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## FOREST OWNERS AND FOREST WORK

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### *Abstract*

Only the most important findings of the investigation of wood production in private forests (MEDVED, 1991) are presented in the article. The private forest owners are classified in six socio-economic categories and four different classes, according to the sizes of their forest estates. The owners perform most of the felling and skidding by themselves. In average the technical equipment is rather old-fashioned and mostly inappropriate from the view of work safety. Individual protective outfit is extremely rarely used. Therefore the number of work accidents in forests is very high (in average 15 fatalities annually). The accidents are more frequent in case of owners of smaller forest estates. The forest owners are convinced that they need more knowledge for work in the forests and that they should have professional assistance as well. In their opinion the professional assistance by tree marking would be the most important.

*Key words:* private forests, forest production, working equipment, education, work safety

## LASTNIKI GOZDOV IN DELO V GOZDU

### Izvleček

V članku je le nekaj pomembnejših ugotovitev iz raziskave o pridobivanju lesa v zasebnih gozdovih (MEDVED 1991). Lastniki gozdov so obravnavani po šestih socio-ekonomskih kategorijah in štirih velikostnih razredih gozdne posesti. Lastniki sami opravijo največ dela pri sečnji in spravi lesa. Tehnična sredstva so v povprečju dokaj stara in iz vidika varnosti pri delu, neustrezna. Uporaba osebnih zaščitnih sredstev je na izjemno nizkem nivoju, zato ne preseneča veliko število nezgod pri delu v gozdu (povprečno 15 smrtnih nezgod letno). Nezgode so pogostejše med lastniki, ki imajo manjšo gozdno posest. Lastniki gozdov so prepričani, da potrebujejo več znanja za delo v gozdu in tudi strokovno pomoč. Po njihovem mnenju je najpomembnejša strokovna pomoč pri odkazilu dreves za sečnjo.

*Ključne besede:* zasebni gozdovi, pridobivanje lesa, oprema za delo, izobraževanje, delovne nezgode

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## 1 INTRODUCTION

Within the research project "Production of wood in private forests of the Republic of Slovenia", an extensive inquiry of forest owners was organized by IGLG (Institut for Forest and Wood Economy) in summer 1990. 865 private forest owners (with an estate larger than 1ha) from the regions of Jesenice, Kamnik, Polhov gradec, Vrhnika, Idrija, Ajdovščina, Nazarje, Šoštanj, Laško, Vransko, Slovenske Konjice and Radlje ob Dravi were chosen by the principle of random selection. Almost a half of the relatives of persons who died in work accidents in forests in the last 10 years (63 fatalities) were inquired as well. The results of investigation are published in the Master of Science research work "Incorporation of private forest owners in forest production" (MEDVED, 1991). As the entire methodology of work had already been prepared before the moratorium on cutting in some public forests was passed, the consequences of this measure were not assessed in this inquiry.

Only the most important results of the investigation are presented in this article. I hope these results to be useful for the work of some people (agriculture furtherers, district rangers), especially for their contacts with forest owners. Due to the power of arguments, especially the ones concerning work accidents in private forests and (un)use of individual protective outfit, the farmers might become more careful and the authorities might try to solve the more and more complicated situation in the field of private forests faster and more efficiently.

For forest owners, the forests mainly represent their working site, where they fell trees, bring wood products to the forest roads, prepare wood for winter heating, cultivate their forests, some even hunt a little, help by construction of forest roads and perform plenty of other minor, yet important jobs. A great variety of interests in private forests results in numerous different techniques of performing the forest work. The greatest differences in the way of work by individual forest owners occur by the process of wood production.

Great differences exist in the equipment for felling, and above all in the equipment for extraction and transport of forest products. There also are great differences in qualification of forest owners for these physically very demanding and dangerous works. The danger of wood production in private forests is well presented by the number of accidents, which often end tragically. For the majority of farms in mountainous regions of Slovenia, forests represent the main source of income. In low country, where smaller forest estates are prevailing, the owners usually do not depend existentially on the forest income.

## 2 THE METHODS OF WORK

The forest owners were studied according to six socio-economic estate categories. They also were classified in four groups, with regard of the area of their forest estates.

