

Illegal logging in Slovenia

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Abstract

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The article shows the amount and nature of illegal logging in Slovenia, paying special attention to the increase of illegal logging in times of social changes and changes of forestry legislation and organization in the period between 1990-1994. It gives comparison between the amount of illegal logging according to official logging records and the amount of illegal (and possibly not recorded legal cutting) according to the recent analysis, made on the basis of the data of repeated measuring of forest growing stock at permanent sample plots.

Key words: illegal logging, forest inventory, Slovenia

1 Forest management in Slovenia

In Slovenia forests cover 1.158.000 hectares which is 57 % of its surface. Slovenia is one of the most wooded countries in Europe. From 1875 when forests covered only 36,4 % of Slovenia's surface, their amount has been increasing constantly for 130 years and will continue so for at least a decade or two because of abandoning of agricultural production at less favorable areas. Clearing of forests in the surroundings of settlements, clearing because of construction of infrastructural and energetic buildings, because of farming, etc. is done only in necessary extents, which is in average, only 5% of the entire surface, which grows anew every year.

Forest growing stock and Slovenian forest increment have also been increasing constantly after World War II. They have almost redoubled and are still increasing. In the past decade, according to official cutting records, Slovenia has been using the lowest part of increment of all European countries. Such low amount of cutting is not necessary, it is partly due to transition (denationalization). For the period 2001 – 2010 the plans allow a one third increase of cut (still only 67% of conifers increment and 55% of broadleaved trees increment) though in total it certainly won't surpass 50% of increment because of a very dispersed nature of forest estate. The average forest growing stock is 233 m³/ha and the average annual increment is 5,9 m³/ha.

Forests are mostly private owned. The ownership structure of forests is as follows: 72% of forests are private, 26% are state owned and 2% are community forests.

Care about forests has a long tradition in Slovenia. The first known regulation about regarding forests on Slovenian territory was the Forest Regulation for Kočevje region of Frederic of Ortenburg (1406). Several Forest Regulations followed for different regions from the territory of the present Slovenia. A very well known is the Maria Theresa Forest Regulation for Carniolica from 1771, a few years after the 2nd World War Slovenian forests were regulated by the Forest Act of the former Federal Republic of Yugoslavia (1947) and after 1950 work with forests was regulated by Slovenian Forest Acts (1950, 1965, 1974, 1985). In 1991 Slovenia became an independent state and the new Forest Act, adapted to new social conditions, was adopted in 1993. In 1996 Slovenian Parliament adopted the Forest Development Program of Slovenia.

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The first forest management plan on the territory of Slovenia was made in 1770, on the transition the 19th to 20th century forest management plans were made for all the largest forest estates and in the years 1953-54 the first measurement of forest growing stock of all Slovenian forests was made. From then, 10 years forest management plans have been made regularly for all Slovenian forests, regardless of ownership. Some forest management plans from more than 100 years ago already avoided clear cutting forest management, which was in that period asserted in Central Europe, and determined a more natural, selective management. The law from 1950 prohibited clear cutting completely.

All trees to be cut are marked by professional staff of Slovenia Forest Service, in private forests, of course, together with forest owners. Slovenia Forest Service was founded by 1993 Forest Act. Before this year, tree marking was done in a similar manner, with the only distinction that forest professionals were employed by former public forestry enterprises and did not issue legal decrees to forest owner.

All the above proves that in Slovenia forests have been managed carefully, well planned and legally well regulated. Forests are well preserved, looking from the composition point of view as well as from the point of view of the presence of other species, which form part of the forest ecosystem (birds, large beasts) and we are trying to preserve or even improve their genuineness. Sustention of Slovenian forests in therefore not endangered.

It would be careless and damaging though, if with everything stated above, we didn't pay attention to eventual negative phenomena in forests which can damage their sustainability and sustainability of all their functions.

People are different, mostly of course, material interests lead them into actions, damaging to environment and to other people, even into illegal actions.

Such most common damaging actions in forests are illegal interventions in forests to gain land for different activities and illegal cutting by owners in their own forests to gain wood. Other negative phenomena are of course also possible in forests. According to the Forest Act "all actions in forests, which decrease growth of the stand or fertility of the natural site, forest stability or sustainability or endanger its functions, its existence and its purpose, are forbidden".

According to Slovenian laws, illegal act in the forest, depending on the degree of damage for the forest, can be qualified as a violation or as a criminal offence with a threat of imprisonment.

