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## **Illegal Logging in Slovakia**

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## **Abbreviations:**

<b>SA FGM</b>	State Administration of Forestry and Game Management
<b>DFO</b>	District Forest Office
<b>RFO</b>	Regional Forest Office
<b>FS</b>	Forestry Section of the Ministry of Agriculture
<b>FMP</b>	Forest Management Plan
<b>FMU</b>	Forest Management Unit
<b>FMR</b>	Forest Management Record
<b>PFM</b>	Professional Forest Manager

## Summary

This report analyses the aspects and the extent of illegal logging in Slovakia. In general, illegal logging happens undercover and is difficult to assess. However, WWF was able to prove, that a remarkable part of the wood products in Slovakia is of unclear origin. When comparing domestic consumption and export of round wood to wood production and import, 10% of the total consumption and export is of unknown sources. Due to the fact that illegal logging is a hidden action and due to the complexity of the wood market, nobody will be able to calculate the precise percentage of illegal logging taking place in Slovakia.

In Slovakia, two types of illegal logging may be distinguished. However, the rural population is driven by poverty to over exploit local forests in an unregulated fashion in order to satisfy its own urgent needs, mostly for fuel. This so called timber burglary happens mostly in regions of Northern Slovakia with a high level of poverty. The level of recorded timber burglary does not reach 0.5% of the total annual harvest.

However, criminals, whether individuals or companies, bribing the forest administration or acting by deception or force, deliberately overharvest, capitalize on gaps in legislation and harvest wood in contradiction to law, for sale to domestic or foreign markets. During the process of restitution, the owners of newly restituted forests often carried out the timber harvest without compliance to the management plan. As the right to use private property is guaranteed by the Slovakian constitution, the violation of the forest act is not prosecuted. In order to avoid the regulations of the management plan, harvesting operations are reported untruly as accidental felling. The forest administration has very little possibilities to check the accidental logging on the field, especially if the harvesting operation is carried out promptly. Illegal overharvest is favoured by the current practice to calculate the standing timber volume in forest inventory. In order to increase the efficiency of forest management planning faster methods with a permissible error of  $\pm 20\%$  are preferred to those more accurate. Being aware of this inaccuracy it is possible to harvest by 20% more than the volume approved in the management plan as the discrepancy will not be uncovered.

The current forest legislation in Slovakia covers and regulates all activities related to forest management and timber harvest, but enforcement on the ground is weak due to lack of personnel, technical and financial problems. For example, in 2002 only 7% of the forest area where the forest management plans expired was controlled by the Regional Forest Offices, although it is compulsory. The wood processing industry is almost without any restriction and has not even to report the volume or the origin of the timber processed. Contradictions between forestry laws and environmental laws lead to harvesting in protected areas which are supposed to be excluded from any harvesting operation. Forest law requires that forests damaged by natural calamities are harvested and restored regardless of their location, whilst environmental protection law forbids any kind of harvesting and artificial restoration in forests situated in strictly protected areas.

Based on the findings of these studies, it can be concluded that there is an urgent need to solve contradictions in the existing legislation, to improve law enforcement by building up the capacity of the control bodies and to develop consistent reporting systems on forest management, wood harvesting and transport, wood processing, export and import, compulsory for all companies involved in these operations.

## 1. Introduction

Illegal logging is a pervasive problem that is not limited to the tropics. Also in some Eastern European countries the level of illegal logging is up to 50% of the total annual harvest. Illegal activities in the forest sector are causing enormous damage to forests, to local communities and to the economies of producer countries. The World Bank estimates that the loss of revenue to governments is 5 Billion US \$ annually, with a further 10 Billion US \$ lost to the economies of producing countries. Globally the problems caused by illegal logging are becoming more and more topical. The European Union is implementing the FLEGT (Forest Law Enforcement, Governance and Trade) action plan in order to control the import of illegal timber. However, with the accession of the new member states illegal logging became also an internal problem within the EU.

The Slovak Republic is one of the most forested countries in Europe. Slovak forestry is well-known and has a rich history. Like every industrial sector in Slovakia, also forestry has been changing significantly since 1990. These changes occurred in the ownership and user's relations to the forest and in the economic conditions of forest management. These processes also influence the occurrence and volume of the illegal logging.

At present insufficient attention is given to the issue of illegal logging in Slovakia. It is probably due to a common belief that no illegal logging may ever exist, as regulations are enforced and the volume of **officially registered illegal logging does not reach the level 0.5% of total annual felling**. On the other side, environmental NGOs estimate the volume of illegal logging to be about 30% of the annual felling in Slovakia.

The present study considered the following to be illegal logging activities:

### **Definition of Illegal logging**

Illegal logging activities include the harvest, transportation, purchase or sale of timber in violation of national laws. The harvesting procedure itself may be illegal, including using corrupt means to gain access to forests; extraction without permission or from a protected area; the cutting of protected species; or the extraction of timber in excess of agreed volumes. Illegalities may also occur during transport, such as illegal processing and export; fraudulent declaration to customs; and the avoidance of taxes and other charges. (FERN, Greenpeace, WWF 2004: Facing reality)

The aim of this study is to analyse the aspects of illegal logging in Slovakia and to estimate its level. Therefore, forest legislation and available official data on felling, import, export and consumption of timber in Slovakia was analysed. In addition, a survey of the State Administration of Forestry and Game Management, forest users and local authorities based on a questionnaire was conducted in three regions of Slovakia.

Special thanks to everyone, who has helped and provided the data used in this study, especially to Forest Protection Service of the Forest Research Institute Zvolen.

## 2. Forests and forestry in the Slovak Republic

### 2.1 Basic information on forests in the Slovak Republic

#### 2.1.1 Forest land and forests

Forest land according to law<sup>1</sup> comprises sites with permanent forest functions. It includes sites covered by forest tree species (in Table 1 referred to as forests) as well as sites without forest stands, which serve forestry and are necessary for forest management, e.g. forest roads, timber yards.

The area of forested land has been increasing over the last years. Since 1970, it has increased by 4.7%, mainly due to afforestation of unsuitable agricultural lands and transfer of agricultural lands covered by forest tree species (so called white plots). During the development of new forest management plans, records on forest lands are also gradually harmonized with the registry of the cadastre.

**Table 1: Present state and development of forest land area and area forests (ha)**

Kind	Year						
	1970	1980	1990	2000	2001	2002	2003
Forest land	1 918 571	1 952 656	1 976 538	1 997 961	2 006 438	2 008 349	*2 008 ths.
Forests	1 826 564	1 861 642	1 921 705	1 921 414	1 927 388	1 928 709	*1 929 ths.

Source: Overall information of Forestry information centre of Lesoprojekt Zvolen

\* data has not been published yet

#### 2.1.2 Ownership and forest management

Forest lands are owned and managed by the state and non-state organisations. The structure of ownership and use of forests has been changing due to a continuous process of restitution of the ownership and rights to use the forests according to law.

In a significant portion of the forest the owner and the user are not the same persons. Mostly small forests owned by private persons are leased and used by state organisations or other companies. The differences are shown in Table 2.

The forests under the ownership of the state are being managed by the state organizations of forestry as follows:

- Lesy SR, š. p., Banská Bystrica (Forests of the Slovak Republic, state enterprise, Banská Bystrica);
- Lesopoľnohospodársky majetok, š. p., Ulič (Forest-Agricultural Estate, state enterprise, Ulič);
- Štátne lesy TANAP-u (State Forests of the Tatra National Park).

These organizations are under the authority of the Ministry of Agriculture of the Slovak Republic.

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<sup>1</sup> Act of the Slovak National Council no. 61/1977 Coll. on forests in wording of later regulations

Vojenské lesy a majetky SR, š. p., Pliešovce (The Military Forests and Estates of the Slovak Republic), state enterprise, is under the authority of the Ministry of Defence of SR.

Some forests under the ownership of the state are being used by school facilities (Technical University in Zvolen, Secondary Forestry Schools in Banská Štiavnica, Liptovský Hrádok and Prešov) based on a leasing contract with the Forests of the Slovak Republic, state enterprise, Banská Bystrica.

**Table 2: Structure of forests (stand land) by ownership and use of particular subjects**

Kind of ownership/use	by December 31, 2000				by December 31, 2001			
	ownership		use		ownership		use	
	ha	%	ha	%	ha	%	ha	%
State	821 125	42.7	1 198 665	62.3	816 343	42.4	1 171 575	60.5
Private	287 199	14.9	114 634	6.0	282 659	14.7	138 635	7.2
Shared ownership	476 158	24.8	396 097	20.6	469 571	24.4	399 387	20.6
Church	63 634	3.3	46 672	2.4	61 703	3.2	54 834	2.8
Agriculture	2 770	0.1	4 811	0.3	2 271	0.1	4 644	0.2
Co-operatives								
Municipal	185 030	9.6	162 555	8.5	187 495	9.7	167 313	8.6
Unknown	85 498	4.4	-	-	107 346	5.6	-	-
	by December 31, 2002				by December 31, 2003*			
State	825 374	42.8	1 201 879	62.3		42.2		61.4
Private	249 172	12.9	117 688	6.1		12.0		5.9
Shared ownership	462 808	24.0	398 222	20.6		24.3		21.6
Church	61 207	3.2	39 815	2.1		3.2		2.1
Agriculture	1 899	0.1	4 301	0.2		0.1		0.3
Co-operatives								
Municipal	187 311	9.7	166 804	8.7		9.7		8.7
Unknown	140 938	7.3	-	-		8.5		-

Source: Permanent Forest Inventory (Lesoprojekt Zvolen)

\*only % officially published are available at this time

The non-state sector comprises private, municipal and church forests as well as agriculture co-operatives and shared ownerships. A legal organizational form of subjects in the non-state sector consists of land communities with or without legal entity, associations founded according to the Civil Code, business companies, individuals registered for business activity or not, as well as special units of municipal office. The majority of forests within the non-state sector are being managed by land communities. These were created by a transformation of former associated forms like urbarials and compossessorates (historic forms of shared ownership established in the 19<sup>th</sup> century).