The data about the age of family members and their jobs and the data about the areas of forest estate were the main factors for classification of farms to the socio-economic categories. The following six socio-economic estate categories were suggested by agriculturists (KOVAČIČ, 1983):

- **FULL-TIME FARM:** all the family members in their active age (between 15 and 65 years) work nowhere but on a farm.
- **POTENTIALLY FULL-TIME FARM:** only the family members that do not belong to the heart of a family are employed outside of the farm.
- **PART-TIME FARM:** at least one of the active members of a family works nowhere but on a farm and at least one of the others is regularly employed somewhere else.
- **SUPPLEMENTARY FARM:** all active members of a family are regularly employed and only work on the farm in their free time.
- **SENIOR FARM:** all family members are over 64 years and they still work on a farm.
- **NONAGRICULTURAL ESTATE:** a family possesses some farming land (or forests in our case), but nobody does any work there.

By forest areas, the farms were grouped in four forest estate size classes. The size determination of forest estates was prepared after WINKLER (1987):

- the acreage of forest between 1ha and 2.99ha - very small forest estate
- the acreage of forest between 3ha and 4.99ha - small forest estate
- the acreage of forest between 5ha and 14.99ha - medium forest estate
- the acreage of forest above 15ha - large forest estate

### **3 INCORPORATION OF FOREST OWNERS IN FOREST WORK**

Forest owners perform the work in forests by themselves or together with their families, with help of hired workers or together with local forest enterprises. In considerably large area of forests nobody does the forest work - because there are a lot of forest owners, that do not even know where their forest estates lie.

In Figure 1 the realization of most important forest works (felling, skidding, timber transport, silviculture, building of skidding trails), which are performed by forest owners and their families is presented.

From Figure 1 it can be seen, that in case of agriculturally most active farms the part of work done by forest owners and their families is much greater than in case of less active socio-economic estates. The greatest part of work is done by forest owners on their own by felling and wood extraction (90% or even more work in case of full-time, potentially full-time and supplementary farms, and less than 50% in case of senior farms and nonagricultural estates). A relatively small share of transports performed by farmers (even in case of full-time farms), is a consequence of a great

share of market production. Because of that, plenty of wood transportations are realized with assistance of forest enterprises. But the activity of forest owners in the field of forest works which represent the major investments to forests (forest infrastructure - building of skidding trails, silviculture) is still insufficient.

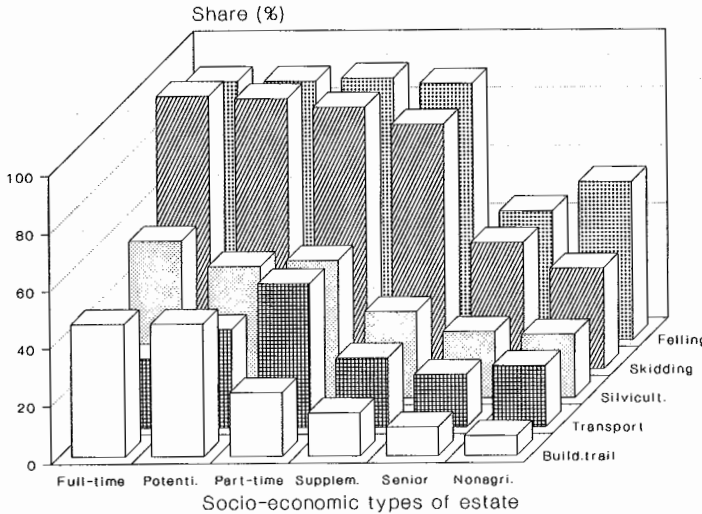


Figure 1: Forest works, performed by forest owners and their families

#### 4 TECHNICAL AND PROTECTIVE EQUIPMENT FOR FOREST WORK

It is well known that Slovene farmers are - regarding the quantity - very well technically equipped - especially with tractors. Our investigation verified this - in average there is more than 1 tractor per farm in Slovenia (in case of full-time farms even 1.8). Unfortunately, most of the tractors are rather old already - about 10 years in average. Most of the farmers also use tractors for work in forests (90%). For forest work, more and more farmers begin to use tractors with four wheel drive and almost 60% of farmers also use tyre chains. But a very worrying fact is, that one third of tractors is not equipped with protective cabine. And there are negligible few tractors with additionally reinforced cabin. The full-time farmers usually use winches for wood extraction (70%). This characteristic distinguishes them from all the other socio-economic types of landowners. Among the winches, 95% are single-drum winches, mostly used by the principle of three-point connections.

