Latvia regained independence in 1991 and a land reform came to action immediately. The plan was to get a new structure of owners and companies within the agricultural sector. The changes were planned to be accomplished in three ways:

- A land reform containing restitution of land to former owners and the distribution of land with usufruct to family farmers.
- Restitution of other collectivised assets to former owners along with the construction of a privatised and market-oriented company structure within the agricultural sector.
- A change of the organisation of the public authority within the agricultural sector.

The main aim is the former landowners right to get their land and other assets back that has been confiscated during the Soviet occupation or be economically compensated. In cases when restitution is not possible, opportunities will be given private holders to rent or buy land. The attempts to create family farms have been prioritised in land where restitution could not be accomplished. In such cases certain areas are prescribed to 100 hectares in agricultural properties and 50 hectares in forest properties. There are no area limits prescribed when restitution is possible.

The total number of applications during the land reform was about 410 000 regarding restitution, compensation and purchase and often has competitive claims occurred. In 1997 the parliament passed a law of the land reforms prorogation (*André 1999*), but it has not really been finished yet. In 1999 the number of private properties was 150-155 000 and 190 000 in 2002. The average size of the properties was 8 hectares in 1999 (*Rotberga 2003*).

The annual increment at the time when Latvia regained independence was approximately 12 - 13 million m<sup>3</sup>, but it is not confirmed. The given annual cut at same time was 6.2 million m<sup>3</sup>/year, which 3.8 million m<sup>3</sup> were in final felling, and 2.4 million m<sup>3</sup> in thinning.

In 1991 was the Latvian forestry politics and organisation principally based on structures from the Soviet time. The utilisation of the great assets of forest was only partially. Bad infrastructure and the predominantly institutional system inhibited the forest sector. So did the lack of capital to investments.

It was not difficult to realise that the structural and financial changes at the time of the independence also would affect the stagnated forest sector and its industry. Privatisation, market-economy, an increased trade and other contacts with Western Europe created conditions to the development of the forest sectors' export opportunities. The development of forest sector was a national interest and as obvious as the development of other sectors.

At the elaboration and out carrying of the Latvian forest policy Swedish knowledge has sometimes been called for. The Swedish forestry support started in 1992 with a project financially supported by BITS (Swedish Board for Investment and Technological Support). The project was followed in 1993 by "Latvia Forestry Sector Master Plan" which has been used as a frame to all BITS/Sida forest projects in Latvia. The plan's main purpose has been to construct a strategy to an adequate management of forestry and the development of forest industry.

During the period between 1992-96 the Master Plan contained 11 separate projects to be implemented. The partner collaborators were "Latvian State Forest Service" under supervision of the Ministry of Agriculture and Swedforest International Ltd. The forest policy must also be adjusted to the international conventions referring to forestry that Latvia has agreed to. All Latvian legislation referring to forestry agrees with, or is even more far-reaching than the mentioned conventions. There are also several organisations in Latvia trying to influence the forest policy such as World Wide Fund (WWF), Latvian Fund for Nature and the Latvian Ornithology Society.

The Latvian forest policy defines the long-term strategic and tactical goals and basic principles of forest sector development. Thus, the Latvian forest policy identifies one general goal: the sustainable management of forests and forestlands (*Anon 2002c*).

In the context of the forest policy, "sustainable" management is defined as stated by Resolution H1: *"the stewardship and use of forests and forestlands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national and global levels, and that does not cause damage to other ecosystems are avoided (Anon 2002c).*

The Ministry of Forestry was abolished in 1993 and instead Latvian State Forest Service was established under the Ministry of Agriculture with the duty of managing the state forests and the observance of the forest laws. Until 1997 a specific cabinet minister administrated the issues about forestry. In 1997 was the forestry administration, still under the Ministry of Agriculture, divided into three units: Forestry Department, State Forest Service and State Forest Inspection (*André 1999*). The composition of the forestry administration changed in 1999 to the present organisation under the Ministry of Agriculture. The forest sector within the ministry consists of Department of Forest Resources and Department of Forest Policy (*Anon 2002c*).

## 2.2.2 State forestry

This chapter is based on findings from the homepage of the Ministry of Agriculture of Latvia (*Web 2004a*).

The Ministry of Agriculture is a central executive institution, one whose primary goal is to elaborate national policies in the area of agriculture, forestry and fishing, to implement those policies in tandem with other government institutions and to co-ordinate the operations of these sectors. The Ministry's Forest Sector is made up of the Department of Forest Policy and the Department of Forest Resources, and their job is to ensure that norms and support functions in the forestry sector are implemented in a co-operated fashion. The Ministry of Agriculture supervises the State Forest Service, and the state-owned stock company "Latvian State Forests" manages the national forests. The ministry of Agriculture controls all shares in the company.

The State Forest Service (*Valsts meza dienests*) is a civilian government institution which is under the aegis of the Ministry of Agriculture, is responsible for the implementation of unified forestry policies in all of the country's forests, supervises the implementation of norms which regulate the management and use of the forest, and implements support programs that are aimed at ensuring sustainable forestry in Latvia. The State Forest Service consists of a central staff and 26 regional units, each of which handles the functions of the State Forest Service in one of the country's 26 administrative districts. The employees of the State Forest Service are charged with ensuring that those who use the forest know about, understand and take into account the requirements of regulations, which govern the process, and that they make sure that good forestry principles are observed. Education among those who use the forest is a priority for the service. The State Forest Service is also the lead agency in monitoring fire safety and limiting fires in the country's forests. The public requires objective information about forests and what is happening in the country's forests. The State Forest Service manages the forest register and ensures that norms and laws are obeyed.

The State Joint-stock company Latvian State Forests (*Latvijas Valsts Mezi, LVM*) manages the forested properties which belong to the state and that can be used for commercial purposes. The LVM manages 1.6 million hectares of land, including 1.37 million hectares of forest. The LVM implements the state's interests in forest management, ensuring that the value of the forest is preserved and increased and that the state gets as much money as possible from the forest. In its economic operations, the LVM takes into account the social and ecological functions of the forest – those, which ensure the value of the surrounding environment, as well as the preservation and maintenance of important facilities of culture, history and recreation. The LVM operates in the entire cycle of the forest. It collects, processes and stores seed and grows saplings. That is the job for one of the LVM's structures, Seeds and Plants. The next phase is forest management throughout the full forestry cycle, and a structural unit called "Forest" handles this. This unit plant trees and then tends them until they grow to the point where they can be used. The unit also sells growing trees. Another structural unit, Round wood Supplies, prepares and sells round wood at its own facilities. The LVM is also engaged in a number of related areas of activity – recreation services, hunting services and sale of decorative plants. The volume that the LVM has to manage in the country's forests has increased by seven million cubic meters per year, while the cutting volume is always around four million cubic meters per year. The Forest Stewardship Council (FSC) certifies all LVM-managed forests.

### 2.2.3 Legal logging

In a report (*Web 2003i*) written by Taiga Rescue Network, WWF Sweden and WWF Latvia in 2002 they state the importance for Swedish companies to have better control over the imported volumes. *“Latvian forests are high in ecological value, providing habitat to a number of threatened and endangered species. The forestry sector is also highly important to the Latvian national economy. Sweden’s position as a major importer of Latvian timber and wood products in conjunction with their reputation as actors taking responsible forest management seriously warrants, closer scrutiny of the origin and impact of the Swedish import from Latvia”*. Not all of the Swedish import can be traced back to its origin and since Sweden is a big importer of timber from Latvia Swedish companies have a great responsibility to avoid importing illegally cut timber. *“Swedish companies have a unique position and very important role to play in the campaign to eliminate illegal logging”*.

Over the past years the Swedish import of Latvian timber and wood products has increased from 2.7 million m<sup>3</sup> in 1995 to almost 4.2 million m<sup>3</sup> in 2001. In 2000, Sweden imported 51% of the total volume exported from Latvia. The majority of the import to Sweden is pulpwood used by the large Swedish forestry companies. Latvia is an important source of deciduous or short-fibre pulpwood used in papermaking. The independence of Latvia from the Soviet Union has moved the country into a period of economic, political and social transition. This has led to transitions in forest ownership, forest management and increased timber exports. The illegal logging is a threat to forest ecosystems, sustainable forest management, rule-of-law, and overall Latvian economic development.

To control the logging in Latvia and to supervise wood trade, the State Revenue Service issues transfer waybills that must accompany all transported timber. The transfer waybill states the registration number of the felling license, the logging site, the volume logged and the assortment of products removed from the logging site or timber yard. When dealing with timber trade companies, documents indicating the origin are not always present and when purchasing timber from a terminal, the law does not require the presentation of felling licenses.

Illegal logging in Latvia can be grouped into three general categories. Timber theft - the illegal logging is performed without permission from the land owner or the land holder, logging without a legal felling license or logging with legal felling licenses but ignoring the logging normative. For harvesting in Latvia a felling license, issued by the State Forest Service, is required. When logging without a legal felling license sometimes a fraudulent license is used. This false documentation can without major difficulty be bought in Latvia today. In the third case, felling with license but ignoring the normative includes for example cases when the State Forest Service issues thinning but final felling is performed.

Illegal companies acting on the market create problems for the effectiveness in forestry management and circumvention of the payment of taxes and fees in the system translates into foregone tax revenue to the State Revenue Service. The illegal logging has a negative impact on both the forest sector in Latvia as well as the rest of the society. Illegal logging also leads to an unbalanced market with unfair competition.

The forestry legislation in Latvia is under development, but illegal logging is despite that a problem. In 2000, 3 763 cases of illegal logging were registered. That corresponds to a volume of 191 657 m<sup>3</sup>. In 2001 the number of registered cases were 2 757 with a registered volume of 229 029 m<sup>3</sup>. Illegal logging were performed both in state-owned forest and in

private holdings. Much of the illegal logging in Latvia goes unreported and it is not possible to provide a complete picture of the extension.

## **2.3 Tax system**

Almost every interviewed logging company, in this study, mentioned the Latvian tax system and its deficiencies. We will here try to give a brief introduction to the tax laws in Latvia and to try to understand the background of some opinions expressed during the interviews.

### **2.3.1 An outline of Latvia's tax system**

This chapter is based on findings from the homepage of the Swedish Tax Authority (RSV) (*Web 2003d*).

Legislative proceedings are a central part of the transformation into a modern market economy. Laws about e.g. competition, bankruptcy and corporations have been established. A substantial modernisation of the tax system in Latvia and in the other Baltic States is in progress. The tax system in the three states is not uniform, but they all constitutes principally of income tax, value-added tax and of payroll taxes.

Enterprises domiciled in Latvia are liable to taxes of all their income, irrespective of where it originates. The tax is calculated based on the net income. The tax rate amounts to 25% for private enterprises and to 35% for enterprises partly or fully owned by the state. For companies who runs banking- and insurance business the taxes amounts to 45%. For the present time being Latvia has a sales tax instead of value-added tax on goods and services. The normal tax rate is 12%. Employers are obligated to pay payroll taxes; in general it amounts to 35%. Employees pay a fee of 1%.

Enterprises with foreign ownership of more than 30% of the capital are exempted from income tax during a period of two years, starting with the first remunerative year. The following two years grant a 50% tax reduction. For enterprises with an activity of the government judged as especially important for Latvia and where the foreign ownership exceeds 30% of the capital, exemptions from income taxes during a period of three years are granted, starting with the first remunerative year. The following two years allows a tax reduction of 50%. For enterprises with foreign ownership that exceeds 50% of the capital or the foreign capital corresponding minimum 1 000 000 US dollar tax exemptions are granted for a period of three years, starting with the first remunerative year, and a tax reduction of 50% the following five years.

For activities judged as especially valuable for Latvia additional tax reductions could be admitted after the expiration of periods mentioned above. If the enterprise closes down its activity before three years have passed since the registration, the enterprise is liable to pay taxes for its profit during the whole activity period. The tax for physical persons is progressive and varies between 15-35%.

### **2.3.2 Law on immovable property tax**

The information about the law on immovable property tax is based on findings from the homepage of the Latvian Government (*Web 2003j*).

The law on immovable property tax shall be imposed upon tangible things that are located in the territory of the Republic of Latvia. The definition in the law for an immovable property is something that cannot be transferred from one place to another without being externally damaged – such as land, buildings and constructions. The cadastral value of immovable property shall not include the value of standing forest. Some exceptions from the immovable property tax are given in the law.

The tax rate is, since January 2002, one percent of the cadastral value of the immovable property. The State Land Service shall determine the cadastral value of a property. The taxation period of immovable property is, according to the law, one calendar year. The local government, based on the last cadastral value, shall determine the tax. If the property is located in the territory of several local governments, they shall all determine a proportional tax amount for the part of the property located in their territory. In case of ownership or possession of more than one property, tax shall be calculated and paid separately for each property. Mass reassessment of immovable property shall be performed not less frequently than once every five years. If the owner covers the related expenses, the owner can request reassessment of the property at any time as he or she wishes. The local government may determine abatements for separate categories of immovable property tax payers in the amount of 90%, 70%, 50% or 25% of the tax amount for the property.

Until the completion of the land reform, the user of the land shall pay immovable property tax for land, which is not in the ownership or legal possession of some person, but if such does not exist - by the lessee.

## **2.4 Investments**

### **2.4.1 Introduction**

This chapter is based on findings from the United International Press' homepage (*Web 2003k*) and might be written in the purpose to attract foreign investors and should not be considered impartial, the same situation shows in the information from "Forest Sector in Latvia, 2002" (*Anon 2002b*).

### **2.4.2 Present situation**

In Latvia's 2001 budget, 28 million LVL was earmarked for agriculture, which is around three percent of the overall budget. Today, the government is working to make both forestry and agriculture profitable in an open market. Both sectors show a significant growth potential, given Latvia's strategic position linking the Baltic States, Scandinavia and European Union. Both forestry and agriculture represent a number of advantages for investors (*Web 2003k*).

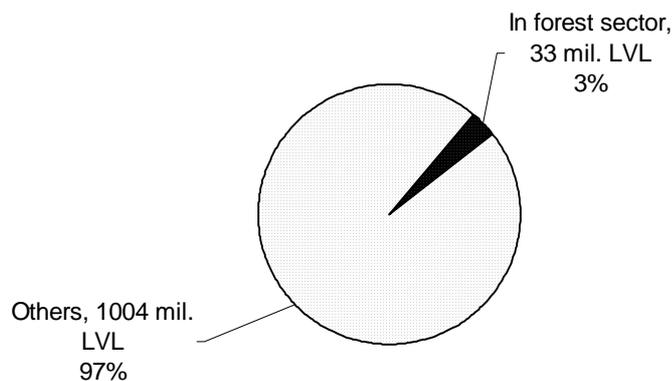
Latvia offers abundant, high-quality raw materials, and the country's unique geographical location, excellent transport network and ice-free ports facilitate exporting products. In addition, Latvia can supply highly qualified, multilingual workers, and the country's economy is stable and thriving. Exploiting its forests in a sustainable way, and upgrading the industry overall through the implementation of new technologies, are the government's main goals for the forestry industry at present. Foreign investment is actively being sought (*Web 2003k*).