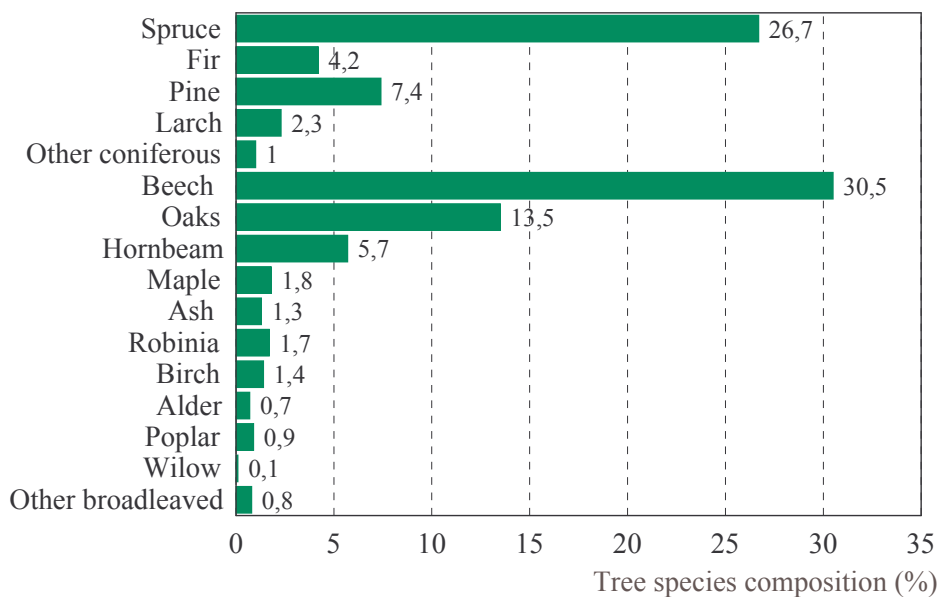
### 2.1.3 Spatial forest arrangement

Forests are divided into forest management units (FMU). Each unit is managed by one owner or user. The area of each FMU typically ranges between 100 and 1000 hectares. The FMU is subdivided into compartments ranging from 5 to 20 hectares, mostly along natural borders. For specific reasons, the compartment can be divided into smaller areas like partial plots or stand groups.

### 2.1.4 Tree species composition

Beech (30.5%) and spruce (26.7%) are the dominant tree species in the Slovak forests. Broadleaved tree species cover 58.4% and coniferous tree species 41.6% of the forest area. Tree species composition by December 31, 2002 is shown in Figure 1 (Green report 2003).

Figure 1: Tree species composition in the Slovak Republic



Source: Overall information of Forestry information centre of Lesoprojekt Zvolen

### 2.1.5 Forest categories

Forests are classified by their function into commercial, protective and special purpose forests (Act no. 61/1977 Coll. on forests).

The role of **commercial forests** is the production of high quality timber, along with the provision of other functions. The category of **protective forests** includes forests with prevailing protective functions. Protective forests are being declared on extraordinarily unfavourable sites (e. g. in high mountainous locations, steep slopes, etc.). **Special purpose forests** result from specific national or group needs which significantly restrict the forest management, e. g. forests in protected areas, research forests, recreational forests, etc..



A review of forests by categories in the years 2000-2003 is presented in Table 5.

**Table 5: Area of forest categories (stand land) in the Slovak Republic**

Forest category	Year							
	2000		2001		2002		2003	
	ha	%	ha	%	ha	%	ths ha	%
Commercial	1 273 771	66,4	1 279 129	66,4	1 289 422	66,9	1 284	66,6
Protective	306 721	16,0	314 411	16,3	320 037	16,6	325	16,8
Special purpose	340 922	17,7	333 848	17,3	319 250	16,5	320	16,6
Total Forests	1 921 414	100,0	1 927 388	100,0	1 928 709	100,0	1 929	100,0

Source: Overall information of Forestry information centre of Lesoprojekt Zvolen

### 2.1.6 Silvicultural systems

Present forest legislation specifies three basic silvicultural systems: shelterwood regeneration, selective cutting and clear felling. In forest management, shelterwood system should be preferred.

**Table 7: Overview of silvicultural systems and their forms planned in the forest management plans with the beginning of their validity**

Silvicultural system	Forms of silvicultural systems, conversions, partial and final fellings	Year			
		1990	2000	2001	2002
		% of felling area			
	Small area (up to 3 ha)	55.5	26.9	28.7	25.9
	Large area (up to 5 ha)	9.2	2.2	7.5	12.9
	Conversion of tree species composition	0.9	0.7	0.5	0.7
Clear felling	Conversion of silvicultural system	2.3	0.3	0.6	1.6
	Partial felling	16.6	-	-	-
	Clear felling together	84.5	30.1	37.3	41.1
Shelterwood	Small area	7.1	49.2	46.1	36.6
	Large area	0.8	8.0	9.5	5.5
	Final felling	6.2	10.9	6.2	14.4
	Shelterwood together	14.1	68.1	61.8	56.5
Selection	Tree and group	1.4	1.8	0.9	2.4

Source: Overall information of Forestry information centre of Lesoprojekt Zvolen

Natural conditions of the forests in the SR would enable to apply shelterwood system on about 70% (potential rate) of the stand land, selection system on about 10% and clear felling on remaining 20% (Green report 2003).

According to law, the limit of small and large clear felling areas is 3 and 5 hectares, respectively.

Share of silvicultural systems and their forms according to forest management plans in 1990, 2000, 2001 and 2002 are shown in Table 7.

## **2. 2 Forest legislation in Slovakia**

### **2.2.1 State Administration of Forestry and Game Management**

The State Administration of the Forestry and Game Management (SA FGM) is divided into the following levels: District Forest Office (DFO), Regional Forest Office (RFO) and Ministry of Agriculture of the SR.

The main competencies of **DFO** are to control the compliance with forest law and activities connected with conservation of the forest land.

The **RFO**, in addition to other tasks, approves of the principles for the development of the Forest Management Plans (FMP), approves of the FMPs, controls the implementation of the FMPs and has to agree to changes in the FMPs, determines the FMU, monitors the forest management regarding the maintenance of the forest functions, keeps records of professional forest managers, authorizes them and can decide to withdraw the authorisation.

The Ministry of Agriculture of SR with the Forestry Section is the central body of State Administration. The Ministry of Agriculture determines the scope of duties of the State Administration.

### **2.2.2 Forest guard**

The forest guard is responsible for forest protection. According to the regulation of the Ministry of Agriculture of the Slovak Republic on the forest guard, district forest offices are responsible for appointment of members of the forest guard. An appropriate number of forest guard members are appointed on request of forest owners and users, or based on the initiative of the district forest offices so that one member of the forest guard has to patrol an area of no more than 500 ha of woodland.

Forest guard members are entitled to be armed when on duty. Their responsibility is to report forest damage to the forest owner or user, and possibly also to identify the offender. They report violations of forest management regulations to the district forest offices.

Law enforcement by forest guard is limited and their co-ordination with other guards (e.g. nature protection etc.) is not sufficient.

### **2.2.3 Professional forest manager**

According to law, all forests, regardless of ownership, have to be managed by a professional forest manager. The professional forest manager may be an individual or a legal entity with authorized employees. Apart from the district where they have executive authority, employees of the state forest administration can also act as professional forest managers. The duty of the professional forest manager is, in addition to others, marking the trees prior felling and issuing a written approval, checking and recording the activities performed in the forest, keeping appropriate recording reports about the forest management as well as warning the forest owner or user and subsequently the appropriate body of the SA FGM about every illegal activity.

### **2.2.4 Management Planning**

All forests, regardless of their area and administration (ownership or using) have to be managed according to management plans in order to provide and improve their functions (Act of the Slovak National Council no. 100/1977 Coll. on management in forests and the State Administration of Forestry).

The current state of the forest stands at the beginning of the plan validity and a prescription of the management measures for the period of the plan validity, which is usually 10 years, are documented. In order to control its implementation, the forest management plan has to contain obligatory data, which includes in addition to others:

- upper limit of the planned regeneration cut volume,
- upper limit of the planned thinning volume (in the stands of the age more than 50 years),
- lower limit of the planned thinning volume (in the stands of the age up to 50 years) and
- area of the thinning.

The forest management plans are approved by the Regional Forest Office, which controls their implementation and may allow changes in reasonable cases.

### **2.2.5 Wood harvesting**

The allowable cut in particular forest stands (subcompartments) within a Forest Management Unit is planned according to the current state of the forest stands, planned silvicultural system, tree species composition, rotation and regeneration period, technological and natural conditions and legislative provisions. Volume of final and intermediate felling is planned for ten years. The harvesting level in state and private forests is planned on equal terms. A professional forest manager can decide the date when a prescribed management measure is carried out.

The allowable cut has to be approved by the State Administration of Forestry and Game Management.

According to legislation<sup>2</sup> the harvesting is carried out as:

- a) **planned cut:** in the forest stands the cutting volume can be up to the volume levels determined by the forest management plan.
- b) **unregulated felling:** clearing of a forest plot for the needs of the forest management, e.g. forest nursery.
- c) **incidental felling:** with the purpose to remove the consequences of extraordinary natural impacts or other detrimental activity.

The forest user may perform the planned cut in the forest stands only at the extent and up to the volume determined by the forest management plan. If a necessity to carry out an incidental felling arises, the user is obliged to provide the preferential cutting plan.

User has to inform the State Administration about incidental felling but he does not need their approval. Planned cut has to be diminished by the volume of incidental felling.

The harvested volume may differ in forest stand (compartment) from the planned volume by + 15% in case of determined upper limit<sup>3</sup>, or by - 15 % in case of the lower limit<sup>4</sup>. However, the sum of the realised cut in forest stands of the age over 50 years within the whole Forest Management Unit may not exceed the allowable cut for planning period (10 years).

Similarly, the sum of the thinning in the stands of the age below 50 years within the whole Forest Management Unit may not be less than the prescribed total thinning level.

The user may carry out harvesting operation only after the trees are marked by the professional forest manager and a written approval is issued on a specific form. The person carrying out the harvesting operation is obliged to show this approval to the employees of the State Administration of Forestry, forest police and policemen, if requested. The professional forest manager keeps a copy of the approval till the end of validity of the forest management plan. The professional forest manager is also responsible for the accuracy of the marking and recording of the harvested timber.

The trees to be harvested are marked separately on the stem at the height of 1.3 m from the ground as well as on the rootstock by an indelible colourful sign with a marking hammer stamp or label.

Logged timber and assortments made of it are marked with a marking hammer stamp, which contains information on:

- the kind of forest user (state organization, forests in usage of the land and duties register association, cities and communes, church and natural persons), respectively another subject, timber purchaser or professional forest manager,

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<sup>2</sup> Act of the Slovak National Council No. 100/1977 of Coll. on management in forests and the State Administration of Forestry in wording of later regulations

<sup>3</sup> regeneration cut, thinning in the stands of the age over 50 years

<sup>4</sup> thinning in the stands of the age up to 50 years

- the State Administration body, the draft number of the forest user, the timber purchaser or professional forest manager,
- the number of the marking hammer stamp.

The forest user, timber carrier, timber purchaser, timber consumer and timber processing company prove the timber origin by a specific document called „Certificate of origin of the timber for transport and processing“. The certificate contains information about the tree species, diameter, length, volume and the forest user. Legal entities and individuals have to record and keep this document for at least two years. But they do not need to report the data to the administration. These documents are only occasionally during transport controlled by Police and bodies of the State Administration of Forestry.