Even better than with tractors, the forest owners are equipped with chain saws (only the saws used for forest work were taken into consideration). All the types of farms - with an exception of senior farms - posses at least 1 chain saw (full- time farms 1.7).

Compared to tractors, the chain saws are even more old-fashioned, but despite that their average age is not so high (8 years). So it is understandable that over 40% of the chain saws are not equipped with chain brakes. The forest owners are extremely badly equipped with measuring instruments. The consequence is (in)accuracy and (un)quality of bucking in private forests (MEDVED, 1989).

Wood extraction performed by draught animals is becoming more and more seldom (only about 10% of forest owners still use animals for wood extraction). Two thirds of forest owners perform hand skidding and preskidding. A lot of manual work is also done by loading of wood on the trailers (70% of forest owners). Only 10% of forest owners use tractor attachments for this purpose. The wood is transported on tractor trailers (44%) and home made trailers or carts (23%).

Even if the unsuitability of technical equipment is overlooked, this should never occur in case of individual protective equipment. In Figure 2 the use of particular protective means for forest work by forest owners is presented. For a comparison and better illustration, the results of a similar investigation from Austria - Kaernten (BERNKOPF 1991) are also presented.

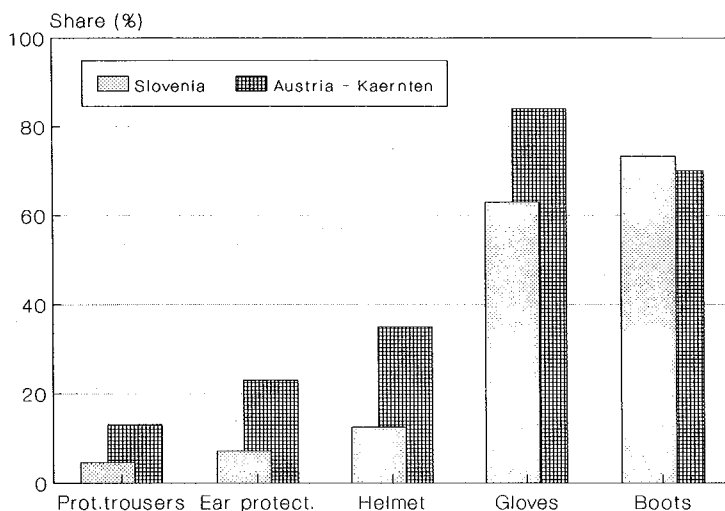


Figure 2: The use of protective outfit by work in forests

In general, conditions are the most critical in case of (un)use of protective helmets and special protective trousers by felling. The comparison with Austria shows, that also in this field we still have a lot to do before we catch Europe. The forest rangers and the whole forestry will have to spend plenty of energy for the humanization of forest work in private forests. The forest rangers keep in permanent contacts with forest owners and are thus able to inform and warn them of the dangers of forest

work. Unfortunately, a great majority of forest owners is completely convinced that they perform their work perfectly and that nothing could ever happen to them. Because of this a suitable health and social insurance legislation and legislation concerning working security of farmers would contribute a lot to the safety of forest work. Just remember the case concerning the use of safety belts in cars! How much it was discussed whether the demand for their use was justifiable or not. Now this is legalized, and nobody argues about it any more; just the drivers that do not use safety belts have to pay penalties.

The forestry branch will have to keep informing the forest rangers about the development of technical equipment for work in forests, so that they would be able to advise the forest owners when buying new equipment. In Slovenia, plenty of rather unexpensive equipment is available, which is because of its technological obsolescence no longer used in western countries. Due to the lower prices, such equipment has a lot of buyers among the forest owners that are not acquainted with the situation.

## **5 (UN)SAFETY BY THE FOREST WORK AND THE CONSEQUENCES**

In the last 10 years in average 15 fatalities annually took place in private forests. To this tragic number the 20 fatalities which each year occur by work with farm tractors could also be added (DURJAVA, 1990).