Atis Slakteris, Minister of Agriculture says in an interview; “Latvia has free-trade agreements with the European Union and with the Baltic States. Latvia is becoming more international everyday and we welcome foreign investors who can help us reach higher levels” (*Web 2003k*).

### 2.4.3 Foreign investments

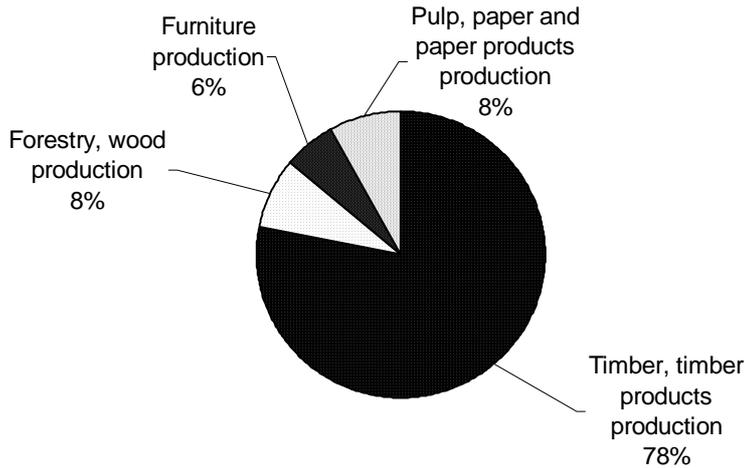
During the last years Latvia has attracted significant foreign direct investment stock. Latvia has become attractive to foreign investors due to the open and growing economy, liberal trade regime, and developed transit infrastructure, as well as to the cheap and qualified work force (*Anon 2002b*).

Due to stable raw material resources and advantageous geographical position, foreign investments have flown in to Latvian forestry. In the end of 2001, the total value of foreign capital invested in Latvia’s forest sector enterprises was 32.7 million LVL, i.e. 3.2% of the total accumulated foreign investment in the stock capital of Latvia’s enterprises (*Anon 2002b*).



**Figure 1.** Foreign investments in Latvia’s forest sector enterprises stock capital, 1992-2001 (*Anon 2002b*).  
*Figur 1. Utländska investeringar i aktiekapital hos företag inom den lettiska skogssektorn, 1992-2001*  
(*Anon 2002b*).

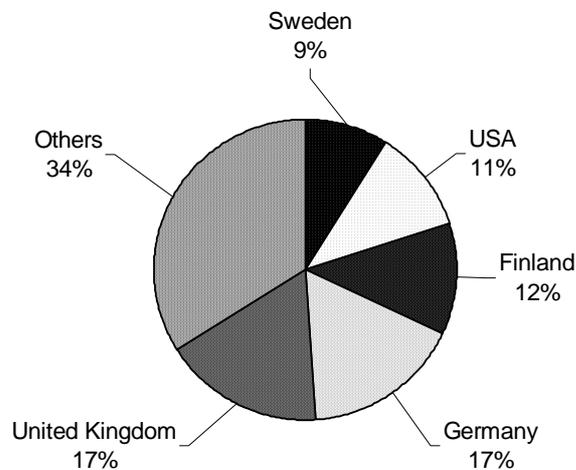
The biggest investments in Latvia’s forest sector were made in timber and timber products producing enterprises. The accumulated value in these enterprises in the end of 2001 was 25.4 million LVL, in pulp and paper producing enterprises - 2.7 million LVL, in forestry and timber producing - 2.6 million LVL and in furniture production - 2 million LVL (*Anon 2002b*).



**Figure 2.** Foreign investments in Latvia's forest sector enterprises stock capital, by the type of activity, 1992-2001 (Anon 2002b).

*Figur 2. Utländska investeringar i aktiekapital hos företag inom den lettiska skogssektorn verksamhetsvis, 1992-2001 (Anon 2002b).*

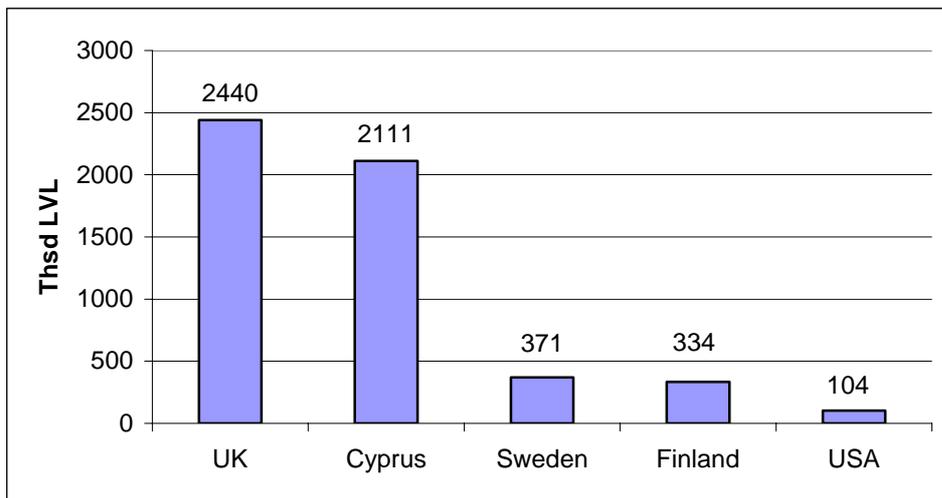
In general during the period between 1992-2001 the biggest investors in the stock capitals of Latvia's forest sector enterprises are from United Kingdom (5.7 million LVL), Germany (5.6 million LVL), and Finland (4 million LVL) (Anon 2002b)



**Figure 3.** Foreign investments in Latvia's forest sector enterprises' stock capital, by countries, 1992-2001 (Anon 2002b).

*Figur 3. Utländska investeringar i aktiekapital hos företag inom den lettiska skogssektorn landsvis, 1992-2001 (Anon 2002b).*

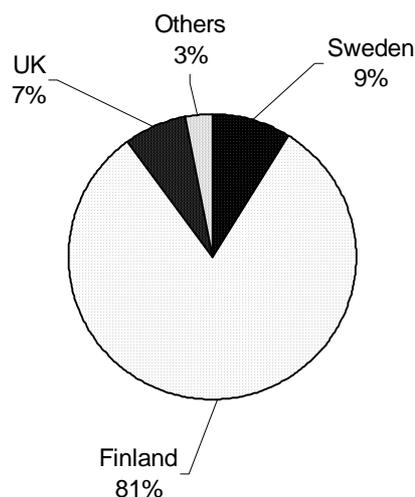
The largest foreign investments in Latvia's enterprises' stock capital in 2001 were made by UK, Cyprus, Swedish, Finnish and American investors. Investments from those countries constitute almost 2/3 of the total investments in 2001 (Anon 2002b).



**Figure 4.** The biggest investing countries in Latvia's forest sector enterprises' stock capital in 2001 (Anon 2002b).

*Figur 4. De största länderna att investera i aktiekapital hos företag inom den lettiska skogsektorn 2001 (Anon 2002b).*

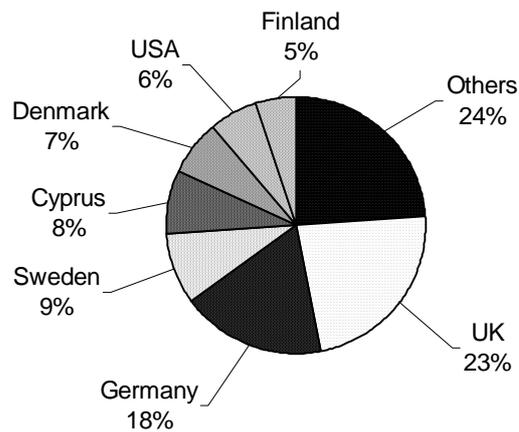
Six countries, dominated by Finland, followed by Sweden, UK and USA, made investments in Latvia's forestry and timber production enterprises' stock capital, during five years from 1996-2000. This trend also maintained in 2001 (Anon 2002b).



**Figure 5.** Foreign investments in Latvia's forestry and timber producing industry enterprises' stock capital by countries, 1992-2001 (Anon 2002b).

*Figur 5. Utländska investeringar i aktiekapital hos Lettlands industriella skogs- och virkesproducerande företag landsvis, 1992-2001 (Anon 2002b).*

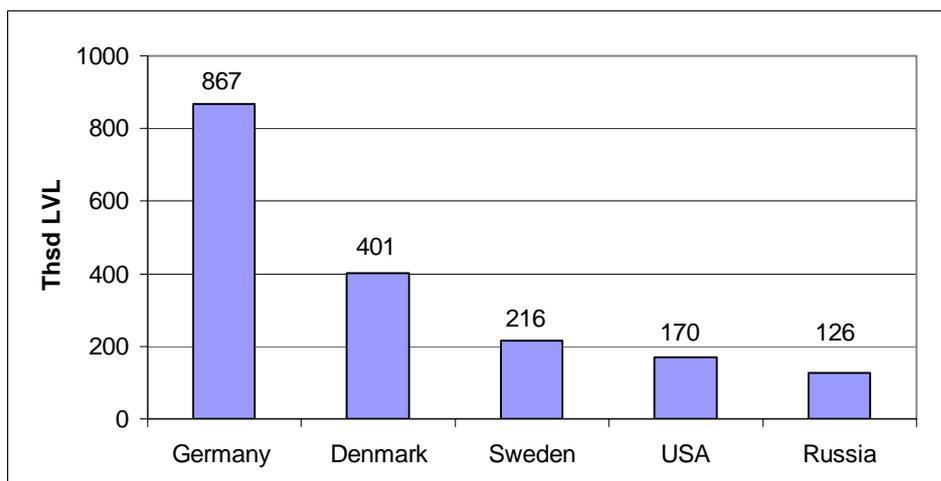
In Latvia's timber and timber products manufacturing enterprises stock capital UK and German investors have been the dominated. The biggest share of products of this industry is also exported to these countries (Anon 2002b).



**Figure 6.** Foreign investments in Latvia's timber and timber products manufacturing enterprises stock capital by countries, 1992-2001 (Anon 2002b).

*Figur 6. Utländska investeringar i aktiekapital hos lettiska tillverkare av virkesprodukter landsvis, 1992-2001 (Anon 2002b).*

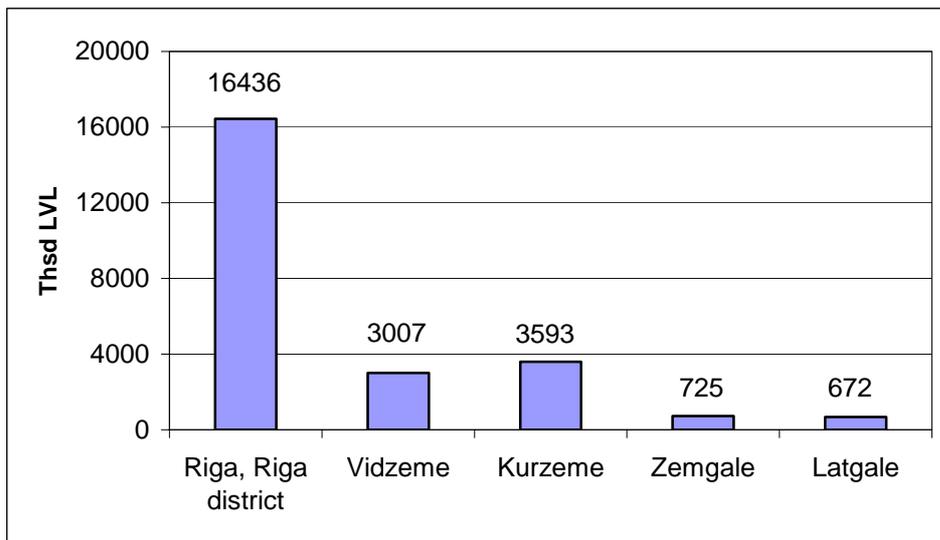
Finland and USA have made the biggest investments in pulp and paper manufacturing enterprises stock capital. Germany, Denmark, Sweden and USA have made the biggest investments in furniture manufacturing (Anon 2002b).



**Figure 7.** Foreign investments in Latvia's furniture manufacturing enterprises stock capital by biggest countries, 1992-2001 (Anon 2002b).

*Figur 7. De största länderna att investera i aktiekapital hos lettiska möbelproducenter, 1992-2001 (Anon 2002b).*

Foreign investors have invested most in the forest sector enterprises that are located in Riga or in the Riga district (67%) during the period between 1994-2000. Almost 15% of investments have gone to Kurzeme, and 12% to Vidzeme region enterprises (Anon 2002b).



**Figure 8.** Foreign investments in forest sector enterprises' stock capital in Latvia's regions, 1994-2000 (Anon 2002b).

Figur 8. Utländska investeringar i aktiekapital hos företag inom skogsektorn fördelade på Lettlands regioner, 1994-2000 (Anon 2002b).

Foreign investors have invested most in the enterprises stock capital producing timber and timber products in Riga and in Riga district. In Kurzeme region the most significant foreign investments in the enterprises stock capital during this period have been in Talsi district, and in Vidzeme - in Limbazi, Cesis, and Madona district enterprises (Anon 2002b).

### 3 METHOD AND MATERIAL

Our task is to investigate the logging companies' situation in Latvia. In the beginning of this study our knowledge about the forestry in Latvia was limited and we therefore started our own investigations from scratch. For our literature survey, many of our primary literature sources stem from the Internet web since very little updated information exist in English in printed form. We chose to elaborate a questionnaire based on our experiences and knowledge of Sweden. We then proceeded with a pilot fact-finding trip to Latvia in order to receive more information, after which a definite interview protocol was elaborated (see Appendix 1) and the interviews were carried out during a second visit to Latvia.