Details about logging, marking hammer stamps and their registration, marking timber with the marking hammer stamp and related recording, certificates of the timber origin, recording of the stored timber and about the circulation of the documents about the timber are specified by the Regulation of the Ministry of Agriculture of the SR No. 244/1997 on marking and recording of the timber logging.

### ***2.2.6 Timber transport***

The carrier or purchaser of the timber is obliged, on request of the members of the Slovakian police forces, bodies of the State Administration of Forestry and Game Management or the forest guards, to prove the origin of the transported timber by a certificate from the forest owner or legitimate user.

Legal entities and individuals, which process the timber, are also obliged to prove the origin of the processed and stored timber to above mentioned bodies and keep records about it.

### ***2.2.7 Evidence of implemented management measures***

Forest owners or users are obliged to keep a survey of the result of forest management measures according to the forest management plans and recording reports. Basic registering unit for documentation is the smallest unit of the spatial forest arrangement (compartments, partial plots or stand group), which has an independent registration in the forest management plan. Separate documentation is continuously kept on the logging, reforestation and silvicultural activity.

The forest user and the professional forest manager keep these monthly documents, on which a correct and complete documentation is based. The forest user has to keep the primary documents also after expiration of the forest management plan validity until the compliance is controlled by the bodies of the State Forest Administration.

Annual report of forest management measures, carried out in the particular subcompartments, and annual balance of Forest Management Record (FMR) are presented to the District Forest Office not later than February 15<sup>th</sup> of the next year.

### ***2.2.8 Supervision of compliance with the forest management plan***

Supervision of compliance with the forest management plan is a joint responsibility shared between the authorities of the State Administration of Forestry and Game Management, professional forest managers and the individual or legal entity who prepared the forest management plan. The inspection also requires the presence of the forest owner or forest user. If other public interests are concerned, the relevant State Administration authorities may be involved in the process as well (nature protection authorities, etc.).

Subject to supervision and inspection are the upper limit of the summed regeneration fellings and the upper limit of the summed volume from planned thinning in the forest stands aged over 50 years.

In addition the compliance with obligatory forest management plan regulations, the forest management records and the overall standard of forest management are inspected.

The inspection should be carried out occasionally during the term of the particular forest management plan and obligatory after the validity has expired.

### ***2.2.9 Changes of forest management plans***

If, for some objective reason, full compliance with a regulation of the forest management plan cannot be achieved, it is possible to modify the relevant regulation.

The forest owner or user has to submit an application form with the requested change of the regulation according to the individual spatial forest arrangement units (compartments, partial plots, stand groups) to the SA FGM not later than one year before the changed management measures are carried out.

### ***2.2.10 Prohibited activities in forests***

The Forest Act also includes prohibition of a number of activities in the forests. A forbidden activity is, for instance, uncontrolled felling and damage of vegetation. This prohibition, of course, does not apply to activities performed by forest users and forestry staff within the scope of tasks related to forest management and forest protection. Unlicensed cutting of trees or shrubs is classified as transgression of legal forest management regulations. A financial penalty of up to 20,000Sk (approx. € 500) may be charged. If an offence is recommitted within a period of one year from the conclusion of legal proceedings and issue of penalty charge, the penalty for the committed act is doubled.

### **2.2.11 Wood import and export**

Timber traders transporting the goods within the territory of the Slovak Republic have to document the origin of the timber by certificate of origin. Similarly, wood transported within the territory of the Slovak Republic which is exported abroad also needs the certificate of origin.

The export and import of timber requires compliance with Act No.285/1995 of the National Council of the Slovak Republic on plant tending and treatment, currently applying especially to export and import beyond the EU market. Wood transportation within the EU is classified as goods relocation.

A phyto-certificate is required for import and export. For export, the certificate is issued after the national Institute for Plant Control has carried out an inspection.

Wood imports are not subject to inspection of the origin of the wood.

### **2.2.12 Conclusion**

Planning, harvesting, recording and supervision of timber harvest may be summarised as follows:

- All forests regardless of their size and administration (ownership, use) have to be managed according to the forest management plan.
- The forest management plans are approved by the State Administration of the Forestry and Game Management.
- The forest user may perform the planned cut in the forest stands only at the extent and up to the volume level established by the forest management plan.
- The volume of regeneration felling and tending in the stands of the age over 50 years may differ in a forest stand from the volume determined in the forest management plan by + 15%.
- However, the sum of the regeneration cut and tending cut in the stands of the age over 50 years for the whole forest management unit may not exceed the planned allowable cut.
- The user may carry out harvesting operation only after the trees are marked by the professional forest manager and a written approval is issued on a specific form.
- The trees to be harvested are marked separately on the stem at the height of 1.3 m from the ground as well as on the rootstock by an indelible colourful sign with a marking hammer stamp or label.
- Logged timber and assortments made of it are marked with a marking hammer stamp.
- The forest user, timber carrier, timber purchaser, timber consumer and timber processing company prove the origin of the timber by a specific document.
- Forest users are obliged to keep a survey of the results of the forest management according in the forest management documents.

- Compliance with the regulations set out in the valid forest management plan is supervised by the authorities of the SA FGM. According to law, the inspection should be carried out occasionally during the term of the particular forest management plan and obligatory after the validity has expired.
- Changes to the forest management plan have to be approved by the State Administration of the Forestry and Game Management.
- The State Administration of the Forestry and Game Management includes District Forest Office, Regional Forest Office and Ministry of Agriculture of the SR.
- According to law, the forest owner or user has to ensure that the forest is managed by a professional forest manager.
- Wood imports are not subject to inspection of the origin of the wood.

The analysis shows that the current forest legislation covers all the activities related to forest management and timber harvesting (planning, realisation, recording, supervision, change of regulations).

The forest legislation is very complex and detailed, containing numerous obligations for forest owners and users. However, compliance with these obligations is monitored insufficiently by the State Administration due to personnel, technical and financial problems.

In the year 2002, (Green Report 2003) inspections by the Regional Forest Offices covered an area of 14,148 ha. Of that area state owned forests accounted for 7,301 ha and non-state forests for the remaining 6,847 ha.

Every year, a certain number of forest management plans expires. These forest management plans cover a total area of approximately 200,000 hectares per year. According to legislation, all areas in which the forest management plans have expired should be inspected by the bodies of the State Forest Administration. However, in 2002 only about 7% of the total area in which forest management plans expired were inspected.

Forest users are exposed to a threat of numerous sanctions resulting from forest law. Some forestry bodies, especially non-state users, consider several legal regulations to be unnecessarily restrictive.

The forest legislation obliges forest users to comply with the forest management plan and to monitor its implementation. The forest owner or user is supposed to implement the forest management plan even if the management measures are not economically beneficial. ***State support and compensation in such cases is insufficient due to a lack of finance.***

Transport of timber inside Slovakia is regulated by legislation. However, documentation on the origin of imported wood is not required. This makes it impossible to prevent imports of illegally logged timber. The volume of such illegally acquired timber, as shown in the following chapters, may not yet be very high. However, considering the accession of Slovakia to the EU in connection with the development of the domestic wood-processing industry and an increased wood demand, especially of exotic tree species, the authors expect an increase of timber imports from non-EU countries.



### 3. Harvest, export, import and wood consumption in the Slovak Republic

#### 3.1 Felling

Total harvest was relatively balanced between 2000 and 2002. In 2003, the annual harvest increased to 6,652 ths m<sup>3</sup>. Coniferous wood was 53% of the harvested volume, while the share of broadleaved was 47%.

**Table 8: Review of harvested timber and allowable cut in Slovakia in the year 2000, 2001 and 2002 (ths m<sup>3</sup>)**

<i>Indicator</i>	<i>Year</i>		
	<i>2000</i>	<i>2001</i>	<i>2002</i>
Harvested timber	6 218	6 184	6 248
Allowable cut	5 325	5 618	5 914
Harvested volume exceeding the allowable cut/Allowable cut (%)	16.8	10.9	5.6

*Source: Report on forestry in the Slovak Republic 2002 (Green report)  
Report on forestry in the Slovak Republic 2003 (Green report)  
Overall information of Forestry information centre of Lesoprojekt Zvolen*

Harvested volume exceeded the allowable cut by 5.6 % - 16.8 % between 2001 and 2002. The excessive volume results from incidental fellings which increase the harvest volume especially at the end of the validity of the forest management plan when the planned cut is almost realised.

#### 3.2 Export of timber

Export of raw timber was liberalized in 1997. An average annual volume of 1,509,707 m<sup>3</sup> of raw timber was exported from Slovakia between 2000 and 2003. The volume of timber export decreased from 1,946,512 m<sup>3</sup> in 2000 to 1,123,625 m<sup>3</sup> in 2003. This means a decline by 42% since 2000. Mainly, the state forest organizations decreased the volume of timber export due to economic-political considerations. The state forest organizations exported 350 ths m<sup>3</sup> of raw timber in 2003. This means a decline of 62 % in comparison to 2001, when they exported 915 ths m<sup>3</sup>.

Timber export realised by the non-state sector and timber trade companies was almost balanced during the last three years but in comparison to 2000 it has decreased. This group of exporters sold 773 ths m<sup>3</sup> raw timber abroad in 2003.

Raw timber is exported into 26 countries from the Slovak Republic, mostly to Austria (68 % of total export in 2003), followed by Czech Republic (11.8 %), Hungary (8.3 %), Poland (3.7 %), Italy (5.9 %) and Slovenia (1.2 %). Export into these countries represents 99 % of the total exported raw timber.