In private forests a fatality occurs on every 100 000m<sup>3</sup> of net annual cut. In Slovenian state forests, a fatality only occurs on every 1.300.000m<sup>3</sup> of annual cut. With regard to the quantity of annual cut, a 100% more fatalities occur in private forests of Slovenia than in the private forests in Austria (the comparison was done for the year of 1987).

The greatest number of fatalities take place in the areas of Murska Sobota, Brežice, Novo mesto, Kranj and Celje. 60% of fatalities occur during the working days of a week and 40% on Saturdays and Sundays. From this it could be concluded, that the majority of forest owners is regularly employed and thus has not enough time for forest work during the working days of a week.

The greatest number of fatalities happen by felling (66%), one fifth by wood extraction (20%) - 2% out of the 20% by hand skidding and all the others by tractor skidding. The remainder of accidents happen by loading and transportation of timber (14%).

Most accidents are a consequence of a hit of a falling tree (29%). It happens very often, that the worker who cuts a tree, fells it on his fellow-worker. Releasing of lodged trees is the second most dangerous forest work (11% of fatalities). Among fifteen such cases, only twice a suitable method of releasing was chosen. Most often the fatality occurred by felling of the tree, upon which the other tree was hanged-up. The

following operations share the third place: felling and manufacturing of the trees, injured or partially felled by weather rigours, load ride by tractor skidding and full-load transportation (9% of fatalities each). The next cause of accidents are falling branches and treetops. The inquired relatives of the victims told, that none of them used protective helmet by work in the forest.

The injuries of head were the main cause of fatalities (58%) and the injuries of thorax the second one (22%). All other parts of the body were mentioned as a cause of fatality in less than 10% of accidents.

Some forest owners, chosen by the principle of random selection, were asked a few questions about the accidents by forest work. On every fifth farm, at least one accident has happened by forest work in the last 10 years. The accidents happened most often in case of full-time farms (every third farm) and potentially Full-time farms (every fourth farm).

It was found out that the best indicator of frequency of the accidents is the forest estate area, while the socio-economic type of estate almost has no influence on it. The senior farms are an exception - the injuries are much more frequent there although the least work is done by the owners (Figure 1). The trend of decreasing frequency of accidents by increased forest estate can be clearly seen from Figure 3. In case of small forest estates the accidents are four times more frequent than in case of estates larger than 15ha - with regard to the acreage of forests as well as with regard to the quantity of forest production.

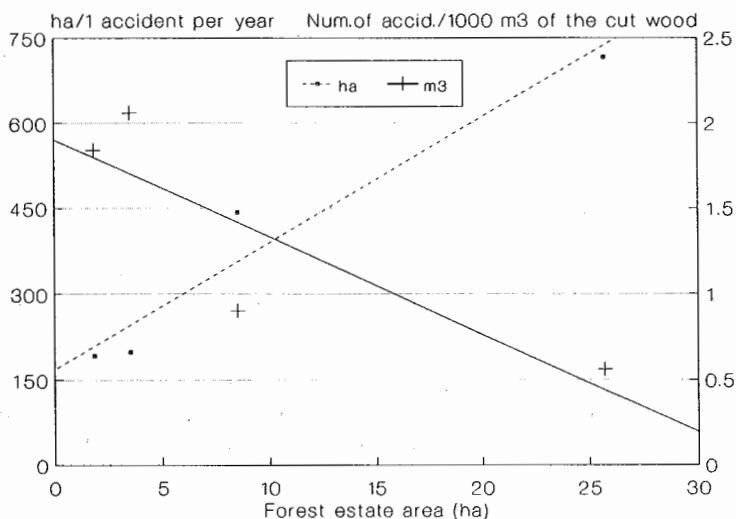


Figure 3: The frequency of accidents in forests, with regard to the forest estate area



Because of a possibility of comparison, the results of some foreign investigations are presented as well. In the German countries Niedersachsen and Bayern, 0.58 respectively 0.4 accidents happened per m<sup>3</sup> of the wood cut in private forests (REHSCHUH and co-workers, 1984). The calculations show, that annually one accident happens per 890ha of forest in Niedersachsen and one per 540ha of forest in Bayern.

