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## **WWF /WORLD BANK ALLIANCE**

# **THE IMPACT OF LARGE-SCALE FOREST INDUSTRY INVESTMENTS ON WORLD BANK / WWF ALLIANCE TARGETS, AND RECOMMENDATIONS FOR INVESTMENT SAFEGUARDS**

## **A REPORT BASED ON AN EXAMPLE IN THE BALTIC STATES**

**Final Report**

**Gland, Switzerland and Washington DC, USA  
February, 2003**

## TABLE OF CONTENTS

PART I: THE CONTEXT FOR THE WORK	1
1. WORLD BANK GROUP FOREST POLICY	1
2. WWF APPROACH TO FOREST CONSERVATION	1
PART II: STUDY ON THE PROPOSED INVESTMENT IN A PULPMILL IN LATVIA	3
1. INTRODUCTION	3
1.1 <u>Background</u>	3
1.2 <u>Objectives</u>	4
2. PROPOSED PULP MILL PROJECT	4
2.1 <u>A/S Baltic Pulp</u>	4
2.2 <u>Wood Demand of the Pulp Mill</u>	4
2.3 <u>Wood Supply by Sources</u>	5
3. FOREST RESOURCE BASE	5
3.1 <u>Forest Area and Ownership</u>	6
3.2 <u>Growing Stock</u>	6
4. PROTECTED AREAS	7
4.1 <u>Legal Framework</u>	7
4.2 <u>Policies</u>	8
4.3 <u>Protected Area Network</u>	9
4.4 <u>Management Regimes</u>	10
4.5 <u>Institutional Arrangements for Park Management</u>	12
4.6 <u>Social Importance</u>	12
5. UTILIZATION OF LATVIAN FORESTS	13
5.1 <u>Wood Harvesting Volumes</u>	13
5.2 <u>Type of Felling</u>	15
5.3 <u>Organising of Harvesting</u>	17
5.4 <u>Projected Wood Balance</u>	17
6. INSTITUTIONAL AND LEGISLATIVE FRAMEWORK IN UTILIZATION OF WOOD	19
6.1 <u>Institutions</u>	19
6.2 <u>Control Systems</u>	20
7. CURRENT ILLEGAL LOGGING	22
7.1 <u>Definition for Illegal Logging</u>	22
7.2 <u>Illegal Logging in Latvia</u>	22
7.3 <u>Impact of Current Illegal Cutting on Tax Revenues</u>	24
8. DEVELOPMENT IN THE EXPORT MARKET AND FOREST INDUSTRY	27
8.1 <u>Exports of Wood</u>	27
8.2 <u>Structure and Development of Other Wood Processing Industry</u>	27

8.3	<u>Wood Prices</u>	29
9.	WOOD PROCUREMENT OF THE PLANNED PULP MILL	30
9.1	<u>Procurement Area</u>	30
9.2	<u>Impact of the Planned Pulp Mill on Sawmill Industry</u>	32
9.3	<u>Impact of the Planned Pulp Mill on Wood Supply in the Neighbouring Countries</u>	32
9.4	<u>Impact of the Planned Pulp Mill on Wood Prices</u>	33
9.5	<u>Socio-economic Impacts of the Planned Pulp Mill</u>	35
9.6	<u>Potential Impact of the Planned Pulp Mill on the Protected Areas</u>	38
10.	CONSTRAINTS RELATED TO THE IMPLEMENTATION OF SUSTAINABLE FOREST MANAGEMENT	39
11.	OTHER BALTIC COUNTRIES	40
12.	MAIN FINDINGS	42
	PART III: RECOMMENDATIONS FOR THE LATVIA PROJECT STAKEHOLDERS BY THE WORLD BANK WWF ALLIANCE	47
	Recommendations for the Government of Latvia	47
	Recommendations for Baltic Pulp and Financial Institutions	48
	PART IV: FUTURE ALLIANCE WORK AND DRAFT INVESTMENT SAFEGUARDS	49

#### **List of Tables**

Table 2.1	Wood Sources I (without bark).....	5
Table 2.2	Wood Sources II (with bark).....	5
Table 3.1	Forest Area by Owners .....	6
Table 4.1	Protected Areas in Latvia.....	10
Table 5.1	Harvesting Volumes in Latvia 1992-2001 .....	14
Table 5.2	Harvesting Methods by Forest Owners in 2001 .....	16
Table 7.1	Illegal Logging Activities in 1991-2001.....	23
Table 7.2	Tax Revenue Losses in Wood Sales .....	24
Table 7.3	Tax Revenue Losses Due to the Use of Grey Labour .....	26
Table 8.1	Production of Latvian Wood Processing Industry 1994-2000.....	28
Table 8.2	Wood Prices Delivered to Roadside in 2001 .....	30
Table 9.1	Employment in Forestry .....	36

#### **List of Figures**

Figure 3.1	Geographical Distribution of the Growing Stock .....	7
Figure 5.1	Harvesting by Region in 2001 .....	14
Figure 5.2	Wood Harvesting by Species in 2001 .....	15
Figure 5.3	Harvesting Intensity .....	15
Figure 5.4	Shares of Removals (2001) of the Regional NAI .....	18
Figure 8.1	Exports of Wood 1997-2001.....	27
Figure 8.2	Geographic distribution of sawnwood production.....	29
Figure 8.3	Export Prices of Wood 1997-2001 .....	30
Figure 9.1	Wood Procurement of the Planned Pulp Mill.....	31
Figure 9.2	Projected Development of Latvian Mill Site Pulpwood Costs .....	33

## ABBREVIATIONS AND ACRONYMS

%	percent
AAC	Annual Allowable Cut
C	Coniferous
CEO	Chief Executive Officer
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	Environmental Impact Assessment
EUR	Euro
FAO	Food and Agriculture Organisation of the United Nations
FKH	Forest Key Habitats
FOB	Free on Board
FSC	Forest Stewardship Council
ha	hectare
HCVF	High Conservation Value Forests
IUCN	International Union for Conservation of Nature
km	kilometre
KSMAA	Latvian Forest Owners Association
LVL	Latvian Lati
LVM	Latvijas Valsts Mezi
m <sup>3</sup>	cubic metre
MAI	Mean Annual Increment
MoA	Ministry of Agriculture
MoE	Ministry of Environment
n/a	not available
NAI	Net Annual Increment
NC	Non-Coniferous
NCO	Nature Conservation Office
NGO	Non-governmental Organisation
PEFC	Pan-European Certification Scheme
SFM	Sustainable Forest Management
SFS	State Forest Service
SPFA	Special Protected Forest Areas
t	tonne
TBFRA	Temperate and Boreal Forest Resources Assessment
UNEP	United Nations Environmental Programme
VAT	Value Added Tax
WB	World Bank
WCMC	World Conservation and Monitoring Centre Wild Fauna and Flora
WWF	World Wide Fund for Nature

## **PART I: THE CONTEXT FOR THE WORK**

### **1. WORLD BANK GROUP FOREST POLICY**

On October 31, 2002, the World Bank's Board of Governors unanimously approved a new forest policy. The new forest policy is actually a forest strategy and a policy. The strategy describes the objectives, milestones and *modus operandi* of the Bank's engagement in the forest sector. The policy consists of two companion documents: the Operational Policy, which describes the spirit, intent and associated safeguard provisions for the Bank's financing of projects that impact forests, and the Bank Procedure, which describes the steps that must be taken in the preparation of such projects. Together, these documents define the legal obligations Bank staff must observe.

Key provisions in the policy refer to the financing of logging operations, and state that the Bank may only finance commercial harvesting operations under the following circumstances:

- Where the Bank has determined, on the basis of the applicable environmental assessment, or other relevant information, that the areas to be harvested are not critical forests or other critical natural habitats; and
- Where the harvesting operations meet standards for responsible forest management and use, based on independent forest certification systems acceptable to the Bank; or
- When the harvesting operations include a time-bound, staged action plan acceptable to the Bank for achieving such independent certification system standards; or
- Where the forests are to be operated by small-scale landholders or under community forest management or joint forest management arrangements by local communities. Such operations are monitored by the Borrower with the meaningful involvement of the locally affected communities.

As a consequence of this policy both the World Bank and the International Finance Corporation (IFC) are keen to develop a proactive approach to the question of appropriate safeguards which are needed to implement the policy. This includes the identification and promotion of appropriate tools for identifying critical forests, and achieving independent forest certification.

### **2. WWF APPROACH TO FOREST CONSERVATION**

For 10 years WWF has been working with industrial partners promoting sustainable forest management involving certification.

The evolution of this engagement has been the "stepwise approach" to certification which involves stepped increase in performance on approaches to illegal logging, high conservation value forests and improved management and transparency, leading to forest certification.

A recent development has been to extend the work to financial institutions, based on experience in South East Asia. This has led to guidelines for the development of policy statements for financial institutions. There is now a need to formalise the work and make it

consistent with the company work, whilst also refining the approach to make it relevant for the different financial institutions such as development banks, export credit agencies and commercial banks.

In parallel with thinking on the evolution of forest certification there are technical aspects of the appropriate safeguards, as well as the issues related to the "enabling environment" and who has responsibility for such issues. Here governments are important, in that they set the governance structures. Development banks straddle these actors.

### 3. THE ROLE OF THE WORLD BANK WWF ALLIANCE

The World Bank / WWF Alliance (hereafter referred to as the Alliance), can play a role for both partners in helping to provide a platform for such developments as well as the convening power to mainstream the ideas.

In 2001 the Alliance commissioned Indufor to study one particular investment project in Latvia as a test case to identify the issues, analyse the impacts on the Alliance targets and draw preliminary conclusions on what appropriate investment safeguards would be necessary to ensure that the impacts of the investment would be minimised and indeed could contribute to the aims of the Alliance.

The study is presented in Part II. Whilst the study analyses the conditions in Latvia regarding the investment, and specifically the likely environmental and social impacts, it uses publicly available information, and not the same (often confidential) data and assumptions used by the pulpmill company. It is recognised that some of these assumptions may be different to those used by the pulpmill company. However, Baltic Pulp have confirmed that the assumptions made are broadly correct, which validates the discussion issues. Neither is it intended that this study is an alternative "environmental impact assessment".

The intention of the study is to raise issues for discussion based around a real world example.

Based on the study results a workshop for Alliance staff was held in Riga, Latvia on 28th January 2003, followed by the presentation of the study to Latvian Government and industry representatives, as well as the pulp mill company staff on 29th January.

Output from these discussions shaped the recommendations and conclusions presented in Parts III and IV.

## **PART II: STUDY ON THE PROPOSED INVESTMENT IN A PULPMILL IN LATVIA**

### **1. INTRODUCTION**

#### **1.1 Background**

There are currently three greenfield pulp mill projects under study in the Baltic States. Each is of a different scale and stage of development. The most advanced is arguably in Latvia, where feasibility studies have been completed, and the investment decision is expected in the near future. The proposal is to build a large-scale mill using both hard and softwood species. In Estonia the proposed mill is smaller, but will focus on the use of aspen an under-utilised species. In Lithuania, a mill project is less well advanced, although feasibility studies and background work has been completed. This study is focused on the situation in Latvia, but the elements that may be relevant to other Baltic countries are also briefly discussed.

The construction of a pulp mill in Latvia was planned as long ago as 1994 as part of the Forestry and timber manufacturing development programme. In 1995, the State Forestry Service formed a project group assigned to realise the construction of this mill. In 1998, 28 pulp producing companies from various parts of the world were invited to participate in a tender for the right to build pulp mill in Latvia. During the same year, two of those companies Södra from Sweden Metsäliitto from Finland - were selected as the most suitable candidates to enter further talks regarding the construction of pulp mill. In 1999, Södra and Metsäliitto financed their own research for the Latvian cellulose project. In 2000, both foreign companies founded a/s Baltic Pulp along with their key strategic partner, the Latvian government. In October 2002, Södra sold its stake to Metsäliitto, which continues to prepare for the investment.

The environmental and social effects of the mill have been investigated as part of the feasibility studies conducted by Baltic Pulp. The Latvia EIA State Bureau's program to carry out an environmental impact assessment is also underway. However, none of these studies focused specifically on forest-related impacts. This study is intended to be a contribution to the debate concerning the potential impact of the planned pulp mill on the forest environment as well as forest owners and forest workers.

The issues to be analysed include the impact on wood balance in Latvia, and the timber markets in neighbouring countries. Currently the demand within Latvia for pulpwood is low, leading to significant exports, and in the forests only low levels of thinning operations. The adequacy of the raw material base depends crucially on the extent to which timber exports decline and thinnings increase after the establishment of the mill. The key variable behind these changes is price development for pulpwood.

The potential impact of the mill on forest management standards in Latvia will be investigated. In particular, the role that certification can play in improving the current practices will be analysed. It is also of interest to assess what consequences the stronger demand for wood caused by the mill will have on protected areas, especially in terms of illegal logging.

Illegal activities are an emerging and significant issue connected to pulpwood and are especially widespread in the private sector. Recent work by WWF Sweden and Taiga Rescue

Network on Latvian-Swedish round timber trade (1999, 2002) has identified the lack of adequate policies and systems to ensure sustainable trade and illegal logging specifically. The key issue is whether illegal practices exert pressure on legal trades to “cut corners”, and what measures could be taken to counter it.

A further issue surrounding the pulp mill is the balance of demand for pulpwood and saw logs. An assumption has been made that thinnings will supply a large proportion of the wood supply, yet the mill will also act as a stimulant to clearfell activity which will generate significant saw log volumes. There will be not only a change in the balance of saw log and pulpwood, but a change of forest management. The production of pulpwood for the mill will lead to possibilities for different forest management regimes including thinning and selective logging.

In addition, there is the question of the State Forest Company’s role in the supply of wood to the mill. The current debate revolves around the question whether the mill should encourage the project on social and economic grounds through a low wood price, or seek to guarantee a balance of benefits, including adequate forest protection and high management standards, at the potential downside of higher wood costs and an uncompetitive investment. The stakes are high in an internationally competitive situation where at least five pulp mill projects are being studied in Europe alone.

## **1.2 Objectives**

The objectives of this study are

- to identify the impacts of the planned pulp mill investments in Latvia on the World Bank/ WWF Alliance targets of sustainable forest management and protected areas.
- to make and disseminate recommendations on investment safeguards to minimise the impacts.

This reports covers the first objective. The second one will dealt with in a separate document.

## **2. PROPOSED PULP MILL PROJECT**

### **2.1 A/S Baltic Pulp**

A/S Baltic Pulp is a start-up company to investigate the possibility of building a greenfield pulp mill in Latvia. The planned production of the mill is 600 000 t/a of bleached sulphate softwood and hardwood pulp. The mill site is in Jekabpils, approximately 150 km to the southeast of Riga.

The current ownership structure of A/S Baltic Pulp is as follows: the Republic of Latvia 33%, and Metsäliitto Group of Finland 67%. The total investment of the mill is estimated at EUR 900 million. The final decision on the construction of the mill is expected at the end of 2002, resulting in a start-up of pulp production at the earliest in 2005.

### **2.2 Wood Demand of the Pulp Mill**



Total wood raw material demand of the planned mill is estimated at 3 000 000 m<sup>3</sup> of wood without bark. Roughly two thirds of the wood input is planned to be softwood (pine and spruce), the remaining third will be hardwood (birch). A tentative sourcing plan has been outlined by A/B Baltic Pulp, and is presented in Table 0.1.

If the roundwood consumption is expressed in terms of volumes with bark, the total wood demand increases 240 000 m<sup>3</sup>/a or 8% (Table 0.2). The wood volume without bark is converted to that with bark by adding 12%.

**Table 0.1 Wood Sources I (without bark)**

Source	Softwood	Hardwood	Total
	solid m <sup>3</sup> without bark/a		
Domestic roundwood	1 100 000	500 000	1 600 000
Domestic chips	900 000	100 000	1 000 000
Imported roundwood	200 000	200 000	400 000
<b>Total</b>	<b>2 200 000</b>	<b>800 000</b>	<b>3 000 000</b>

Source: A/S Baltic Pulp

**Table 0.2 Wood Sources II (with bark)**

Source	Softwood	Hardwood	Total
	solid m <sup>3</sup> with bark/a		
Domestic roundwood	1 232 000	560 000	1 792 000
Domestic chips	900 000	100 000	1 000 000
Imported roundwood	224 000	224 000	448 000
<b>Total</b>	<b>2 356 000</b>	<b>884 000</b>	<b>3 240 000</b>

A/S Baltic Pulp has not yet a publicly available plan how to organise the wood supply of the mill. However, in order to ensure a steady and reliable wood supply to the mill, the pulp mill company needs to establish an organisation responsible for planning, coordinating and monitoring the various wood procurement operations. The actual harvesting and transportation operations are likely to be contracted out or purchased from independent wood supply companies.