**Table 9: Export of raw timber assortments in the years 2000 to 2003**

<i>Timber assortment</i>	<i>Year</i>							
	<i>2000</i>		<i>2001</i>		<i>2002</i>		<i>2003</i>	
	<i>ths m<sup>3</sup></i>	<i>%</i>	<i>ths m<sup>3</sup></i>	<i>%</i>	<i>ths m<sup>3</sup></i>	<i>%</i>	<i>ths m<sup>3</sup></i>	<i>%</i>
Logs 1 <sup>st</sup> to 5 <sup>th</sup> quality class	1 695	87.1	1 550	92.0	1 184	92.3	1 035	92.3
Firewood, chips, wood waste, sawdust and charcoal	251	12.9	135	8.0	99	7.7	89	7.9
<b><i>Total</i></b>	<b><i>1 946</i></b>	<b><i>100</i></b>	<b><i>1 685</i></b>	<b><i>100</i></b>	<b><i>1 283</i></b>	<b><i>100</i></b>	<b><i>1 123</i></b>	<b><i>100</i></b>

Source: Customs statistics of the SR

**Table 10: Export of raw timber by the type of organisation in the years 2000 to 2003 (ths m<sup>3</sup>)**

<i>Subjects</i>	<i>Year</i>			
	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
State forest organisations	815	919	614	350
Non-state forest organisations	195	39	144	533
Others subjects (business companies, etc.)	936	727	525	240
<b><i>Total</i></b>	<b><i>1 946</i></b>	<b><i>1 685</i></b>	<b><i>1 283</i></b>	<b><i>1 123</i></b>

Source: Customs statistics of the SR  
 Statistical reports: Les (MP SR) 2-04

**Table 11: Export of raw timber according to exported country in the years 2000 to 2003 (m<sup>3</sup>)**

<i>Country</i>	<i>Year</i>			
	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
Austria	1 294 086	1 126 506	850 436	764 402
Czech Republic	305 200	243 464	252 403	132 963
Federal Republic of Germany	122 444	17 283	17 542	4 571
Hungary	81 110	48 587	56 535	93 475
Slovenia	51 298	40 992	12 286	13 285
Poland	42 936	48 543	34 513	41 818
Italy	28 498	16 725	52 536	66 774
Denmark	10 431	0	48	35
France	2 967	1 716	2 207	1 358
Switzerland	2 164	0	138	2
Spain	1 409	1 383	1 685	1 707
China	1 294	2 642	1 023	522
Others	2 675	137 088	2 410	2 713
<b><i>Total</i></b>	<b><i>1 946 512</i></b>	<b><i>1 684 929</i></b>	<b><i>1 283 762</i></b>	<b><i>1 123 625</i></b>

*Source: Customs statistics of the SR*

**Table 12: Raw timber deliveries by forestry organisations in the Slovak Republic in the years 2000 to 2003 (m<sup>3</sup>)**

Assortment	Year 2000			Year 2001			Year 2002			Year 2003		
	Inland	Export	Total	Inland	Export	Total	Inland	Export	Total	Inland	Export	Total
<i>Softwood</i>												
Logs of 1 <sup>st</sup> class	3 565	735	4 300	4 724	1 175	5 899	1 543	1 570	3 113	1 214	1 409	2 623
Logs of 2 <sup>nd</sup> class	21 156	2 844	24 000	22 152	2 437	24 589	24 228	742	24 970	16 758	1 695	18 453
Logs of 3 <sup>rd</sup> A and B class	1 406 061	86 960	1 493 021	1 114 844	115 029	1 229 873	1 396 006	56 176	1 452 182	1 687 770	145 647	1 833 237
Poles	4 014	0	4 014	2 631	0	2 631	2 422	0	2 422	10 437	237	10 674
Pit props	16 209	227	16 436	21 936	0	21 936	10 285	1 152	11 437	14 614	3 872	18 486
Thin poles	13 507	0	13 507	20 275	0	20 275	10 519	0	10 519	11 482	85	11 567
Pulpwood	842 205	153 847	996 052	765 551	135 934	901 485	891 684	109 407	1 001 091	1 020 503	191 256	1 211 759
Forest chips	0	0	0	4 001	0	4 001	1 134	0	1 134	1 061	580	1 641
Firewood	112 098	0	112 098	116 979	31	117 010	125 707	49	125 756	143 125	9 190	152 315
Stumpage	71 554	0	71 554	72 019	0	72 019	34 453	0	34 453	46 069	0	46 069
Raw stems	187 760	492	188 252	137 146	0	137 146	38 718	0	38 718	135 903	0	135 903
Total Softwood	2 678 130	245 105	2 923 235	2 282 258	254 606	2 536 864	2 536 698	169 096	2 705 794	3 088 936	353 792	3 442 727

*Cont.*

Assortment	Year 2000			Year 2001			Year 2002			Year 2003		
	Inland	Export	Together	Inland	Export	Together	Inland	Export	Together	Inland	Export	Together
<i>Hardwood</i>												
Logs of 1 <sup>st</sup> class	5 790 455	2 424	8 328	5 662	1 818	7 480	6 306	1 297	7 603	2 094	946	3 040
Logs of 2 <sup>nd</sup> class	25 102	17 163	42 264	25 190	11 703	36 893	29 855	6 891	36 746	21 032	8 167	29 199
Logs of 3 <sup>rd</sup> A and B class	668 054	59 103	727 157	699 594	77 108	776 702	638 628	60 237	698 865	620 374	130 770	751 143
Pit props	4 035	0	4 035	6 007	0	6 007	15 733	2	15 735	14 472	1	14 473
Thin poles	460	0	460	94	0	94	124	0	124	182	0	182
Pulpwood	1 096 110	685 716	1 781 826	1 235 408	610 923	1 846 331	1 384 603	520 465	1 905 068	1 609 537	367 564	1 977 101
Forest chips	3 390	0	3 390	10 783	0	10 783	13 649	0	13 649	20 680	0	20 680
Firewood	137 000	312	137 311	135 861	1 761	137 622	117 410	439	117 849	113 460	21 456	134 916
Stumpage	129 363	0	129 363	141 399	0	141 399	57 852	0	57 852	82 985	0	82 985
Raw stems	32 728	358	33 086	38 077	318	38 395	9 547	0	9 547	13 405	10	13 415
Total hardwood	2 102 145	765 075	2 867 220	2 298 075	703 631	3 001 706	2 273 707	589 331	2 863 038	2 498 221	528 914	3 027 134
<b>Total softwood and hardwood</b>	<b>4 780 275</b>	<b>1 010 180</b>	<b>5 790 455</b>	<b>4 580 333</b>	<b>958 237</b>	<b>5 538 570</b>	<b>4 810 405</b>	<b>758 427</b>	<b>5 568 832</b>	<b>5 587 156</b>	<b>882 705</b>	<b>6 469 862</b>

Source: Statistical reports: Les (MP SR) 2-04, adjustments of FRI Zvolen  
Deliveries include only timber from forest subjects (owners/users), do not include own consumption and timber from other sources.

### 3.3 Import of timber

An average annual volume of 147,500 m<sup>3</sup> of raw timber was imported to the Slovak Republic between 2000 and 2003. This corresponds to 9.7 % of the average export for the same period. The volume of timber import during the observed period was between 128,940 m<sup>3</sup> in 2000 and 166,923 m<sup>3</sup> in 2001.

Most of the wood imported is hardwood. The proportion gradually declined from 98.3% in 2001 to 91% in 2003. Mostly broadleaved logs of the IV-V grade were imported, with a share of 91.4 % in 2002 and 87.5% in 2003. In the preceding years, imports of broadleaved logs were probably not registered separately by grade. The official data on import volume of broadleaved logs of the I-III grade seems to include the import of IV-V grade logs. Imports of birch logs of the IV-V grade account for 66 % of the total timber import with a volume of 105,791 m<sup>3</sup> in 2003. Firewood, wood waste, forest chips, sawdust and charcoal were not imported to the Slovak Republic.

**Table 13: Import of raw timber assortments in the years 2000 to 2003**

<i>Timber assortment</i>	<i>Year</i>							
	<i>2000</i>		<i>2001</i>		<i>2002</i>		<i>2003</i>	
	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>
Coniferous logs of 1 <sup>st</sup> to 3 <sup>rd</sup> grade	1 314	1,0	928	0,5	2 928	2,2	7 807	4,9
Coniferous logs of 4 <sup>th</sup> and 5 <sup>th</sup> grade	2 503	1,9	1 979	1,2	5 066	3,8	6 488	4,1
Broadleaved logs of 1 <sup>st</sup> to 3 <sup>rd</sup> grade	125 123	97,1	164 016	98,3	3 519	2,6	5 676	3,5
Broadleaved logs of 4 <sup>th</sup> and 5 <sup>th</sup> grade	0	0,0	0	0,0	122 843	91,4	139 915	87,5
<b><i>Total</i></b>	<b><i>128 940</i></b>	<b><i>100,0</i></b>	<b><i>166 923</i></b>	<b><i>100,0</i></b>	<b><i>134 356</i></b>	<b><i>100,0</i></b>	<b><i>159 886</i></b>	<b><i>100,0</i></b>

*Source: Customs statistics of SR*

Timber is mostly imported from neighbouring countries: Mainly from Ukraine, smaller amounts also from Czech Republic, Poland, Hungary and Austria. Import from these countries represents 99.2 % of total volume of imported timber. An average annual volume of 1,174 m<sup>3</sup> of timber was imported from other countries between 2001 and 2003. As mentioned in chapter 2.2, the origin of the timber imported to the Slovak Republic has not been checked, thus it is not possible to evaluate whether it comes from illegal or legal logging.

**Table 14: Import of raw timber according to imported country in the years 2000 to 2003 (m<sup>3</sup>)**

<i>Country</i>	<i>Year</i>			
	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
Ukraine		106 663	101 679	138 556
Czech Republic		38 736	19 064	13 254
Poland		2 944	592	5 033
Hungary		17 497	12 081	1 547
Austria		0	64	161
Others		1 083	1 104	1 335
<b>Total</b>	<b>128 940</b>	<b>166 923</b>	<b>134 584</b>	<b>159 886</b>

*Source: Customs statistics of SR (no data are available in 2000)*

### **3.4 Wood consumption**

#### **3.4.1 Consumption of raw timber by the wood-processing industry**

The raw timber supplied to the domestic market is distributed among a number of industries: the pulp mills, wood-processing industries (mechanical wood processing), producers of agglomerated boards, veneer and plywood, constructional joinery firms and furniture industries.

Detailed official records of the domestic wood utilisation are not available, but regular accurate felling records of individual forest owners or users are. Due to the existing situation, wood consumption estimates are derived from statistical surveys carried out by the Statistics Office of the Slovak Republic only in industries with twenty or more employees. In 2002, a survey of smaller wood enterprises was conducted within the national Small and Medium Business Census (CMSP). Statistical surveys, including the CMSP census, are mainly focused on economic indicators like profit, sales and costs, as well as employment statistics and production volume. The surveys, however, do not include the proportional share of individual wood assortments and their volume.

A large number of small private sawmills is another obstacle which may be encountered when attempting to determine a more accurate figure on wood consumption in Slovakia. These are often run by persons with registered small-business trade licence. Many of the small-trade entrepreneurs may be involved, besides wood processing, in a variety of other branches of business not related to the wood industry. Special lists of such enterprises are not available and data on their production and output have never been collected. Moreover, there is a large number of small sawmills, especially in the districts in the north of Slovakia, which are run privately without an appropriate trade licence. Thus, the data on real consumption is difficult to determine.

Table 15 shows data on consumption by wood-processing companies published by the Ministry of Economy of the Slovak Republic (Report on Forestry in the Slovak Republic 2003 - Green Report 2003). In consideration of the fact that there is no

evidence on timber consumed in Slovakia, the accuracy of this data remains unclear. In spite of this, the data was used in the calculation of the level of illegal logging as it is the only data available.