The accidents by various phases of work and working operations (Table 1) were compared to the results from the private forests of Austria (STADLMANN, 1986). The comparison is presented, because the results of ours are gotten by the inquiry of a random sample of farmers, while in Austria a special form has been issued for registration of accidents in forests by the Farmers Social Insurance Organization of Austria (Socialversicherungs-anstalt der Bauern).

Table 1: The structure of accidents by various phases of working operations (shares in %)

Phase of work/ Working operation	The IGLG inquiry 1990	Austria 1986
<b>FELLING AND MANUFACTURING</b>	61	73
- Trimming	25	24
- Barking	1	1
- Passages	1	3
- Other working operations	34	45
<b>SKIDDING</b>	32	16
- Tractor skidding		7
- Hand skidding		9
<b>LOADING AND TRANSPORTATION</b>	5	3
- Loading	1	
- Transport	4	
<b>SILVICULTURE</b>	2	4
<b>OTHER ACTIVITIES</b>		4

In Slovenia, there are relatively more accidents by skidding and transportations of wood. The most probable reason for this is, that more old-fashioned and for forest work unsuitable tractors are used. Because of that, the relatively smaller share of accidents by felling does not mean, that absolutely less accidents occur in Slovenia than in Austria.

Because of the insufficiency of data for Slovenia, the consequences of injuries in forests were evaluated by help of the Austrian statistics. The many years' average of accidents in private forests of Austria (from the social insurance records) is 2553 accidents annually. 15.5% of accidents (395 annually) ended by permanent invalidism

and 0.78% (20 annually) with death. These data are valid for the period of 1974-1984 (STADLMANN, 1986). With our inquiry it was found out that 17% of injuries in Slovene forests were very bad (so bad, that more than 4 months of medical treatment were needed). Being acquainted with the extent of invalidity in Austria it could be concluded, that the consequence of these 17% of accidents in Slovenia was at least partial invalidity in most cases.

The number of all the accidents in private forests of Slovenia is not known. We tried to find it out by two methods:

- the share of fatalities among all accidents in private forests of Austria is well known, as well as the number of fatalities in private forests of Slovenia,
- with the results of our inquiry (forest area/1 accident yearly - MEDVED, 1991, p.77).

Using the first method it can be concluded, that in private forests of Slovenia in average 1910 accidents occur yearly (which would be the concern of Social Insurance, if they happened in Austria). According to the inquiry 2065 accidents happen per year. The difference of results of two completely independent methods is only 8%. Regarding the conditions in Austria it could be concluded, that each year in our forests at least 2000 accidents happen, which will sooner or later have to become the concern of the Social Insurance of Slovenia.

In all the following calculations for Slovenia, the number of 2000 forest accidents per year will be used. If once again the Austrian results (15.9% of disabled persons) are taken into account and the proportion is used for the calculation of the extent of accidents in Slovenia, it could be concluded, that about 300 of the people, who are injured by work in private forests in Slovenia in one year, remain permanently disabled.

After an accident, medical treatment is necessary in most cases. With regard to the injuries, the hurt person is medically treated in hospital, in outpatients' department or at home. Medical treatment is not necessary only in case of slight injuries. As no data exist about the extent of the latter, they are not registered in the statistical evidence. According to the evidence of Austrian Social Insurance for Farmers, hospital treatment is necessary for 43.3% of forest accidents, treatment as outpatient in 43.1% and medical treatment at home in 13.1% of accidents. Only 0.4% of persons are so slightly injured, that they need no medical help.

The time of hospitalization depends on the type of injuries and on the method of medical treatment. In average, the duration of hospital treatment after forest accidents is 2 weeks. A special trouble is incapability for work - a patients' status. In average, this status lasts for 32 days (from the same source).

In Germany, Austria and Switzerland the average costs of medical treatment of persons, injured in forest accidents, were evaluated. Different methods of evaluation were used. The costs were from 2700 DEM per accident (BLASCHKO, 1983), where only the direct expenses were taken into consideration, to 4400 DEM, where all the

indirect expenses were also considered. For the Swiss conditions, BUTORA (1982) made a calculation, that the average costs per accident were 3700 SFR.