### **2.3 Wood Supply by Sources**

Domestic roundwood will come from two sources: From the state forests (*Latvijas Valsts Meži*) and from private forests. The state and the private forests are both estimated to make up 50% of the domestic roundwood supply.

The domestic chips, about 1 000 000 m<sup>3</sup> (sub) should come from the domestic sawmill industry. The balance is to be purchased from the international pulpwood market. Imported roundwood is likely to originate from Estonia, Lithuania, Russia and Belarus.

## **3. FOREST RESOURCE BASE**

### 3.1 Forest Area and Ownership

The forests presently cover about 45% of the land area of Latvia, the total forest area being almost 2.9 million ha (Table 0.3). Forest ownership structure has been changing radically during the last century. Presently, 100 000-150 000 private forest owners manage approximately 43% of Latvia's forests. The exact number of private forest owners is not known because the available statistics do not distinguish cases where one owner possesses more than one woodlot. It is possible that each woodlot is entered into the statistics as if they were owned by different owners. In this case the present number provided by the statistics, 150 000, would be exaggerated. The public forests (owned by the state and municipalities) account for 54% of the total forest area.

**Table 0.3 Forest Area by Owners**

Owners	Area, 1 000 ha	Share, %
Private	1 233.3	43
Legal entity	53.8	2
Municipality	111.0	4
State	1 443.3	50
Joint ownership	0.3	
Free land	19.8	1
<b>Total</b>	<b>2 861.5</b>	<b>100</b>

*Source: State Land Service (01.01.2002)*

From the year 1940, during the Soviet era, the state was the sole owner of forests. A great majority of the forests were managed by state forest enterprises, and the rest by collective and state farms. After Latvia regained its independence the process of restituting land properties to former owners or their descendants was started, resulting in the present ownership structure.

### 3.2 Growing Stock

The total growing stock of Latvia is at present 544 million m<sup>3</sup>. It has increased considerably in the 1900s and has more than doubled from the year 1935 (245 million m<sup>3</sup>). Part of the increase can be explained by improved inventory methods, but still the development trend is clear.

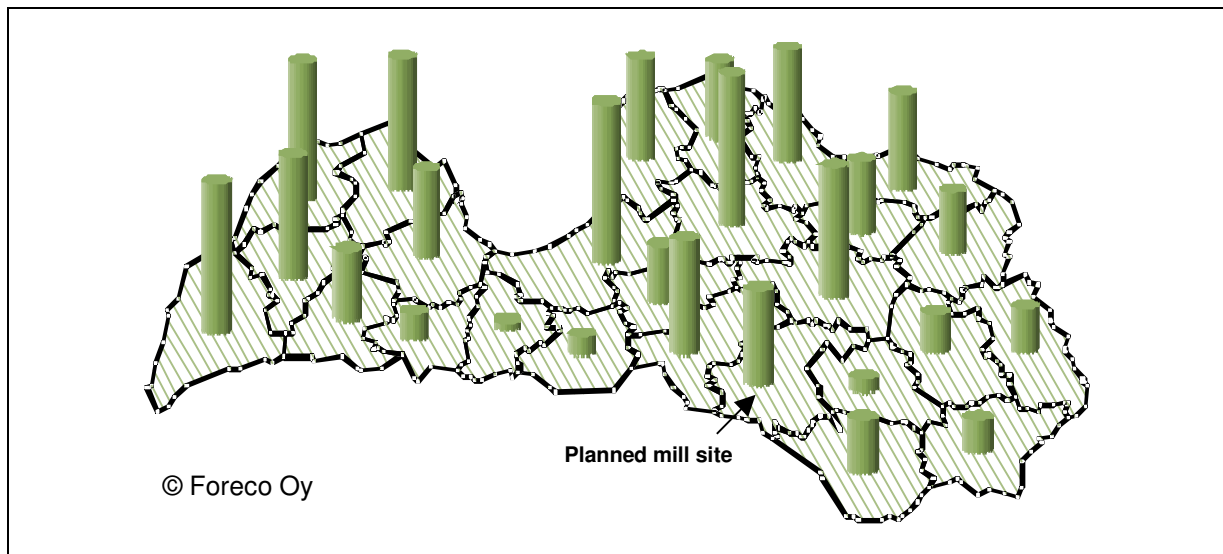
The geographic distribution of the growing stock reflects both ecological zones and land-use patterns. In addition, the distribution of local forest industries, and more recently harvesting for export purposes, has modified the structure of growing stock. Figure 0.1 illustrates the present geographical allocation of the growing stock. The highest concentrations are found to the north of the proposed mill site and on the western coast.

The species composition of the growing stock is as follows:

- Spruce 17%
- Pine 43%
- Birch 28%
- Aspen 4%
- Other species 8%

The first four species are the most suitable for the pulp production.

**Figure 0.1      Geographical Distribution of the Growing Stock**



Source: *Meza statistika 2002*

## **4.      PROTECTED AREAS**

### **4.1      Legal Framework**

The legal basis for protected areas has undergone a major revision in the last few years. The current protected area network consists of three types of areas:

- (i) Territories designated by Saeima (Parliament) by special laws for each of them including three National Parks and four Strictly Protected Nature Reserves.
- (ii) Other nature reserves designated by regulations of Cabinet of Ministers including 21 nature parks, six protected landscape areas and 211 Nature reserves.
- (iii) Small, strictly protected areas called “micro-reserves” and designated so far mostly in forests to protect important sites for forest dwelling species with disperse distribution.

The legal framework for the first two groups is adequate, and they provide for long-term security, if implemented effectively. However, a major weakness is that management plans, which are an integral part of the framework, are not available in most areas (see Ch. 4.4). Regarding the “micro-reserves” referred to under the third group, the legal provisions are also adequate, but the problem is that only few have been designated yet. For historical reasons a large part of them are at present classified as “potential” micro reserves, which have relatively weak protection status.

A large part of the “potential” micro-reserves were included in the Soviet system of Special Protected Forest Areas (SPFA). They were used for protection of leks of capercaillie and nesting sites of threatened forest birds and animals. The same approach was adopted as a basis for current nature conservation legislation, namely in law about “Species and habitat protection”. However, the new law widened their scope to cover not only forest but also other types of landscape and other groups of species. A special category of micro-reserves is forest key habitats (FKH), the designation of which is based on a special methodology.

The network of micro-reserves was intended to replace the former, rather complicated system of forest protection. However, it turned out difficult to determine which management regulations would apply during the transition from one system to another, and it was therefore decided that all former SPFAs will be equated to strictly protected micro-reserves until an inventory is carried out and their status is determined anew.

With this decision a strict ban on forest management was extended to a large area, where management regimes used to be less strict. The regulation affected a large number of private properties, whose owners voiced strong opposition and forced the authorities to exempt water protection forests, which formed the largest part of SPFAs. While in some cases the exemption may have been justified even on pure environmental grounds (e.g. some water protection zones were located quite far from any water bodies), the example shows that the temporary protection status is rather weak, and can be changed quite rapidly.

Other important laws influencing nature conservation that have been recently changed or passed include Law about Protection Belts, Fisheries Law, and the Forest Law. Latvia has also ratified a number of important International Conventions such as the Bonn Convention, Ramsar Convention, CITES, Bern Convention, Helcom and Rio Convention. Owing to the large number of laws regulating protected areas, the private owners, in particular, may sometimes be confused about the protection status of their property.

## **4.2 Policies**

The Latvian protected area system has been developed over several decades. The first protected areas were established early in early 20<sup>th</sup> century, and the system was consolidated during the Soviet era. However, the development approach was not necessarily based on a comprehensive ecological approach, but rather focused on protecting individual sites considered valuable from biological and recreational standpoint. An overarching, national policy framework was lacking, and the expansion of the network was often driven by individual initiatives using the local context as a reference point.

In the last few years, the development of an overall policy framework has made significant progress. In particular it is noteworthy that the legal framework has been nearly completely overhauled. The concept of micro reserves was developed with nation-wide needs in mind. The analysis on Natura 2000 sites is underway, and it is expected that this process will considerably improve the situation further both in terms of clarifying the basis for decision-making and stakeholder involvement. The Government is committed to maintenance of the existing network, and its expansion within the framework of the Natura 2000 programme.

However, even today there is a lack of articulation regarding the basic development guidelines and strategic choices. Some general goals and strategies are available (see e.g. National Programme on Biological Diversity 1999, Latvian Forest Policy 1998), but the main problem is that the principles underlying the development effort have not yet been made sufficiently explicit, so they could be debated and agreed with all stakeholders. This applies to issues such as goals regarding representivity, balance and interaction between protected areas and production forests, area requirements for specific species, choice of management regimes etc.

### **4.3 Protected Area Network**

The information on protected areas lacks consistency, and data gaps persists. The precise size of forest areas under protection is difficult to assess, since for many protected areas no distribution between forest, non-forest land, waterbodies etc. is provided. A substantial portion of protected areas is situated on privately owned land, but data on their size is lacking. Expert assessments suggest that their proportion is 40-50% of total protected area.

In addition, information is collected by two entities, Ministry of Environment (MoE), and Ministry of Agriculture (MoA), and inconsistencies have been identified. The most complete source of information is the forest data base maintained by State Forest Service, which is being upgraded and expanded. Based on currently available information the distribution of protected areas is as follows:

The proportion of forest to which some degree of management restrictions apply is 15.7% of total forest area. Areas protected by special laws i.e. Strict Nature Reserves and National Parks account for 0.3% and 2.7% respectively. Areas designated under regulations issued by Cabinet of Ministries comprise Nature Reserves, Nature Parks and Landscape Protection Areas, which represent 2.3%, 1.2% and 1.9% respectively. The SPFAs, whose status is unclear until an inventory is carried out comprise 3.5% of total forest area. Other areas are protected under various other legal instruments (e.g. Law on Protection Belts).

In terms of quality of the protected area network has shortcomings. Forest types that are adequately represented in protected area systems are coastal forests and swamp forests, whereas noble hardwood forests are not sufficiently represented. The few globally rare or threatened bird species (Ferruginous duck, Steller's Eider, Greater Spotted eagle, Corncrake, Aquatic warbler White-tailed eagle, Greater Snipe) are covered by the network. One of the bird species, Corncrake, is not particularly threatened in Latvia, but protection measures have been taken out of general conservation interest. The protected areas contain higher levels of biodiversity than other forest areas, and they provide protection for the one intact ecosystem found in Latvia—raised bogs. There are no endemic species or globally threatened ecosystems in Latvia.

In terms of size, the individual areas range from 0.4 ha to 50 000 ha. The areas at the upper end of scale are large in regional terms, but a common weakness is that only minor parts of them are strictly protected, which prevents natural succession of forest ecosystems on a large scale. With proper management these areas would have high potential to provide critical protection for most of the naturally occurring species, and even for forest dwellers. The latter are more or less disperse species and would need huge areas to hold a reasonable population - half the country at least. A representative forest protected area network together with the concept of micro-reserves that is recently being elaborated may have full potential to address the problem.

However, applying other study approaches could be considered, since they may reveal needs that have not yet been addressed. In particular, biodiversity gap analysis, should be considered, since it may be relevant in the Latvian context. A preliminary assessment suggested that productive forest types are poorly represented in the Latvian protected area network (UNEP-WCMC and WWF 2000). An on-going WWF study on Baltic forests is using stand characteristics to identify high conservation value forests. Preliminary results indicate that a substantial portion of such areas may still be without protection (Karjalainen, pers. comm.).

#### 4.4 Management Regimes

The elaboration of management plans for protected areas is rather slow. Of 247 protected territories 59 have elaborated or drafted management plans (inclusive all three National Parks, Teiči Nature reserve, 12 Nature parks). Only ten of them have individual regulations defining division of territories in different functional zones with respective management. Full ban on any kind of management is applied only in strictly protected zones. Final cuttings are prohibited in part of other zones, and in others all types of cuttings are allowed, although restrictions on them are more severe than in production forest (Table 0.4).

**Table 0.4 Protected Areas in Latvia**

Type of protected area	Ha	% of forest area	Comment
Strict Nature Reserves	7 780.90	0.3	
- Strictly protected zone	4 958.50	0.2	No management
- Regulated zone	2 355.50	0.1	No final cutting
- Buffer zone	466.9	0.0	
National Parks	77 743.40	2.7	
- Strictly protected zone	6 287.30	0.2	No management
- Nature Reserve.	31 869.90	1.1	No final cutting
- Landscape protection	29 009.80	1.0	
- Culture-Historical zone	940.6	0.0	
- Neutral	9 63.80	0.3	
Nature Reserves	65 494.70	2.3	No final cutting
Biosphere Reserve <sup>1</sup>	2 238.80	0.1	No final cutting
Nature Parks	35 280.00	1.2	
Protected Landscape Areas	55 601.00	1.9	
Micro-reserves	15.6	0.0	No management
Dendrological Reserves	555.9	0.0	No final cutting
Geomorphological Reserves	419.5	0.0	
Seacoast Protection Belt	5 124.00	0.2	No final cutting
Seacoast Restricted Belt	57 121.80	2.0	
Protected Belt along Waters	18.3	0.0	
Protected Belt around Towns	44 875.30	1.5	
Special Protected Forest Areas (SPFA)	102 948.80	3.5	Protected temporarily until final definition of status
<b>Total</b>	<b>455 218.00</b>	<b>15.7</b>	

Source: Forest Data Base, Latvian State Forest Service 2002

For all other protected areas having no individual regulations the general regulations apply, i.e. no final cutting is allowed unless a management plan and individual regulations are elaborated and endorsed by the authorities.

Strictly protected forest land with forest cover and with no management represents 71 366.9 or 2.5% of all forests<sup>2</sup> (Table 0.4). A major part of these are SPFAs under temporary

<sup>1</sup> Refers to area designated as nature reserve within the Biosphere Reserve

protection waiting for inventory and decision whether they will be accorded the status of micro-reserves. Stands where no final cuttings are allowed account for 139 332.3 ha or 4.8% of all forests. These two groups together form 7.3% of forest stands which can be considered as protected forests although a large part of them still have temporary status.

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<sup>2</sup> Adding up strict protection zones of Nature reserves and National parks and micro-reserves in Table 0.4 the total area amounts to 11261.4, but this figure includes also non-forested parts)

## **4.5 Institutional Arrangements for Park Management**

State owned forests are under two different ministries — strict nature reserves and national parks are under the responsibility of Ministry of Environment and Regional Development (MoE). All other non-administrated nature reserves and commercial forests are under Ministry of Agriculture (MoA). To eliminate confusion that the split between two administrative bodies has given rise to, a new body, Nature Conservation Office (NCO) under MoE, was established recently to be responsible for future co-ordination of protected area management. The NCO is planned to have 12 staff, and it is expected to be operational by the end of 2002.

There are two different management structures for protected areas. All National parks, Strict Nature reserves, the Biosphere reserve and Engure lake Nature Park have on-site management staff. Other protected areas rely on other organisations for supervision and management.

### **4.5.1 *Protected Areas with Designated Management Staff***

The availability of staff and other resources varies among areas. For instance, the Teichi Reserve has satisfactory resources, but the new Kemerí park is short of staff, and resources (e.g. vehicles and fuel). None of the National Parks get sufficient funding from Government budget, and the gap is filled by generating own revenue e.g. from timber sales. For instance, for the Kemerí National Park the state budget grants only slightly more than half the necessary funds. It is estimated that to implement fully the first priority actions proposed by the Kemerí National Park management plan, the current budget would have to be more than doubled. Still, this would not be enough to raise the low salary levels of employees working in the National Parks, which is a serious problem for staff management. Since revenues from other sources, such as ecotourism, are still limited, increased timber harvesting may be the only immediately available alternative to fill the funding gap.