**Table 15: Review of the wood processing of the I-V grade timber by the sector of wood-processing industry in the Slovak Republic (ths m<sup>3</sup> under bark)**

<i>Sector</i>	<i>Year</i>		
	2001	2002	Assumption in 2003
Wood industry	2 755	3 468	3 600
Pulp and paper industry	1 687	1 726	1 800
<b><i>Wood processing industry together</i></b>	<b><i>4 442</i></b>	<b><i>5 194</i></b>	<b><i>5 400</i></b>

*Source: Ministry of Economy of the Slovak Republic*

### **3.4.2 Firewood consumption**

An average annual volume of 250 ths m<sup>3</sup> of firewood is supplied to the domestic market to heat private households, tourism resorts and temporary-accommodation facilities. Since 2000, annual sales (Table 12) of fuel softwood, traded by forestry organisations and enterprises, has been steadily increasing (from 112,098 m<sup>3</sup> in 2000 the sales soared to 143,125 m<sup>3</sup> in 2003). Contrary to that, the sale of hardwood for heating consumption has dropped from 137,000m<sup>3</sup> in 2000 to only 113,460 m<sup>3</sup> in 2003. The total volume of firewood market deliveries in 2003 exceeded the deliveries in 2000 by 3%.

An opposite trend has been detected in demand for forest chips, which is primarily used for heating, too. The production of hardwood forest chips septuplicated by from 3,390 m<sup>3</sup> in 2000 to 20,680 m<sup>3</sup> in 2003. However, production of softwood forest chips has a downward trend, with only 1,641 m<sup>3</sup> produced in 2003.

### **3.4.3 Forest owners/users own consumption**

A certain proportion of the extracted raw wood material is used by forest owners or users for their own consumption. The major part forms sawn timber made of I-III grade logs, especially softwood. In 2002, the private consumption of pulpwood, mainly so-called prime pulpwood is preferred as saw-log material, increased. An average annual volume of 14,500 m<sup>3</sup> of firewood accounts for the own consumption of forest organisations and enterprises.



**Table 16: Own consumption of timber in 2001 and 2002 (m<sup>3</sup>)**

<i>Assortment</i>	<i>Year2001</i>			<i>Year 2002</i>		
	<i>Softwood</i>	<i>Hardwood</i>	<i>Together</i>	<i>Softwood</i>	<i>Hardwood</i>	<i>Together</i>
Logs of the I-III grade	189 869	24 087	213 956	125 473	15 580	141 053
Pulpwood	24 641	9 903	34 544	38 363	10 411	48 774
Firewood	5 976	7 746	13 722	7 792	7 440	15 232
Forest chips	386	574	960	139	810	949
Other assortments	2 227	322	2 549	6 128	233	6 361
<b><i>Together</i></b>	<b><i>223 099</i></b>	<b><i>42 632</i></b>	<b><i>265 731</i></b>	<b><i>177 895</i></b>	<b><i>34 474</i></b>	<b><i>212 369</i></b>

Source: Statistical reports: Les (MP SR) 2-04, adjustments of FRI Zvolen

## 4. Illegal logging

Insufficient attention is given to the issue of illegal logging in Slovakia. It is probably due to a common belief that the existing regulations are sufficient to prevent illegal logging. Figures on timber burglary are regularly included in the annual Report on Forestry in the Slovak Republic (The Green Report). These figures amount to approximately 10 ths m<sup>3</sup> per year on average, i.e. 0.5 % of the annually harvested timber, though in 2003 the volume of stolen timber increased to nearly 30 ths m<sup>3</sup>. But even the Ministry of Agriculture states that a great proportion of timber burglary is not recorded (Green Report 2002). It should also be kept in mind that timber burglary is only a small part of the illegal activities included in WWF's definition of illegal logging.

Illegal harvesting in Slovakia is particularly pointed out by the VLK (Wolf) environmental group. According to figures presented on the group's web-page ([www.wolf.sk](http://www.wolf.sk)), the real volume of harvested timber in Slovakia is by 30% (i.e. 2 million m<sup>3</sup>) higher than the volume officially recorded. This estimate is calculated based on the difference between standing volume assessed by partial field surveys in 1993 and the standing volume published in the annual Green Report in 1993. The group considers the investigated difference between standing volume to be equal to illegal logging. Indeed, this difference is not an accurate and direct indicator of illegal logging, but may result from different methods of data ascertainment.

In the present study, the volume of illegally logged timber is derived by comparison of available official statistics. The results have been affirmed with own independent surveys, carried out at forest enterprises, bodies of the State Administration of Forestry, and local municipalities or community offices. The objective of the study is to point out discrepancies between the different records, which may be indicators of illegal timber harvesting.

### 4.1 Forms of illegal harvesting

Illegal logging activities include harvest, transportation, purchase or sale of timber in violation of national laws. The harvesting procedure itself may be illegal, including the use of corrupt means to gain access to forests; the extraction without permission or from a protected area; the cutting of protected species; or the extraction of timber in excess of agreed limits. Illegalities may also occur during transport, such as illegal processing and export; fraudulent declaration to customs; and the avoidance of taxes and other charges (FERN, Greenpeace, WWF 2004: Facing reality).

Illegal harvesting is only one part of these illegal logging activities.

Basically, the illegal harvesting in Slovakia may be divided in two categories: recorded and unrecorded illegal harvesting.

The category of **recorded illegal harvesting** covers timber burglary committed by public offenders and reported in official statistics. Such a loss of timber due to theft is included in forest management records as incidental felling (with notice: injurious agent "theft"). The injured party reports the case to the police. Depending on the degree of damage, the theft is then considered either as minor transgression of law or as criminal offence.

Illegal harvesting, however, may also be carried out by a forest owner or user while the professional forest manager in charge may or may not be aware of the offence. In the majority of cases, the illegal harvesting is then a case of **unrecorded illegal harvesting**.

#### ***4.1.1 Recorded illegal harvesting***

The forest user includes the ascertained offence in the forest management records. From the aspect of forest protection, timber burglary is considered as an injurious activity and a cause of forest damage. Incidents are therefore recorded in the Report L116, which is annually submitted to the Forest Protection Department of the Forest Research Institute based in the town of Zvolen.

A list of recorded timber burglaries is shown in Table 17. The volume of stolen timber heavily increased up to 29,527 m<sup>3</sup> in 2003 in comparison to 8,224 m<sup>3</sup> in the year before. Indeed this increase happened in just one district where a huge amount of timber was stolen in 2003. Of the tree species, spruce had the highest share of loss due to theft, which was 85.6 % in 2003.

Illegal logging occurs almost in all districts of the Slovak Republic. In the districts of Komárno, Nové Zámky, Šaľa, Bratislava, Senec, Krupina, Žarnovica, Ilava, Myjava, Nové Mesto nad Váhom, Dunajská Streda, Galanta and Hlohovec no timber theft was recorded between 2000 and 2003 as the forest coverage in these districts is low.

However, the highest rate of timber theft is found in the counties of Prešov, Košice and Žilina. The proportion in the total volume of stolen timber in these regions has increased from 78.3 % 2000 to 93.7 % in 2003.

A steady rate of illegal logging has been recorded in the district of Čadca. In 2003, there was a sharp increase in theft in the districts of Spišská Nová Ves and Kežmarok. The situation got even worse by the fact that a major percentage of the illegal harvesting was committed in the territory of the Slovenský Raj National Park. The issue of timber theft in Slovenský Raj is frequently publicised in media. Combat of illegal logging in these regions is very difficult under the given socio-economic circumstances as there is a high level of unemployment and poverty, especially of ethnical minorities. In addition, the criminal prosecution is very often impossible as many of the caught offenders are teenagers.

**Table 17: Recorded wood theft of tree species between 2000 and 2003**

<i>Tree species</i>	<i>Year</i>							
	<i>2000</i>		<i>2001</i>		<i>2002</i>		<i>2003</i>	
	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>	<i>m<sup>3</sup></i>	<i>%</i>
Spruce	7 988	55.6	4 925	52.2	3 966	48.2	24 327	82.4
Pine	1 324	9.2	689	7.3	739	9.0	841	2.8
Fir	208	1.4	132	1.4	57	0.7	93	0.3
Larch	47	0.3	34	0.4	88	1.1	23	0.1
Douglas fir	0	0.0	3	0.0	0	0.0	0	0.0
Coniferous	9 567	66.6	5 783	61.3	4 850	59.0	25 284	85.6
Beech	2 450	17.0	1 199	12.7	904	11.0	1 419	4.8
Oak	1 113	7.7	865	9.2	955	11.6	1 182	4.0
Turkey oak	109	0.8	50	0.5	50	0.6	217	0.7
Hornbeam	167	1.2	202	2.1	275	3.3	233	0.8
Ash	3	0.0	18	0.2	32	0.4	203	0.7
Maple	62	0.4	29	0.3	80	1.0	311	1.1
Lime	200	1.4	60	0.6	100	1.2	3	0.0
Elms	0	0.0	0	0.0	5	0.1	2	0.0
Robinia	406	2.8	803	8.5	729	8.9	427	1.4
Birch	22	0.2	0	0.0	37	0.4	50	0.2
Cherry	44	0.3	287	3.0	79	1.0	138	0.5
Alder	8	0.1	10	0.1	5	0.1	18	0.1
Aspen	205	1.4	132	1.4	104	1.3	18	0.1
Poplar	14	0.1	0	0.0	19	0.2	22	0.1
Broadleaved	4 803	33.4	3 655	38.7	3 374	41.0	4 243	14.4
<b>Total</b>	<b>14 370</b>	<b>100.0</b>	<b>9 438</b>	<b>100.0</b>	<b>8 224</b>	<b>100.0</b>	<b>29 527</b>	<b>100.0</b>

**Table 18: Recorded wood theft by districts (m<sup>3</sup>)**

<i>County</i>	<i>District</i>	<i>Year</i>			
		<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
Bratislava	Malacky	422	277	359	274
	Pezinok	1	0	0	0
	<b>Together</b>	<b>423</b>	<b>277</b>	<b>359</b>	<b>274</b>
Trnava	Piešťany	10	27	0	0
	Senica	327	283	501	354
	Skalica	0	0	45	0
	Trnava	0	0	45	0
	<b>Together</b>	<b>337</b>	<b>310</b>	<b>591</b>	<b>354</b>
Trenčín	Bánovce nad Bebravou	4	0	0	3
	Ilava	0	0	0	0
	Partizánske	4	29	0	0
	Považská Bystrica	223	175	10	54
	Prievidza	59	36	0	19
	Púchov	220	260	90	0
	Trenčín	237	62	150	21
<b>Together</b>	<b>747</b>	<b>562</b>	<b>250</b>	<b>97</b>	
Nitra	Levice	15	0	56	57
	Nitra	0	91	0	0
	Topoľčany	6	0	0	0
	Zlaté Moravce	0	9	0	0
	<b>Together</b>	<b>21</b>	<b>100</b>	<b>56</b>	<b>57</b>
Banská Bystrica	Banská Bystrica	0	0	37	48
	Banská Štiavnica	24	0	0	0
	Brezno	239	28	38	113
	Detva	40	30	15	56
	Lučenec	250	679	77	98
	Poltár	129	10	81	0
	Revúca	197	0	55	49
	Rimavská Sobota	671	303	141	661
	Veľký Krtíš	0	98	186	28
	Zvolen	40	23	0	0
	Žiar nad Hronom	0	18	0	75
<b>Together</b>	<b>1 590</b>	<b>1 189</b>	<b>630</b>	<b>1 128</b>	

Cont.