Our starting point was to make a survey of the logging companies in Latvia. We then faced the choice of whether to use quantitative or qualitative methodology. Knowledge is one of two important factors when to decide upon the most appropriate methodology. In the initial phase of this study, our knowledge about the Latvian forestry was scanty in general and the knowledge about the Latvian logging companies was even more limited. We wanted to reach a depth in our knowledge about the logging companies in order to make a fair study. If we did not have any real knowledge and used quantitative methods, we might have misunderstood the companies' conditions they are working under, and consequently have drawn incorrect conclusions about the Latvian forestry and the logging companies. A quantitative study demands knowledge about the subject, in order to perceive the great amounts of meaning's a quantitative interview can involve (Kvale 1997).

The second factor in the choice of methodology of a study is the aim, which Trost (1997) consider to be the most crucial factor. Trost (1997) also remarks that a quantitative method is to prefer when the aim considers information about how often, how many or how common. If the aim is to understand lines of action and reasoning, a qualitative method is the most favourable. Our aim with this study is to understand the logging companies' situation in the Latvian forestry and as a result, bring out the companies' present state and development needs. Our intention is not to quantify the logging companies in order to see similarities, but to point out the logging companies' differences between themselves and to present their specific corporate image. We found out that our knowledge about the companies, which we were about to receive, and our aim of the study in particular, considered a qualitative approach to be the best alternative.

In order to understand what conditions the logging companies are working under, we did a literature study primarily based on Internet documents, and correspondence by e-mail has also taken place with persons of authority in Latvia. A first preliminary fact-finding mission was carried out during a short trip to Latvia. We met our fellow Latvian B.Sc. students, who will also be writing their theses on this material, and their supervisor as well as two representatives from the forest sector. The meetings concerned the general conditions the companies were working under. Due to the very complex and diversified settings in which the logging companies work, we decided that 10-20 interviews would be necessary in order to draw general conclusions. We became aware that the understanding of English is limited, even among high-ranking administrators and businessmen. The ability to perform the interviews in English would consequently be greatly limited and that we needed to relay on simultaneous interpretation.

We developed a pilot questionnaire together with two Swedish students, who did the same study in Estonia, regarding the companies logging organisation and economics, company,

employees, machines and production. The questions were based on prior knowledge of Swedish logging contractors, literature and the experiences from the trip. The final version of the questionnaire was finalised in co-operation with our Swedish supervisor and with additional information from the Swedish fellow students, who started their interview based information retrieval in Estonia before us. The questionnaire is to be found in Appendix 1.

The cases to be studied were selected from a list received by The Latvian Union of Timber Harvesting Companies (LUTHC) from which the Latvian B.Sc. students and their supervisor selected the cases. The total list comprised more than 20 companies from which 14 companies was selected. The selection was based on logging companies using relatively modern equipment such as modern harvesters and forwarders. The intention in the selection was also to have a geographical spread in order to see if any local differences could be distinguished between the logging companies. Regarding most cases, we had no knowledge of the logging companies to be interviewed, but the companies were always informed ahead about the purpose of our visit by the Latvian B.Sc. students' supervisor. The respondent companies were free to choose the place for the interviews and all, except for one, was carried out at the companies' headquarters.

Of the 14 interviews with respondents from the logging companies were 11 performed in the Latvian language and three in the English language. The interviews lasted from one to three and a half hours. All interviews were carried out based on the same questionnaire and the length of the interviews depended on the respondents.

The primary idea of simultaneous interpretation, which probably would have led to a redoubled length of the interview, was rejected as a regard to the respondent. Otherwise the interviews would have been too long and trying. At the most, but only once, three interviews were managed in one day, but the usual rate were one or two interviews per day.

During the interviews the Latvian students took notes, which we later translated into English. During the three interviews carried out in English all four of us took notes. Each interview took about one and a half hour to translate when we also shared our different observations, which enriched the information about the companies.

In order to separate the logging companies, with the purpose to especially demonstrate their specific corporate identity, we decided to present three logging companies as case studies (see chapter 4.2, 4.3, 4.4). According to Kvale (1997) is the case study an illustrative example when to point out a subject and that the case study itself has a value. The companies concerned by case studies also take part in the summary of all interviews (see chapter 4.1) together with the other 11 interviewed companies. Our choice to present three case studies is only an attempt to point out the diversity between the logging companies even more easily and to give distinguished examples of three types of companies in the Latvian forestry with logging as core business.

The results from this study are not representative for all logging companies in Latvia. Consequently, the results only describe the 14 logging companies that have been interviewed. The results from the interviews with the logging companies are all reported anonymously.

## 4 RESULTS

The results presented in this chapter are a summary of the interviews of all 14 logging companies' respectively three case studies of three selected companies.

### 4.1 Summary of all interviews

#### 4.1.1 The companies' history and ownership

Thirteen companies mention their year of foundation. The two oldest companies have 1990 as year of foundation, while the latest founded company has 2001 as foundation year. Five of the companies were founded during the years of 1992-1993. Three companies say that they have been state-owned before their foundation year, and that the companies originate from the Soviet period. One company, founded in 1992, says that they were an agricultural company until 1997 when they became a logging company.

*Table 1.* The 14 companies' mentioned foundation years.

*Tabell 1. De 14 företagens nämnda år för grundande.*

Company	Year of foundation
1	1995
2	1993
3	1995
4	1993
5	1996
6	1990
7	1992
8	1993
9	*
10	1990
11	1992
12	2001
13	1994
14	2000

\* Statement missing.

The ownership in 11 companies is 100% Latvian, while two are subsidiaries to forestry companies from Scandinavia. A third logging company is to 90% owned by a foreign sawn wood company. The three Scandinavian forestry companies that own the three Latvian logging companies are from the countries Sweden, Finland and Denmark. A German company owned one other logging company until 1996 when the present Latvian owner bought all shares in the logging company.

#### 4.1.2 The companies' business activities

All interviewed companies' mention logging in final felling- and thinning stands as their core businesses. Besides the logging the majority of the companies do silvicultural activities for example planting and pre-commercial thinning. Eight companies also do scarification and 11 companies do timber transportation both for themselves and other logging companies (see table 2). Seven companies perform building or restoration of forest roads. The companies say

that they are only doing the improvement or building of forest roads when it is necessary for their own logging and timber transportation.

**Table 2.** The 14 companies' mentioned silvicultural activities and other activities connected to forestry excluding logging.

*Tabell 2. De 14 företagens nämnda skogsvårdsverksamheter och andra aktiviteter förknippade med skogsbruk förutom skogsavverkning.*

Company	Activities				
	Planting	Pre-commercial thinning	Scarification	Timber transportation	Forest road building/restoration
1	*	X	*	X	X
2	X	X	X	X	*
3	X	X	X	X	*
4	X	*	X	X	X
5	X	X	X	X	X
6	X	X	X	X	X
7	*	*	*	X	X
8	X	*	*	X	*
9	X	*	X	X	*
10	X	X	X	X	X
11	X	X	*	X	*
12	X	X	*	*	X
13	X	*	X	X	*
14	X	X	*	*	*

\* Statement missing.

Six companies own their own sawmills and two companies manufacture fence poles out of suitable pieces of pulpwood (see table 3). Two companies build log houses and one company performs bush cleaning of ditches. One company owns a nursery for spruce, pine and birch plants, and another company owns a camping. One other company ennobles the wood products from their sawmill to furniture like coffins, another company manufactures boards and one company owns a firm that make inventory's of standing forest.

**Table 3.** The 14 companies' statements regarding own sawmills and performances of other activities.

*Tabell 3. De 14 företagens redogörande beträffande egna sågverk samt utförande av övriga verksamheter.*

Company	Sawmill	Other activities
1		Board factory, bush cleaning of ditches
2	X	Furniture factory
3	X	Fence pole manufacturing
4		Forestland owner
5		Forestland owner
6	X	Forestland owner
7		Log house building, timber trading, forestland owner
8	X	Fence pole manufacturing, nursery, trading with felling-rights
9		
10		Timber trading, forestland owner
11	X	Camping, forwarder dealer, timber trading, log house building
12	X	Timber trading, forestland owner
13		
14		Trading with planks, inventorying of standing forests, forestland owner

As a part of their business, six companies also do trading. In four cases the trading comprises round wood, where the companies buy round wood from other logging companies or private forest owners, and then sell it further to other companies. One company trades with felling-rights to cutting-sites with standing forest. The company purchases the felling-rights and then

sells the rights with the forest still standing. One other company buys planks in Russia and sells the planks for export abroad and to Latvian companies. There are seven companies that own forestland, which also are active buyers of forestland. One company representative says that the company buys forestland to the amount of 15-20 000 LVL per year. Another company respondent expresses that buying forestland with standing forest is too expensive, why the company purchase sites that has already been felled instead. This is the only statement regarding what kind of forestland the companies buy. Two companies mention the amount of forestland they own. One company owns 3000 hectares and the other company owns 140 hectares. The last-mentioned company is to 90% owned by a foreign company, which in its turn owns 350 hectares.

### 4.1.3 Logging

The State of Latvia is the greatest owner of forestland. There are 12 logging companies that have logging contracts of some kind with the state. One company is a subcontractor to a Latvian building firm and does not have any own state-contracts. The logging companies can have two kinds of logging contracts with the state, long-term- and assortment-contracts. The long-term contracts were created by the state in the early 1990:s, during the first years of independence. There are 10 companies in the survey that have this kind of logging contract (see table 4). A long-term contract implies that the companies have a priority to buy felling-rights from the state and harvest standing forest on state-owned land in a certain limited geographical area. The areas are in general one of Latvia's 26 State forestry regions, but the exact sizes of the contracts geographical areas are uncertain. One company mention an area of 25 000 ha when the other companies mention their long-term contracts only in cubic-metres. The companies sell the timber from the long-term contracts to optional customer.

**Table 4.** Mentioned procedures and combinations of procedures in the acquisition of timber among the 14 companies.

*Tabell 4. Nämnda tillvägagångssätt och kombinationer av procedurer i anskaffningen av virke hos de 14 företagen.*

Company	Procedures in acquisition of timber						
	State contracts		Bidding procedures		Buyer of forestland	Buyer of round wood	Rent of forestland
	Long-term contracts	Assortment contracts	State forests	Private forests			
1	X						
2	X		X				X
3	X			X		X	
4	X			X	X	X	
5			X	X	X		X
6	X		X	X	X		
7	X			X	X	X	
8	X		X	X		X	
9	X		X	X			
10	X		X	X	X	X	
11		X		X			
12		X	X	X	X		
13	X	X		X			
14 <sup>1</sup>					X		

<sup>1</sup> Subcontracting company without own contracts.

The long-term contracts also include regeneration of the cutting-sites. There are no limits regarding the number of long-term contracts a company can own. A few of the interviewed companies have several long-term contracts in different regions in Latvia. The long-term

contracts can last for several years but for many companies these contracts are running out within the years 2004-2007. In cases when time limitations regarding contracts have been mentioned, the longest long-term contract ends in 2026.

The other kind of state logging contract is called assortment-contract and was introduced by the state in 2002 as a successor to the long-term contracts. The assortment-contract implies that the companies do not become the owners of the timber. These companies are only selling their services to the state for compensation and are only working as contractors in a limited geographical area. The assortment-contracts geographical working areas are greater than the long-term contract areas and extend over several of Latvia's State forestry regions. In order to get a contract the companies must fulfil certain demands, for example electronically measuring equipment in the harvesters and regeneration of the cutting-sites. The electronic measuring equipment is necessary because the companies are paid by the state by actual volume by the road when the logging is performed. The assortment-contracts are only valid for one year and prolong for one year at a time. Three of the interviewed companies have these kinds of logging contracts. The total number of assortment-contractors in Latvia is eight (2003). Having a long-term contract or an assortment-contract does not exclude a company to have both (see table 4). One company has both kinds of contracts.

A majority of the companies also buy felling-rights to specific cutting-sites through bidding procedures from the state or private owners. The bidding procedures by the state take place every third week as a kind of auction. The bidding procedures by private forest owners take place as the forest owners put ads in newspapers when they want to sell a felling-right. The felling-right is then sold to the highest bidder. Six companies buy felling-rights from both the state and private forest owners (see table 4). Additional six companies purchase felling-rights either from private forest owners or the state. The felling-rights are valid for one year, but the felling is in general made after a few weeks up to six months after the purchase. The cutting-sites, which the felling-rights give access to, can be located anywhere in Latvia. In order to bound the expensive transports to far cutting-sites, one company exchange felling-rights with other companies that are near the cutting-sites. The company then gets felling-rights to cutting-sites that are closer to their geographical working area in exchange. One company also makes logging deals with private forest owners and two companies mention rent of private forestland as a part of their acquisition of timber. In favour to the assortment-contracts the state have decided to reduce the number of felling-rights offered by the state's auctions.

#### **4.1.4 Customers**

Several of the Latvian companies have foreign companies as customers for their pulpwood, of which four are Swedish; three considerable pulp companies and a forest owners association. One company also sell their saw logs for export abroad, but the majority of the companies have domestic customers regarding their saw logs when they do not enoble the saw logs in their own sawmills. The domestic customers can be both sawmills and trading firms. One company mentions that they have 70 sawmills as customers. Four companies tell that they make contracts with the companies that buy their saw logs and pulpwood. Out of the four have two companies long-term contracts with their customers and the other two companies have both long-term- and spot contracts. Two companies are customers to several of all interviewed companies.

Five companies mention that they receive feedback from their customers. One company representative says that they only get the negative feedback. Another company says that a sawmill, which is one of their customers, often complain about pieces of metal in the saw

logs. Four companies are pleased with the positive and negative feedback they receive from their customers. One company, to the majority owned by foreign company, mentions that they are the first logging company to make deals in EURO in Latvia. The representative tells that using EURO works well and their utilisation of the currency has changed many people's minds about it. The representative wishes that more companies would use EURO in the future.

#### **4.1.5 Participation in trade associations**

Nine of the companies are members of the Latvian Union of Timber Harvesting Companies (LUTHC), whose purpose is to promote the logging contractors' and the logging companies' interests. The union has 29 members (2002). One of the companies' respondents says that the union is doing as much as they can for the companies. The respondent also expresses the importance of being a part of the organisation, especially in the contacts with the state. The five companies that are not members of the union mention all the same reason for not being a member. They say that the union does not have any power and they do not see any use of their participation. Because of this reason, one company has left the union and instead wants to form, as well as two other companies, a new organisation for the smaller logging companies and contractors. Besides being a member of the LUTHC, three companies also participate in other organisations. One company is a member of the Latvian Investment Council, one other is a member of Latvia's Association of Wood Processing Entrepreneurs and Exporters (LAWEE) and one company is a member of a union that organises forestry industrial companies.