### **4.5.2 *Protected Areas without Designated Management Staff***

Until very recently, the territories without designated management staff were supervised by the local foresters of State Forest Service. This often led to very lax control as foresters have very limited resources to manage the area they are responsible for and are often obliged to concentrate their activity on areas where intensive forestry activities are carried out (mostly private lands). In problem cases the State Environmental Inspection will also intervene, but given the low capacity of this unit its function is rather to be a “fire brigade” than a deterrent. Much hope is placed on the new Nature Conservation Office to improve the situation, but it is unclear whether it will have the sufficient resources to do so.

## **4.6 Social Importance**

Socially, the current protected area network present a complex problem. It is estimated that roughly 40-50% of the protected areas are located on privately owned land. A legal framework exists to purchase or exchange these lands or to compensate forest owners for restrictions imposed on forest management or. However, lacking Government funds has



prevented the implementation of these provisions. The issue of compensations has featured prominently in public discussion, most recently related to private properties in Gauja National Park. So far, the private landowners have respected the restrictions imposed on their property in protected areas. Reportedly, the level of illegal activity, site conditions etc. is not dependent on land ownership.

## **5. UTILIZATION OF LATVIAN FORESTS**

### **5.1 Wood Harvesting Volumes**

The reported harvesting volumes in Latvia have more than doubled in a decade. In 1992, the harvested volume was 4 million m<sup>3</sup> of wood, while in 1998, the harvesting exceeded the level of 10 million m<sup>3</sup> of wood. Since then the annual harvesting volumes<sup>3</sup> have been stable oscillating between 10-11 million m<sup>3</sup>/a (Table 0.5). Without the pulp mill, this trend is likely to continue.

At the beginning of the 1990s, the harvesting activities concentrated on the state owned forests. The implementation of the privatisation program increased the wood supply from the private forests to the market. Since 1998, more wood was harvested from the private forests than from the state forests. In the year 2001, the harvest from private forests reached 6.5 million m<sup>3</sup> of wood, while in the state forests the harvested volume was 4.0 million m<sup>3</sup>.

The harvesting activities are not evenly distributed throughout Latvia (Figure 0.2). The highest harvesting volumes are found in the regions with abundant forest resources (cf. Figure 0.1)

The harvesting volumes are distributed rather evenly between pine, spruce and birch, which account for 30%, 28% and 26% respectively. Other species make up 16% of the total volume. If compared to the species composition of the growing stock, it seems that spruce is intensively harvested and the harvesting of pine could be increased. The harvesting of birch equals its share of the growing stock.

The harvesting intensity is presently higher in the private forests than in the state-owned forests (Figure 0.4). The utilisation rate of the AAC is just over 50% in the state forest. The AAC is not calculated for the private forests, but it can be estimated based on the current harvesting volumes that the private forest are being utilised intensively.

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<sup>3</sup> In 1999, the cut-off point between data collection periods was moved three months forward. The data for 1999 was therefore collected over a period of 15 months. If the data is scaled back to make it comparable with a 12-month period (i.e. by multiplying the volume estimated for 1999 with a proportion that 12 months represents of 15 months), the annual harvesting volume is 10 750 m<sup>3</sup>.

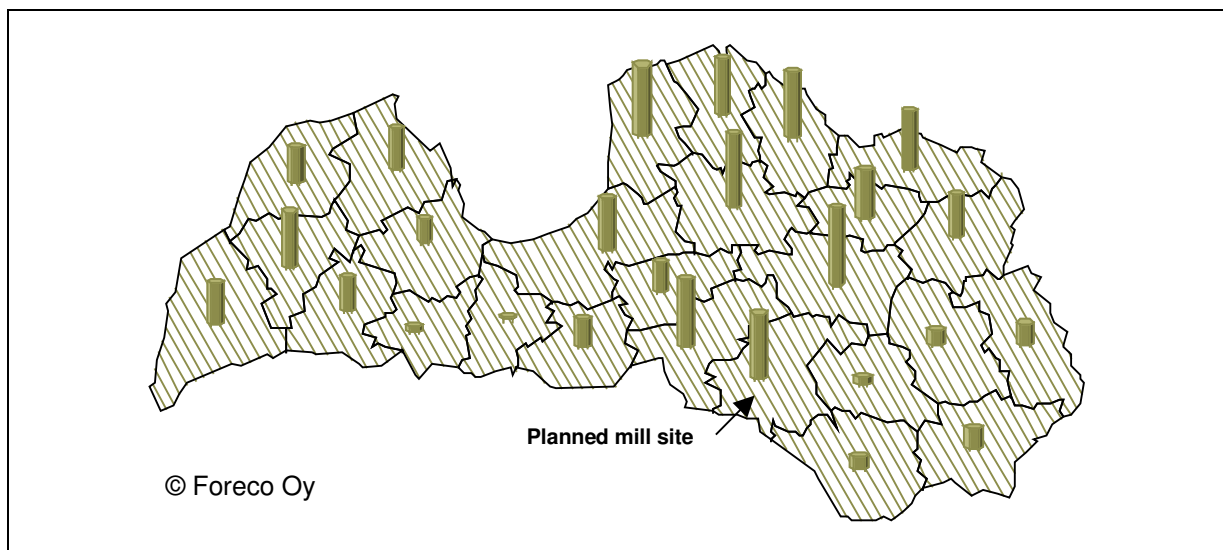
**Table 0.5**      **Harvesting Volumes in Latvia 1992-2001**

Year	State forests	Private forests	Total
	1 000 m <sup>3</sup>		
1992	3 058	955	4 013
1993	3 796	960	4 756
1994	4 729	1 001	5 730
1995	5 299	1 588	6 887
1996	4 482	2 280	6 762
1997	4 870	4 054	8 924
1998	4 509	5 520	10 029
1999*	5 300	8 137	13 437
2000	3 724	7 276	11 000
2001	3 950	6 550	10 512

Source: Latvian State Forest Service

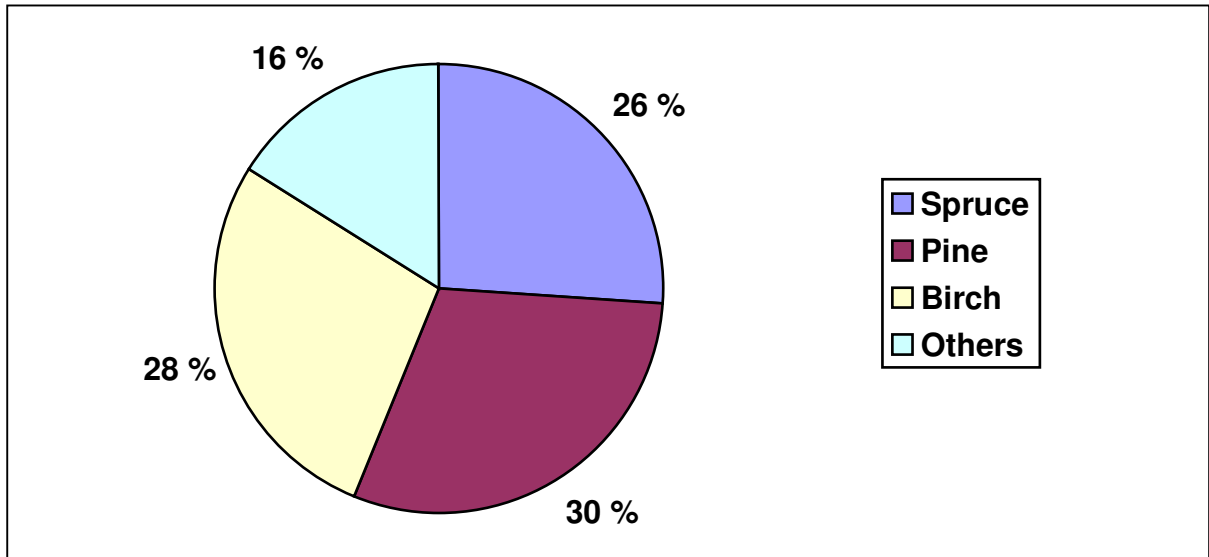
\* Duration of forestry year in 1999 was 15 months

**Figure 0.2**      **Harvesting by Region in 2001**



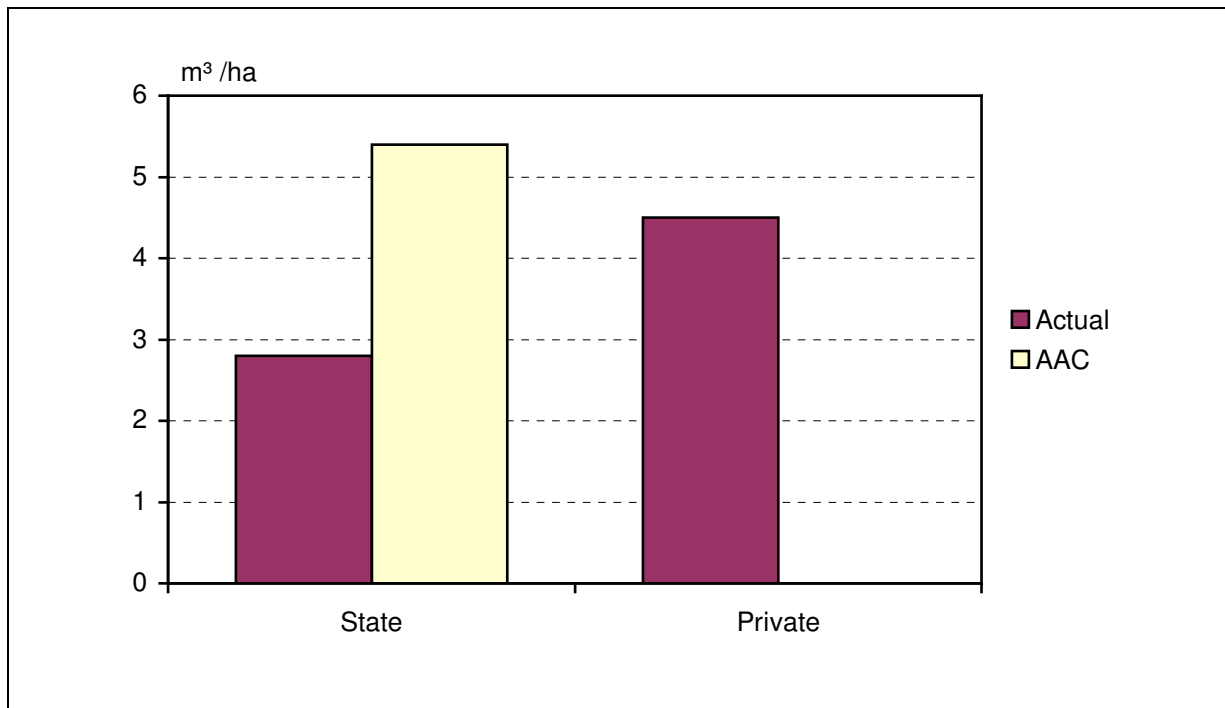
Source: Meza statistika 2002

**Figure 0.3**      **Wood Harvesting by Species in 2001**



Source: Meza statistica 2002

**Figure 0.4**      **Harvesting Intensity**



## **5.2      Type of Felling**

The present structure of Latvian forests requires thinning, sanitary and final (regeneration) felling operations. The final felling methods are applied in the mature forests, and the thinning and sanitary felling in the forests at growing stages. The latter methods are needed to improve the species composition and to enhance the growth potential of the stands.

The biggest challenge for the development of harvesting methods in Latvia is to generate locally adapted thinning regimes, which would be effective in enhancing the sustainability of the forest management while being cost effective and capable of producing several millions of m<sup>3</sup> of pulpwood annually. Due to the logistic and cost constraints these should be introduced predominantly in the eastern regions. This necessarily means very active involvement of the private forestry in development and application of these regimes.

Table 0.6 presents the shares of various harvesting methods by owner groups. The final felling methods represented 31.3% of the total harvesting area in Latvia in 2001 but produced 78.9% of the harvested volume. The sanitary cutting methods represented 10.2% of the harvesting area and produced 2.0% of the harvested volume. The thinning methods represented 56% of the total harvesting area but produced only 16.8% of the harvested volume.

**Table 0.6 Harvesting Methods by Forest Owners in 2001**

Method	Area	Volume
	%	
<b>Private</b>		
Final felling	23.1	50.5
Illegally cut	1.1	1.5
Other felling	0.2	0.2
Reconstruction cut	0.5	0.4
Sanitary cut	8.2	1.7
Thinning cut	28.3	9.6
	<b>61.5</b>	<b>63.8</b>
<b>State</b>		
Final felling	8.3	28.4
Illegally cut	0.3	0.1
Other felling	0.2	0.1
Reconstruction cut	0.0	0.0
Sanitary cut	2.0	0.4
Thinning cut	27.7	7.2
	<b>38.5</b>	<b>36.2</b>
<b>All methods</b>	<b>100.0</b>	<b>100.0</b>

*Source: Meza statistica 2002*

The use of different harvesting methods has been rather well adapted to the age-class structure of the forest resources. However, the proportion of thinnings can still be increased. In particular, there are substantial areas of forest stands dominated by pine and birch that are in a need of thinning. The forests dominated by spruce are typically younger than those dominated by pine and birch. Consequently, a significant part of spruce forests needs pre-commercial or first commercial thinning.

### 5.3 Organising of Harvesting

The industrial wood supply in Latvia is arranged through numerous small and medium-sized enterprises and also by larger wood procurement organisations. The technologies applied vary from felling with chain saws to modern harvesters and forwarders. In practice, all wood is harvested with the cut-to-length system. Tree-length techniques are not used any more.

The long-distance transportation of wood is mainly on roads. Railroad transportation is used especially when hauling wood from the eastern part of the country to the west.

In the state owned forests, Latvia Forest Enterprise (*Latvijas Valsts Meži, LVM*) currently sells wood standing only. More than 50% of the annual cut is sold by long-term contracts, and approximately 30% by actions. In the present system, wood buying companies arrange all the harvesting operations in the forest, and the long-distance transportation. The future plan of LVM is to start selling wood delivered to the mill or to other destinations. In this new system, the planning and coordination of wood supply is in hands of LVM and the actual operations are outsourced to contractors that are to be selected with a set of criteria covering e.g. paying of legal duties, professional skills and machine fleet.

In the private forests, wood is sold either standing or delivered to a point agreed with the buyer. It is common that forest owners living in the countryside participate in the harvesting operations. The forest owners who live in urban areas seldom do any harvesting work, and usually sell wood standing to individual buyers or companies that further market the wood to local forest industry companies/wood exporting companies as well as arrange the harvesting and transportation operations. The wood supply chain from a private forest holding to a wood processing mill or to an export port may include two or more middlemen or companies.

There are no comprehensive statistics available in Latvia on the number of companies and workers in the wood harvesting and transportation. The companies with high procurement volumes are well known and identified. Basic information on the small companies/middlemen that operate seasonally or occasionally is currently deficient. It is estimated that the forestry and logging employs 16 000 people in total.

### 5.4 Projected Wood Balance

#### 5.4.1 *Growth of Forests*

The information on the Latvian forests has been improved recently and gives a relatively reliable picture on the prevailing situation. Detailed information is available on growing stock by region, ownership, species and age class. However, no detailed data on forest growth is available. Some estimates on forest growth have been made by inventory specialists:

- Kuusela and Vainio (1998) state: “*The total annual increment is 16.5 million m<sup>3</sup> ... total increment in commercial forests is 13.8 million m<sup>3</sup>, with conifers accounting for 8.0 million m<sup>3</sup> and broadleaved species for 5.8 million m<sup>3</sup>.*” In the same document they estimate the long-term biological potential of Latvian forests as 16.1 million of net annual increment (NAI), which was based on growing stock estimate of 484 million m<sup>3</sup>.
- Latvian Ministry of Agriculture and FAO estimate the NAI at 16.5 million m<sup>3</sup>. It is based on a growing stock of 502 million m<sup>3</sup> and a mean annual increment (MAI) 6.3 m<sup>3</sup>/ha. These figures still refer to the 1998 information base.

In this study, the total NAI is assumed to be 16.5 million m<sup>3</sup>. In the commercial forests, the NAI is established at 14 million m<sup>3</sup>.