Supposing that an accident costs 3000 DEM in average, and that at least 2000 accidents happen each year in the private forests of Slovenia, the annual costs of medical treatment of the persons injured by work in forests are 6.000.000 DEM per year (60 000m<sup>3</sup> of timber at price of 100DEM/m<sup>3</sup>) - that is 3% - 4% of the value of the entire annual cut of the private forests in Slovenia.

The analyses of forest accidents are maybe not of a great importance for the work in forest districts, but they are the most important basis for explanation of pretentiousness and danger of forest work and the consequences of forest accidents. In any case, these results will have to be taken into consideration by the young State of Slovenia, which will have to decide whether to earmark more money for prevention of accidents or to pay medical treatment, invalid pensions and pensions to the relatives of the victims of fatalities in forests.

## **6 THE EXPECTATIONS AND THE NEEDS OF FOREST OWNERS**

The education of forest owners is not very well organized in Slovenia. Their readiness and sometimes eagerness for education is not well known, so the fields of education for them are rather hard to imagine (MEDVED, 1989). Because of this, the forest owners were inquired, whether they thought they should have more knowledge for work in the forests (Figure 4).

The number of affirmative ("YES") answers was proportional to their attachment and dependence on forests. Those, who work a lot in the forests and who also have rather some experience, share the opinion, that they should have more knowledge for the more effective and less dangerous work in the forests. The cause of deviation in case of inactive owners of large forest estates is most probably in a too small number of inquiries within this category of forest owners.

For all the people, who will in future organize education for forest owners, it is necessary to know the fields and topics of education in which the forest owners are especially interested. The data concerning the most important of these fields are presented in Figure 5.

The smaller the farming activity, the smaller the interest in further education. The greatest interest in education exists on full-time farms and the lowest on senior farms. To everybody, the education in felling is the most important. Silviculture is the second topic of interest, followed by the sale of timber, the protection of forests and the tractor skidding.

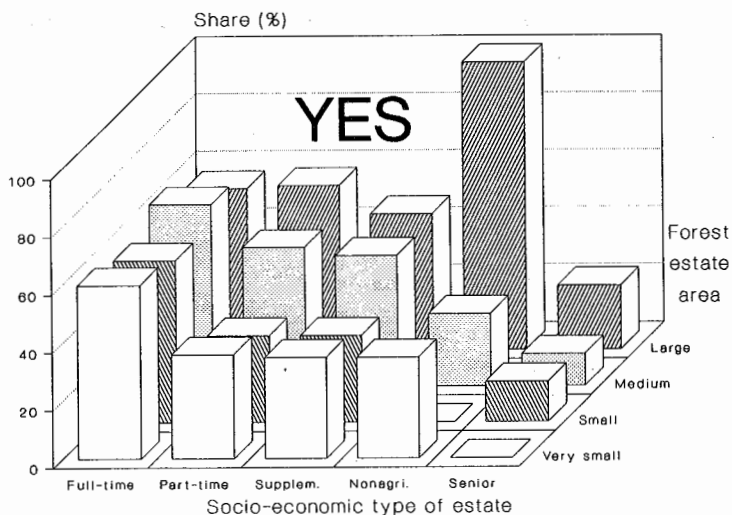


Figure 4: The share of affirmative answers about the greater knowledge needed for work in forests

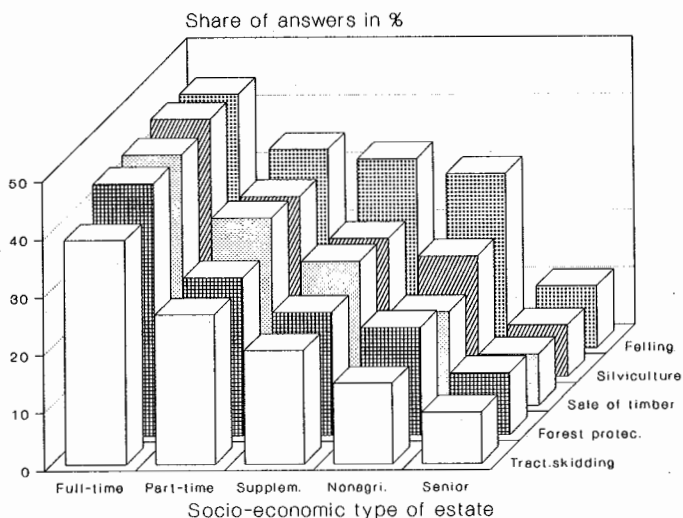


Figure 5: In which fields would you like to improve your knowledge? (the share of affirmative answers in %)