#### **4.1.6 Certifications**

Regarding certifications, six companies mention that the Forest Stewardship Council (FSC) certifies them. One company also wants to be certified by the Pan-European Forest Certification (PEFC) and another company wants to have ISO-certifications. Two certified companies tell that a customer, which is the same for both companies, pay 0,50 LVL more per cubic-metre for certified timber than uncertified timber. Several uncertified and one certified company, say that the certification does not work in Latvia. One of the respondents says that the saw logs from certified and uncertified forests are mixed in the sawmills and then being sold as certified timber. The respondent could therefore not see any use of being certified when the certification is not obeyed. The uncertified companies all say that they will be certified if it is necessary for their business. One company considers to be certified by FSC, which they already have been in contact with, and one other company will choose either FSC or PEFC depending on their customers' demands.

#### **4.1.7 Economics**

Seven companies mention their yearly turnovers (see table 5). Four companies say that they have a turnover less than 1 million LVL<sup>1</sup>, and three companies mention their turnovers to be 1 million LVL or more.

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<sup>1</sup> 1 LVL = 12.56 SEK (2005-02-16). In local purchasing power equals 4 LVL to a dinner including three meals at a restaurant.

**Table 5.** Seven companies' mentioned yearly turnovers in LVL.  
*Tabell 5. Nämnade omsättningsuppgifter i LVL/år hos sju företag.*

Company	Turnover
X	100 000
X	108 000
X	344 069 <sup>1</sup>
X	700 000
X	1 000 000
X	3 800 000
X	11 000 000

<sup>1</sup> Mentioned turnover of the first six months of 2003.

There are 10 companies that mention what kind of costs they encounter and the amounts of the costs. One of these companies have given statements regarding both total costs and costs for each activity. Five companies mention their total costs that include preparing of wood, forwarding and transporting by truck (see table 6). Preparing wood is either carried out by chainsaw or harvester, or both.

**Table 6.** Five companies' mentioned total costs in LVL/m<sup>3</sup>.  
*Tabell 6. Nämnade totala kostnader i LVL/m<sup>3</sup> hos fem företag.*

Company	Total cost
X	1.60
X	5.50-6.50
X	6.50
X	6.00-7.00
X	8.00

Six companies mention the cost for each activity in their enterprises (see table 7). The activities are preparing of wood, by chainsaw and/or harvester, forwarding and transporting by timber truck. One company mentions also an extra cost that is 0.10 LVL per 100 metres of forwarding.

**Table 7.** Six companies mentioned costs for each activity in LVL/m<sup>3</sup>.  
*Tabell 7. Nämnade kostnader för repektive verksamhet i LVL/m<sup>3</sup> hos sex företag*

Company	Activities			
	Chainsaw <sup>1</sup>	Harvester <sup>2</sup>	Forwarder	Truck
X	3.41	2.03	*	1.36
X	2.20	**	1.50 <sup>3</sup>	1.50 <sup>3</sup>
X	*	2.00	1.98	1.54
X	*	2.20-2.30	1.80-1.90	*
X	*	2.60-2.70	2.00+0.10/100m	**
X	*	2.70	2.00	*

<sup>1</sup> Both final felling and thinning.

<sup>2</sup> Final felling only.

<sup>3</sup> Average cost for the company.

\* Statement missing.

\*\* Lack of activity.

Regarding the incomes from logging, seven companies mention their gross income in LVL per logged cubic meter (see table 8). The smallest mentioned gross income is 0.20 – 0.50 LVL/m<sup>3</sup> and the greatest 3.00 LVL/m<sup>3</sup>. Three companies say that they count on their gross incomes to be 2.00 LVL/m<sup>3</sup> in 2003. The three companies' figures are presented as less than 2.00 LVL/m<sup>3</sup> in the table.

**Table 8.** Seven companies' mentioned gross incomes in LVL/m<sup>3</sup>.  
*Tabell 8. Nämnda bruttoinkomster hos sju företag i LVL/m<sup>3</sup>.*

Company	Income
X	0.20-0.50
X	0.40
X	1.50-2.00
X	< 2.00
X	< 2.00
X	< 2.00
X	3.00

#### 4.1.8 Profitability

There are nine companies that have stated that their enterprises are profitable. Four of them mention logging and other forestry activities as the greatest contributors to the profits, while three companies are saying that their logging is unprofitable. These three companies state that they are profitable, due to other activities undertaken by the enterprises that are lucrative; these side activities are two sawmills and a board factory. The reasons for the low profitability vary among the companies. One company's respondent mentions the wet cutting-sites within their long-term contracts and the long waiting time for spare parts to their Valmet machines as two examples.

One company respondent says that buying felling-rights through their long-term contracts is still profitable, but purchasing through bidding procedure gives a profit more or less equal to nil. When buying felling-rights from private forest owners, it varies depending on cutting-sites, whether the logging is profitable or not, the respondent also says. For two other companies, the representatives tell that they are pleased as long as the profit can defray the mortgage and amortisation of the bank loans from their investments. Another company mention both their logging and sawmill as equal contributors to the 50 000 LVL profit, where 25 000 LVL originate from each activity and year. This amount is the only statement regarding profits in this survey. One company mentions the needed performance per month to defray the mortgage and amortisation of the bank loans. They say that a volume of 5000 m<sup>3</sup>/month is a necessity. Another company respondent says in comment to the low logging profits that if the profit in road building increases, the company might stop the logging activities and start building roads instead. Another company respondent says that the profit hopefully will increase in the future because of new techniques and more educated personnel, and as a result of that, make the company more competitive and create new possibilities to expand.

#### 4.1.9 Taxes

Tax is frequently mentioned as a restraint on business profits. Ten companies have given statements regarding taxes where all of them say that the taxes are a serious problem for their businesses. The taxes that the companies mention as burdensome are the road-tax within fuel costs and the income tax. The road-tax is a state taxation included in the fuel price, which aim is to finance the state-owned roads. The portion of the road-tax in the companies' total fuel cost is, as the companies say, significant. One company respondent mentions a figure of 40-50 000 LVL per year that the company pays in road-tax. The companies expresses that they do not see the need to pay road tax for their logging machines, as the machines are not active on the roads, but in the forests. The income tax is a state taxation of the companies' gross incomes. The amounts the companies are paying are 18-20% of their gross income. There can

also be a taxation of the companies if they do not regenerate their cutting-sites, as the Latvian Forest Law prescribes. Some of the companies express the forest law as scarce in this matter. Different interpretations of the forest law can occur depending on divergent interests as a logging company or an inspector from the Latvian State Forest Service.

#### **4.1.10 Illegal logging companies**

Many of the interviewed companies complain about the small illegal logging companies that are active in the bidding procedures. The illegal companies do not pay the income tax of 18-20% of the gross income from logging, and can therefore afford to pay a higher price for the felling-rights. The illegal companies are active in the bidding procedures both by the state and private forest owners. Several companies want the state to supervise more in the bidding procedures in order to eliminate the illegal companies and make the competition more even. One of the smaller logging companies in this survey expressed that small companies have difficulties to keep up the competition against larger companies economically in the bidding procedures. Especially when the procedures concern cutting-sites with large quantities of pine and/or spruce stands, which are easier to harvest than sites with a high percent of deciduous trees. The prices of felling-rights to coniferous cutting-sites are often too expensive for the small logging companies, the representative says.

#### **4.1.11 Logging in the future**

The fact that the state will not renew the long-term contracts is a major problem to 10 of the interviewed companies, as the contracts represent the half or more of their yearly production from logging. One company does not have any other contracts than their long-term contract. The long-term contracts are also the basis of planning for the companies' forestry activities, because of the contract length of several years.

Within the assortment-contracts, the planning is limited to one year at a time, and as the companies say, does not give any good grounds for investments. One company representative complains about the demands within the assortment contract from the state. The state is also decreasing the number of bidding procedures where the companies can buy felling-rights, in favour to the assortment-contractors. One company representative says that the private forests cannot provide the present number of logging companies with timber in the future. As a result of the state's actions, many of the companies tell that they are seriously worried about their future existence in the forestry sector.

#### **4.1.12 Geographical working areas**

Latvia consists of 26 State forestry regions. Most companies say that their main geographical working area is in one of the regions, but they can also be in several regions. The long-term and assortment-contracts are located within a certain or several regions, but when buying felling-rights to cutting-sites through bidding procedures, the cutting-sites can be located anywhere in Latvia. Out of all companies nine have given statements regarding geographical working area expansion. Five of those are willing to expand to other regions, while four companies are saying that they do not have any plans of expanding their geographical working area. One company representative says that expanding to other regions can be less popular among the already existing companies in the region. The reason can be, as the representative says, an unofficial division of the regions between the existing companies that

do not want more competition in their regions. None of the companies have plans to expand their geographical working area to any of Latvia's neighbouring countries Russia, Belarus, Estonia and Lithuania.

#### 4.1.13 Production

Several companies say that the timber volumes are steady over the year. Exceptions occur when seasonal variations in climate restrain the production and transportation of timber. Because of the breaking up of frost in the ground are many roads are closed and impassable during the spring. As a result the volumes get higher in the winters when the companies try to cut as much as they can while the ground is still frozen. Other factors affecting the timber volumes are the prices per cubic-metre of saw logs and pulpwood. Several companies say that they try to cut more when the prices per cubic-metre of saw logs and pulpwood are high or increasing. One other factor affecting the timber volumes, as a company representative says, occur when the companies are competing when buying felling-rights through bidding procedures.

All 14 companies mention their total yearly production from logging. The volumes are all presented in cubic-metres and represents timber and pulpwood (see table 9). The smallest volume is 36 000 m<sup>3</sup>/year and the greatest volume is 550 000 m<sup>3</sup>/year.

**Table 9.** The 14 companies' mentioned yearly production and percentage division of activities and species of trees.

*Tabell 9. De 14 företagens redogörande för årlig virkesproduktion med procentuell fördelning därav i aktiviteter samt trädslagsfördelning.*

Company	Volume m <sup>3</sup> /year	Final felling/thinning %	Coniferous/deciduous %
1	64 000	*	50/50
2	80 000	70/30	70/30
3	76 500	70/30	85/15
4	53 000	80/20	60/40
5	100 000	70/30	*
6	205 000	50/50	*
7	50-70 000	90/10	*
8	60 000	60/40	*
9	453 000	80/20	55/45
10	550 000	70/30	*
11	50-60 000	*	70/30
12	36 000	50/50	*
13	120 000	60/40	*
14	80-90 000	*	*

\* Statement missing.

There are 11 companies that mention their division of final felling and thinning (see table 9). Nine companies have a greater division of final felling than thinning, except two companies that have equal divisions of the activities. Six companies tell their division of coniferous and deciduous trees (see table 9). There are five companies that have a greater division of coniferous trees than deciduous trees, and one company that have an equal division of the tree species. Four companies mention the minimum production per month, which for each company is 3 000 m<sup>3</sup>, 4-5 000 m<sup>3</sup>, 5 000 m<sup>3</sup> respectively 40 000 m<sup>3</sup>/month. One company mentions the minimum production per day (24h), which are 800m<sup>3</sup>/day.

Six logging companies say that they have cutting instructions according to their customers' demands. The assortments can be different depending on the customer. One company

mentions that they had problems with the assortments, but not anymore. Another company wants to adjust the assortment demands from the customers, while one another company, as the representative say, produces what assortment their customers demands. One company that has a specific sawmill as main customer cut the logs in lengths of 4.2 m, 5.1 m and sometimes 6 metres. The company has other assortments for their other customers. Another company complains about the demand from the state of 21 different assortments, which makes it hard to perform rational logging, according to the respondent.

#### **4.1.14 Production planning**

Most companies say that they plan the logging for one or two years ahead. The logging planning is then made as quartile to monthly plans. A few companies also have weekly plans for the logging. One company mentions that their logging managers have to prepare a certain volume of saw logs and fuel-wood each month. Of the volume of saw logs 2/3 must originate from the company's long-term contracts. The remaining 1/3 originates from bidding procedures and private forest owners. Each one of the logging managers has to give a monthly plan to the head of logging. The same company says that they can make plans because of the contracts that they have with their customers. One other company, that is a subcontractor to a building material firm, says that the ground for planning is the volume of timber they have to produce for the firm.

One company with long-term contracts has logging plans for 10-20 years ahead in the state's forests and quartile plans for the logging in private forests. Another company respondent says that the planning used to be for 10 years ahead, but since their long-term contracts now are running out, they are only able to plan their logging one year ahead. Many companies say that the grounds for planning are their long-term contracts. The contract length of several years makes the logging within the long-term contracts easier to plan in comparison with the one year long assortment-contracts. One company representative says that the logging planning in the state forests will be for three years ahead in the future. The reason is to give better grounds for investments to the companies working for the state. The representative also says that some companies mention logging plans three years in advance as enough grounds for investments while some companies claim the opposite.

#### **4.1.15 Employees and subcontractors**

During the late 1990:s, the logging companies' chainsaw operators were outsourced from being employees. The result of the outsourcing is that most chainsaw operators now work as subcontractors. The chainsaw operators work as one-man firms or in small subcontracting firms to the logging companies. All companies use chainsaw operators in their logging enterprise. Of the 14 interviewed companies, nine companies use chainsaw operators only as subcontractors while one company still have chainsaw operators as employees only. The remaining four companies have besides their subcontracting chainsaw operators also a few employed chainsaw operators that help the harvester to cut and process stout trees. The chainsaw operators, subcontractors or not, are mainly working in thinning but also do other silvicultural activities as planting and pre-commercial thinning. They also do final felling sometimes, especially in deciduous stands where it is difficult to cut and process the trees with a harvester.

The main reason why the logging companies use chainsaw operators is the loss of other mechanical cutting alternatives in thinning. The chainsaw operators are also cheaper than

using a harvester in thinning, a few company representatives say. Besides having subcontractors with chainsaws, many companies use private machine owners with forwarders, harvesters and tractors with carts as subcontractors. Seven companies have subcontracts with private machine owners. The lack of machines makes one company to hire subcontractors with both harvesters and forwarders when two other companies, with own harvesters and forwarders, only do the same in cases of over employment. One company does not hire subcontractors with harvesters because using manual labour is a better choice economically. The common for all seven companies is the employment of subcontractors with tractors and carts, which are used in most cases in thinning but also in final felling.

There are 10 companies that mention their quantity of employees when the companies were founded (see table 10). All companies mention their present number of employees. Six companies have increased their number of employees since the foundation. As the companies have expanded their business with sawmills and logging machines, so has their number of personnel. Three companies have decreased their number of employees since the foundation. The main reason is the privatisation of the chainsaw operators, which now are subcontractors and does not count as employees anymore. Another reason is the increasing number of harvesters in Latvia, which reduces the need of chainsaw operators. Six companies have women as employees. Four of the companies have women working at the companies' offices and one company have women in the staff at their own camping. One company has female employees working in their sawmill. None of the companies say that they have women working in the forest.