It is worth noting that the growth is estimated based on yield tables originally developed in the Soviet era. The method used to be shared by all Baltic countries, but when Estonia a few years ago switched to estimates based a more accurate statistical forest inventory, their growth estimate increased 30%. This suggests that the current projection in Latvia would be on the low side.

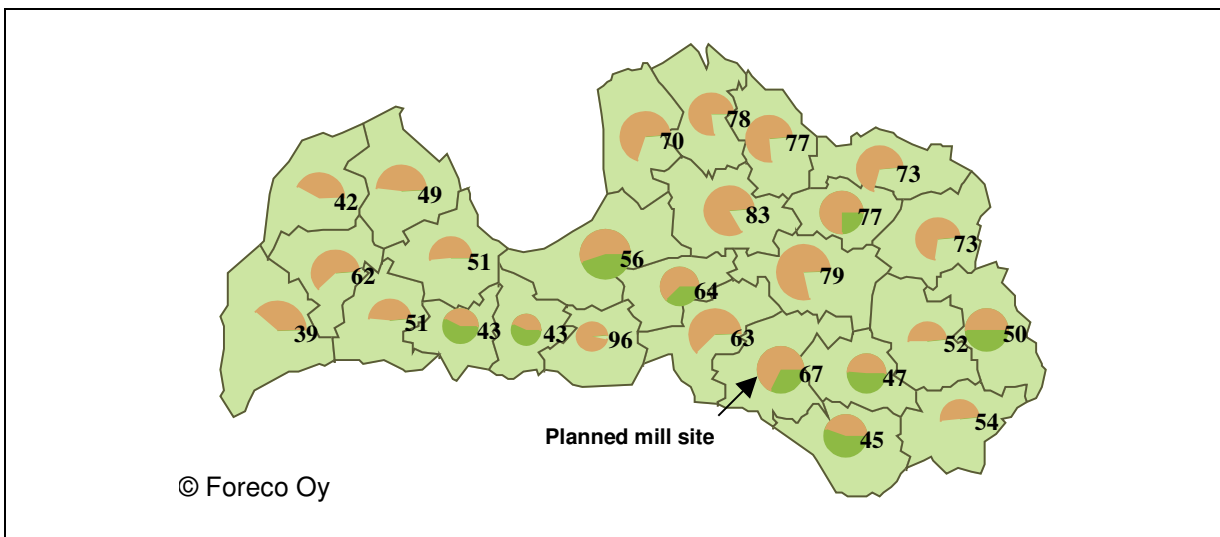
On the other hand, additional restrictions on forest use, certification, other policy instruments, establishment of new protected areas etc. may substantially reduce the sustainable cutting potential. In Sweden, they have been estimated to curb the cutting potential by up to 20% (Larsson, pers. comm.). As the current and projected harvesting volumes are close to the current estimate on sustainable harvesting levels (see Ch. 9.1), the availability of more accurate resource data would be highly desirable.

### 5.4.2 Comparison of Growth and Removals

Figure 0.5 illustrates the estimated cutting balances. The regional balances are calculated as a ratio between the annual removals (in 2001) and the NAI. In a more appropriate comparison, removals should be compared to Annual Allowable Cut (AAC), but these estimates were not available.

Figure 0.5 points out that the Jekabpils region seems to be a favourable one for the planned pulp mill, as the utilisation rate of the NAI is estimated at 67% in 2001. Furthermore, the planned pulp mill site would be surrounded by a number of regions with a positive utilisation rate of the NAI. Towards the North from the planned mill site, the resource use rate averages about 75%, while to the South the resource use rates average at about 50%. Based on these estimates, the first conclusion is that there would be additional raw material available for the processing capacity expansion.

**Figure 0.5**      **Shares of Removals (2001) of the Regional NAI**



*Note: The size of pie refers to volume of NAI*

## **6. INSTITUTIONAL AND LEGISLATIVE FRAMEWORK IN UTILIZATION OF WOOD**

### **6.1 Institutions**

#### ***6.1.1 Ministry of Agriculture***

The Forest Section within the Ministry of Agriculture is the highest level supervisor of forestry in Latvia. The Forest Department is responsible for preparing

- forest policy and strategy
- legislation
- information base on forestry and forest products
- economic analysis and
- foreign co-operation

The Forest Section is comprised of two departments: Department of Forest Policy and Department of forest Resources and Forest Economics.

#### ***6.1.2 State Forest Service***

State Forest Service (SFS) is a state administration civil institution under the supervision of the Ministry of Agriculture, which is responsible for implementing a unified forest policy in all the Latvia's forests, supervision over compliance with the statutory acts and effecting support programmes. In more detail, SFS provides the following services:

1. Supervision of forest management and utilisation in all the Latvia's forests (compliance with legal requirements)
2. Evaluation of effectiveness of laws in forest management and utilisation, including suggestions on actions to be taken to improve the effectiveness
3. Issuance of permits, certificates, licences, statements, and other documents defined in the forest legislation (e.g. felling licences)
4. Certification of forest reproduction material and its sources
5. Monitoring of forest management, logging and forest health
6. Control of the quality of forest inventory data
7. Maintenance of State Forest Register
8. Testing of the hunter's proficiency and issuance the hunter's certificates
9. Control of forest fires
10. Administration of support programmes related to forestry
11. Information of game resources and their utilisation
12. Control of forestry research
13. Provision of information and consultancy to the forest owners
14. Provision of paid services.

SFS comprises of a central administration unit and 26 regional forest districts. The regional forest districts are further divided into smaller units, forest districts headed by district foresters. Forest rangers work under the control of district foresters. SFS has a total staff of 1 500 employees of which over 800 are forest rangers working at the local level (average 3 500 ha/ranger). The rangers are key persons in advising forest owners and monitoring the quality of forest management and utilisation.

### **6.1.3 *Latvia Forest Enterprise***

Latvia Forest Enterprise (*Latvijas Valsts Meži, LVM*) was established in 2000 to manage state owned forest in Latvia. The LVM has a central administrative office and ten regional structures – eight forestry regions, which cover all of the state owned forests, the Jaunmokas castle, which provides tourism and business centre services, and the forest tree nursery, which produces tree seeds and seedlings.

The forestry of LVM cover all other forest management related activities (such as silviculture, forest protection, rehabilitation, road construction, monitoring) than logging operations. At present, all wood from state owned forest is sold standing. In order to ensure the quality of harvesting operations, LVM plans and monitors the activities of wood purchasing and harvesting companies. LVM is also in the process of certifying its forest area (see Ch. 6.2.3).

### **6.1.4 *Interest Organisation for Private Forest Owners***

KSMAA (Latvian Forest Owners Association) was established in 1993 and is a non-profit cooperative accepting all non-industrial forest owners as members. KSMAA has four principal areas of activity (i) representation of forest owners' interest at national fora (ii) timber trade, (iii) training and advisory services, and (iv) project activities such as promotion of timber certification under the Pan-European Certification Scheme (PEFC).

KSMAA has at present approximately 1 000 fee-paying members, making up approximately 1% of the total number of forest owners in Latvia. KSMAA's involvement in timber trade constitutes its financial backbone. The proceeds from timber trade are channelled to fund activities that do not generate income such as providing advisory services and training. Annually traded volume of timber has been around 200 000-300 000 m<sup>3</sup>. One of KSMAA's strengths in timber trade is a long-term procurement agreement with a Swedish company, Södra Skogsägarna, which provides them with access to steady market and price levels.

KSMAA is actively promoting certification of forest management. The organisation is the national focal point for PEFC scheme responsible for establishing and maintaining the basic arrangements for PEFC certification in Latvia.

## **6.2 Control Systems**

### **6.2.1 *Legislation***

Forest and nature protection legislation has been recently revised in Latvia. The Forest Law complemented with Regulations define the access of people to forests, felling of trees, regeneration, utilisation of regeneration material, conservation of biological diversity, soil and water protection, cultural heritage values, conversion of forest cover and information that the forest owners have to submit to the State Register of Forests. The Law on State Forest Service (SFS) determines the SFS's tasks and organisational structure.

Forest management is also regulated by separate laws and regulations related to the environment protection and the conservation of nature values. Such acts include the Law on



Species and Habitat Protection, the Law on Protection Belts and the Law on Specially Protected Nature Areas.

### **6.2.2 *Monitoring of Legal Requirements***

SFS is the main organisation responsible for controlling and monitoring forest management in Latvia. As regards logging operations, SFS issue felling licenses to forest owners, including LVM, and control the quality of forest operations with respect to the enforcement of forest and nature conservation laws.

The forest owners are obliged to report SFS on cutting volumes and measures such as road construction, use of chemicals and fertilisers and regeneration carried out in the forest. In addition, Forest Rangers check the areas to be treated in advance and/or after the completion of operations. In the monitoring performed by SFS, a particular attention is paid to the final felling areas. SFS reported that all of the final felling areas are checked by the Forest Rangers. The control of thinning operations is reported to be based on samples.

Payment of taxes is controlled as part of Tax Offices' audit procedures on wood processing and harvesting enterprises as well as trade intermediaries. The emphasis has shifted towards operative audits carried out in the field, which since last year are carried out in collaboration with SFS. The audits are focused on controlling the payment of corporate income tax and social charges on employees, but they may occasionally result in checks on individual forest owners, as the origins of purchased volumes are traced back to the forest.

### **6.2.3 *Timber Certification***

Both FSC and PEFC certified forests are found in Latvia. In terms of certified area the FSC scheme is more significant. The LVM has certified four of its forestry regions according to the FSC Scheme. The certified area covers 846 000 ha or 52% of the total area. The wood production from the certified area is approximately 2 million m<sup>3</sup>/a. The remaining four forest regions are planned to be certified in 2003 resulting in a doubled supply of certified wood from state owned forests. Also, the 57 000 ha of Riga city forests have been FSC certified.

There are two group certification schemes offering FSC certificates on privately owned lands in Latvia. These are run by Forest 2000 and the Forest Owners Consulting Centre and cover over 2 600 ha. Within this group certification, the forest owners are obliged to manage their forests to the FSC standards, and report on the forest management activities to Group Managers. Control is carried out by the Group Manager (1-4 times a year) The Group Manager and the forest owners also undergo an independent third party audit of the systems and standards of operations. The results are available publicly.

Under the PEFC scheme there are 85 certified forest holdings covering a total area of 8 000 ha. They have been certified within the framework of regional group certification. In the regional group certification, the forest owners sign a confirmation document in which they commit themselves to follow the requirements of PEFC standards. Regional Business Centres (5) of KSMAA advise forest owners and control their forest management with questionnaires and field monitoring.

Several timber companies have acquired chain-of-custody certificates. Currently, there are 30 certificates issued under the FSC scheme and 4 certificates under the PEFC system.

## **7. CURRENT ILLEGAL LOGGING**

### **7.1 Definition for Illegal Logging**

Based on the World Bank definition (as published in the WB CEO forum on forests), illegal logging is defined as logging

- outside a concession area
- in excess of quota
- in a protected area
- without appropriate permits
- without complying with bidding regulations
- without submission of required management plans
- in prohibited areas such as steep slopes, river banks, and water catchments
- protected species (as defined by CITES or other international law)
- with duplicate felling licenses
- using girdling or ring-barking to kill trees so they can be logged legally
- that contracts with local entrepreneurs to buy logs from protected areas
- removing of under/over sized trees from public forests
- reporting high volumes extracted from forest concessions to mask that part of the volume is from non-authorised areas outside of the concession boundaries
- using bribes to obtain logging concessions
- using deceptive transfer pricing and other illegal accounting practices to distort prices, volumes, cash flows and debt service levels (for example some companies will inflate the price of imported inputs such as machinery and deflate prices and volumes of their exports to reduce nominal profits, their tax liability with the host country and to illegally transfer funds abroad.)
- that engages in the illegal transport and trade of timber or the smuggling of timber
- that is processed with out the required licenses and that is not in compliance with environmental, social and labour laws

### **7.2 Illegal Logging in Latvia**

State Forest Service has calculated volume and value of known illegal logging in Latvia. In 2001, approximately 229 000 m<sup>3</sup> were logged illegally, accounting for 2% of the total cutting volume. During the first six months of 2002, the respective volume was 79 500 m<sup>3</sup> or 1 300 ha equalling to a lost value of about LVL 1.8 million. By comparing the figures from these two years, the pattern in illegal activities seems to be stable or slightly decreasing in Latvia. The professional opinion of representatives of State Forest Service based in Riga and Jekabpils is that the amount of illegal logging has now started decreasing and constitutes a rather insignificant share of current forest operations.

The illegal logging reported by State Forest Service can be categorised to three main groups:

- logging without a felling license
- thefts of wood
- too intensive felling/ignoring normative requirements

**Table 0.7**      **Illegal Logging Activities in 1991-2001**

Year	Number of offences	Wood volume, m <sup>3</sup>
1991	705	14 298
1992	1 756	12 629
1993	2 627	16 511
1994	4 068	25 424
1995	4 688	66 965
1996	3 604	85 412
1997	4 120	97 498
1998	4 428	102 553
1999	3 298	123 606
2000	4 038	207 627
2001	3 145	229 028

*Source: State Forest Service 2002*

Logging without a felling license is a crime that typically takes place in the private forests. In a typical case, the forest owner consciously refuses to acquire a felling license and sells the wood either standing or delivered to roadside. Another common reason for illegal logging is that a licensed cutting area or volume is exceeded. Another possibility is that illegal felling activities are carried out in privately owned forests that are protected by governmental regulations (e.g. Regulations on the General Protection and Use of Specially Protected Nature Territories). In this latter case, State Forest Service is not allowed to issue felling licenses.

Wood is stolen both from the state and privately owned forests, but it is increasingly concentrated in private forests. Remote forest stands are the most common targets for thefts of wood. Illegally cut areas in the state owned forests are typically small in size or just removals of individual trees. Based on the interview of representatives of Latvia Forest Enterprise illegal logging in the state forests accounted for about 30 000 m<sup>3</sup> in 2001. During the first six months of 2002, the illegal cutting from state forest was 3 800 m<sup>3</sup> or 40 ha. This suggests that that the Latvian Forest Enterprise has managed to decrease the illegal logging through improved planning and control.

In the private forests, the volume of unauthorised logging operations has remained at the same level in 2001-2002. Between January and June 2002, a total area of 736 ha was illegally harvested in the privately owned forests. Out of this illegally cut area, severe damages were caused to 49%. The remaining 51% include proper cutting without license, too intensive thinning, ignoring normative requirements or other activities with no permanent, long lasting or wide impacts.

The wood buyers of illegal wood are usually small companies or middlemen that deliver the material to small sawmills operating occasionally or resell it to larger wood dealing companies. It is unclear to what extent the companies that have established wood tracking systems are able to detect illegal wood parties and avoid accepting them (cf. Ch. 0)

The State Forest Services's control system with field checks seems quite extensive (cf. Ch. 6.2) but it is not fully clear to what extent they are able to reveal unlicensed felling activities. Inconsistencies in the available data suggest that part of illegal activities may still not enter the statistics. In particular, there is a discrepancy when the wood consumption of the local wood processing industry and export volumes of wood is compared to the official cutting

volume. The wood use of sawmills and plywood mills is estimated based on the following wood consumption figures:

The domestic industrial wood consumption (excluding production of particle board, fibreboard and paper products) added with an export volume of 4 million m<sup>3</sup> of roundwood and subtracted with an import volume of 0.2 million m<sup>3</sup> leads to a total volume of 12.3 million m<sup>3</sup> of wood. Respectively, the official cutting volume amounts to 10.5 million m<sup>3</sup> of roundwood in 2001. The gap is nearly 2 million m<sup>3</sup>.

The issue has been raised in the local media, and it has been investigated by local experts, who have suggested a number of possible explanations. For instance, the gap could be partly explained by errors in measurement of harvested volumes and industrial consumption of wood. Import and export statistics may also be inaccurate. The former may be smaller than actual imports owing to deficiencies in the custom procedures, and the latter may be exaggerated, because the state pays back the VAT paid on timber that is exported, and inflated figures would provide an unlawful gain. As suggested above, part of it may also be explained by illegal fellings not included in the statistics.