County	District	Year			
		2000	2001	2002	2003
Žilina	Bytča	577	0	716	497
	Čadca	2 483	2 689	1 657	3 220
	Dolný Kubín	25	83	336	380
	Kysucké Nové Mesto	629	82	83	84
	Liptovský Mikuláš	22	8	255	0
	Martin	299	79	0	0
	Námestovo	142	199	59	3
	Ružomberok	34	8	37	465
	Turčianske Teplice	190	0	0	0
	Tvrdošín	102	30	0	22
	Žilina	1 242	74	97	27
	<b>Together</b>	<b>5 745</b>	<b>3 252</b>	<b>3 240</b>	<b>4 698</b>
Košice	Gelnica	0	50	13	547
	Košice	35	0	0	42
	Košice okolie	279	166	57	91
	Michalovce	0	14	42	7
	Rožňava	367	192	315	473
	Sobrance	58	0	43	33
	Spišská Nová Ves	278	595	186	17 231
	Trebišov	0	85	17	347
	<b>Together</b>	<b>1 017</b>	<b>1 102</b>	<b>673</b>	<b>18 771</b>
Prešov	Bardejov	35	141	40	27
	Humenné	111	134	0	231
	Kežmarok	741	170	304	2 130
	Levoča	407	125	0	88
	Medzilaborce	93	45	21	29
	Poprad	790	598	463	190
	Prešov	822	256	351	594
	Sabinov	113	0	30	28
	Snina	288	324	97	230
	Stará Ľubovňa	170	107	9	98
	Stropkov	75	20	214	188
	Svidník	757	637	578	125
Vranov nad Topľou	88	89	318	190	
	<b>Together</b>	<b>4 490</b>	<b>2 646</b>	<b>2 425</b>	<b>4 148</b>
<b>Total</b>		<b>14 370</b>	<b>9 438</b>	<b>8 224</b>	<b>29 527</b>

Source: Forest Research Institute Zvolen (The occurrence of injurious agents in the forests in the Slovak Republic - Report L 116)

#### 4.1.2 Unrecorded illegal felling

There are three forms of unrecorded illegal felling carried out by forest users:

- a) the timber harvest is not in compliance with the forest management plan.
- b) the forest user records false incidental salvage felling on a site where no harvesting is planned.
- c) the real volume of harvested timber is higher than the volume officially entered in the records as either planned or incidental felling.

a) The first form of illegal felling became quite common in the north of Slovakia after 1990. The owners of newly restituted estates and lands frequently abused the process of restitution. They often carried out their timber harvesting regardless of the forest management plan and to the Forest Act. Such cases may even occur today, although less commonly than a decade ago. The following criminal inquiry often states **only a minor transgression of the Forest Act. As the offence is committed on private property, a criminal prosecution is virtually impossible.** Consequently, dealing with such cases is a long-lasting process which often ends with no result at all.

The other two above-mentioned ways are classical examples of illegal logging.

b) The forest user marks the trees with white paint indicating incidental logging. Felling and conversion of the timber is carried out immediately after that. In this case the forest user **abuses the fact that the District Forest Office with its forester in charge has very little practical possibilities to provide a field check of the reported incidental logging.** No retrospective inspection of compliance with the forest management plan may then show any discrepancies and will therefore prove that the reported incidental logging was a hoax. This shows again the low capacity of existing institutions to enforce legislation.

c) Another example of illegal logging is the unrecorded overharvest. If, for instance, an extra of 50m<sup>3</sup> of raw timber is harvested in addition to the planned 500 m<sup>3</sup>, only the planned volume is entered into the records. The remaining 50 m<sup>3</sup> is not reported in any documentation. Such a limited amount of overharvest does not affect the resulting stand density very much. Thus the discrepancy with the forest management plan is hard to detect. Such cases are favoured by the fact that the officially accepted measurement methods for the standing timber volume are of variable accuracy with a permissible error ranging from  $\pm 5\%$  to as much as  $\pm 20$  or  $25\%$ . **In recent years, in particular in connection with attempts to increase the efficiency of forest management planning, the more accurate survey method of full callipering is being used less frequently while preference is given to faster calculations from basal area tables.** Aware of the fact that the inaccuracy of such estimates reaches up to 20 %, forest users may then obviously increase their harvest by 20 % above the volume limited by the management plan without reporting the extra cut.

It has to be mentioned that nature protection authorities and environmental NGOs consider incidental salvage logging in areas covered by the 4<sup>th</sup> or 5<sup>th</sup> degree of nature protection (Nature Monument, Nature Reserve, National Nature Reserve) also as a form of illegal logging (the highest conservation degree in Slovakia is 5<sup>th</sup> degree). The dispute between aims and attitudes of forest managers and those of nature protection authorities or NGOs has been a hot unsettled issue since 1997, when Act

No. 287/1997 on nature protection and landscape conservation (the Nature Protection Act) came into force. There are obvious **contradictions between forest laws and environmental laws**. According to forest law, the forest user has to carry out salvage and restoration measures in areas of forest damage regardless of their location. If the restoration measures are neglected, the State Administration considers this to be violation of forest management regulations. The Nature Protection Act, however, declares areas covered by the 4<sup>th</sup> and 5<sup>th</sup> degree of nature protection to be zero-action areas in which all forest management measures are strictly banned. This ban also includes salvage logging and restoration of damaged forest sites. Forest users are thus in a difficult position and any of their decisions may backfire as violation of legal regulation of one of these.

## 4.2 Estimation of illegally harvested timber

In the following part of the study available official data on the production and consumption of roundwood in Slovakia will be compared. Possible discrepancies may indicate occurrence of illegal sources of wood supplies. The volume of illegal harvesting may be derived from the comparison of harvested volume, exported, imported and domestic consumption volumes according to the following calculation:

$$\text{Illegal Logging} = \text{Domestic Consumption} + \text{Exports} - \text{Production} - \text{Imports}$$

This calculation, however, requires knowledge of each of the relevant figures. Forestry bodies have detailed official records on the harvested volume, which are checked and periodically submitted by the State Forest Administration. The figures on export and import are taken from the statistics of the Slovak Customs Office. Exact domestic consumption data, however, cannot be obtained from any particular source. The only available official data on the volume of I-V grade raw timber processed in the domestic wood-processing industry between 2001 and 2002 (Table 15) derives from statistical surveys carried out by the Statistic Office of the Slovak Republic. Those statistical surveys are published in the Report on Forestry in the Slovak Republic 2003 (Green Report 2003). The domestic consumption of firewood was calculated from the number of households heated by firewood and the estimated annual firewood consumption per household.

### 4.2.1 Wood-processing industry

#### In 2001

- A total volume of **4,442,000 m<sup>3</sup>** of the I-V grade (Table 15) timber was consumed by the wood-processing industry in Slovakia.
- The export volume of the I-V grade timber was **1,550,000 m<sup>3</sup>** (Table 9).
- A total volume of 4,880,195 m<sup>3</sup> of the I-V grade roundwood was delivered to the domestic and foreign market in 2001 (Table 12). In addition, the stumpage sales and raw stems sales amounted to 388,959 m<sup>3</sup> (Table 12). It is supposed that



about 369,511 m<sup>3</sup> (95.0%)<sup>5</sup> of the given raw timber volume were used for conversion into I-V grade assortments. The total production of I-V grade roundwood is therefore calculated to be **5,249,706 m<sup>3</sup>**.

- The import volume was **166,923 m<sup>3</sup>** (Table 13).

According to official data, the total volume of I-V grade roundwood consumed in or exported from Slovakia was 5,992,000 m<sup>3</sup>, however, only 5,416,629 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **575,371 m<sup>3</sup>** of I-V grade roundwood to meet this demand. Therefore, **9.6%** of the consumed or exported wood was not accounted for in the official statistic for I-V grade roundwood deliveries, i.e. not declared by the logging companies and was therefore possibly obtained from illegally harvested wood.

### In 2002

- A total volume of **5,194,000 m<sup>3</sup>** of the I-V grade (Table 15) timber was consumed by the wood-processing industry in Slovakia.
- The export volume of the I-V grade timber was **1,184,000 m<sup>3</sup>** (Table 9).
- A total volume of 5,169,875 m<sup>3</sup> of the I-V grade timber was delivered to the domestic and foreign market in 2002 (Table 12). In addition, the stumpage sales and raw stems sales amounted to 140,570 m<sup>3</sup> (Table 12). It is supposed that 133,542 m<sup>3</sup> (95.0%)<sup>5</sup> of this volume were converted into I-V grade assortments. Thus, the total production of I-V grade roundwood is calculated to be **5,303,417 m<sup>3</sup>**.
- The import volume was **134,356 m<sup>3</sup>** (Table 13).

According to official data, the total volume of I-V grade roundwood consumed in or exported from Slovakia was 6,378,000 m<sup>3</sup>, however, only 5,437,773 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **940,227 m<sup>3</sup>** of I-V grade roundwood to meet this demand. Therefore, **14.7%** of the consumed or exported wood was not accounted for in the official statistic for raw timber deliveries, i.e. not declared by the logging companies, and was therefore possibly obtained from illegally harvested wood.

### In 2003

- For 2003, the Ministry of Economy of the Slovak Republic assumes that a total volume of **5,400,000 m<sup>3</sup>** of the I-V grade (Table 15) timber was consumed by the wood-processing industry in Slovakia.
- The exports volume of the I-V grade timber was **1,035,000 m<sup>3</sup>** (Table 9).
- A total volume of 5,881,937 m<sup>3</sup> of the I-V grade timber was delivered to the domestic and foreign market in 2003 (Table 12). In addition, the stumpage sales and raw stems sales amounted to 278,372 m<sup>3</sup> (Table 12). It is supposed that 264,453 m<sup>3</sup> (95.0%)<sup>5</sup> of this volume were converted into I-V grade assortments.

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<sup>5</sup> The 95.0 percentage was derived as the count-up share of the I-V grade timber and the total volume of all the combined assortments (I-III B grade logs, poles, mine timber, pulpwood, forest chips) and the firewood altogether (average value for the period 2001 to 2003).