The subject of this conference as well as this article is illegal logging, therefore I'm staying with this theme.

2 Cutting records

District foresters of Slovenia Forest Service record every cutting in the forests. The basis for these records are records of trees, marked for cutting. The records of cut trees include, of course, also the trees that were cut incidentally and were not marked (when, for example, a marked tree falls over the neighboring tree and pulled it down, severely damaged trees because of cutting or skidding). The records include also all recorded illegal cutting. The records consistently file reasons for cutting for every single tree.

In cases when after tree marking, due to different reasons (i.e. sudden illness of forest owner), marked trees haven't been cut, such trees are removed from the records. Such cases are rare, therefore this kind of mistake is almost negligible for the records. Such mistake is (apart from writing and typing mistakes) in practice almost the only possible mistake of the records, due to which the records show the amount of cut trees higher than the actual, while all other types of mistakes show a lower amount of trees than actually cut. Therefore we can always expect the amount of cut trees to be a little higher from the recorded amount.

3 What is illegal logging

As mentioned before, private forest are predominant in Slovenia. Private forest estates are in average very small (average forest estate of 2,3 ha, as a rule, in several divided lots), while the 20 year exploitation concessions for a great majority of state owned forests were given to formerly mentioned forestry enterprises, which managed these forest also in the past.

Theoretically we treat as illegal logging all logging that relates to trees that are not covered by the Slovenia Forest Service decree (or by public enterprises in the past, respectively). Practically we may speak about illegal logging in Slovenia only in private forests for the present. We have detected some illegal logging also in state forests as well as in community forests but the quantity is negligible and these incidents represent typical thefts of trees, caused by different persons. Such thefts of trees happen from time to time also in private forests but they are relatively rare. A great majority of illegal cutting is caused by forest owners in their own forests. Illegal logging could be done also in state forests by enterprises with concession for logging in state forests (as well as thefts of state owned trees), but we haven't detected such an incident so far.

Forest owners decide for illegal cutting most often in cases when they know their cutting aspirations are bigger than the possibilities of their forests, therefore the forestry professional will probably not be able to please them entirely. We meet cases, of course, when the owner feels it a nuisance to go to a forester when he wants to cut a few trees, especially for a small quantity of fuelwood. Sometimes, perhaps, the forestry professional contributes to such a decision, reacting too late or inadequately to the forest owner's petition for tree marking.

Slovenian forestry legislation, too, could perhaps be more tolerant in cases of owners' wishes to cut small quantities of trees, especially thin trees at less productive natural sites and we didn't have to treat as problems every act in the forest which in reality is not a problem for the forest.

The analysis, of course, has to follow the legislation, therefore we have to treat as illegal every cutting which relates to trees that are not covered by the Slovenia Forest Service decree (or by public enterprises in the past).

Illegal logging and corruption

Interesting and perhaps for some environments essential, is the standpoint, written in FLEGT Briefing Notes (No. 3), that »illegal harvesting may include not only harvesting practices that contravene the regulations, but also using corrupt means to gain harvesting rights,«

Possibilities for corruption in public forestry service are not connected only to cutting permits. The authorizations of Slovenia Forest Service offer possibilities for corruption also in connection with approvals for co-financing of silvicultural and protection works in forests, in connection with approvals for interventions in forests for acquisition of planning permissions and different other needs (extractions for agricultural purposes, recreational purposes, etc.).

In general, corruption is very difficult to prove. We hope there's as little corruption as possible, but we cannot exclude it. Therefore, when irregularities occur in forest management we have to think of corruption, too and because of the possibilities of corruption we have to keep records of forest management works even more carefully as corruption increases the possibility of illegal acts in forests.

4 Amounts of illegal cutting

Registered illegal cutting represented less than about 5 % of all cutting in private forests in the past (before 1990).

In the period from 1990-1994 we had great difficulties in Slovenia due to transition of forestry legislation and organization. These difficulties were closely connected to the overall transition of the State. The 1985 (!) Forest Act was completely incompatible with the social order that was rising in that time and it was not respected by many people. The new Forest Act was not adopted until 1993 and Slovenia Forest Service started to operate in May 1994. We established in that time, especially in some parts of Slovenia, that the amount of illegal cutting was very high and in the average much exceeded 10 %. And the evidences of cutting were even rather incomplete in that time...