The company having the greatest number of personnel with 250 employees (company 10) is the owner of the greatest machinery. The two companies with 240 respectively 215 employees (company 3 and 8 in the table) have sawmills as a part of their enterprises. The company having the smallest quantity of employees consists of five managers, as the company exclusively hires subcontractors with machines and chainsaws.

**Table 10.** The 14 companies' mentioned numbers of employees in the start up and in 2003.  
*Tabell 10. Nämnda antal anställda vid grundandet och år 2003 hos de 14 företagen.*

Company	Employees in the start up	Employees in 2003
1	25	30
2	140	110
3	360	240
4	*	18
5	5	26
6	*	199
7	1	85
8	*	215
9	*	174
10	40	250
11	1	35
12	5	5
13	26	50
14	15	10

\* Statement missing

Several companies say that the number of employees and subcontractors can change over the year, but in general the numbers are more or less steady. Reasons of changes are when employees quit their jobs and when more people are needed during the planting season. Another reason of changes, as a respondent says, is the use of alcohol among the workers. One other company representative says that it is difficult to get subcontractors during the

winter when many companies cut as much as they can when the weather conditions are favourable. Several companies say that a majority of the employees from the year of foundation is still working in the companies and many of the other employees have been employed for many years.

#### 4.1.16 Staff functions

There exists a hierarchy with several different functions and responsibilities within the companies (see table 11). All companies that own forwarders and harvesters have employed operators. One company has scarifier operators, eight companies have truck drivers, two companies have trailer drivers, seven companies have mechanics, one company has a welder and three companies have tractor drivers as employees.

**Table 11.** The mentioned functions and the number of employees in each function within the 14 logging companies.

*Tabell 11. Nämda funktioner och antal anställda för respektive funktion inom de 14 företagen.*

Functions	Company													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Managers			4	3			1	2	12	10	6			
Assistant manager							1							
Head of development						1								
Head logging manager	1	4				1								1
Logging managers	2	8	4	3		6			10			2	4	
Logging planner						1								
Buyer of cutting sites						1								1
Sawmill managers				3										
Technique managers		2				1							1	
Harvester operators	2		1		4			4	10	12	3		6	3
Forwarder operators	4	6	5		7	15		5	20	36	6		12	3
Scarifier operators														3
Chainsaw operators	15		40	4							1		3	1
Mechanics	3		2			5	1			10	1		3	
Truck drivers	4	8		2	6	12		2	27				8	
Trailer drivers	1					1								
Tractor drivers	1					2	1							
Welders						1								

Concerning the managing part of the enterprises, seven companies say that they have managers without mentioning any specific duties regarding those managers. Three of these companies have in addition to the unspecified managers logging managers, one company has sawmill managers and another company has an assistant manager. Six companies specifies the managing functions more in details saying they have logging head managers, logging managers, head of development, technique managers, buyer of cutting-sites and planning managers. One company (company 5 in the table) only mentions that they have nine managers and administrative personnel without specifying the allocation of these functions.

#### 4.1.17 Staff age structure

There are 11 companies that state the structure of age within their company (see table 12). Of those mention four companies their average age based on all employees in the company and five companies mention their age structure as average age within each function. Two

companies mention their age structure as the variation between the youngest and oldest employee.

**Table 12.** Mentioned average ages and variation of ages of the staff within the 14 logging companies.  
**Tabell 12.** Nämda medelåldrar samt åldersfördelning avseende personal inom de 14 företagen.

Function	Company													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Company <sup>1</sup>					40					<40 <sup>2</sup>	18-40 <sup>3</sup>	35-40	30-40	25-40 <sup>3</sup>
Administration	30								47.5					
Logging managers						35			42					
Harvester operators	35							40	37					
Forwarder operators	35	45				35		35	37					
Chainsaw operators	35	35				35		30						
Truck drivers	35	50				40		40	46					
Mechanics									44.4					

<sup>1)</sup> Mentioned average age in each company based on all employees.

<sup>2)</sup> Average age mentioned as less than 40 years.

<sup>3)</sup> Variation of ages in the company (youngest-oldest).

#### 4.1.18 Education

Several companies say that the education level within the company is good, enough or at the same level as other logging companies in Latvia. All companies' office personnel have university degrees. The degrees the companies' representatives' mention is in economics within the administrative personnel and in techniques and electronics regarding the operative managers. Three companies mention university degrees in forestry in their staff, and one company has an agronomist as manager. One company says that their logging managers need upper secondary school degrees in forestry. Another company says that experience is more important than forestry education in the company. Concerning the education level at the companies offices, two companies respondents say that they are pleased but the education can always be better and needs to be so in the future. One company respondent says that if the employees want to study, the opportunity will be given them. Another company respondent expresses that it is difficult to get educated personnel.

The machine operators in all the 14 companies have certificates in logging and operating, which mainly has been received at Machine Technological Centre (MTC) in Ogre. Some operators have received certificates at the logging company Silva in Riga. At two companies the machine operators have upper secondary school degrees in forestry. At one of them is the upper secondary school education the minimum education that requires, according to the company respondent. One company respondent say that the education for the machine operators is to low, even if they have all courses they can get in Latvia. The machine operators need more education in ecology and forest management in theory, the respondent also says. Another company respondent wanted the machine operators to have better computer knowledge. One company employs only local farmers as machine operators, as the company considers the local farmers as the best operators they can get. Another company has problems to get good workers and machine operators, especially good young people that want to work as truck drivers and machine operators. Several companies tell that their workers are the strength in the companies. The same companies say that the workers have great experience and do high quality performances.

#### 4.1.19 Salaries and benefits

There are 12 companies that mention their workers salaries (see appendix 2). One of the two companies that have not mention any salary says that their workers wages are good and over the Latvian average. The other company says that their operators are paid by cubic-metres. Of the 12 companies mention one company the workers salaries as an average monthly salary for all functions within the enterprise. An additional company also mentions a monthly wage, but only for the harvester operators. In two cases are the wages a secret concerning one company's harvester operators and another company's forwarder operators. Concerning the chainsaw operators' wages, six companies mention the wages per cubic-metres and two companies mention their operator's earnings per hectare. One company mentions in two cases the compensation to their subcontractor enterprises. Two companies say their workers wages are too low and could be higher in order to increase the workers job satisfaction. One representative, whose company is a subcontracting enterprise, says that he wants his employer to ground the compensation to his logging company by the performances per hour instead of cubic-metres. The representative says that it would lead to less stress for the workers. The interviewee also wants the employer to introduce a bonus system for good performances. One company representative says that the workers in the company have certain monthly quotas to be aware of that can affect their earnings. If the workers produce over a certain quota, they receive 30% more of their monthly salaries. When producing less than a certain quota, the workers get 30% less of their monthly salaries.

Nine logging companies mention for how many hours per week their labourers work. As they say, the normal workweek is 40 hours but can also be longer as the workers are paid by cubic-metre and want to reach a greater volume and consequently a better salary. Eight companies say that their workers are not members of some kind of workers union or any other organisation. One respondent, whose workers are not union-members, says that the workers associations in Latvia are not powerful. Another company respondent says that the company will not be troubled if the workers want to be union-members. The workers in three companies are union-members and in one company are some of the workers union-members and some are not.

Three companies say that they pay salaries to their workers when they are sick. Two of them pay for 10 days and the third company pays for 15 days. An average of the absence due to illness in one of the resent-mentioned companies that pays for 10 days is 3.5 days per worker and year (2002). The other company that mention they pay sick-salaries for 10 days says that their workers have one month of paid vacation. Two additional companies provide their workers with safety clothes, give them shots against tick diseases and have health exams every second year. One respondent says that the company pays the workers insurance and pensions. A majority of the companies have instructions regarding safety in work for the workers. Four representatives from four companies say that they have meetings with the employees. One representative gives the monthly salaries personally to the workers just to have a chance to talk with the workers. The meetings with the employees in one company are once a week and in one other company once a month. One company representative says that if an employee neglects the work, the employee receive three warnings before the company give the notice to quit.

Concerning job-rotation for the workers, seven companies say that it does not exist in their enterprises. Five companies have not given any statements whether job-rotation exists or not in their companies. Two companies say that they have job-rotation and in one of them the chainsaw operators sometimes do pre-commercial thinning. The other company has job-

rotation for the labourers in their sawmill but not for the forestry workers. One company wants to implement job-rotation in their enterprise in the future. The workers can, as a few companies say, advance from their functions. A good chainsaw operator can advance to be a forwarder operator and a good forwarder operator can advance to be a harvester operator. None of the companies mention any higher advancement for the workers.

#### 4.1.20 Machinery

There are 12 companies that own logging machines. The remaining two companies do not own any logging machines and uses subcontractors with machines instead. All logging machines the companies own are relatively modern. The machines are from the late 1990:s and newer. The newest machine when this study was performed, a harvester, was procured in December 2002. Of the interviewed companies are there nine that have harvesters in their enterprises (see table 13). Three of them have two harvesters each, which is the greatest number of harvesters within a single company in this study. The brands of the harvesters that the companies use are Valmet, Lokomo, Ponsse, Case and Timberjack. Two companies want to invest in a thinning harvester. One of them also wants to hire subcontractors with thinning harvesters and a harvester for wet cutting-sites. One company representative wants to invest in a planting head for the company's harvester and to be the first to introduce a harvester in Lithuania.

**Table 13.** The 14 logging companies' mentioned machine parks.

*Tabell 13. Nämda maskinparker hos de 14 företagen.*

Company	Harvesters	Forwarders	Scarifiers	Timber trucks
1	Valmet 911	2 x Valmet 840		SISU E12 SISU E14
2	**	Timberjack 1010b, 1110		8 x Kamaz
3	Lokomo 990	3 x Timberjack 1010, 1110c		Yes
4	**	**		Kamaz Volvo
5	Ponsse Ergo	Timberjack 810b Ponsse Visent	Delta Waggon TTS Combi II	Man Kamaz
6	**	Timberjack 810b, 810d 2 x Timberjack 1010b Timberjack 1110b	Delta Waggon TTS Combi II	4 x Scania
7	**	Timberjack 1110b, 1110c		4 x Scania, Maz
8	Timberjack 1270c	Timberjack 1010, 1110		Yes
9	Timberjack 1270b Timberjack 1270d	5 x Timberjack 810 Timberjack 1410 5 x Timberjack 1110	Timberjack 460d	14 x Kamaz 3 x Maz 7 x Volvo
10	2 x Timberjack 1270d	12 x Timberjack 810c, 810d,1110c	Timberjack 406d	8 x Volvo 2 x Scania
11	Timberjack 1270c	Timberjack 1110c HSM 208		Yes
12	**	**		**
13	2 x Timberjack	4 x Timberjack	2 x Valmet	6 trucks
14	Case	Ponsse Visent		**

\*\* Lack of machinery

There are 12 companies that own forwarders (see table 13). The largest quantity of forwarders for a single company is 12 forwarders. The brands of the forwarders the companies use are Valmet, Ponsse, HSM and Timberjack. The company that owns the German forwarder HSM is also a Latvian dealer of the forwarder. There are five companies having scarifiers in their machine parks. Three of them have scarifier machines while the two others have tractors with scarifier carts. The brands of the scarifiers are Valmet, Timberjack and Delta Waggon. One

company wants to buy one more scarifier and another company wants to enlarge the enterprise with a scarifier. The Timberjack machines, both harvesters and forwarders, get service at Machine Technical Centre (MTC) in Ogre. Many companies say that they are pleased with the Timberjack machines because of the quick delivery of spare parts from Timberjack in Finland. The spare parts are delivered to the companies within two or three days in comparison to Valmets spare parts that have delivery times for several weeks. A majority of the companies mention the technical knowledge among the workers to serve and repair the machines as good.

Besides logging machines, 12 companies also own timber trucks (see table 13). The timber trucks are from the late 1980s and newer. Three companies say that they own trailer trucks to transport their machines. The brands of the trucks, which the companies use, are Maz, Man, Kamaz, SISU, Volvo and Scania. One respondent mentions having problems with the company's Kamaz trucks, as in average two trucks are broken every week. Another company wants to buy one more timber truck.

In most companies the logging machines are active for 24 hours/day. In one company the logging machines are active between 21-22 hours/day. In an additional company the harvester is active for 20 hours/day while the forwarder is active for 24 hours/day. The time of operating for the operators and their shifts varies among the companies. In four companies the machine operators work in three shifts divided into morning, afternoon and night shifts. One shift is eight hours and the operators change shifts every week. Two companies have two shifts of 12 hours each. One of these two companies has four operators overlapping each other shifts when operating the harvester. The operators work for four hours, then are free for four hours and then have four hours of operating again. The forwarder operators in the respondent mentioned two companies also work in two shifts but operate for 12 hours straight in the machine and then are free for two or three days afterwards. One company has one shift of 24 hours for their forwarder operators and truck drivers, with two days of free time afterwards. One company mentions their utilisation rate of the machines as 80%, which satisfies the respondent. The respondent also mentions that many logging companies have 50% as utilisation rate. Another company mentions a rate of 55%, which the respondent wants to be higher. A third company says that the utilisation rate is high enough regarding their harvesters and forwarders. The communication with the machines among the companies is mainly made through mobile phones but also through e-mail in the most modern machines.

Eight companies mention how the decision is made when to buy new machines. The reasons of the decisions vary among the companies. The most frequent reason, as four companies say, is when the machines are too old and often broken. One company changes their machines when they are three to four years old or when the machines have run for 12-15 000 motor hours. Two companies decide to buy new machines when the production and the income per cubic-metre are high. One company says that the foreign company they are owned by finances the machines and also decides when to buy new machines. Another company says that they do not make any calculations to see if the company can afford a new machine. The decision to buy is made when they have money enough to finance a machine. To finance the investments in new machines the companies use bank loans or leasing systems. Companies that own several machines have in some cases both financing alternatives. Two companies mention the writing-off time of the investments as three years and one company as four years.

## 4.2 Case study A

### 4.2.1 The company

The logging company was founded in 2001 and has its base in the northeastern part of Latvia. The respondent is one of the managers in the company. A foreign sawn wood firm owns 90% of the company and the remaining 10% of the company are Latvian. The logging company's core business is to supply a sawmill, which is also owned by the foreign firm, with raw materials consisting of small dimensions and special assortments. As a result of the close cooperation between the two companies it is easier to adjust the raw material to present production in the sawmill. The sawmill takes care of approximately 50% of the saw logs that the logging company produces and the remaining part is sold to other Latvian companies. The pulpwood is sold to a Swedish forest owners association and exported to Sweden. The company receives both positive and negative feedback from their customers and the climate for communication between the company and their customers is friendly.