Thus, the total production of I-V grade roundwood is calculated to be **6,146,390 m<sup>3</sup>**.

- The import volume was 159,886 m<sup>3</sup> (Table 13).

According to official data, the total volume of I-V grade roundwood consumed in or exported from Slovakia was 6,435,000 m<sup>3</sup>, however, only 6,306,276 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **128,724 m<sup>3</sup>** of I-V grade roundwood to meet this demand. Therefore, **2.0%** of the consumed or exported wood was not accounted for in the official statistic for raw timber deliveries, i.e. not declared by the logging companies, and was therefore possibly obtained from illegally harvested wood.

**Table 19: Production and consumption of I-V grade timber in 2001, 2002 and 2003**

<i>I-V grade timber</i>	<i>Year</i>		
	<i>2001</i>	<i>2002</i>	<i>2003</i>
Consumption and Exports	5,992,000 m <sup>3</sup>	6,378,000 m <sup>3</sup>	6,435,000 m <sup>3</sup>
Production and Imports	5,416,629 m <sup>3</sup>	5,437,773 m <sup>3</sup>	6,306,276 m <sup>3</sup>
Difference	575,371 m <sup>3</sup> 9.6 %	940,227 m <sup>3</sup> 14.7 %	128,724 m <sup>3</sup> 2.0 %

#### **4.2.2 Firewood**

According to the national Census of Population and Households, carried out by the Statistics Office of the Slovak Republic in 2001, there are 1,665,536 places of permanent residence (flats and houses) altogether. Thereof, 222,128 households are heated by solid fuels like firewood or coal. In addition, most of the 44,455 places of temporary or seasonal residence like holiday homes and tourist resorts are heated by firewood. As the census does not contain data on the number of solid-fuel-heated households which are heated by firewood, a small-scale sample survey was conducted in several regions. 93 municipalities or communities were covered, which makes 3.2% of the total number of 2,883 municipalities and communities in Slovakia.

Our survey shows that 13% of households heated by solid fuels use firewood. That means 28,877 households. Moreover, the results of the survey show that the average annual firewood consumption in each individual household is 13.5 m<sup>3</sup>, which makes a total annual firewood consumption of 389,835 m<sup>3</sup>. It is supposed that approximately 50% of the places of seasonal or temporary residence are heated by firewood, which makes 22,227 places. If, roughly estimated, these accommodation facilities are occupied for 20% of their yearly capacity, the average annual firewood consumption per place may be 2.7 m<sup>3</sup> which makes a total annual firewood consumption of 60,013 m<sup>3</sup>. The estimated total annual firewood consumption in Slovakia is then **449,848 m<sup>3</sup>**.

#### **In 2001**

- A total volume of **267,624 m<sup>3</sup>** of firewood and forest chips was produced and delivered to the domestic market in 2001 (Table 12).

- In the same year, the stumpage sales and raw stems sales amounted to 388,959 m<sup>3</sup> (Table 12). It is supposed that about **19,448 m<sup>3</sup>** (5.0%)<sup>6</sup> of the given raw wood volume were used for firewood and forest chips.
- In addition, a total volume of **14,682 m<sup>3</sup>** of firewood and forest chips was produced and used by the forest owners and users for their own consumption (Table 16).
- The total reported volume of the wood produced for heating purpose is therefore calculated as follows: 267,624 m<sup>3</sup> + 19,448 m<sup>3</sup> + 14,682 m<sup>3</sup> = **301,754 m<sup>3</sup>**

In comparison to the estimated annual consumption of 449,848 m<sup>3</sup>, Slovakia would need to produce another **148,094 m<sup>3</sup>** of firewood to meet this demand. Hence, **32.9%** of the consumed firewood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

### In 2002

- A total volume of **257,900 m<sup>3</sup>** of firewood and forest chips was delivered to the domestic market in 2002 (Table 12).
- In the same year, the stumpage sales and raw stems sales amounted to 140,570 m<sup>3</sup> (Table 12). It is supposed that **7,029 m<sup>3</sup>** (5.0%)<sup>6</sup> of the given raw wood volume were produced.
- The total volume of **16,181 m<sup>3</sup>** of firewood and forest chips was produced and used by the forest owners and users for their own consumption (Table 16).
- The total reported volume of the wood produced for heating purpose is therefore calculated as follows: 257,900 m<sup>3</sup> + 7,029 m<sup>3</sup> + 16,181 m<sup>3</sup> = **281,110 m<sup>3</sup>**

Compared to the estimated annual consumption of 449,848 m<sup>3</sup>, Slovakia would need to produce another **168,739 m<sup>3</sup>** of firewood to meet this demand. Hence, **37.5%** of the consumed firewood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

### In 2003

- A total volume of **278,326 m<sup>3</sup>** of firewood and forest chips was delivered to the domestic market in 2003 (Table 12).
- In the same year the stumpage sales and raw stems sales amounted to 278,372 m<sup>3</sup> (Table 12). It is supposed that **13,919 m<sup>3</sup>** (5.0%)<sup>6</sup> of the given raw wood volume were produced.
- The total volume of own consumption is **15,432 m<sup>3</sup>** (mean volume between 2001 and 2002).
- The total reported volume of the wood produced for heating purpose is therefore calculated as follows: 278,326 m<sup>3</sup> + 13,919 m<sup>3</sup> + 15,432 m<sup>3</sup> = **307,676 m<sup>3</sup>**

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<sup>6</sup> The 5.0 percentage was derived as the count-up share of the firewood and forest chips and the total volume of all the combined assortments (I-III B grade logs, poles, mine timber, pulpwood) and the firewood and forest chips altogether (average value for the period 2001 to 2003).

Compared to the estimated annual consumption of 449,848 m<sup>3</sup>, Slovakia would need to produce another **142,172 m<sup>3</sup>** of firewood to meet this demand. Hence, **31.6%** of the consumed firewood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

**Table 20: Production and consumption of fuelwood in 2001, 2002 and 2003**

<i>Fuelwood</i>	<i>Year</i>		
	<i>2001</i>	<i>2002</i>	<i>2003</i>
Consumption		449,848 m <sup>3</sup>	
Production	301,754 m <sup>3</sup>	281,110 m <sup>3</sup>	307,676 m <sup>3</sup>
Difference	148,094 m <sup>3</sup> 32.9 %	168,739 m <sup>3</sup> 37.5 %	142,172 m <sup>3</sup> 31.6 %

In view of the increasing prices for gas and electricity, the number of households heated by solid fuel (especially wood) will presumably increase. The growth in consumption and demand for firewood will also lead to a growing trend in illegal logging. The increase may begin as early as autumn of this year, when most households are building up heating supplies for winter. The forestry bodies, State Forest Authorities and local administration representatives who were asked all confirmed the anticipated development.

#### **4.2.3 Calculation of the illegally harvested timber volume**

##### **In 2001**

- consumption and exports of I-V grade timber: 5,992,000 m<sup>3</sup>
- consumption of firewood and forest chips: 449,848 m<sup>3</sup>
- total consumption and exports: **6,441,848 m<sup>3</sup>**
- production and imports of I-V grade timber: 5,416,629 m<sup>3</sup>
- production of firewood and forest chips: 301,754 m<sup>3</sup>
- total production and imports: **5,718,383 m<sup>3</sup>**

Slovakia had to produce and import 6,441,848 m<sup>3</sup> of I-V grade timber and fuel wood to meet the demand of the domestic and foreign markets, but according to the official data only 5,718,383 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **723,465 m<sup>3</sup>** of I-V grade roundwood to meet this demand. As a result, **11.2%** of the consumed or exported wood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

##### **In 2002**

- consumption and exports of I-V grade timber: 6,378,000 m<sup>3</sup>
- consumption of firewood and forest chips: 449,848 m<sup>3</sup>

- total consumption and exports: **6,827,848 m<sup>3</sup>**
- production and imports of I-V grade timber: 5,437,773 m<sup>3</sup>
- production of firewood and forest chips: 281,110 m<sup>3</sup>
- total production and imports: **5,718,883 m<sup>3</sup>**

Slovakia had to produce and import 6,827,848 m<sup>3</sup> of I-V grade timber and fuel wood to meet the demand of the domestic and foreign markets, but according to the official data only 5,718,883 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **1,108,966 m<sup>3</sup>** of I-V grade roundwood to meet this demand. As a result, **16.2%** of the consumed or exported wood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

### In 2003

- assumed consumption and exports of I-V grade timber: 6,435,000 m<sup>3</sup>
- consumption of firewood and forest chips: 449,848 m<sup>3</sup>
- total consumption and exports: **6,884,848 m<sup>3</sup>**
- production and imports of I-V grade timber: 6,306,276 m<sup>3</sup>
- production of firewood and forest chips: 307,676 m<sup>3</sup>
- total production and imports: **6,613,952 m<sup>3</sup>**

Slovakia had to produce and import 6,884,848 m<sup>3</sup> of I-V grade timber and fuel wood to meet the demand of the domestic and foreign markets, but according to the official data only 6,613,952 m<sup>3</sup> were produced or imported. Hence, Slovakia would need to produce another **270,896 m<sup>3</sup>** of I-V grade roundwood to meet this demand. As a result, **3.9%** of the consumed or exported wood was not accounted for in the official statistic, i.e. not reported to the State Administration of Forestry, and was therefore possibly obtained from illegally harvested wood.

**Table 21: Total production and consumption of wood in 2001, 2002 and 2003**

<i>Consumption</i>	<i>Year</i>			
	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>Average</i>
Consumption and Exports	6,441,848 m <sup>3</sup>	6,827,848 m <sup>3</sup>	6,884,848 m <sup>3</sup>	6,718,181 m <sup>3</sup>
Production and Imports	5,718,383 m <sup>3</sup>	5,718,883 m <sup>3</sup>	6,613,952 m <sup>3</sup>	6,017,073 m <sup>3</sup>
Difference	723,465 m <sup>3</sup> 11.2 %	1,108,966 m <sup>3</sup> 16.2 %	270,896 m <sup>3</sup> 3.9 %	701,109 m <sup>3</sup> 10,4 %

The proportion of timber which is not accounted for in the official statistic of raw timber deliveries varies from 3.9% up to 16.2%. The figures may vary with the year as a result of stock changes, that, however, balance in the long term. Thus, the level of illegal logging may not be 16.2% as the difference derived in 2002 shows. Nevertheless, the consumption of industrial roundwood and fuelwood between 2001 and 2003 exceeded the production by an average annual volume of more than 700.000 m<sup>3</sup>. This means that up to 10.4% of the timber consumed in or exported from Slovakia comes from unknown and probably illegal sources.