Until now, the education for forest owners has mainly been organized by forest enterprises. The Centre of Forestry Schools in Postojna (GŠC) only joined this activities from time to time. This could be well observed from the answers, where the education should take place. For mass education, the home surroundings within the local forest enterprises is the most suitable. Yet, there are quite some farmers,

who would also gladly join the courses organized in Postojna, so it would only be reasonable to start thinking about better exploitation of the capacities of the Centre of Forestry Schools for the needs of private forest owners.

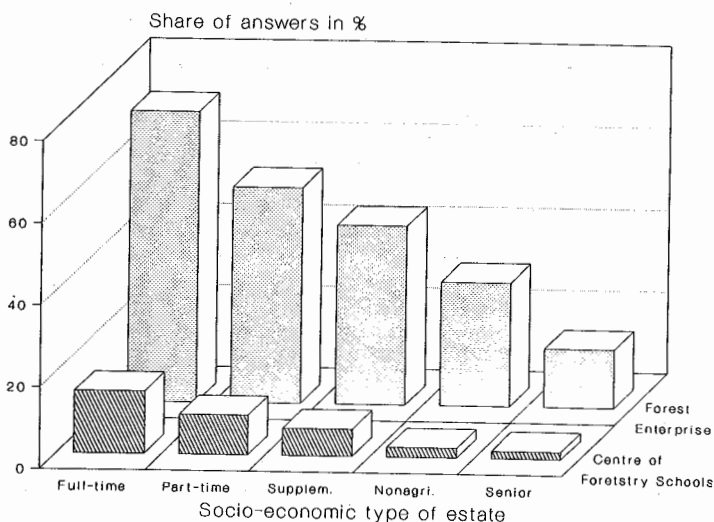


Figure 6: Where should the education for forest work take place

More than two thirds of forest owners think that they will still need professional assistance for forest management in future. The smallest interest for such assistance was showed by the owners of senior farms (55%) and by the owners of nonagricultural estates (63%). More than 70% of the owners of forest estates larger than 5ha are convinced, that professional assistance is necessary. Only 57% of the owners of forest estates of 3 - 5ha believe, that they might need help, while the situation in case of forest owners with 1 - 3ha is different - 63% think, that assistance will be necessary.

Because the "professional assistance" is rather a wide notion, some more particular questions have also been raised about the main activities, connected to forest management: marking of trees for felling, execution of felling, execution of skidding, removal of timber, silviculture, building of forest roads and skidding trails, inventory of forests, advising about new equipment and crediting. The differences in answers about the expected professional assistance among the various socio-economic classes of forest owners are much smaller, than by any earlier questions. Because there are no characteristic differences, only the average values of expected professional assistance by single working processes are presented (TABLE 2).

Table 2: By which activities in forests would you like to have professional assistance or help for the execution of work? (shares in %, n = 865)

Activity	Professional assistance		
	Not expected	Expected	Rank
Marking of trees for felling	48,7	51,3	1
Execution of felling	94,8	5,2	8
Execution of skidding	95,0	5,0	9
Removal of timber	74,9	25,1	7
Silviculture	66,1	33,9	5
Building of roads and skidding trails	59,3	40,7	2
Inventory of forests	63,6	36,4	3
Advising and crediting	74,0	26,0	6
Education	66,0	34,0	4

The opinions of forest owners about the necessity of professional assistance for different phases of work vary significantly. By the majority, assistance is expected for the marking of trees for felling and for building of forest roads and skidding trails. Inventory of forests, education and silviculture are the following three activities on the rank-list. The least assistance is expected for all the three phases of timber production: felling, skidding and transportation of wood.

## 7 CONCLUSION

In spite of organizational and business changes in forestry, the continuous activity of forest ecosystems and also the business interests of all the forest owners will have to be maintained and supported. Due to the fact, that two thirds of Slovene forests already are private property, and this share is certainly going to grow bigger in the years to come, and due to the expected changes of forest legislation as well (free market for timber, greater obligations of forest owners by their forest work, changes in fiscal policy,...), all the people competent for this field will have to change their way of work and intensify their activities - especially the advising, education and guidance of forest owners.