The company is mainly working with logging. Depending on the different contracts with the forest owners they also perform planting, pre-commercial thinning and other silviculture activities. Approximately 50% of the total yearly volume of produced timber originates from final felling and 50% from thinning. It depends on the price level which activity that is most profitable. When the prices are advantageous they also do a bit of wood trade as a sideline. The company does not have any own transport unit and hire subcontractors for that purpose. The respondent says that transportation is another business and that it is better to focus on the company's core business, which is logging. The respondent tells that the company's opinion is that logging and transport should be separated from each other in different companies.

The company does not build any new forest-roads, only restorations of old forest-roads. The restoration is made when so are needed for timber transportation from the cutting-sites. The respondent says that the road standard in Latvia is inferior, and no one is really taking care of the problem. The forest owners do not want to pay for road building or restoration, the respondent says, and the companies performing the logging only restore for that single event and the problem remains. That procedure only pushes the problems into the future and in the long run it is not economical defensible, the respondent also says.

The company buys felling-rights to cutting-sites through bidding procedures from both private forest owners and the state. The volume that the company buys through bidding procedures is getting closer to nil. The main reason for that is the increasing prices caused by the uneven competition between the legal and illegal logging companies in Latvia, the respondent says. Some small volumes are also bought through other kinds of agreements than bidding procedures. The respondent says that in five years time they do not know if there will be any felling-rights to cutting-sites available to reasonable prices on the market. This makes the problem hard for a single company to have an impact on, the respondent says.

In addition to buy felling-rights the company also purchase forestland. The company owns 140 ha (2003) and the foreign firm owns 350 ha (2003). The total amount of standing forest is 7 000 m<sup>3</sup>. Forestland in this small dimension is of course not enough to secure the future but it is a beginning of a way to be more self-supported with raw timber, the respondent says.

The company is an assortment-contractor to the state. In general the timber volumes from the state-contracts accounts for approximately 70% of the total wood supply to the company. The remaining 30% are from felling-rights in the private forest sector. These figures vary +- 20% each year. One of the major problems to the company is the increasing price of felling-rights

in the bidding procedures caused by the illegal logging companies. The respondent wants the state to supervise more in order to control the illegal companies. As a result of the illegal companies acting on the market the respondent says that it is harder to purchase felling-rights nowadays than it used to be.

Calculations for each cutting-site are always made to see how the distances affect the profit. The respondent says that they do not have any plans to expand to some of Latvia's neighbouring countries Russia, Belarus, Estonia or Lithuania. As the situation is today, it is not possible for them to make a profit in Russia, the respondent also says.

Neither the logging company nor the foreign firm is certified by PEFC or FSC. According to the logging company's opinion, the certifications do not work in Latvia today and improvements are needed in that area. The respondent says that saw logs from both certified and uncertified forests are mixed in certified domestic sawmills, and then are sold as certified products. The respondent does not see the use of being certified. The respondent also says that their customers do not demand certified products and certified raw timber. In the future it depends on the demands from the market if they will be certified.

The company is not a member of any organisation. Their opinion is that the existing associations that promote logging companies in Latvia are not powerful and the company do not see any benefits by being a member. The workers and subcontractors are not members of any workers union either. The respondent says it is up to the workers if they wanted to join a union. The company does not see any specific positive or negative consequences with employees organised by the worker unions.

#### **4.2.2 Profitability**

The turnover for the first six months of 2003 was 344 609 LVL. The respondent says that the economic result of 2002 showed green figures. The company is satisfied with the economic result as long as the bank is pleased and they can pay the wages in time, the respondent also says. The finances are stable and they have a good reputation in the line of business. An economic budget is made every year but the planning of logging is in a shorter perspective. It varies from two weeks to six months between purchasing and logging of the cutting-site. The company makes all their deals in Euro. The respondent says that they have changed many people's minds about the currency. The company only has positive experiences by using the Euro and it is an opportunity to the country if the Euro comes to Latvia, the respondent also says.

#### **4.2.3 Logging**

The average logging production of timber per month is 3 000 m<sup>3</sup>. They do not have any demands for minimum production volume per day and the subcontractors can work in their own pace. The total average cost including transport per logged m<sup>3</sup> is approximately 6.50 LVL and the calculated profit is 0.40 LVL/m<sup>3</sup>, depending on quality of the raw timber. In the company's geographical working area, there are about 40 % coniferous trees and 60 % deciduous trees. The priority is for pine and spruce, which is sawn by the foreign firm's sawmill. The raw timber from deciduous trees is sold to other Latvian companies with the exception that the foreign firm's sawmill sometimes saw logs from aspen. The company has different cutting instructions of the raw timber based on the customer's demands. The foreign firm's sawmill demands lengths of 4.2 m, 5.1 m and some small volumes of 6.0 m. The

timber volumes from logging are steady over the year, with an exception in the spring when the forest-roads are impassable, which create problems to transport the timber. The timber volumes also go down in July because of the subcontractors' vacation period.

#### **4.2.4 Employees and subcontractors**

There are five employees in the company. Two of them are logging managers and three are administration personnel. The company does not have any logging machines or chainsaw operators and hire therefore subcontractors to perform the logging and silviculture. As subcontractors for felling they use the prisoners from a nearby prison. The company employs approximately 70 subcontractors. They do not have any subcontractors with harvesters, because motor manual subcontractors with chainsaws are still cheaper comparing to harvesters, according to the respondent. They have agreements with companies using forwarders for haulage and they also use farmers with tractors. The company pays the subcontractors 2.00-2.50 LVL/m<sup>3</sup> for logging and 2.00-2.50 LVL/m<sup>3</sup> for forwarding. The payment is the compensation for the performances to the subcontracting companies, not to the operators.

Since they are so few in the company the number of employees do not change over the year. The number of subcontractors is also steady, except for vacation time in July. All workers and subcontractors are men, with the exception for the female bookkeeper. The average age is somewhere between 35-40 years old. The normal workweek is 40 hours, but since the subcontractors are paid on basis of their performances in cubic-metres, they might work more and that is not what the company supervises. Because of the present attitude among the subcontractors it is not possible to pay them a fixed salary based on clock hours. The respondent says that having a salary based on clock hours would generate into reduced performances by the subcontractors.

The education level in the company is normal and does not differ much from the other logging companies, according to the respondent. The company requires a working license from the subcontractors but no formal education. For the two managing functions and the administrative functions higher education is needed. For example has the two managers knowledge in ecology and the bookkeeper is educated in economics. The respondent says that it is hard to find educated personnel in Latvia and that experience is as important as education. They also point out that the attitude among the workers has to change. The workers does not have a feeling for the company that they are working for and it is mostly about making money to survive. The respondent is optimistic and in the belief that changes in the workers attitudes will come.

All the workers all have full medical care, taken care of by the company. On a regular basis the workers are sent to medical exams and the company pays insurance for them. Since the medical care for the workers is so well taken care of, the company does not have any problems with health and consequently sick leave. The respondent expresses that the people working for the company are satisfied with their situation and there are no complaints. The communication within the company is positive and very informal, according to the respondent. The communications is mainly by cell phones and direct personal contacts.

They also have a system for safety information to the workers. Because of practical obstacles such as subcontractors and knowledge limits there is no job-rotation within the company. The respondent says that job-rotation is a positive thing but not feasible in the kind of organisation that they have in the logging today. The foreign firm is using job-rotation in their sawmill.

Some of the tasks in the sawmill demand high degree of concentration and the purpose of the job-rotation is to have a remaining high production and at the same time defend the safety of the employees.

## **4.3 Case study B**

### **4.3.1 The company**

The company was founded in 1994 and was at that time owned by a German firm. In 1996 bought the present owner, who also is the respondent, the German shares and the company is now 100% Latvian. During the years the company has grown as they have bought small private firms. Their main customer is a Swedish pulp company that buys all pulpwood the company produces. Domestic sawmills buy the saw logs. The company has logging as their core business, but they also perform scarification, planting and timber logistics. Their main geographical working area is in the western part of Latvia, but they also do logging operations in other parts of Latvia. The company does all silviculture activities.

Certification does not exist in the company yet, but they will be certified if it is a demand from the market. In that case it would probably be FSC-certifications, which they already have been in contact with. The company is a member of the Latvian Union of Timber Harvesting Companies (LUTHC). The respondent says that LUTHC are doing as much as they can for the logging companies, and it is important to be a part of the organisation. It is good to have a backup, especially in the fights with the state, the respondent also says.

### **4.3.2 Logging**

The company has long-term contracts with the state from which they buy 25 000-30 000 m<sup>3</sup>/year as felling-rights. They also buy felling-rights through bidding procedures from private forest owners to the amount of 40 000-50 000 m<sup>3</sup>/year. The company is also an assortment-contractor for the state. From the state's assortment-contracts they get a timber volume of 50 000 m<sup>3</sup>/year. Approximately 60% of the total timber volume per year originate from final felling and 40% from thinning. The company tries to cut more when the prices of raw timber are high in order to gain more profit. If the price of pulpwood increases they will cut up to 120 000 m<sup>3</sup> in 2003.

The company's long-term contracts with the state are running out in 2004-2005. The respondent is worried about how to get the equivalent timber volume from the private forestry sector as the company got from their long-term contracts. Especially when illegal companies can afford to pay a higher price for the felling-rights than the legal companies, in the bidding procedures in the private forest sector. The economical planning is made one year ahead, then for every month and week. They have a computer program in which they can see statistics and figures from a past period.

The main problem in the future for the company is the endings of the long-term contracts with the state. Another serious problem the company meets is the uneven competition in the forestry sector caused by illegal logging companies. The respondent says that the situation is more and more desperate for the company and that they will work everywhere in Latvia in order to get one santim (0.01 LVL) more in profit. The respondent also says that it will be radical changes in the Latvian forestry sector within three years, caused by the state's new assortment-contracts, and the illegal logging companies.

### 4.3.3 Employees and subcontractors

From the number of 26 employees in 1996 the number has increased to 52 persons in 2003 that have duties connected to logging. Three chainsaw operators help the harvester operators to cut and process stout trees. The company hires subcontractors that perform planting. Other subcontractors the company hires are chainsaw operators in thinning stands.

The company employs local farmers as machine operators. The respondent says that the farmers are the best operators they can get in Latvia. The operators receive courses at Machine Technical Centre (MTC) in Ogre and at Silva in Riga, in order to get knowledge in operating the machines. All machine operators have certificates from these courses and they do not need any more education, according to the respondent. Some of the employees have certificates and experiences from working in the State forestry.

**Table 14.** Mentioned functions respectively the number of employees of each function in the logging company.  
*Tabell 14. Nämnade funktioner respektive antal anställda inom varje funktion i företaget.*

Functions	Number of employees
Production managers	4
Technique manager	1
Harvester operators	6
Forwarder operators	12
Scarifier operators	3
Chainsaw operators	3
Truck drivers	8
Mechanics	3

The majority of the employees working in the office have university degrees in techniques and electronics but not in forestry. The respondent does not see the lack of university degrees in forestry as a problem in the company. Experience is more important than education and the need of employees with university degrees in forestry is non-existent, the respondent says. Most of the employees has been in the company since 1996 and onwards. The average age of the forestry workers is between 30-40 years. All employees are men and the number of employees is steady. The company had to break one employment agreement because of the employee's alcohol problems, but it is rare that those things happen, according to the respondent. The company pays insurance and pension for the workers, who are satisfied with their situation, the respondent says. Unfortunately, the level of the generous social conditions might go down if the company considers the social costs to be too expensive when the economic situation gets bad, the respondent also says. The company is pleased with the workers technical knowledge. The respondent says that the mechanics can mend everything. There exist no job-rotation regarding the harvester and forwarder operators. The forwarder operators can, if they are good, advance to harvester operators. Stress in work exists among the workers in the company but it is not a big problem. The workers are paid on basis of their performances in cubic-metres, which sometimes make them work too much. None of the forestry workers are member of a workers union.

The harvester and forwarder operators work in three shifts of eight hours each. Two operators alternate with each other and operate the logging machines for two hours at a time. The service is included in the shifts. If there are good conditions at the cutting-site the operators can produce 50 m<sup>3</sup>/hour. The average time that the logging machines are active is 18 motor hours per day. A demand for the harvester operators is to produce at least 4-5000 m<sup>3</sup> of timber per month, which is a minimum on both harvesters. The respondent says that a good month is when they cut 15-18 000 m<sup>3</sup>. Bad weather conditions can be blamed for the variations in the production, especially in the spring.

### 4.3.4 Machinery

The company owns harvesters and forwarders. The logging machines are between one to three years old (2003). One harvester and one forwarder were bought in 2002 and are the newest in the company machinery. One of the timber trucks is new and the rest are five and six years old (2003). They have an own trailer that facilitates the machine transports which makes logging operations all over the country easier.

*Table 15.* The mentioned machinery in the logging company.

*Tabell 15. Företagets nämnda maskinpark.*

Machines	Number of machines
Timberjack harvesters	2
Timberjack forwarders	4
Valmet scarifiers	2
Timber trucks	6

Timberjack has an well-arranged service in Latvia, which is the reason why the company buys Timberjack machines. They have good contacts with a Finnish firm that delivers cheap spare parts within one or two days after the booking. The company also has contacts with Swedish logging companies operating Timberjack machines in order to exchange experiences. The company hopes to get enough contracts in the future to be able to invest in one more harvester. The company's ambition is to change machines every third or fourth year. When the contracts are good and the output is enough will the company decide to buy a new machine. In order to pay the machine the company use leasing systems and calculate to have the investment back in three years. The small profit pays the loans of the machines. They also have loans left since the shares from the German company were bought in 1996. The profit was okay in 2002 and it will also be okay in 2003 according to the respondent.

## 4.4 Case study C

### 4.4.1 The company

The company was founded in the year 2000 and has the central parts of Latvia as geographical working area. The respondent is the company's owner and also the owner of another company that inventories standing forests. The company's core business is to be a logging subcontractor, mainly to a Latvian firm that manufactures building material. The firm buys felling-rights to cutting-sites for the logging company in bidding procedures by the state and private forest owners. The logging company hopes to be an assortment-contractor to the state in 2004. Besides the logging the company purchases planks from Russia that either Latvian companies buy or goes for export abroad. The company purchase forestland with either young or already final felled clumps of forest, which is much cheaper than buying forestland with old standing forest.