#### **4.2.4 Unregistered forests**

Supplies of firewood do not come exclusively from forest harvesting, but also from unregistered forests (so-called **white plots**) which are currently used as an additional source. The white plots are registered as agricultural areas although they are covered with forest tree species. As these areas are not registered as forest areas, they are not covered by forestry legislation. Thus, the white plots are not included in forest management planning and neither the growing stock volume nor the annual increment are measured on these sites. Forest management plans only contain basic data of these areas like their size, age and growth density, while special marking for these sites is used in forest maps. Table 22 displays the size of the unregistered forest area according to individual regions. The total area of unregistered forest covers 39,311.19 hectare, corresponding to almost 2 % of the registered forest area.

White plots are a result of natural succession. Unused agricultural land (formerly utilised as arable land or pastures) situated close to woodland gradually became invaded by shrubs first, then by pioneer trees (alder, birch, goat willow) and later also by commercially valuable tree species of the climax forest like oak, beech and spruce. In such cases, most of the white plots are covered with an uneven aged, low dense, double storey growth of tree species. The local population uses the white plots as a source of firewood, poles, small-size construction timber and other material.

In the past, however, white plots originated also from errors in land registration. Such situations occurred when formerly used agricultural land was artificially afforested, but the transfer into the forest land records was neglected. As a common consequence, forest stands were established, that do not differ to the registered forest land in the particular region. These stands then developed into prevalingly even-aged quality commercial stands.

The age of white plots is not recorded in any statistic. The age structure of the local stands and their standing timber volume can only be estimated and not determined accurately. As a survey of sample areas showed, the age of the white plots in Slovakia ranges mostly between 10 and 60 years with an average of 35-40 years. The average standing timber volume of commercial forests of the 4<sup>th</sup> age class (31 to 40 years old forest stands) in Slovakia is 144 m<sup>3</sup>/ha. Due to lower stand density, the standing volume of the white plots may be estimated to be below 20%, which means 115 m<sup>3</sup>/ha. The total standing volume of white plots may thus be up to 4,521,000 m<sup>3</sup>.

As mentioned above, the white plots are neither covered by forest measurement surveys nor included in forest management planning. Logging operations on white plots are therefore not reported about in forest management records. Consequently, the State Administration cannot monitor harvesting on these sites. In the past, the nature protection authorities were in charge of issuing logging permits. Since 2003, the responsibility for granting logging permission has partially been shifted to the local administration.

**Table 22: Area of the white plots by counties (ha)**

<i>County</i>	<i>Area (ha)</i>
Žilina	11,958.10
Banská Bystrica	9,199.34
Prešov	5,395.94
Nitra	4,054.81
Trenčín	3,363.92
Košice	2,442.47
Tnava	2,031.84
Bratislava	864.77
<b>Total</b>	<b>39,311.19</b>

*Source: Overall information of Forestry information centre of Lesoprojekt Zvolen*

The following results are taken from the survey carried out at offices of local administration (municipalities and communities) in chosen regions of Slovakia:

- many local mayors are insufficiently informed about their responsibilities and power concerning the authorisation of logging in white plots,
- the staff of the local administration offices is not aware of the existence of white plots in their area, moreover, many clerks do not even know what white plots are,
- local administration often agrees with exploitation or even complete destruction of white plots by the local land owners or users without authorised permit,
- if permit is issued, the trees to be felled are listed separately and not according to the wood volume in cubic metres,
- no records are kept on the logging in white plots.

The existing situation is far from being satisfactory. ***It is necessary to specify the use of white plots*** on the grounds of consultations with their respective owners or, if the ownership is not assured, with the Slovak Land Fund. ***If the concerned owner does not intend to utilise the white plot for agricultural purposes, the property record should be transferred into the forest land register, and a subsequent forest management survey should be carried out promptly.***

***All logging on white plots should be recorded and summary logging statistics should be introduced.***

***Responsibilities for issuing logging permits should be clearly defined.*** At the moment, the responsibility in some regions lies in the hands of the local administration while in other places the nature protection authorities are in charge. This confusing use of legal power is obviously not acceptable and should be improved.

### 4.3 Survey evaluation

A questionnaire survey on illegal logging was carried out in the three regions Kysuce, Horehronie and Spiš. The following representatives took part in the poll: nine members of the State Administration, 53 forest users, 57 wood-processing enterprises and 93 local administration offices (municipalities and communities). The results of the survey carried out at the local administration offices are mentioned in the previous chapter on white areas.

#### 4.3.1 Members of the State Administration

- involving the staff of the State Administration in such a survey is a difficult task as they are often concerned about possible abuse of information,
- district forest offices are checking and supervising timber transports by means of the certificate of origin on average five or six times a year within a district, but there are districts where the check is only carried out once a year or never at all,
- the lack of inspections is a result of the State Administration being understaffed as well as underfinanced and having limited practical means of control,
- members of the State Administration expressed strong disapproval with the current possibilities of law enforcement in Slovakia,
- the ***disagreement between the Forest Act*** that sets legal requirements for forest management ***and the State Constitution*** that guarantees the rights of use of private property, often forces the State Administration to withdraw a charge and cancel further prosecution. Even if law-breakers are brought to trial for minor offences leading to financial penalties, the jury points out this conflict.
- ***according to the estimation of the State Administration, the level of illegal harvesting (timber theft and illegal harvesting by the forest owner) in Slovakia is about 5% of the total annual harvesting volume,***
- since the beginning of the restitution in 1989, especially the small private forest owners have shown a tendency to avoid the regulations and to gain fast profit from uncontrolled and unrecorded timber harvest,
- the situation has recently been slightly stabilised as the forest owners have become more aware of the value of forests,
- nevertheless, excessive harvest which violates the regulations set in the forest management plans still happens,
- such cases of over-harvest, if investigated, are then mostly classified as a minor transgression of law, not as criminal offence,



#### **4.3.2 Forest owners and users**

- in the opinion of forest owners and users, nothing but a strict and uncompromising implementation of the farming and trespassing law may improve the situation,
- when private forest property is included into protected areas, a majority of the forest owners and users concerned expressed dissatisfaction with the existing cooperation between them and the members of the State Administration or law-enforcement authorities,
- the current legislation, based only on penalties, is not expected to improve the situation,
- most forest owners or users agreed that positive legal motivation (especially financial support) and removal of some unnecessary restrictions from the law are needed to convince the parties concerned that law-abiding is more beneficial than law-breaking in relation to forest management,
- the forest owners and users suggested to establish special funds which support and encourage them to act according to national forest policy,
- public information on forest issues as well as efficient advisory service and training provided for small private forest owners and users should be improved or intensified.
- timber burglary committed by ethnical minorities in the region of Spiš appears to be a very specific problem which cannot be solved by forest law alone, but by improvement of their living conditions.

#### **4.3.3 Wood-processing enterprises**

- some regions in Slovakia are characterised by a high number of very small private saw-mills converting raw timber harvested in the local area. The sawn timber is either sold to timber traders or to construction and furniture firms,
- it is impossible to determine an accurate number of these small wood-processors as some of them are run by a small-trade licence without being authorised,
- in spite of the fact that the technical equipment of most of these local wood-processing enterprises is out of date, they are able to compete successfully on the open market. This is commonly due to low-cost origin of raw timber, often acquired at a low price from illegal logging,
- wood-processing enterprises are not obliged to report the records of the procured raw wood to the administration.

## 5. Conclusion

The study analysed some of the aspects of illegal logging in Slovakia, i.e. related to harvesting activities. The objective was to point out the possibilities for illegal harvesting and estimate levels of this activity based on official data. During the elaboration, available official data and also data provided by the Ministry of Agriculture of the Slovak Republic on written request were used.

The official data on wood production and consumption is of varying quality. The forest owners and users have to report the harvesting volumes to the State Forestry Administration. In contrast, the wood-processing industry is not obliged to report the volumes of timber processed. Estimates on wood consumption are derived from statistical surveys, but the accuracy of this data remains unclear. For 2003, the only available official data on wood consumption is an assumption by the Ministry of Economy of the Slovak Republic. However, the comparison of available data shows discrepancies indicating that not all timber harvested is reported to the State Administration of Forestry and may therefore be obtained from illegal sources.

According to available official data, consumption and export of wood exceeded timber production and import by 3.9%-16.2% between 2001 and 2003. Thus, an average annual timber volume of more than 700.000 m<sup>3</sup> was consumed or exported, but not reported as harvested or imported like it is regulated by law. There is strong evidence that this unreported timber volume derives from illegal harvesting operations. On the basis of the calculations and questionnaire survey, it is possible to assume **the average level of illegal harvesting in Slovakia to be as high as 10%**. It should be kept in mind that WWF considers illegal harvesting as just one of the various activities defined as illegal logging. The accuracy of reported felling volume, export and import should be subject of a more detailed research as some illegal activities can not be shown by the analysis of official data and estimated consumption.

The current legislation establishes plenty of duties to forest users, but the wood-processing sector is nearly without any restrictions. The lack of governance provides possibilities for the processing of illegal timber. In detail, forest legislation contains all activities regarding forest management and felling (planning, implementation, documentation). However, due to personnel, technical and financial problems the control of the State Administration is insufficient. Nevertheless, the wood-processing industry profits from the current situation as they do not even have to report the volume, not to mention the origin of the timber processed.

## **Recommendations:**

### In legislation:

- establish obligation to provide supporting documents of consumed wood for all kinds of wood-processing companies,
- solve contradictions related to constitutional rights of use of private property and legal requirements for forest management,
- remove contradictions between forest laws and environmental laws,
- improve co-ordination of forest police and other guards (e.g. nature protection etc.),
- monitor origin of the wood imported from abroad,
- regulate the use of unregistered forests and clearly define the responsibilities for issuing logging permits at white plots.

### In practice:

- record all existing wood-harvesting/wood-processing enterprises,
- introduce statistical records of procured timber to trace the origin of the wood acquired by the wood-processing enterprises, with compulsory reports also being submitted to the State Administration,
- establish regular inspection of the origin of the wood procured by the wood-processing enterprises, with obligatory long-term preservation of procurement documentation needed in order to enable retrospective inspection,
- improve personnel, technical and financial capacity of the State Administration in order to empower them to carry out a more frequent inspection of the implementation of the forest management plans and the timber transports,
- improve the work of the forest guards and their coordination with other guards, especially for nature protection,
- transfer unregistered forests into the forest land register and carry out a subsequent forest management survey promptly if the concerned owner does not intend to utilise his property for agricultural purposes,
- record all logging operations, also on unregistered forested land (reporting obligation for harvesting companies) and introduce summary logging statistics
- establish management measures and tracking possibilities for the timber coming from unregistered forests,
- certification of forests and wood-processing enterprises is an additional instrument to reduce the rate of illegal logging in Slovakia.

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