Because of the importance of their duties, the forest rangers - who are the ones to keep permanent contacts with forest owners - will no longer be able to do everything by themselves. Professional assistance of educational, research and other state institutions will be needed for additional training of the existing cadres and for adequate education of the new ones.

Because of the needs for training, education and professional assistance, expressed by farmers and other forest owners, the state and society are obliged to make this education possible and the foresters are obliged to cooperate professionally with forest owners much more intensively and creatively. The need of further guidance of forest owners is also showed by a great number of accidents among them. And forest decline as well dictates to the society and foresters to help forest owners, because it is not possible for the forest owners to solve the consequences of pollution of the environment (which influence the forest ecosystems) by themselves. We are also obliged to do this, because the Slovene public has declared forest decline the first and major problem among all the ecological problems of our environment.

## 8 SUMMARY

For different private forest owners, the forests have different value. The forest owners were therefore classified by two criteria: by the socio-economic category and by the forest estate area. The following six socio-economic categories of farms were defined: full-time farm, potentially full-time farm, part-time farm, supplementary farm, nonagricultural estate and senior farm. By the forest estate areas, the owners were categorized in four classes: 1ha - 2.99ha, 3ha - 4.99ha, 5ha - 14.99ha and more than 15ha. The owners with an estate smaller than 1ha, were not included in the investigation.

Most of the felling and tractor skidding (more than 85%) is performed by the forest owners and their family members on their own, only in case of senior farms and agriculturally nonactive estates, hired workers are more frequent. The participation of forest owners in silvicultural work is below 50%, especially in case of supplementary farms and senior farms and in case of agriculturally nonactive estates. Plenty of silvicultural work is done by forest enterprises, yet a lot still remains

undone.

Forest owners are very well equipped with chain saws. The average age of saws is 8 years. Only one half of the saws, used for forest work, are equipped with chain brakes. Most of the tractors are owned by full-time farmers and those with medium or large forest estates. In average, the tractors are 10 years old, 22% of the tractors do not have a protective cabin, and only 12% are equipped with a roll bar.

The forest owners only seldom use protective outfit - especially the protective trousers, protecting against cuts by chain saws. Some more forest owners have protective helmets, yet they only rarely use them.

In average, 15 fatalities in forests occur in Slovenia each year. The comparison of the Austrian data concerning forest accidents with the results of our inquiry shows, that approx. 2000 serious accidents occur in our private forests every year. 15% of victims are invalids for life. Forest work accidents are more frequent on the estates smaller than 5ha. The most often forest accidents happen on senior farms. The rehabilitation of injuries, resulting from forest work, lasts for a month in average; half of this time is usually needed for hospital treatment. The average costs of medical treatment of the injured vary from 2700 DEM to 4400 DEM per injury (foreign authors).

The willingness to participate in education is relatively high among forest owners, especially among the farmers in their active age and among the owners of large forest estates. There is quite some interest for education within regional forest enterprises. Two thirds of the forest owners expect professional assistance offered by forestry service also in the future. By their expectations of assistance, the help by tree marking is placed in the first position.



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1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. This section outlines the various methods used to collect and analyze data.

3. The following table provides a summary of the key findings from the study.

The data shows a significant increase in the number of transactions over the period studied. This is primarily due to the implementation of the new system, which has streamlined the process and reduced the time taken to complete each transaction. The results also indicate that the new system has led to a decrease in the number of errors, which is a positive outcome for the organization. The overall trend suggests that the new system is well-received and is being used effectively.

It is important to note that the data is based on a sample of transactions and may not be representative of the entire population. Further research is needed to confirm these findings and to explore the long-term effects of the new system.

The data also shows that the new system has led to a decrease in the number of transactions that are delayed or incomplete. This is a significant improvement over the old system, which often suffered from these issues. The results suggest that the new system is more efficient and reliable than the old one.

Overall, the data indicates that the new system is a success and has led to a number of positive outcomes for the organization. The results are encouraging and suggest that the new system is worth the investment.

The data also shows that the new system has led to a decrease in the number of transactions that are cancelled or returned. This is a positive outcome for the organization, as it indicates that the new system is more user-friendly and easier to use than the old one.

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