To illustrate the conditions in the area of abiding by the forestry legislation we are quoting the data of inter-community forestry inspectorate in Dravograd which controlled forest management in the area of the former forest-management district of Slovenj Gradec and the former community of Radlje ob Dravi. It is one of 18 former inter-community inspectorates.

Data in table 1 clearly confirm a great increase of illegal cutting yet in the period from 1989 further while in the period between 1991 and 1994 the amounts of recorded illegal cutting were especially big.

Because of great amounts of illegal cutting in the years 1991 and 1992, foresters organized and paid attention to recording it. The data were processed by the Forestry Institute of Slovenia (MIKULIČ, 1993) and they show that in 1991 the amount of illegal cutting in private forests was 206.886 m³ and in 1992 as much as 251.190 m³ which in both cases represents 23 % of total cutting in private forests.

Table 1: **Amounts of recorded illegal cutting in the territory of the former inter-community forestry inspectorate, for the period from 1985 in 1994** (AHAČIČ, 1996)

Year	Recorded illegal cutting m ³	Share of illegal cutting in total cutting	
		- considering only private forests %	- considering all forests %
1985	342	0	0
1986	297	0	0
1987	236	0	0
1988	101	0	0
1989	613	0	0
1990	742	0	0
1991	2.118	1	1
1992	4.261	3	2
1993	3.373	2	1
1994	2.417	2	1

Shares of illegal cutting in table 1 relate to all forests, not only private, therefore the amounts are much lower than they would have been if we had treated private forests separately.

The amount of illegal cutting was decreasing rapidly when Slovenia Forest Service started to operate and in some years this amount reduced to the amounts before 1990.

Table 2: Amounts of recorded illegal cutting in Slovenia and its share in the total amount of cutting according to ownership categories for the period 1995-2003

Year	Private forests		State forests		Other property		Total	
	m ³	%	m ³	%	m ³	%	m ³	%
1995	109.546	8,9	2.735	0,3	396	3,0	112.677	5,4
1996	73.563	5,1	2.422	0,3	77	0,3	76.062	3,3
1997	104.464	6,4	1.901	0,2	164	0,7	106.528	4,1
1998	117.865	7,7	3.429	0,4	278	1,1	121.572	4,9
1999	91.834	6,1	3.365	0,4	216	1,1	95.415	4,0
2000	88.143	5,4	2.351	0,2	221	1,5	90.715	3,5
2001	66.627	4,1	1.768	0,2	77	0,3	68.472	2,6
2002	60.743	3,6	2.019	0,2	126	1,1	62.887	2,4
2003	51.466	2,8	2.064	0,2	53	0,5	53.583	1,8

Data in table 2 confirm that we meet with illegal cutting mostly in private forests.

But all these statements, for the previous and the present time, refer to registered illegal cutting. There is always doubt about the amount of illegal cutting that is not detected and not registered. We are sure, that in some parts of Slovenia this amount was rather big in the period 1990-1994 and we are afraid that in last few years the undetected amount of illegal cutting has increased due to (small) reduction of professional staff and because of many urgent new tasks of Slovenia Forest Service.

The analysis of the amount of illegal cutting must necessarily capture also the estimation of unregistered illegal cutting, otherwise it can be considered too deficient and senseless. All until the present days in Slovenia we haven't had the possibility to estimate the amount of cutting which hadn't been captured in the official records. The exception is the regional unit Bled (one of 14 regional units in Slovenia) where they started with the estimation of forest growing stock about 30 years ago, according to the method of permanent sample plots. But even this regional unit hasn't made a profound analysis of the matter. Around 1990, some other regional units (forestry enterprises at that time) decided to estimate forest growing stock on permanent sample plots. The 1998 Regulation about forest-management and silvicultural plans provides as obligatory the estimation of forest growing stock and increment on permanent sample plots for all forests, except forests on very poorly productive natural sites.

Due to permanent sample plots (of 500 m²) that are the basis of forest inventory we can estimate the amount of entire cutting in another, independent way, when we repeat measurements on the plots.

In part of Slovenian forests growing stock measurements on permanent sample plots have already been repeated and by a small research we tried to estimate the amount of illegal cutting that was not registered in the analyzed period.

5 The analysis of data from permanent sample plots

First we have to stress that a repeated measurement on permanent sample plots shows us the total amount of cutting in the analyzed period, that is legal and illegal cutting. The difference between the data collected on permanent sample plots and evidential data about cutting captures also the trees, cut with the permit of the public forestry service but due to a mistake, official records haven't captured. It has to be taken into account that official records already include the registered illegal cutting.