Product	Unit wood consumption, m <sup>3</sup> of logs / m <sup>3</sup> of product	Production in 2001, m <sup>3</sup>	Wood consumption, m <sup>3</sup>
Sawnwood	2	4 030 000	8 060 000
Plywood	3	153 000	459 000
<b>Total</b>		<b>4 183 000</b>	<b>8 519 000</b>

Source: Indufor estimates

### 7.3 Impact of Current Illegal Cutting on Tax Revenues

#### 7.3.1 Wood Sales

When selling wood, The forest owners are obliged to pay a tax of 25% off their net income. The costs of regeneration and harvesting are allowed to be deducted from the wood sale income (gross income):

- If wood is sold standing, regeneration costs can be deducted
- If wood is sold delivered to roadside, both regeneration and logging costs can be deducted

**The forest owners have given declaration of the regeneration costs up to 25% of wood sales income and that of the harvesting costs up to 25%, respectively. Based on the information available, losses in tax revenues due to illegal logging is rather limited, LVL 300 000-400 000/a (**

Table 0.8). However, as indicated in Chapter 7.2, the official statistics may not fully capture the extent of the problem.

**Table 0.8 Tax Revenue Losses in Wood Sales**

Factor	Calculation 1	Calculation 2
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Illegal logging volume	230 000 m <sup>3</sup>	230 000 m <sup>3</sup>
Average unit price of wood	<sup>a</sup> LVL 9/ m <sup>3</sup>	<sup>b</sup> LVL 12/ m <sup>3</sup>
Regeneration and harvesting costs of wood sale income	20%	50%
Net income	LVL 1 656 000	LVL 1 380 000
Income tax	25%	25%
<b>Loss in tax revenue</b>	<b>LVL 414 000</b>	<b>LVL 345 000</b>

<sup>a</sup> average stumpage price, <sup>b</sup> average price delivered to roadside

Note: EUR 1=LVL 0.58

A potentially more serious problem is the loss of tax revenue on wood that has been cut in full compliance with forest management regulations, but is sold in the “black” timber market. It is impossible to reliably estimate this proportion of unpaid income tax, as the regeneration and harvesting costs as well as wood prices vary considerably case by case. However, according to the Latvian Tax Office, in 2001 the tax on timber income paid by physical persons (~non-industrial private forest owners) was LVL 7.2 million (EUR 12.4 million), which is a substantial amount, and suggests that a large portion of forest owners do pay income tax.

Wood sales without paying income taxes benefit both the seller and buyer. It is a common practice that the illegal wood is purchased at a discount price of 18-20%. The forest owners achieve a net benefit of 5-7% by not paying income tax. The illegal wood is typically sold to the industry at market prices. Thus the actual profit is collected by the wood trading companies or middlemen.

### 7.3.1 Labour Costs

It is likely that in many cases the illegal wood volume is logged by using grey employees. Furthermore, grey employees are also used in the logging operations with authorised felling licenses. Legal duties related to the labour costs include the following charges:

- Social tax I of 27%
- Social tax II of 9%
- Income tax of 25%

The social tax I is paid by the employer, and the social tax II by the employee. The wages of forest labour force vary between LVL 100-650/month depending on the skills and task of the employee. The highest wages are paid to the operators of harvesters and lowest to the unskilled forest workers. Losses in tax revenues due to the use of grey employees are estimated at LVL 5–10 million (EUR 9–18 million) (Table 0.9).

The impact of “grey” labour is difficult to estimate, since there are many schemes and several alternative “degrees” of tax evasion in wood transport and harvesting. A rough estimate is that by combining all types of tax evasion (timber income, social charges and income tax of forest workers) the dealers of illegal pulpwood have at the mill gate a total cost advantage LVL 2-3/m<sup>3</sup> (EUR 3.5-5/m<sup>3</sup>) or 15-20% over law-abiding traders.

**Table 0.9 Tax Revenue Losses Due to the Use of Grey Labour <sup>4</sup>**

<b>Factor</b>	<b>Calculation 1</b>	<b>Calculation 2</b>
Number of employees	10 000	16 000
Share of grey employees	30%	40%
Average wages	LVL 2 400/year	LVL 2 400/year
Social taxes of wages	36%	36%
Income tax of wages	25%	25%
<b>Loss in tax revenue</b>	<b>LVL 5.2 million</b>	<b>LVL 9.4 million</b>

Note: EUR 1=LVL 0.58

While illegal wood is generally sold at market prices, it is possible that to increase their competitiveness the traders in illegal wood slightly cut their margins in benefit of the industry. This would have a depressing effect on the overall price level, and put additional pressure on legal trade. The impact may be significant in the sense that the interviewed traders claimed that the problems are widespread and in one form or another affect most timber harvested in Latvia.

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<sup>4</sup> These calculations include uncertainties, as there are no reliable data available on the number of employees in logging operations, level of their average wages and the number of grey labor force.

## **8. DEVELOPMENT IN THE EXPORT MARKET AND FOREST INDUSTRY**

### **8.1 Exports of Wood**

Latvian exports of wood raw material are summarised in

Figure 0.6. The exports consist of roundwood in form of logs, pulpwood and fuelwood, and particles including wood chips. Until the end of 1990s, fuelwood was an interesting export commodity, which is in fact interpreted to cover mainly logs and pulpwood for wood processing industry.

Pulpwood including chips is currently the main raw material to be exported from Latvia<sup>5</sup>. In the last two years, they accounted for over 90% of the exported wood volume, which reached more than 5 million m<sup>3</sup> annually.

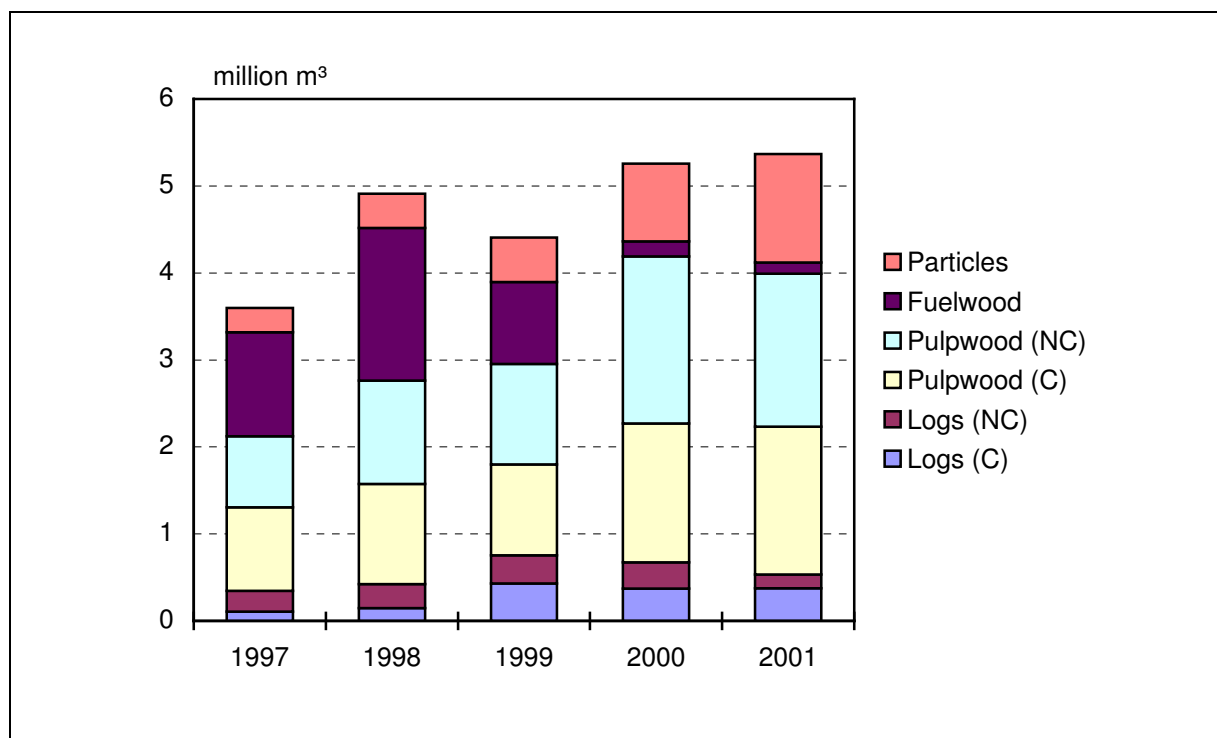
### **8.2 Structure and Development of Other Wood Processing Industry**

Sawmilling is the most important branch of the forest industry in Latvia. It would have a close link with the pulp mill in that the mill would be a new outlet for chips, which is a by-product of sawnwood production. The total number of sawmills in Latvia is more than 1 500, of which 20 biggest sawmills produce 25% of the total output. The production of sawn softwood (pine and spruce) has been growing rapidly in the 1990s. Other industrial processing of wood contains plywood, particle board, fibreboard and paper products, but their importance is minor compared to the production of sawnwood. Table 0.10 summarises the production volumes of the Latvian wood processing industry.

Figure 0.6      Exports of Wood 1997-2001

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<sup>5</sup> Chips are exported under heading “particles”. While all of them may not be chips, it is probable that they are of sufficient quality for pulp mill consumption. Export of particles that are of lower quality would not be economically justified.



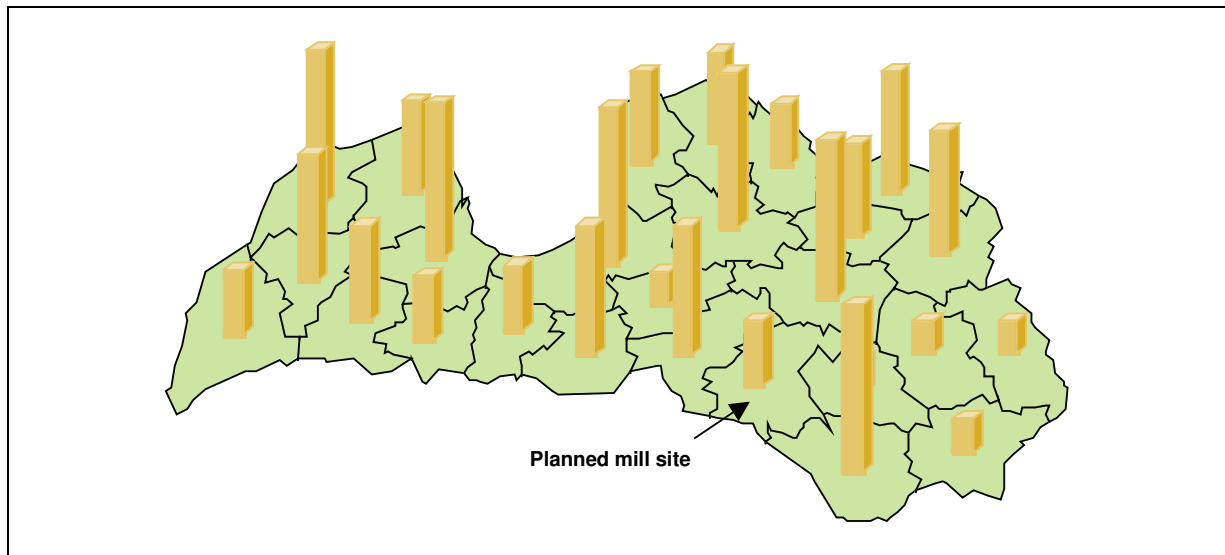
**Table 0.10 Production of Latvian Wood Processing Industry 1994-2000**

Year	Sawnwood	Plywood	Particle board	Fibreboard	Paper and board
	1 000 m <sup>3</sup>	1 000 m <sup>3</sup>		million m <sup>2</sup>	1 000 t
1994	950	63	148	17	2
1995	1 300	73	130	23	7
1996	1 800	103	143	22	8
1997	2 700	120	149	27	15
1998	3 200	150	152	26	18
1999	3 640	155	129	24	19
2000	4 030	153	102	17	24

The sawmilling capacity in Latvia has grown rapidly in the last ten years. Even in the last five years, the capacity has roughly doubled. The raw material utilisation rate within the Latvian sawmilling industry is estimated at 50% resulting in a log consumption of 8 million m<sup>3</sup>/a. If the share of chips is 10-15% of the raw material input, the current sawmills are able to produce a theoretical volume of 1 million m<sup>3</sup> of wood chips annually. However, the actual availability of wood chips for pulp production is clearly lower than the total output. The constraints include, among others, (a) logistical distance, (b) quality of chips and (c) species composition (d) and the demand from particleboard industry currently estimated at 160 000 m<sup>3</sup>/a. Figure 0.7 illustrates the geographic distribution of the sawnwood production in Latvia.



**Figure 0.7**      **Geographic Distribution of Sawnwood Production**



There are regions, which have a high sawmilling capacity, compared to their resource base. These include Balvi and Daugavpils in the East. From the point of view of their distance from ports, processing of wood chips locally makes logistic sense. Similar conditions are found in Bauska and Jelgava in the middle of the country.

### **8.3      Wood Prices**

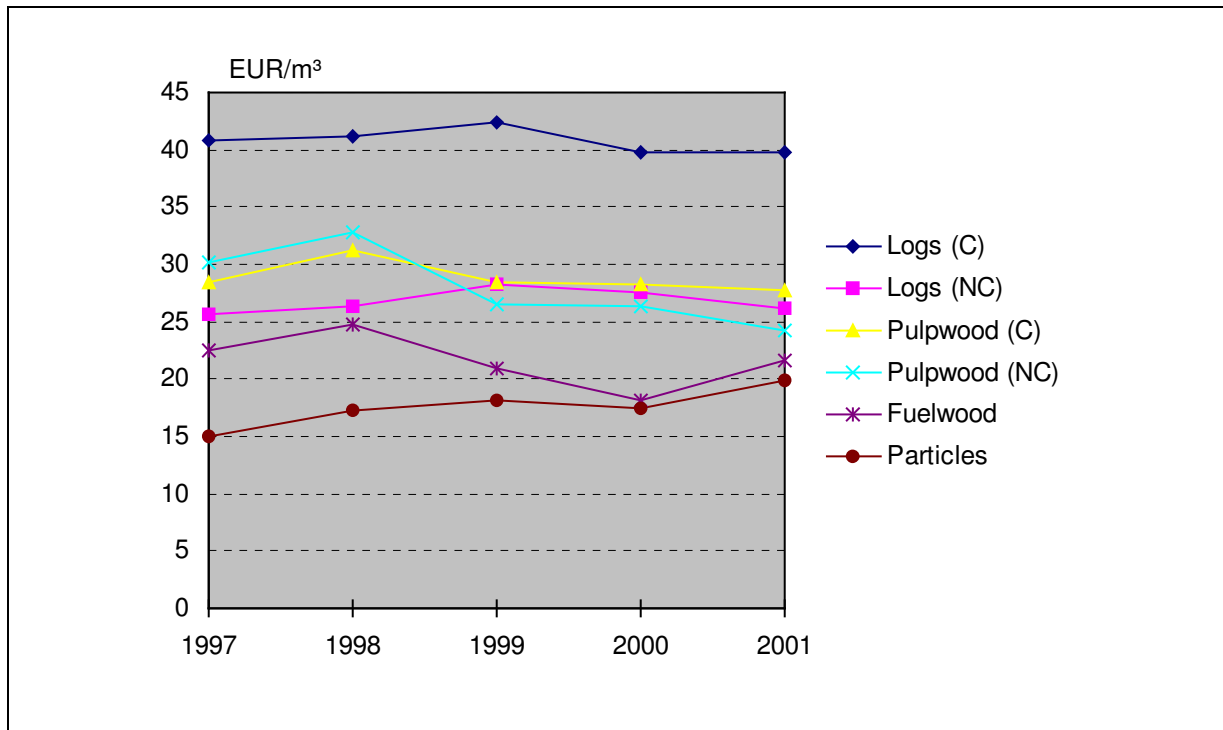
The export prices are used in this context to illustrate the cost levels of wood raw material at the mill gate, as no other relevant statistics are available. The prices of wood in Figure 0.8 are nominal export unit values (typically FOB at a Latvian port). The export prices include:

- stumpage price
- harvesting costs
- transportation costs
- overhead costs

The average export prices for pulpwood (coniferous and non-coniferous) and wood chips (particles in Figure 0.8) average EUR 25/m<sup>3</sup>. For coniferous pulpwood, the average export price is about EUR 28/m<sup>3</sup>. The prices peaked in 1998 going beyond EUR 30/m<sup>3</sup>.