In the future the respondent want to build roads and perform ditching if the profit in these business increases. The company was first in Latvia using a harvester and wants to be the first to introduce a harvester in Lithuania. The respondent also wants to be the first in Latvia using mechanised planting. The company has both FSC- and PEFC-certificates, according to the respondent, and is also a member of the Latvian Union of Timber Harvesting Companies (LUTHC). The company has plans to found a new association only for the small logging companies that do not have any long-term contracts with the state. As a subcontractor for the state the logging companies have to work all over the country, which is expensive. The reason

for a new association is to divide Latvia between the small logging companies in order to decrease the expensive transports.

#### 4.4.2 Profitability

The profit is 15% gross of the turnover and the respondent sees difficulties to be profitable because of the income taxes. The respondent says that in the future the most profitable composition would be three harvesters and three forwarders, and only work as a subcontractor to the state and large companies. The way to a profit is not to buy standing forest, then cut and sell it as it is today, respondent says. The respondent sees problems with the Latvian forest law that prescribes that they have to perform a successful regeneration after cutting to avoid land tax. Another problem is to be updated and how to interpret the forest law that changes rapidly. In the future it could be problems for the Latvian logging companies with competing Estonian logging companies. Three machine teams (one harvester and two forwarders in each team) from Estonia are active in Latvia (2003), and the respondent sees this as a threat. An opportunity for the small logging companies, the respondent says, is the new assortment-contracts instead of the long-term contracts.

#### 4.4.3 Logging

Every year the company produce between 80-90 000 m<sup>3</sup> of which 50 000 m<sup>3</sup> is in the subcontract to the building material firm. They do both thinning and final felling and have always maps and plans for each cutting-site. The logging planning is made for a year ahead, then for every month. The ground for planning is the demand of the delivery of 50 000 m<sup>3</sup>/year to the building material firm. The respondent says that it would be easier to plan the logging if the company were a subcontractor to the state. In a month the company prepares 4 500 m<sup>3</sup> but the volumes can change +- 20%. The respondent says that to be successful in Latvia a company needs to prepare 6 000 m<sup>3</sup>/month on one harvester and two forwarders.

#### 4.4.4 Employees and subcontractors

When the company was founded the company had 15 employees, but since then the number has decreased to 10 employees in 2003. The chainsaw operator does the undercutting and helps the harvester operators to cut and process stout trees. The company uses 10-12 subcontractors with chainsaws and private machine owners with tractors and carts in thinning. The company also hires subcontractors that perform planting and pre-commercial thinning.

**Table 16.** The mentioned functions, number of employees and wages for each function in the logging company.  
*Tabell 16. Nämda funktioner, antal anställda samt löner för respektive funktion inom företaget.*

Functions	Number of employees	Wages
Manager	1	*
Buyer of forestland	1	*
Harvester operators	3	0.35 LVL/m <sup>3</sup>
Forwarder operators	3	0.30 LVL/m <sup>3</sup>
Chainsaw operator	1	2 LVL/ha + 2 LVL/m <sup>3</sup> <sup>(1)</sup>

<sup>1</sup> Compensation for cutting dangerous trees.

\* Statement missing.

The machine operators have received an operating course at Machine Technical Centre (MTC) in Ogre and that is enough education for the company. The respondent says that in general the harvester operators would need upper secondary school degrees. Their knowledge,

especially of thinning, is a bit low and could be better. The respondent is an agronomist and the only one in the company with a university degree. There exist no job-rotation for the machine operators, but the respondent wants to implement a job-rotation system in the future. The machine operators are paid per cubic-metre, but in the future the respondent hopes that the company's employer will ground the compensations by the performances per hour instead. The respondent also wants the employer to introduce a bonus system for good performances, which would reduce the stress among the machine operators. The company has instructions for safety in work for the workers. The age allocation is between 25-40 years and there are no women in the company. Some employees have worked since the start in 2000 and none of the employees is a member of a workers union.

#### 4.4.5 Machinery

The company owns a harvester and a forwarder, which are active 24 hours/day. The operators work for eight hours each in three shifts and the service of the machines is made in the end of each shift. The demand to the operators is to perform at least 800 m<sup>3</sup>/day.

**Table 17.** The mentioned machinery in the logging company.

*Tabell 17. Företagets nämnda maskinpark.*

Machines	Number of machines	Costs in LVL/m <sup>3</sup>
Harvester Case 988 Excavator	1	2.60-2.70
Forwarder Ponsse Visent	1	2.00+0.10/100m

When greater services of the harvester are needed the company uses Machine Technical Centre (MTC) in Ogre. The manager of the MTC is a friend to the respondent and they have developed the Case harvester together. The company Ponsse Baltic Forest Machines Service performs the service for the forwarder. The respondent put a program originating from timber trucks into the logging machines in order to measure how much fuel the machines consume every hour and for every cubic-metre. A logging company in Latvia later stole the respondent's idea. Communication between the machines is made through cell phones. The logging company sends regular production reports to the building material firm, which they have good communication with.

# 5 DISCUSSION AND CONCLUSIONS

## 5.1 The accomplishment of interviews

We had no reason to question our findings. However two possible sources of bias exist which may comprise the reliability of individual statements. Since 11 interviews were performed in the Latvian language we rarely had the opportunity to make supplementary questions during the interviews. The interviews were carried out all over the country and because of long travels and sometimes several interviews per day the translations could be delayed for a few days. This procedure unfortunately put substantial limits to our possibilities of following up on topics broached during the interviews. Second, companies were sometimes reluctant to provide us with economic information and may for different reasons have wanted to mislead us if they thought the information we collected would be used for other purposes than mere fact finding in a research context.

The companies in this study are called logging companies. Alternatives to the expression would have been logging contractor or entrepreneur. These terms can be seen as inadequate as the enterprises still buy felling-rights to cutting-sites through state- and private contracts and consequently become the owner of the timber. The understanding of the word entrepreneur deals with innovation and new thinking more than just mean a performance of services for compensation. The present procedure of the acquisition of timber where the companies in a greater extent purchase felling-rights than perform logging services for compensation makes the expression logging companies to be the most appropriate in this study.

## 5.2 The companies

The companies that mention their year of foundation have all foundation years after the Latvian independence in 1991. The fact that five companies have the years of 1992-1993 as years of foundation can be seen as an expression from the Latvian State to encourage the creation of private logging companies instead of having just state-owned logging companies. Three companies mention that they have been state-owned before their years of foundation. The impression from at least one of the former state-owned companies is a hierarchical organisation still remaining from the communistic period.

The core business of the 14 logging companies is logging in final felling and thinning. Besides the core businesses are the companies very many-sided with activities as timber transports by truck, own sawmills, log house building, factories and timber trading. Six of the interviewed logging companies have sawmills as side-businesses and the companies often mention the sawmills as the part of the company that generates the profit. In some companies, the forestry was often seen as a side-business only to supply their sawmill industry with raw material for further processing. In comparison with the focus on the core business as many companies have in Sweden, is the Latvian logging companies' idea of success to have many businesses, as long as they are lucrative. As many companies mention the logging as a losing business, contributes other activities within the companies to make the economic loss less obvious. The main reason to the foundation of the companies seems to be performing logging as the core business, which have also been the companies only business when they were newly formed. Ideas of expanding the enterprises with sawmills etc. have appeared later.

Some logging companies say that they only perform road restoration when it is absolutely needed for just that particular cutting-site. This creates a problem in Latvian forestry, as the companies never want to do anything that can favour a different company at a different time. The private forest owner does not want to defray the cost for the road, since they think that it is up to the company that own the felling-right to make sure that the timber can be transported to the industry. The company that performs the logging does not want to defray the cost for the road either, because they may not have any advantage of the road in the future. This results in many destroyed roads since timber transportation goes on until the road is completely useless.

Two foreign forestry companies own two logging companies to 100%. A third company is to 90% owned by a foreign sawn wood company. These companies give the impression that they are satisfied with their situation as parts of foreign enterprises. The situation makes the companies to feel secure about their future existence in the Latvian forestry. Especially when the Latvian State is not so generous about selling felling-rights anymore. At least two of the logging companies have a dominant position in the Latvian forestry sector. The position and the fact that they are foreign-owned give them economic advantages against other logging companies when competing about felling-rights and when investing in new machines.

The majority of the logging companies participating in this study are members of the Latvian Union of Timber Harvesting Companies (LUTHC). Several of the companies are unsatisfied with the organisation, especially the smaller logging companies. Some of these companies want to form an organisation, which will take care of the small companies' interests. The discontentment the smaller logging companies feel about the LUTHC can be seen as the organisation in a greater extent only listen to the larger logging companies, which consequently has a greater influence. An organisation for the smaller logging companies does not exist yet in Latvia and many companies feel that being a member of the LUTHC is better than not participate in the organisation at all. The other existing organisations are more concentrated on industrial companies. Many of the logging companies have sawmills and factories and are more or less small forest industrial companies. As the companies see logging as their core business, it is possible that the LUTHC is the only organisation that feels right to them.

Several companies say that environmental certifications, as FSC and PEFC, do not work in Latvia. The reason is the lack of supervision that makes certified companies mix timber from both certified and uncertified forests in the sawmills. The timber is then sold as certified timber. Four of the logging companies trades with timber and when the timber has passed through a number of companies it can be difficult to know if the timber is certified or not. When the certified companies do not obey the certification do not the uncertified companies see the point of being certified. Another reason to remain uncertified is that the companies consider it not worth the effort to be certified when it is not a demand from their customers. Only one company mention a customer who demands certified timber and also pays 0.50 LVL more per cubic-metre than for uncertified timber. As long as the demand for certified timber is so low and almost non-existent the logging companies will not consider to be certified.

## **5.3 Economics**

The yearly turnovers the companies mention reflect the differences in size between the companies. The amounts of the companies' yearly turnovers are not reliable according to the mentioned reason in chapter 5.1. The company that has a yearly turnover of 100 000 LVL is

many-sided with other activities than just logging and has one of the highest number of employees in the study. The yearly turnover can consequently be seen as low in comparison with the other logging companies of the same calibre. It is also possible that the respondent mentioned the figure as the yearly turnover in their logging business only. The company with 11 000 000 LVL<sup>2</sup> as yearly turnover is one of the largest logging companies in Latvia.

Regarding total cost that four of the logging companies mention, exist differences in the amounts. The company with the lowest total cost of 1.60 LVL/m<sup>3</sup> is one of the smallest companies in the study regarding the scale of their logging. The company only hires motor manual labour as subcontractors and own forwarders but no harvesters. The company, that mentions the highest total cost of 8.00 LVL/m<sup>3</sup>, is in the same scale as the company with the lowest total cost regarding logging. The differences between these two companies are the activities besides logging and the number of employees. The company with the highest total costs has considerably higher number of employees than the company with the lowest total costs. The activities besides the logging are also of a considerably greater scale in the company with the highest total costs. The conclusion could therefore be drawn as higher number of employees and side-businesses a logging company has, the higher will also the total costs be. The company that has 5.50-6.50 LVL/m<sup>3</sup> as total costs is smaller in the scale of logging in comparison with the logging company with the lowest total costs. The company has a small quantity of employees and only hire subcontractors for all their logging activities. The earlier mentioned conclusion can therefore be rejected and the differences in the total costs between the companies must depend of other reasons than just the quantity of employees and the scale of side-businesses. Many companies complain about the high prices of felling-rights in the bidding procedures. The felling-rights expensiveness could also affect the total costs negatively in different extents to the logging companies. There can also be other reasons that have not been mentioned during the interviews.

Concerning each cost for the categories preparing of wood by chainsaw and/or harvester respectively forwarding and timber transports by truck, the cost are more or less the same to all six companies that have given statements. The biggest difference in cost is within the category preparing wood by chainsaw, where the cost differs 1.21 LVL/m<sup>3</sup>. Only two companies have given statements regarding their cost in the category, which make a conclusion difficult to be drawn whether the difference is big or not in comparison to other logging companies. The other three categories have several statements regarding costs from the companies which not differs as much as the category preparing of wood by chainsaw. The category preparing of wood by harvester differs 0.70 LVL/m<sup>3</sup> and the category transport by forwarder differs 0.50 LVL/m<sup>3</sup>. The fourth category transport by timber truck differs 0.18 LVL/m<sup>3</sup>. All numbers reflects the differences between the highest and the lowest mentioned cost in each category. It is possible that all six logging companies mentioned costs in all categories are average numbers. Just one company mentions their costs as average numbers, but only in the category transport by forwarder and the category transport by timber truck. It is consequently possible that a greater or smaller difference in both categories between highest and lowest costs can appear.

The gross income per cubic-metre varies considerably between the seven companies that have given statements regarding the matter. The company with the lowest gross income has mentioned a figure of 0.20 – 0.50 LVL/m<sup>3</sup>, while the company with the highest gross income mentions a figure of 3.00 LVL/m<sup>3</sup>. Another company has a gross income of 0.40 LVL/m<sup>3</sup>. Any company did not explain the reasons of the differences in gross incomes between the logging companies or what reasons that contributes to the particular gross income in a

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<sup>2</sup> 1 LVL = 12,56 SEK (2005-02-16). In local purchasing power equals 4 LVL to a dinner including three meals at a restaurant.

particular logging company. In the analysis of the logging companies' total costs has the expensive felling-rights been singled out as a possible reason to the differences in total costs. The same analyse can be applied on the divergent gross incomes. Several companies buy felling-rights even to cutting-sites that are not profitable, which affects the logging companies economic results negatively.

Regarding profitability nine companies mention that they are profitable. All of the nine companies are not profitable because of their logging activities, but three companies say that they are profitable due to their side-businesses. Four companies say that their logging activities are profitable. Two of these four companies have great long-term contracts that contribute in a large extent to their profitability. The two others do not have long-term contracts but an assortment-contract respectively felling-rights bought through bidding procedures. It is therefore difficult to derive a reason to the logging profitability from the companies' ways of acquire timber only. Many companies say that the road-tax and the income tax restrain their profitability. There is no doubt about that taxation restrains the profits but there are certainly other reasons to the small profits too.