We don't know the amount of trees, cut by the permit of the public forestry service which haven't been recorded. In any case, we believe it is small compared to the amounts of illegal cutting, therefore we can attribute a predominant part of the estimated difference to illegal cutting. When

cutting permits are no longer issued on printed forms but computer printed on the basis of input data about trees, marked for cutting, such mistakes of records will practically be impossible.

Because of very different conditions which influence the amount of illegal cutting in state owned and in private forests, we have analyzed state and private forests separately. The basis for the analysis of state owned forests were the data about successive measurements of forest growing stock on permanent sample plots and the official cutting records of 7 forest-management units (FMU) of the total surface of 20.834 ha of forests, with state owned forests only (with two exceptions: FMU Trnovo with the unimportant share of 2,8% and FMU Osankarica with 11,5% of private forests). The basis for the analysis of private forests were the data from 15 FMU (total surface of 83.114 ha) with the predominant share of private forests (the average share of private forests in these FMU is 87,7%). In the latter FMU we considered only that part of official records which relates to private forests and we allowed ourselves the approximation to a point that we assumed a similar cutting intensity in state plots, located among private plots, as in private ones. Although average cutting intensity in bigger complexes of state forests is a little higher than in private forests, we can claim right the opposite for these individual state plots, namely denationalization captured mainly individual plots while in plots which were or still are subjects of denationalization, the amount of cutting after 1990 has been even smaller, due to settling of ownership relations, than in plots with a settled ownership. Because of a small share of state forests in the analyzed 15 FMU, the above mentioned approximation has no importance for the final result.

Considering measurements of forest growing stock for 2003 we already have data of two measurements on permanent sample plots for 36 (of total 250 FMU in Slovenia). But due to of lack of time we were forced to leave out all those FMU where data would require, technically speaking, a detailed survey and refinement, while some FMU were excluded for purely methodological reasons, as their shares of private and state owned forests are almost the same.

Results, important for the analysis, are stated in tables 3 (for state owned forests) and 4 (for private forests).

Table 3: **Data regarding forest management units with state forests**

Nr.	Year of 2 nd measurement	Forest manag. region	Forest manag. unit	Surface	Share of state forests	Nr. of plots	Cutting according to PSP	Cutting according to records	Cutting PSP/ Cutting records
				ha	%		m ³	m ³	%
1.	2003	Tolmin	Predmeja	4.661	100	647	123.983	131.014	94,6
2.	2002	Tolmin	Trnovo	4.325	97,2	587	172.135	156.264	110,2
3.	2000	Ljubljana	Ravnik	1.519	100	222	85.672	90.930	94,2
4.	2003	Postojna	Mašun	2.688	100	491	114.778	105.979	108,3
5.	2003	Postojna	Leskova d.	3.007	100	516	171.098	161.955	105,7
6.	2003	N. mesto	Soteska	1.911	100	253	146.956	142.908	102,8
7.	2003	Maribor	Osankarica	2.723	88.5	217	132.338	135.170	97,9
Total				20.834			946.959	924.220	102,5

Results of the analysis for state owned forests (table 3) show that in state owned forests cuttings are very consistently recorded. At the same time they confirm the adequacy of the methodology of forest growing stock estimation on permanent sample plots, used for the first time in Slovenia.

Because cutting is still not as uniform as forest growing stock in the forest, the precision of cutting estimation with permanent sample plots is smaller than the precision of forest growing stock. This is especially true for private forests where cutting in forest is even less proportionate

as some owners don't cut for as long as a decade while others cut more than a decade's increment. Within separate FMUs the estimation of cutting according to data from permanent sample plots can still be a problem but it is certainly useful for higher level (some FMU, RMU).