Roadside prices for logs and pulpwood are presented in Table 0.11. The pulpwood assortments are quite evenly priced in Latvia. More distinct differences are found in log prices.

**Figure 0.8 Export Prices of Wood 1997-2001**



**Table 0.11 Wood Prices Delivered to Roadside in 2001**

Assortment	Unit price, LVL/m <sup>3</sup>
Pine pulpwood	8.1
Spruce pulpwood	8.3
Birch pulpwood	7.7
Pine sawnlogs	17.1
Spruce sawnlogs	19.3
Birch plywood	13.6
Pine small logs	10.5
Spruce small logs	11.0

Assuming that the average off-road transportation cost is LVL 5/m<sup>3</sup> the average stumpage prices vary around LVL 3/m<sup>3</sup> (~EUR 5/m<sup>3</sup>) for pulpwood, LVL 13/m<sup>3</sup> (EUR 22/m<sup>3</sup>) for sawlogs, and LVL 6/m<sup>3</sup> (~EUR 10/m<sup>3</sup>) for small sawlogs. Tree species, quality of wood and location of the forest stand further affect the price level.

## 9. WOOD PROCUREMENT OF THE PLANNED PULP MILL

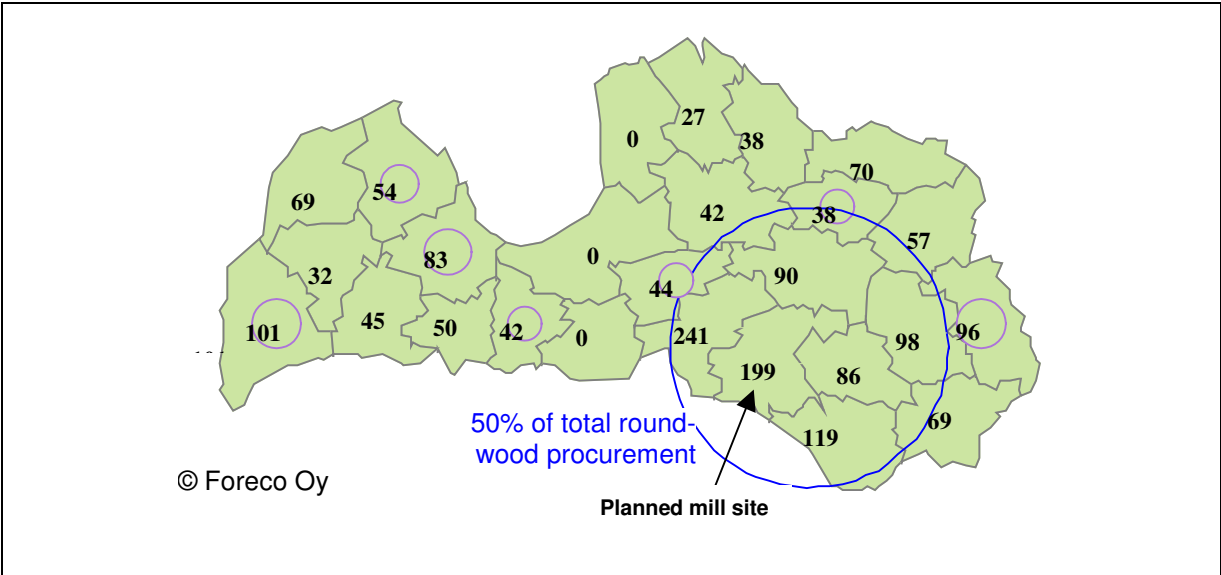
### 9.1 Procurement Area

Based on the projections of A/S Baltic Pulp, the mill needs 1.8 million m<sup>3</sup> of domestic pulpwood with bark annually. This is estimated to correspond to an increased cutting volume of about 2 million m<sup>3</sup> annually. The additional 0.2 million m<sup>3</sup> would be species and assortments not suitable for pulp production (e.g. alders and other broadleaved species, saw

and veneer logs) that have to be extracted due to the nature of forest resources (e.g. mixed stands and development classes of forests).

It is estimated that 50% of that need will be purchased from Jekabpils and ten surrounding administrative regions (Figure 0.9). In this core procurement area, all pulpwood of pine, spruce and birch available will be in practice purchased by the pulp mill. The other half of the domestic pulpwood need will be gathered from the remaining regions of Latvia.

**Figure 0.9 Wood Procurement of the Planned Pulp Mill**



*Note: the regional figures on the map refer to procurement volumes in 1 000 m<sup>3</sup>.*

The introduction of the pulp mill would lead to a high level utilisation of cutting potential in the core procurement area. The mill would also change the current pattern of pulpwood trade in the area by terminating the export activities.

The mill would also procure pulpwood from the western parts of Latvia. There the mill is forced to compete for the raw material with wood exporters. The competition is also likely to locally raise the market value of pulpwood.

In theory, the present harvesting volumes of Latvia are adequate to supply raw material to the pulp mill (Scenario 1, see below). The impact of Scenario 1 is that approximately 50% of current exports of pulpwood are replaced by the wood supply of the pulp mill. Scenario 2 includes an assumption that the exports of pulpwood continue at the present level, and the annual harvesting volumes increase by 2 million m<sup>3</sup>. In this case, the total volume of removals would reach 14,3 million m<sup>3</sup>/a. This exceeds the consultant’s current estimate of sustainable cutting potential in commercial forests established at 14 million m<sup>3</sup>/a. In addition, 8 % of the growing stock consists of species (e.g. alder), which do not readily have a market, which makes the “marketable” cutting potential even lower.

<i>Scenario 1 (minimum)</i>	<i>Scenario 2 (maximum)</i>
<ul style="list-style-type: none"> <li>- Wood demand at pulp mill will be satisfied by diverting 50% of current pulpwood exports to it</li> <li>- No change in harvesting volume in Latvia</li> </ul>	<ul style="list-style-type: none"> <li>- Pulpwood exports continue at present level</li> <li>- Harvesting volume in Latvia increases 2 million m<sup>3</sup>/a</li> </ul>

However, the latter scenario serves mainly to indicate the theoretical maximum limit for wood procurement. It is unlikely that it would come to reality. Apart from practical difficulties in

trying to use a country's timber resources to the maximum amount, an attempt to do so would drive the price level so high that other wood sources would be identified. The most readily available option is imports from neighbouring countries (cf. Ch. 9.3).

On the other hand, the harvesting levels are unlikely to remain at the level projected in scenario 1. Higher prices resulting from the establishment of the mill will lead to intensified harvesting. The most likely outcome is that the actual harvesting volume will settle between the projections made in scenarios 1 and 2 at a level, which is fairly close to the maximum cutting potential for marketable species.

If the removals expand, the increase would predominantly focus on thinnings in the middle-aged stands producing mainly pulpwood and other small-dimensioned assortments. Greater wood volumes from thinnings will be enabled by the projected price increase for pulpwood. An intensification of forest management and harvesting will also require increased investment in infrastructure development and machinery (see Chapter 8.4).

## **9.2 Impact of the Planned Pulp Mill on Sawmill Industry**

Scenario 1 does not increase the supply of saw logs and therefore directly affect the raw material use of domestic sawmills. A positive impact is that the planned pulp mill is a new potential destination for wood chips produced by the sawmills. Increased profitability is likely to moderately increase log prices. However, the supply of wood chips to the pulp mill would in many cases require investments in the chipping and screening facilities at the sawmills.

The implementation of Scenario 2 is estimated to increase the supply of saw logs by a maximum of 0.5 million m<sup>3</sup>/a. In terms of processing capacity, the increase is approximately 230 000 m<sup>3</sup> of sawnwood, which is equivalent to a new large-scale sawmill or a capacity expansion of 5% of the existing sawmills. In fact, no capacity expansion is needed, as the additional saw logs can be processed by extra work shifts. It is therefore unlikely that sawlogs would not be used optimally even after the extra supply caused by the mill comes to the market.

However, the increased pulpwood price could mean that small sawlogs would be pulped. There is only a LVL 2.5-2.7/m<sup>3</sup> difference in the current price between pulpwood and small sawlogs compared to a foreseen increase of LVL 5/m<sup>3</sup> in pulpwood price. This could diminish the supply of small sawlogs at mills, which are currently buying them. The problem would probably be felt above all by mid-sized and large sawmills, which have specialised technology required for the use of small sawlogs. Some of the smallest sawmills using labour-intensive processing techniques may also be able to use them for production of fenceposts etc. While the volumes produced by them are probably limited, any problems the small sawmills face may still affect a large number of rural people.

## **9.3 Impact of the Planned Pulp Mill on Wood Supply in the Neighbouring Countries**

The wood supply plan of A/S Baltic Pulp includes an annual import of 0.4 million m<sup>3</sup> of round pulpwood. The wood sources can be easily found in Estonia, Russia, Belarus and Lithuania, as the supply potential of pulpwood clearly exceeds the domestic demand in these countries. If Russia is not taken into account, no large-scale pulp mills exist in these countries.

In addition, it should be noted that an additional pulpwood demand of 0.4 million m<sup>3</sup> does not affect significantly the wood markets (e.g. volumes or price levels) in any of these countries.

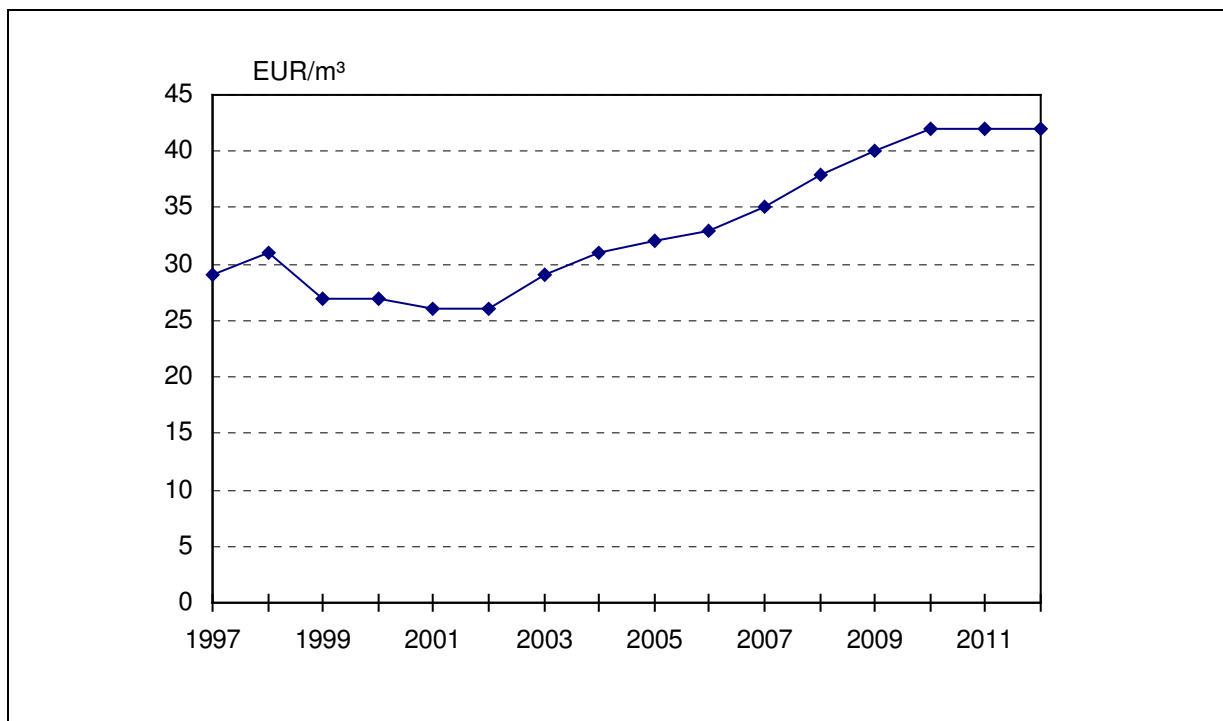
In Scenario 1, the mill will take annually 1.8 mill. m<sup>3</sup> of roundwood out of the export market. This supply is currently destined mainly to Sweden and Finland, where the mills will be obliged to find alternative procurement sources. The most likely option is to increase imports from other Baltic countries, as well as from Russia and Belarus. However, considering that the current roundwood imports to Sweden and Finland from these countries are 25 mill. m<sup>3</sup> per year (2001), the impact will not necessarily be very significant. Still, if harvesting were to increase in countries such as Estonia, where cutting intensity is already quite high, there is a risk that pressure on environment will increase. In Russia and Belarus the main risk factor would be the somewhat weaker institutional environment. The local forest administrations may not be able to fully contain the negative environmental consequences that increased harvesting could give rise to.

## 9.4 Impact of the Planned Pulp Mill on Wood Prices

### 9.4.1 *Market Prices*

Figure 0.9 presents a projection of the market prices of pulpwood in the Latvian condition in 2001-2012. The potential pulp mill is expected to be the main striving force to increase the pulpwood price levels in the country.

**Figure 0.10**      **Projected Development of Latvian Mill Site Pulpwood Costs**



Source: Foreco Oy

The projected price development indicates that the average Latvian pulpwood prices would first return to the 1998 level of EUR 32/m<sup>3</sup>. In the short run, the price increase would be

driven by a stronger international demand for pulp, which is foreseen to develop. After the Latvian mill would become operational the price level is expected to increase to EUR 42/m<sup>3</sup>. Higher prices would result from intensified competition with exporters, and the forest owners' - state included - ability to take advantage of the higher wood paying capacity of the mill. This level is estimated to be the medium term equilibrium price for the Latvian pulpwood. It would also be equivalent to the European price levels.

It should be noted, however, that based our data banks on international pulp prices, and investment and production costs of kraft pulp mills (adapted to the Latvian conditions), the wood paying capacity of the mill will still not be fully exhausted at an average wood cost of EUR 42/m<sup>3</sup>.

#### ***9.4.1 Guaranteed Prices and Other Interventions***

Any mill would attempt to reach agreement on guaranteed wood supplies at highest possible volumes and at lowest possible prices. To this effect, guaranteed volumes and/or prices have been discussed in the context of the Latvian pulp mill project. To compare the alternatives, three scenarios have been put forward.

1. Mill is established, price is determined on the free market
2. Mill is established, guaranteed price is provided to part of wood supply provided by the state forests
3. Mill is not established

In case guaranteed prices and volumes are introduced, they will form entirely or partly the investment input of the Latvian State to the pulp mill project (projected ownership share of 33%). We estimate that the guaranteed volume would at most contain 0.7 million m<sup>3</sup> (40% of the domestic pulpwood supply), but most likely less. The guaranteed price level is a negotiable issue that is likely to be based on international (or Nordic) pulpwood prices. The guaranteed price can be determined for standing trees (stumpage prices), or pulpwood delivered to the roadside or to the mill gate.

The uncertainties regarding the future development of market prices make it difficult to estimate the impact on state finances. In addition, the existence of guaranteed prices would make the mechanism determining the prices in the free market quite complex. Speculations abound, and any attempts to predict price development are full of uncertainties. For instance, it has been suggested that if information on guaranteed price would not be publicly available, it would provide one player, the state, with better market information than others, and the gap between prices obtained by the state and other sellers would widen. There is also speculation that a guaranteed price for part of the supply would enable the mill to eliminate exporters and other competitors from the Latvian market by raising the free market price temporarily to a very high level. The impact of imports on the price level is another unknown factor.

In this situation, the estimates on the financial impact of guaranteed prices can be only very indicative. Assuming that the guaranteed price would be LVL 5/m<sup>3</sup> (EUR 9/m<sup>3</sup>) below the market price, the direct loss of wood revenue for LVM would be LVL 3.5 million/year (EUR 6 million/year), if compared to the "free market" option. In addition, the most likely scenario is that a guaranteed price would depress the price level for the remaining volume sold in the free market, which would reduce the revenue further. This would also affect the private forest owners, who depend on the "free" timber market. However, it should be noted

that timber prices and the direct state revenue could still be higher than in a situation, where the mill is not established at all.

It has also been claimed that income (profit) resulting from it can partly or entirely compensate the decreased wood revenues of the state and private forest owners. According to an assessment carried out by specialists from the Latvian Development Agency and the Economic and Finance Ministries in 2000, the State of Latvia will annually receive about LVL 16 million in dividends, and taxes amounting to LVL 14 million will go to the State and municipality budgets (Baltic Pulp 2001b).