## 5.4 Logging

The majority of the 14 logging companies have the state's long-term contracts. Many of the companies are certainly glad that they were foresighted enough to get contracts longer than 10 years, because of the state's reorganisation of the contract systems that has started. In comparison to the assortment-contracts the long-term contracts are more advantageous to the logging companies, because of easier planning and the fact that the companies become the owner of the timber, and can sell the timber to optional customer. It is possible that the Latvian State felt to generous with advantageous contracts to the logging companies and did not want to renew the long-term contracts. The state gets more incomes by introducing the assortment-contract where the logging companies are simply doing a service as a subcontractor to the state. Three of the companies in this study have assortment-contracts. Many of the other companies are certainly keen on getting assortment-contracts when their long-term contracts are ending and because of the high prices of felling-rights in the bidding procedures. The most secure way to survive in the Latvian forestry sector seems to be an assortment-contractor as the state is the biggest owner of forestland. The private forest sector is not big enough to provide so many logging companies and a scarcity of timber in the private forests is approaching.

Besides just the competing between the serious logging companies themselves in the bidding procedures the companies also meet competition from illegal logging companies. Hopefully, these illegal companies will disappear as a consequence by the state's reorganisation of the forestry sector, where the state will supervise the forestry more than before. The illegal companies are one problem, but another problem is also the unofficial division of Latvia's 26 State forestry regions between the logging companies. The division prevents the companies to expand, as the already existing companies in the region do not want more competition.

## 5.5 Employees and subcontractors

All 14 logging companies have some kind of subcontractors to perform different logging activities for them. The chainsaw operators that used to be employees in the logging companies are now subcontractors and works as either as one-man firms or in small motor manual enterprises. The chainsaw operators are working mainly in thinning where it is too expensive to cut and process trees by a harvester made for final felling. The lack of thinning harvesters in Latvia is one reason why the companies use chainsaw operators in thinning. Another reason is that the chainsaw operators are cheaper than a thinning harvester is. Seven companies also hire private machine owners as subcontractors. There is a variation between these seven companies whether using subcontractors with harvesters or forwarders or both. Subcontractors with tractors and carts are common among the companies, especially in thinning.

The number of employees in the 14 companies varies considerably because of the divergence between the companies' activities. The scale of the activities does also affect the quantity of employees. Many of the logging companies mention their number of employees not just in the logging enterprise but also including sawmills, factories and other side-businesses. Most of the companies say their quantity of employees is steady over the year, a bit higher during the winter and a bit lower in the spring. The companies' many activities also affect the number of functions within the companies. A large quantity of activities demands more people to manage the company. One company has only five managers as the company only hires subcontractors that perform the logging.

The present education level within the companies pleases several of the logging companies. The personnel working at the logging companies' offices all have university degrees. The degrees the companies mention are in economics, electronics and forestry. Another degree the companies mention is an upper secondary school degree in forestry. This degree exists among the operators but it is not common in all companies. All machine operators in the logging companies have certificates in logging and in operating the machines. Many of the companies' respondents want the operators to have more knowledge in general about forestry and using computers. Despite the want for more knowledge seems the experience in logging to be more valuable than education concerning the machine operators. None of the companies mention any demand for higher education for example the upper secondary school degree, which could improve the understanding of ecology and economy in the logging companies.

The majority of the logging companies mention their employees' salaries and/or compensation to their subcontractor enterprises. Two companies refused to reveal the wages concerning the harvester operators respectively the forwarder operators. The reason to secrecy about the wages has not been mentioned. Regarding employed harvester operators the wages differs 0.12 LVL/m<sup>3</sup> between the highest and lowest wage. The employed forwarder operators have a greater variation of 0.15 LVL/m<sup>3</sup>. Three companies still have employed chainsaw operators where one of the companies mentions an average salary of 20 LVL/hectare. The other two companies mention the chainsaw operators' wages in cubic-metres where the earnings differ 0.60 LVL/m<sup>3</sup> respectively 0.70 LVL/m<sup>3</sup> in final felling and thinning. The wages regarding truck drivers differs 5.84 LVL/m<sup>3</sup> as the most. Two companies mention the compensation to their subcontractor enterprises. The two statements are not comparable concerning harvester allowance as one of the companies mention the compensation for the harvester in the categories final-felling and thinning while the other

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<sup>3</sup> 1 LVL = 12,56 SEK (2005-02-16). In local purchasing power equals 0,50 LVL to a cup of coffee.

company mentions the compensation for both categories. The forwarder compensation, on the contrary, is comparable and differs 0.50 LVL/m<sup>3</sup> as the most. The allowance to the chainsaw operators in final felling who work as subcontractors, differ 0.20 LVL/m<sup>3</sup> between the four logging companies that has given statements. However, the variation of the compensation is higher regarding thinning where the maximum difference is 0.80 LVL/m<sup>3</sup>.

None of the companies has revealed any reason why they pay the mentioned particular amount of money to their workers as wage or compensation. Two companies say they pay good salaries, which are over the Latvian average. One respondent says the workers salaries could be higher in order to increase the workers job satisfaction. The labourers work for 40 hours per week, according to the companies. The workweek can be longer because the workers want to have a better salary. All statements regarding the employees' salaries and compensation to the subcontractor enterprises comprise the same apprehension as all economic figures in this study (see chapter 5.1).

The rate of the companies' benefits to the workers varies considerably between the companies. Three companies mention that their workers get some kind of salary when the workers are sick. Two of these companies pay their workers for 10 days and the third company pays for 15 days of sickness. One of the companies that pays for 10 days mention the average rate of absence due to illness in the company to be 3.5 days per worker and year. Only one company says that their workers have one month of paid vacation. Two other companies provide their workers with safety-clothes, have health exams every second year and give the workers shots against tick-diseases. Another company pays insurance and pensions to their workers. Benefits that are common to the majority of the companies are the instructions of safety in work. Several of the companies are keen on to have regular meetings with the employees. One of the company representatives pays the salaries in person to the workers just to have a chance to talk to them. The fact that only seven logging companies mention an extra service to their workers besides just paying their salaries, in this study called benefits, can present a reality where many companies do not offer any benefits at all to their workers. The rate of benefits can also be higher than the results present, as some companies perhaps just did not give any statements whether benefits exist or not. Any differences in benefits to the workers between the companies and the scale of their activities or the ownership have not been distinguished. Except the instructions of safety in work, mention the seven companies that have given statements, different benefits that are not necessary to find in other companies in this study. Regarding the benefits that are more of economic nature as pension, insurance, sick-salary and paid vacation exist uncertainties if these benefits are real. The doubt concerning economic benefits to the workers has the same base as the general apprehension in this study that the economic figures the companies mention is not reliable (see chapter 5.1). The other benefits the companies mention, that not are of a direct economic kind, are in a greater extent trustworthier in their existence in the logging companies.

Job-rotation rarely occurs within the companies. Two companies say that job-rotation exist in their companies while seven companies denies the existence of job-rotation in their companies. One company wants to implement job-rotation for their workers. A few companies mention ability for the workers to advance from their functions. A good chainsaw operator can advance to be a forwarder operator and then advance to be a harvester operator, which also is the highest function for a worker to advance to. When looking at the results regarding job-rotation, it is possible that the interviewees have a different understanding of the word job-rotation than the authors of this study. Many statements concerning job-rotation can involve both the possible advancements for the workers the companies mention, as well as an alternation between operating machines and operating for example chainsaws in every

daily shift of work. Several companies denies that job-rotation exist, which implies that both meanings of the expression is not to be found in those companies.

## 5.6 Machinery

The Swedish and Finnish forestry and the Swedish and Finnish forestry companies that have been and still are active in the Baltic States have certainly influenced the Latvian forestry. The great use of Timberjack logging machines among the logging companies is consequently a result of the Scandinavian presence in the Latvian forestry. Some of the interviewed companies have during the years become great machine owners because of the increments in the scale of their logging activities. The companies' present production of timber forces them to have large and modern machinery. The next innovation in the Latvian forestry will probably be a thinning harvester whom at least one of the companies is interested to purchase. As the future lack of old standing forests in the private forest sector may force the prices of felling-rights of thinning stands to increase, it is possible that in combination with the future increase of the forestry workers salaries, investments in thinning harvester could be profitable.

Four companies say that they decide to buy new logging machines when the machines are too old and often broken. Other companies certainly also ground their decisions to buy new machines on same reason but also plan to buy when the production and the cubic-metre price is high. Any concrete answers whether the companies buy brand-new or second-handed machines have not been given during the interviews. In the statements concerning procurements of machines has always the machines been mentioned as new. It is possible that some companies mean a second-handed logging machine when they want to purchase a new machine as well as a brand-new logging machine. The logging companies in this study are all using modern logging machines and a majority of them perform a relatively great scale of logging activities, which give the impression of the purchases of logging machines to concern brand-new machines more than second-handed

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## APPENDIX 1

### Questionnaire used in the interviews with the logging companies

#### Logging organisation and economics

When do questions refer to buying, when selling timber?

1. Do you only do harvesting and logging or do you also buy and/or sell timber.
2. With whom do you make the logging deals? The State, private owners or others?
3. How do you buy the cutting sights? By auction, contracts or assortments? Are there any problems buying the cutting sights? What kind of contracts do you have?
4. Which companies or organisations do you have as customers? Buying and selling timber. Spot contracts or long-term (e.g. 50.000 m<sup>3</sup>/year)
5. Do you have any foreign interests in your company?
6. Do you see any problems with the forest law or tax law? What should be different?
7. How does logging vary over the year? Steady or seasonal? Seasonal dues to industry demand, seasonally, weather, light?
8. Clear cut or thinning?
9. Payment by estimated volume or actual? (When buying and when selling)

#### Company

1. Age of company? How many employees in the start-up?
2. Other work than logging operations? What kind of work and how big is it? E.g. Planting, scarification and pre-commercial thinning, transports, road building?
3. Is the company a member of some kind of association or organisation?
4. Do you make logging contracts with other companies? Subcontracts with other logging firms? Are you going to make future subcontracts with other companies?
5. Do you have contracts with private machine owners? Are you going to make future contracts with private machine owners? Is it problematic? What kind of problems?
6. How is the planning organised in your company week/year? How do you like it to be?
7. Are there grounds for planning, i.e. steady contracts, long-term contracts?
8. How do you feel about certification?
9. Are you certified or are you going to be? If you are, what kind of certification do you have? FSC, PEFC, ISO?
10. Education level in the company? Do the drivers have some education? Would you like your employees to have better education? Do the education level of the employee's cause any problems in the company?
11. Turnover made by logging. Future expectations? Do you see problems with logging in the future? What kind of problems?
12. How big is the profit and how big is the estimated profit?
13. Which part of the company is most profitable? Thinning, harvesters, forest trucks, etc?
14. Company working area in Latvia. Are you planning to expand your working area? Do you see any problems with expanding? Do you want your company to expand? If you are, in which way? More machines, other tasks as pre-commercial thinning, planning services etc, wood trade?
15. Which are the most problematic things in the company? Where do you need research and development?
16. What could be better within your company? Which part is the most important to improve?
17. What could be better within the Latvian forestry? Difficulties, possibilities?
18. Expectations? Goals? Visions/dreams? Hope?

#### Employees

1. How many employees do you have in the company? How many managers, machine operators, chainsaw operators, planners, mechanics? How many people are involved in logging operations?
2. What is the average pay for workers operating harvesters, forwarders, and chainsaws?
3. How do the numbers of employee's change during a year? Seasonal/steady employment? See for q. 7 under logging above.
4. For how long time has your employees been working in the company?
5. How many hours/week of working for the workers?
6. Age allocation.
7. Are the workers members of some kind of union?

8. Education? Operator course? Earlier experiences of working in forestry? E.g. Forestry diploma course, welding, hydraulics, mechanics, economics, environment/ecology's.
9. Technical maintenance knowledge level in the company.
10. Communication within the company? Instructions? Is there a formal system? Is this a problem?
11. Work environment, health and safety, is this a problem?
12. Job satisfaction measured by personnel turn over, sick leave, over employment? Is this a problem?
13. Job-rotation.
14. Disadvantages? Stress in work?

#### Machines

1. Number of machines, harvesters and forwarders, within the company? How many machines would you like to have?
2. Brands, models, year models and buying year of the machines?
3. For how many hours has the machines been driving?
4. Utilisation rate? Is this a problem? Do you want a higher utilisation rate? If the utilisation rate is to low, what is the reason?
5. Extra equipment?
6. Service organisation?
7. How do you decide to buy a new machine? Based on wood demand, existing capacity, what?
8. Do you make an investment calculus to evaluate future profitability? What rate of return is the minimum you expect? Years?
9. Financing?
10. Spare parts access?

#### Production

1. Estimated production in a period (summer and winter)? How much do you want to produce?
2. Income per logged m<sup>3</sup>? How much do you want to earn per logged m<sup>3</sup>?
3. Cost per logged m<sup>3</sup>?
4. Performance demands? Minimum m<sup>3</sup>/day?
5. Do you have cutting instructions? Assortments? Lengths?
6. Feedback from costumers and within the company. Would you like to have more feedback?
7. Total logging volumes. Percent pine/spruce? Percent birch etc?

## APPENDIX 2

The mentioned wages to the employed operators and compensations to the subcontractors in LVL/m<sup>3</sup>.

Functions	Company						
	1	2	3	4	5	6	7
Average all workers	200-300 <sup>1</sup>						
Harvester operators	300 <sup>1</sup>		0.28		secret		
Forwarder operators	secret		0.21		0.30	0.25-0.30	0.24
Chainsaw operators							
- final felling	2.00		1.40				
- thinning	2.30		1.60				
- fuel wood	0.50/1.50 <sup>4</sup>						
Truck drivers	0.16-0.26						6.00
Tractor drivers							0.45
<b>Subcontractors</b>							
Harvester							
- final felling				2-2.30			
- thinning				2.50-2.80			
Forwarder				2.00			
- chainsaw operators							
- final felling					2.20	2.20	
- thinning					3.00	2.50	
- cleft wood						1.00	

Functions	Company						
	8	9	10	11	12	13	14
Average all workers							
Harvester operators	0.35-0.40	0.38		0.35			0.35
Forwarder operators	0.28-0.36	0.23-0.26		0.30			0.30
Chainsaw operators							20 <sup>2</sup>
- final felling							
- thinning							
- fuel wood							
Truck drivers							
Tractor drivers							
<b>Subcontractors</b>							
Harvester					2-2.50 <sup>3</sup>		
- final felling							
- thinning							
Forwarder					2-2.50 <sup>3</sup>		
- chainsaw operators				20-30 <sup>2</sup>			
- final felling	2-2.20	2.14					
- thinning	2.20-2.50	2.50					
- cleft wood							

<sup>1</sup> monthly salary

<sup>2</sup> wage/hectare

<sup>3</sup> compensation to subcontractor companies

<sup>4</sup> wage in final-felling/thinning