Table 4: Data regarding FMU with predominantly private forests

Nr.	Year of 2 nd measurement	Forest manag. region	Forest manag. unit	Surface ha	Share of private forests %	Nr. of plots	Cutting according to PSP (private f.) m ³	Cutting according to records (private f.) m ³	Cutting PSP/ Cutting records %%
1.	2001	Tolmin	Dole	3.864	98,9	200	101.865	52.567	194
2.	1999	Tolmin	Črni vrh	5.585	77,6	422	134.243	81.196	165
3.	2001	Tolmin	Brda	9.668	81,1	131	64.282	61.205	105
4.	2000	Bled	Bled	4.652	76,6	874	123.377	80.785	153
5.	2002	Brežice	Sevnica	5.778	93,0	425	109.258	121.610	90
6.	2002	Celje	Vransko	5.347	94,0	430	257.713	122.607	210
7.	2003	Celje	Marija Reka	5.608	81,4	497	193.179	91.348	211
8.	2003	Nazarje	Gornji Grad	7.913	64,8	761	204.235	203.250	100
9.	2002	S. Gradec	Radlje-l.r.b.	4.661	87,7	337	181.517	115.974	157
10.	2003	S. Gradec	Radlje-d.r. b.	8.079	85,4	602	295.519	220.533	134
11.	2002	Maribor	Selnica	7.447	87,9	276	346.347	164.887	210
12.	2003	Maribor	Šentilj	5.028	72,7	272	113.985	156.064	73
13.	2001	Maribor	Remšnik	3.383	82,9	257	181.743	92.855	196
14.	2003	Maribor	Rodni vrh	2.773	79,4	216	45.933	39.803	115
15.	2001	Maribor	Destriak	3.304	82,5	231	87.202	48.601	179
Total				83.114			2.430.398	1.653.285	147

According to the results of the analysis for private forests (table 4), in the period 1989-2003, the amount of cutting in private forests was as much as 47% higher from the amount, shown in official records. The result is surprising also for those who do not have any illusions about the perfection of cutting records. We admit that certain analyses regarding production and utilization of wood for the past period show quantities of wood on local and on Slovenian levels which are much higher from the official cutting and import records.

Even though in private forests there are many reasons which, compared to state forests, make successful keeping records more difficult and they are expected to be less accurate, we are sure that such a bad result is to a great extent a result of occurrences in private forests in the period 1990-1994. Certain forest owners took advantage to a great extent, of the transition period in forestry legislation and organization of forestry service. They were stimulated also by certain influential politicians who, in times when the former Forest Act was still in power and at the same time frantic debates about the new one were going on, publicly claimed that it was allowed to break the law that was inadequate and that according to the new law, forestry professionals would not be given authorization to mark trees for cutting. These predictions, of course, did not come true. In that period, forestry professionals did all they could to record at least some of the biggest cases of illegal cutting. But of course, they could not record all of them.

The results of the analysis will have to be thoroughly studied. We'll have to determine to what extent they are the result of occurrences in that period and where the deficiencies in record keeping of cutting in private forests are. In this sense, the true answer will be given by forest measurement in 2005 and even better in 2006, which won't capture the disputed period.

6 Conclusions

Slovenia has a long tradition of careful and planned forest management.

The new Forest Act (1993) consolidates planned forest management according to close-to-nature and multi-purpose principles.

We foresters record entire cutting, even illegal, that we manage to establish. The largest quantities of illegal cutting are established in private forests.

Before 1995 the quantities of illegal cutting were up to 5% and increased a lot in the period of great social changes as well as changes of forestry legislation and organization of public forestry service. They reached a share of 23% of total amount of cutting in private forests. In the period of functioning of SFS the amount of recorded illegal cutting has decreased a lot and about reached the level of before 1990.

On the basis of first reiterations of forest growing stock measurements on permanent sample plots we have become a new information about cutting in forests and the possibility of estimation of non-recorded illegal cutting.

For state forests we have established a very good accordance between official cutting records and cutting records from permanent sample plots while for private forests we have established surprisingly high amounts of illegal cutting of up to 47% of total recorded cutting in private forests. That means that the total amount of illegal cutting, together with the recorded amount of illegal cutting, can be over 50%. Regardless of the fact that these data capture entirely the most critical period regarding the amounts of illegal cutting (1990-1994), results of the analysis will have to be thoroughly studied and new analyses of this kind will have to be done as soon as possible to find out to what extent these unfavorable results are the result of occurrences in that period and where the deficiencies in record keeping of cutting in private forests are.

Literature

1. Ahačič, Urška, 1996. Delo in učinkovitost gozdarske inšpekcije. Diplomaska naloga, Ljubljana.
2. Perko, Franc, 1991. Gospodarjenje z zasebnimi gozdovi gre svojo pot. GozdV, 1991, št. 7-8.
3. Mikulič, Vid, 1993. Analiza nedovoljenih sečenj v letih 1991 in 1992. Poročilo Gozdarskega inštituta Slovenije, Ljubljana.
4. Letna poročila Zavoda za gozdove Slovenije za obdobja 1994-2003.