No agreement on guaranteed prices has so far been made public. The interviews of the Latvian experts conducted during the field phase of this assignment also suggest that guaranteed prices and volumes are an option, but a sensitive one. Nearly all of the interviewed persons were rather cautious about the proposal and expressed doubt that guaranteed prices and volumes would be accepted as a form of support to the mill. Apart from pure financial considerations, their main concern was that guaranteed prices could seriously distort the price mechanism in the Latvian timber market, and prevent its proper functioning. If needed, the support from the Latvian state should rather be provided in the form of tax relief or infrastructure investments benefiting the mill.

## **9.5 Socio-economic Impacts of the Planned Pulp Mill**

### **9.5.1 *Stumpage Prices***

The pulp mill investment will significantly increase incomes of private forest owners. The direct income effect would come through more attractive sales on pulpwood. Indirectly, the pulp mill will affect the stumpage prices of saw logs through increased value of the wood chips produced by sawmills. The extent to which the private forest owners will be able to take advantage of this opportunity depends on their bargaining power. Cooperation would obviously strengthen it considerably, but its impact could not be assessed separately.

Provided that no guaranteed pulpwood prices are introduced, the planned pulp mill is estimated to increase in short terms the stumpage prices of pulpwood by EUR 5/m<sup>3</sup>, resulting in an increase in annual income of EUR 20 million. The volume affected is estimated at 3.5 million m<sup>3</sup> of pulpwood including pulp logs for exports (Scenario 1).

If Scenario 2 materialises, the increase in annual income would be EUR 45 million. In this case, the wood harvesting volumes are estimated to increase by 2.5 million m<sup>3</sup> of pulpwood and other assortments. The total income increase is generated by adding the stumpage value of the increased harvesting volume to that of Scenario 1.

The stumpage income effect would be distributed throughout the whole country. In the eastern part of the country, where the difference between the mill's wood paying capacity and the current pulpwood prices is the largest, the forest owners, including the state, will be able to take advantage of this situation to raise price levels. In the western part of Latvia, the increase will be driven by competition between the pulp mill and exporters.

The regional impact will to some extent depend on the mill's pricing strategy. In its home country the investment company, *the Metsäliitto Group*, has applied a straightforward strategy, where stumpage price is more or less a function of distance to the mill. The price paid at mill gate is fixed and the price of individual stands is determined by deducting

transport and harvesting costs from the fixed price. Consequently, the longer the distance to the mill, the higher the transportation cost, and lower the price. The calculations carried out in this study are based on this assumption. However, it should be noted that other strategies also exist. For instance, large timber buying companies sometimes work on a system of "price banding" based on zones. Lower prices are paid for wood closer to the mill where there is no competition, and higher far from the mill where competition is tougher.

### 9.5.2 Employment

The planned pulp mill will have only a minor impact on the employment and level of wages in the forest sector. Recent development in the employment is described in Table 0.12

**Table 0.12 Employment in Forestry**

<b>Branch of sector</b>	<b>1995</b>	<b>2000</b>
Forestry & logging	14 000	16 000
Mechanical wood processing	19 300	34 000
Furniture manufacturing	1 900	1 900
Pulp, paper & board industry	9 800	10 700
Institutions serving the sector	31 000	3 000
<b>Total forestry sector</b>	<b>50 000</b>	<b>65 600</b>

*Source: Monthly Bulletin of Latvian Statistics. Central Statistical Bureau of Latvia.*

Scenario 1 (no increase in removals) does not have influence on the employment in the forestry and logging. If the productivity of logging is constant, an increase of 2.5 million m<sup>3</sup> in removals (Scenario 2) requires approximately additional 4 000 forest workers. In fact, less workers are needed, as the productivity of logging is expected to increase through higher mechanisation rate.

Based on the above assumptions, Scenario 1 has no major short-term impact on the employment rate in the forestry sector. If the forest resources are currently underutilised within the core catchment area for wood, the increased demand for pulpwood can improve the employment in the respective districts. However, a shift towards thinnings may require an additional training input, as thinnings require higher skills than clearfelling. In the long term, the mechanisation rate of logging operations is expected to increase simultaneously with the increased labour cost. This development pattern with a lower demand of labour force should not be considered to be a direct impact of the planned pulp mill.

### 9.5.3 Illegal Logging and Trade

It is stated in the environmental principles of the international investor, the Metsäliitto Group, that the wood supply to their mills must meet all the legal requirements and relevant international agreements. This statement is reflected in the ways in which they - as well as other large forest enterprises in Latvia, both international and local - are attempting to control material flows:

- Contractors and independent suppliers are commonly used for various phases of the wood procurement chain. These companies are usually selected and their performance is continuously evaluated based on sets of criteria including paying of legal duties.



- The wood procurement organisations require copies of felling licenses and wood invoices for wood transportation.
- Performance evaluations in the field based on sampling (e.g. harvesting operations are field checked and the chain of custody is verified).

However, the ways in which illegal timber enters the procurement flows are elaborate, and the current systems are by no means complete and foolproof. Surveys carried out by Taiga Rescue Network and WWF Sweden (1999, 2002) reveal that many foreign companies importing wood from Latvia are still inadequately aware of the origin of the purchased raw material. While tracking systems are being developed, most companies confess that they do not have full control over the volumes they trade.

It is expected that the wood procurement organisation to be established will set up control systems for managing the origin of wood raw material and for evaluating the operations carried out in the forest. The planned pulp mill has all technical opportunities to control its wood flows. The local representative of the Metsäliitto Group, Silva Ltd., is currently developing a fairly advanced verification system comprising a tracking system, environmental audits and field checks (TRN and WWF Sweden 2002). How efficient the control system is depends on its coverage and rate of utilisation. A potential risk is independent wood suppliers that sell raw material delivered to several mills or for export purposes. To bring these wood suppliers with more than one customer under a comprehensive control, the raw material flows to other destinations need to be monitored. In practice, the wood supplier itself must establish a chain of custody system for its wood deliveries. This chain of custody system should be made available for second party audits (conducted by the pulp mill) and/or audits carried out regularly by an independent and impartial certification body.

If managed well the planned pulp mill will stabilise the wood market and improve trade practices and transparency. The influence will go much beyond the wood volume consumed by the mill itself. Still, the mill will probably have just a minor impact on the companies using illegal wood, because their “market niche” will not cease to exist. Illegal trade may change location from the immediate vicinity of the mill to more remote locations, but it is unlikely that the small and medium-sized sawmills accepting illegal wood would stop operating.

The use of illegal wood can only be reduced by improved dissemination of information to forest owners and other relevant parties and with more efficient control of small-scale companies in the fields of logging, transportation and wood processing.

#### **9.5.4 Contractors**

The pulp mill could have a positive impact on tax revenues provided that the wood procurement organisation of the mill efficiently requires and controls the paying of legal dues and taxes of the employed contractors and wood supply organisations. If compared to the prevailing situation in the logging and transportation business, the number of grey employees is expected to be zero within the wood procurement organisation and considerably less also in the contracted or other supporting companies. Higher rates of tax revenues could be achieved as regards to income tax of workers, paying of social charges and other legal dues.

The planned pulp mill is likely to prefer large-scale contractors to small-scale ones. This may decrease the job opportunities of smaller logging companies and force them to merge in larger units. The economies of scale would also decrease the need of employees.

## **9.6 Potential Impact of the Planned Pulp Mill on the Protected Areas**

### ***Illegal Logging***

Regarding illegal logging inside the protected areas, there is no hard data available but both the authorities and the local NGOs seem to agree that it is not a major problem. Reportedly, in most cases only single trees have been cut. There are only very few known cases where illegal clearcuttings areas have been found inside protected territories (Nature parks or Areas of Protected landscape), and in some cases the reason may have been that boundaries of the park were not clearly marked. The thefts in protected forest may be deterred by the fact that fines are three times higher than in commercial forests.

If the establishment of the pulpmill will lead to increased timber prices, it will increase the pressure for illegal harvesting. The current situation is highly satisfactory, but since effective control system is lacking potential problems may emerge and therefore additional resources may be required to safeguard against negative developments.

### ***Forests with High Conservation Value***

Another risk associated with the pulp mill is that the increased demand for pulpwood will encourage harvesting in potential protected areas. These comprise the SPFAs that have been granted a temporary status as micro-reserves, and possibly some other areas, which will be identified in new inventories (e.g. survey of Baltic forests being carried out by WWF and BirdLife International). Based on current information it appears that valuable forest stands without designation as a micro-reserve account for some 5% of all forest stands. Expert opinion suggests that 60-80% of them are well-stocked areas of high commercial interest.

A substantial portion of potential protected areas are expected to fall under Natura 2000 programme. After summing the total areas of all Natura 2000 habitats analysed and questioning of these figures versus the total area of protected forests (all categories) indicates that only as little as 7% of these habitats is covered by existing network of protected territories (of all kinds). It is highly probable that this will further increase the need to expand the current protected area network. Additionally, experts involved in developing Natura 2000 project stress, that in many cases the management regime in existing sites is not adequate.

Although the establishment of the pulp mill is still several years away, the lack of firm legal protection may be a concern since the evaluation of potential micro-reserves has progressed slowly. More than a year after adoption of micro-reserve regulations (situation on August 1, 2002) there are only 44 confirmed territories with the total area 678.5 ha (out of 103 000 ha of identified areas). To ensure that no conservation values will be lost, it is recommended that the Government reviews the need to strengthen the legal protection of potential protected areas. Available options include declaration of a moratorium or a logging ban in areas with high conservation values until inventories of all potential micro reserves is carried out and the valuable sites have been protected. Another possibility is to set a legally binding time limit for the inventory and designation of currently known micro-reserves.

To ensure that existing conservation values will not be unnecessarily lost, the pulp mill will have to carefully observe the results from existing surveys on high conservation value forest outside existing protected areas. In the immediate future, the pulp mill development company

could review the adequacy of existing research, and assess the need to fund additional surveys. If further analysis is needed, the use of HCVF toolkits/concept developed by WWF could be considered as a research methodology.

## **10. CONSTRAINTS RELATED TO THE IMPLEMENTATION OF SUSTAINABLE FOREST MANAGEMENT**

As regards state owned forests, there is a good reason to anticipate that the treatments and utilisation of forest are constantly developing towards sustainable forest management (SFM). This statement can be justified by the fact that the state forests are already certified or in the process of certification according to the FSC Scheme.

In the private forests, the quality of forest management varies more than in the state forests. The economic, ecological and social sustainability of the private forests may occasionally be threatened by short-sighted decisions related to harvesting, regeneration and other activities.

A typical private forest owner

- suffers from lack information on SFM
- has limited opportunities to get training on SFM
- is afraid of cost effects of SFM (including cost of certification), and additional control and paper work

In order to make the private forest owners familiar with the concept of SFM, information and training should be provided them by various organisations. The SFS, forest owner associations and FSC group managers, wood processing industry and logging contractors are potential institutions to disseminate information on SFM. In addition to awareness raising among the private forest owners, the certification of forest management against schemes respecting SFM, should provide advantages to the forest owners:

- Price premiums (e.g. in connection of joint sales)
- Other priorities in wood trade (e.g. guaranteed purchase volumes)

Increased organisation of private forest owners would be beneficial in the sense that associations would provide a basis for developing long-term partnerships in timber trade. They would also facilitate the development of wood tracking systems, and increase transparency. To encourage their development, the use of price premiums and guaranteed purchase volumes could be targeted on forest owners' associations and certification group managers.

It is unlikely that the forest certification would spread very easily to the private forests. The promotion of group certification is the only feasible option, but it is not easy to organise it without external assistance. The group managers' role is vital when promoting forest certification, but it is doubtful whether the forest owners themselves, who are largely unorganised, would be able to finance and organise such activities. It is recommended that the pulp mill would consider providing financial support to this activity.

Regarding the choice of certification system *A/S Baltic Pulp* has issued a statement that it "supports the necessity of both forest certification systems – FSC and PEFC – and does not intend to bestow most favoured status on either of them". Even though the *Metsäliitto Group*

supports the PEFC certification system in their domestic market, they are of the opinion that in Latvia's case the best solution would be if both certification systems were mutually compatible and therefore pre-empted unnecessary complications. They hope that by 2005 when the operation of the pulp mill is scheduled to begin, Latvia will have "two mutually compatible forest certification systems and that forest owners will be able to choose which one of these systems to adhere to. If for any reason this is not possible then the mill will accept timber certified according to both systems" (Baltic Pulp 2001a).

## **11. OTHER BALTIC COUNTRIES**

As mentioned earlier, greenfield pulpmill projects are underway in the three Baltic countries. Since the countries share many similarities in terms of forest area, institutional structure etc., it is useful to review the relevance of conclusions made in Latvia to the situation in Estonia and Lithuania.

The proportion of forest land in Estonia is close to that in Latvia. In Lithuania, forests cover only one third of the land area, but because the country is larger than the other two, the area in absolute terms is almost the same as in Estonia. Public forests (state and municipal) forests represent roughly one half of the forest area in all three countries, and the remaining area is planned to be transferred to private hands. In Latvia restitution to private owner has been completed, whereas in Estonia and Lithuania approximately one fifth of the forest area is still pending restitution or privatisation.

Regarding felling intensity in the total forest area, Estonia stands out being well ahead of both Latvia and Lithuania. However, in all three countries the intensity is still below the net annual increment.

The relatively high intensity in Estonia is caused by a rapid pace of exploitation in private forests. One of the main reasons behind this development is sale of forest properties, which has expanded rapidly. Available investigations show that cutting intensity increases sharply in properties, which have been traded, as the new owners seek to recover the cost of their investment.

The situation is of concern to the Government, and new measures have been introduced to prevent overall cuttings from exceeding sustainable levels. The impact of the new pulp mill is unclear as it intends to use lesser used species. It is possible that the necessary volume could be made available with present intensity of cuttings, but the issue would merit close monitoring.

Regarding the Government's capacity to implement public functions, it is possible to compare the situation between Estonia and Latvia, which have a separate public forest agency responsible for public functions. In Lithuania, the situation is in a state of flux, but a large part of the public functions were integrated with the state forest management and comparable data was not available.

Indicator	Estonia	Latvia	Lithuania
Forest area (1 000 ha)	2 016	2 884	1 978
Proportion of forest land of total land area (%)	48	46	32
Proportion (%) of			
- public forest	48	58 <sup>6</sup>	50
- private forest	33	42	23
- under restitution	20	0	28
Net annual increment in areas available for wood supply (m <sup>3</sup> /ha)	6.0	5.8	5.0
Felling intensity (m <sup>3</sup> /ha) in			
- public forest	3.1	2.4	3.9
- private forest	13.0	6.7	3.1
- total forest area (incl. non-restituted area)	5.7	3.8	2.6

Source: TBFRA 2000, National statistics

The Estonian public forest service is clearly much leaner than the Latvian one. There are fewer staff per hectare of forest, and the budget funds are also clearly much lower.

Indicator	Estonia	Latvia	Lithuania
Forest area per Government employee in public function	13 000	2 000	n/a
Forest area per forest ranger at field level	15 000	3 500	
Funds available for public functions of forestry (EUR/ha)	1.4	4.6	n/a

Source: National statistics

It is interesting to note, however, that despite the great difference in the area supervised by forest ranger both Estonia and Latvia report similar level of illegal cuttings, approximately 2% of total cutting volume. However, this estimate comprises only thefts and unauthorised cuttings. If wood subject to evasion of income tax or social charges is included, the proportion is much higher. In Estonia, a local NGO puts the estimate at 25-50%.

The new mill in Estonia would probably add pressure to resort to illegal cuttings, but the impact is probably not very significant because of the mill's focus on lesser used species. On the other hand, some of these species such as aspen are important from a conservation perspective and the mill might add pressure on aspen dominated HCVF where harvesting has not been that profitable before.

There may also be a need to strengthen the extension function, which suffers from lack of resources. In Lithuania, the oversight of forest owners is reportedly quite strong, but extension services are weak, and these would probably have to be strengthened in order to secure sustainable forest management.