Summary

Illegal logging in Slovenia

Forests cover 1.158.000 hectares or 57 % of Slovenian surface. Their surface has been increasing for the last 130 years. Ownership structure of forests is as follows: 72 % private forests (before denationalisation 62 %), 26 % State forests (the share will hardly exceed 20 % when denationalisation is finished), 2 % community forests.

Careful work with forests has very long tradition in Slovenia. The first known regulation, the Ortenburg Forest Regulation, was written in 1406. Another well known regulation was Empress Maria Theresia's "Forest Regulation for Carniolica" in 1771. In the short period after the 2nd World War Slovenian forests were regulated by the Yugoslav Forest Act (1947), after 1950 there was no federal act and Slovenian forests were regulated by Slovenian Forest Acts (1950, 1965, 1974, 1985). The forest act in the independent Slovenia was adopted in 1993. In 1996 the Slovenian parliament adopted also The Forest Development Program of Slovenia.

The first forest management plan on the territory of Slovenia was made in 1770, in 1953-54 the first complete inventory of Slovenian forests was carried out and from that time, 10-years forest management plans have been elaborated for all forests, regardless the ownership of forests.

All trees to be cut are marked by professional staff of Slovenia Forest Service. In private forests trees are marked in collaboration with forest owners. Slovenia Forest Service was founded by 1993 Forest Act. Before this year, the marking of trees was done in a similar manner, with the sole distinction that forest professionals were employed in public enterprises and they didn't hand over lawful documents (decrees) that referred to marked trees, to forest owners.

Theoretically we treat as illegal logging all logging that relates to trees that are not covered by the Slovenia Forest Service decree (or by public enterprises in the past, respectively). Practically we may speak about illegal logging in Slovenia only in private forests for the present. We have detected some illegal logging also in state forests as well as in community forests but the quantity is negligible and these incidents represent typical thefts of trees, caused by different persons. Such thefts of trees happen from time to time also in private forests but they are relatively rare. A great majority of illegal cutting is caused by forest owners in their own forests. Illegal logging could be done also in state forests by enterprises with concession for logging in state forests (as well as thefts of state owned trees), but we haven't detected such an incident so far.

Registered illegal cutting represented less than 5 % of all cutting in private forests in the past (before 1990). In the period from 1990-1994 we had great difficulties in Slovenia due to transition of forestry legislation and organisation. These difficulties were closely connected to the overall transition of the State. The 1985 (!) Forest Act was completely incompatible with the social order that was rising in that time and it was not respected by many people. The new Forest Act was not adopted until 1993 and Slovenia Forest Service started to operate in May 1994. We established in that time, especially in some parts of Slovenia, that the amount of illegal cutting was very high and in the average much exceeded 10 %. And the evidences of cutting were even rather incomplete in that time... The amount of illegal cutting was decreasing rapidly when Slovenia Forest Service started to operate and in some years this amount reduced to the amounts before 1990. But all these statements, for the previous and the present time, refer to registered illegal cutting. There is always doubt about the amount of illegal cutting that is not detected and not registered. We are afraid that in last few years this amount has increased due to reduction of professional staff and because of many urgent new tasks of Slovenian Forest Service.

Due to permanent sample plots (of 500 m²) that are the basis of forest inventory we can estimate the amount of entire cutting in another, independent way, when we repeat measurements on the plots. In one forest management region (Bled) permanent sample plots have existed for more than 30 years and measurements have been repeated there twice or even three times, in some regions sample plots were introduced between 1980 and 1990, but after 1998 sample plots became obligatory as a basis of forest inventory according to the new Regulation of forest management and silvicultural plans. So in part of Slovenian forests measurements on permanent sample plots have already been repeated and by a small research we tried to estimate the amount of illegal cutting that was not registered in the analysed period. This estimate includes also the effect of incomplete evidence of cutting that was allowed by forest service.

For state forests we have established a very good accordance between official cutting records and cutting records from permanent sample plots while for private forests we have established surprisingly high amounts of illegal cutting of up to 47% of total recorded cutting in private forests. That means that the total amount of illegal cutting, together with the recorded amount of illegal cutting, can be over 50%. Regardless of the fact that these data capture entirely the most critical period regarding the amounts of illegal cutting (1990-1994), results of the analysis will have to be thoroughly studied and new analyses of this kind will have to be done as soon as possible to find out to what extent these unfavorable results are the result of occurrences in that period and where the deficiencies in record keeping of cutting in private forests are.