The proportion of protected areas is reportedly highest in Latvia, and Lithuania. The available data should, however, be treated with caution, because the countries had trouble in classifying them according to the IUCN categories. A number of changes have recently taken place. Estonia has tripled the proportion of strictly protected areas, and all countries are planning to expand their protected area networks in connection with the Natura 2000 programme. Estonia has conducted a gap analysis on the representativity of its protected area networks, and based

<sup>6</sup> Includes forests owned by municipalities and legal entities

on it the Government has made a decision to increase the proportion of strictly protected areas to 10% of forest area, which would be a high figure in European<sup>7</sup> and even in global terms.

In terms of management resources Latvia has most staff, but Estonia is making the largest investments.

Indicator	Estonia	Latvia	Lithuania
Protected areas of forest area (%)			
- IUCN categories I-II	2.6	3.7	5.6
- IUCN categories III-VI	6.5	12.7	9.3
Employees in protected areas (ha/employee)	1430	380	840
Funds available for management of protected areas (EUR/ha)	12.8	5.6	6.9

Source: TBFRA 2000, National statistics

The WWF forest scorecards give Estonia the highest score (40) on protected areas. Lithuania follows close behind (39) trailed by Latvia (24). In Estonia gaps in forest protection are being surveyed. Management plans have small coverage and they lack ecological aspects. Some areas suffer from illegal logging (in summer and fall of 2002 two clearcuts larger than 10 ha were made in one of the main parks). Regarding Lithuania, the scorecard report indicates that the Government considers commercial forest more important than protected areas. Central and southwestern Lithuania are poorly protected, and there is controversial logging in lower protection categories (WWF 2001)

Forest certification has expanded rapidly in state forests. Estonian state forest has FSC certified all of its area, and a few of the several Lithuanian state forest enterprises have either completed it or are in the process of doing so. Both in Estonia and Lithuania all forests are FSC certified, the PEFC certification system is at the stage of system development. As in Latvia, this suggests that the sustainability of forest management is good in public forests, whereas the situation is unclear in private forests. It would highly beneficial, if the planned mills were able to financially support the promotion of timber certification in private forests.

Indicator	Estonia	Latvia	Lithuania
Certified forest area (mill. ha), of which	1.06	0.92	0.07
- public forest	1.06	0.85	0.07
- municipal forest		0.06	
- private forest		0.01	

Source: FSC, PEFC 2002

One potential vehicle to promote certification and, in a more general sense, stability in the timber market are the private forest owners' associations. Unfortunately, similarly to the situation in Latvia, the existing associations in Estonia and Lithuania lack funds and are weak. However, as in both countries the associations are involved in timber trade, preferential agreements between the mill and them to arrange joint sales or guaranteed purchase volumes could also be considered in these countries.

## 12. MAIN FINDINGS

The sheer size of the planned pulp mill means that the investment will play a major role in shaping the Latvian forest environment and social development in rural areas. The influence

<sup>7</sup> E.g. within the European Union the highest proportion of strictly protected areas is recorded in Finland, where they represent 3.6% of forest area.

may be either positive or negative depending on how the mill organises its wood procurement and other forest-related activities. If handled badly, the establishment of the mill may strengthen the undesirable activities such as illegal logging. On the other hand, if appropriate precautions are taken, **the mill has the potential to become a stabilising force in the timber market**, whose positive effect will be felt much beyond its immediate sphere of influence.

The mill plans to source most of the needed wood (~85%) from Latvia. If the demand from the mill (~ 3 200 000 m<sup>3</sup>/a) replaces current exports, then the wood resource is adequate (minimum scenario). On the other hand, if the wood consumed by the mill were added on top of export demand (maximum scenario), the required supply would be more than the sustainable cutting potential for marketable species. This is, however, an unlikely development path, because part of the exporters will not be able to withstand competition from the mill, and will fall out from the Latvian market. Another option for the mill to relieve pressure on domestic resources is to increase imports from nearby countries. The most likely outcome is that harvesting volumes will stabilise somewhere between the minimum and maximum scenarios at a level. **The actual harvesting volume is projected to be close to the maximum cutting potential for marketable species.**

The fact that **cutting intensity in private forests is substantially higher than in state forests**, and much closer to sustainable maximum, is a trend giving rise to concern. Higher timber prices may encourage private forest owners to further intensify their harvesting, which is a potential risk for sustainability. It is, however, difficult to predict the private forest owners' response, because most of them have obtained their property recently, and are faced with an entirely new situation. Behavioural patterns, which are valid in established environments, may not be found in Latvia. For instance, in 2002 the harvesting volumes in private forests reportedly declined despite increasing prices.

The development of timber price is of importance for state finances and private forest owners. Price projections are difficult and subject to many uncertainties, but based on available information it is estimated that pulpwood prices increase LVL 3/m<sup>3</sup> (~EUR 5/m<sup>3</sup>). **Under minimum scenario the additional timber income accruing to the 100 000–150 000 private forest owners would be approximately LVL 12 million (EUR 20 million). Under maximum scenario, the timber income would increase by LVL 25 million (EUR 45 million), and the expansion of wood procurement would provide some 4 000 person-years of additional employment.** This would have a significant impact not only on the personal economies of private forest owners and forest workers, but also on rural development. A major portion of private forest owners and forest workers live in cash-strapped rural areas, and the additional income would be a significant boost to rural economies.

The Latvian forests have significant potential for increased thinnings, and they may be the only possibility to increase wood procurement sustainably. **The sharp increase of pulpwood price induced by the mill is expected to facilitate a shift towards thinnings.** If pulpwood procurement increases, it will slightly increase sawlog supply, but this volume can easily be absorbed by the Latvian sawmilling sector either by adding workshifts at existing mills, or by establishing new capacity. However, pulpwood prices are likely to increase beyond the level currently paid for “small” sawlogs. This may have a negative impact on mills currently processing them.<sup>8</sup>

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<sup>8</sup> In presentation to industry representatives in Latvia, it became apparent that the study may have significantly understated the potential impact on this issue.

The impact of guaranteed prices on part of the wood supply on timber prices and the national economy could not be estimated with a precision that would allow for definite conclusions on the “net” impact. Besides direct loss of timber revenue for the state forest enterprise, a fixed price below the market price would probably depress the price level for timber sold in the “free market”. This effect would be felt both by the state and private forest owners. On the other hand, the price could still be higher than without the mill. In addition, the mill is estimated to provide substantial benefits to state finances in the form of dividends and tax revenue. One of the most negative consequences is that **introducing a guaranteed timber price for part of the wood supply would disturb the price mechanism in the Latvian timber market.**

The official statistics indicate that wood that has been stolen or which has been cut by the forest owners themselves without necessary authorisations represents about 2% of the total harvesting volume, about 220 000 m<sup>3</sup>/a. Discrepancies between the official harvesting figures and production statistics suggest that the real amount may be somewhat higher. Other legal problems include evasion of income tax, use of “grey” labour force in wood harvesting. Reliable estimates on the extent of tax evasion are not available, but it appears that a significant portion of private forest owners pay tax on their timber income. The volume of timber harvested using “grey” labour force is equally difficult to estimate, but expert assessments set the proportion between 30-40% of total harvesting volume. In other words, **there are about 6 000–10 000 “grey” workers involved in forest harvesting and transport, which results in a loss of LVL 8-15 million (EUR 13-22 million) of budget revenue.** This is a substantial amount, as it is, for instance, equivalent to the projected tax revenues from the mill.

Regarding the competitive position of illegal and legal timber, a rough estimate is that by combining various forms of tax evasion the **traders selling illegal pulpwood have a cost advantage of 15-20% per m<sup>3</sup> over legal traders at the mill gate.** This may have a depressing effect on the overall price level, and put additional pressure on legal traders. However, lack of reliable estimates on the extent of illegal logging precludes a more precise assessment.

The problem of using illegally harvested timber is usually associated with small and medium-sized wood processing enterprises. Most of the larger companies, domestic and international, are in the process of developing monitoring systems of their own to ensure that illegal timber would not find its way to their procurement system. However, **the existing timber tracking systems suffer from loopholes and lax control,** and it is unclear to what extent these systems have been able to alleviate the problem in Latvia. While complete eradication of the problem may be too ambitious a goal, the mill has the potential to become a “trend setter” paving the way for better practices in the entire country.

The direct impact of the mill on the National Parks and strict nature reserves is likely to be minor. However, **increased logging may have a negative impact on forests that lie in less strictly protected zones within National Parks.** Illegal cuttings inside these protected areas are currently negligible, but higher prices will increase the pressure for illegal use.

**The existing protected area network has some deficiencies in terms of ecological representation and effectiveness of management.** Expansions and improved management are planned within the framework of Natura 2000 programme. A potentially serious problem is the temporary protection status of potential “micro-reserves”, small-sized areas which possibly have high conservation value. Many of them are well-stocked areas with high



commercial value. **The legal protection of micro-reserves remains rather weak until they are inventoried and provided with full protection status.**

In conclusion, **both the Government and the potential investor(s) have to take action to ensure that the proposed investment will be sustainable in environmental and social terms.** The investor is responsible for the activities to be carried out by the company, and the Government's task is to create an appropriate policy and institutional framework. The WWF/World Bank Alliance will make specific recommendations in a separate document.

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### **PART III: RECOMMENDATIONS FOR THE LATVIA PROJECT STAKEHOLDERS BY THE WORLD BANK WWF ALLIANCE**

Based on the main findings from the Indufor report the Alliance identified a series of draft recommendations for the various stakeholders involved in the Latvian pulpmill project. These were presented to the stakeholders and feedback received. The following recommendations are the result of these discussions. They are divided into two groups - the first for the various government agencies in Latvia, and the second for the pulpmill company and financiers.

#### **Recommendations for the Government of Latvia**

The Government of Latvia, through its various ministries has a fundamental role to play in setting the "enabling conditions" for investment in the forest sector. At the time of writing (end January 2003) the Government had recently decided not to be an investor in the pulpmill project. The following recommendations are therefore made on this basis.

1. There is a need to introduce a statistical forest inventory for the analysis of wood supply issues and the calculation of annual allowable cut. The further development of a monitoring system to enable rapid detection of changes in forest status is also recommended.
2. The Government should refrain from offering incentives to the pulpmill investors (such as a guaranteed timber price) that would distort the timber market.
3. There is a need to reduce illegal practices in timber procurement & trade, through the strengthening of law enforcement and amendment to relevant regulations. Of specific concern is the need to focus on taxation and social security payments for forest workers.
4. The Government needs to develop a "biodiversity maintenance strategy" for the country with a binding time limit for implementation before the investment in the pulpmill is made. This strategy should be integrated with, yet needs to go beyond, the legal commitments associated with future EU membership (eg Natura2000).
5. The Government needs to plan for the additional costs in intensified forest management (thinning, road building etc), the extension services for private forests, and the forest information system detailed in point 1.
6. The Government should require of the pulpmill company, the independent certification of private sector wood supply. In order to facilitate the choice of the most appropriate system, the Government and the stakeholders could use the WB/WWF Alliance 11 Criteria and associated Questionnaire, which will be available in March 2003.
7. Given the range of important issues, which will require a long term and cross-sectoral approach to resolving them, the Government should create a Multi-stakeholder process to oversee issues raised in this report. Such a process would need to involve *inter-alia*: the Ministries of Agriculture, Economy, Finance, Environment; relevant industry and forest owner associations, NGO's, and Baltic Pulp.

## **Recommendations for Baltic Pulp and Financial Institutions**

The issues for Baltic Pulp and banks financing the company have two types of risks to consider: to their reputation and their bottom line. The recommendations below address these two aspects.

1. Baltic Pulp needs to develop transparent verification systems to eliminate the procurement of illegal timber, not just via their own wood sourcing operations but also when buying through third parties. They should collaborate with state authorities in the development of a nationwide system.
2. The company should promote independent forest certification by providing financial support to its development in private forests.
3. Related to the above point the company should contribute to development of strong partners in private forest sector by providing financial incentives to organized forest owners (e.g. price premiums).
4. The company should in current negotiations require the Government to develop a "biodiversity maintenance strategy" and implement it before the investment is made. This should cover biodiversity in production forests, as well as a viable formal protected area network etc
5. The company should proactively support the Government to introduce a statistical forest inventory for the analysis of wood supply issues and the calculation of annual allowable cut.
6. The company should encourage transparency in the provision in incentives. These should be in line with EU guidelines, and should support the development of infrastructure which would deliver long term sustainable competitive advantage for the project and the Latvian industry without creating distortions in the domestic timber market which specifically favour the project.

## **PART IV: FUTURE ALLIANCE WORK AND DRAFT INVESTMENT SAFEGUARDS**

### **NEXT STEPS FOR ALLIANCE IN LATVIA**

The Alliance and/or the partners in the Alliance are willing to work with and support the various stakeholders to achieve the above series of recommendations. Specifically they will:

1. Support the development of credible independent certification with private owners and will promote the Alliance "11 Criteria" as a tool for determining which schemes meet the requirements of "credible".
2. Support the creation of forum for the development of a Biodiversity Maintenance Strategy
3. Support the creation of a forum for the elimination of Illegal Logging
4. Support the creation of a Multi-Stakeholder Process to follow the investment and issues raised in the study

The lessons learned in the course of this work, and from other parallel work by WWF in SE Asia will be further developed and promoted through the

5. Creation of a Global Forum on Investment Safeguards for Finance Sector to include: EBRD, EIB, IFC, Commercial Banks, Export Credit Agencies. This will seek to promote a consensus on the adoption of investment guidelines for companies and financial institutions. Separate but parallel approaches may be required for development and commercial banks. A suggested set of investment guidelines is detailed below:

## DRAFT INVESTMENT GUIDELINES FOR COMPANIES AND FINANCIAL INSTITUTIONS

These investment safeguards apply strictly to forest management and wood procurement, which are but one element of forest industry operations. They are intended to guide companies investing in forest industry development to pursue environmentally sustainable and socially responsible policies in their forest-related operations. The following safeguards are proposed.

1. Forest policy: The Company has made a commitment to sustainable forest management, and formulated a sound forest management policy for its forest-related operations.

2. Certified Forest Resources. The Company agrees to prioritise certified forests as sources of wood.

*Management of company forests.* The forests managed by the Company are certified under a credible and internationally recognised certification scheme. Where these forests are not yet part of such schemes, the Company has prepared a time-bound, staged action plan for achieving independent certification system standards.

*Procurement of wood from other forests.* For wood procurement in non-certified forests the Company agrees to establish with the owners of those non-certified forests, from where it plans to obtain part of its wood supply, a time bound, staged action plan leading to certification.

*Small-scale forest holdings and forests managed under community forest arrangements or joint forest management arrangements by local communities,* the Company agrees to develop a credible plan for establishing an effective monitoring procedure to ensure that forest management as well as harvesting and transport operations in these forests meet relevant forest management standards.

3. For non-certified supplies the Company establishes a monitoring system to all operations which includes, as a minimum, checks (including field checks) on the elements listed below. The plan has provisions for the Company to take appropriate measures to ensure that its subcontractors and service providers comply with the same requirements.

i) Forest Use Rights

Forest manager has property or forest use rights to the site, from which wood is procured, and that his/her use rights do not infringe the legal and customary rights of indigenous/local peoples to own, use and manage their lands and resources

ii) High Conservation Values

The Company does not procure wood from sites which have been identified as possibly holding high conservation values until their status has been confirmed, and they have been administratively designated as areas where wood procurement is allowed; identification of such sites must be based on a scientifically sound methodology and be carried out through a stakeholder process. Prior to wood sourcing from such areas they should be mapped, and

management prescriptions be adopted that maintain or enhance the high conservation values.

iii) Chain of Custody

The origin of all timber procured by the Company can be tracked

iv) Legal issues

Harvesting and transport operations are carried out based on necessary licenses and in compliance with other legal requirements specified in national legislation, and relevant international agreements such as the ILO Conventions

v) Forest Management

A management plan is available which details management objectives and monitoring. Low impact harvesting is practiced through adequate planning and operations.

4. Involvement of stakeholders. The Company has established a method for two-way communication with parties that are potentially affected by its forest-related operations as well as a procedure to consider their views concerning these operations.

5. Promotion of sustainable forest management and maintenance of natural ecosystem processes. The Company agrees to provide support to promotion of sustainable forest management and the maintenance and enhancement of high conservation values in wood supply areas not managed by it complementing efforts made by other parties (e.g. by strengthening private forest owners' organisations, promoting certification including group certification, etc.).