

Forest visitors' opinions on the importance of forest operations, forest functions and sources of their financing

L. ŠIŠÁK

Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Prague, Prague, Czech Republic

ABSTRACT: The survey was conducted in three selected areas of the Czech Republic in 2008, with the results processed in 2009. Forests visitors received inquiry forms (face to face interviews, random sample). The total number of visitors on 8 survey days was 7,369. The total number of filled-in questionnaires in the three areas was 1,122. Tree planting and tree protection are considered as the most important forest operations, followed by road and stream bank maintenance. On the contrary, timber transport and harvesting are considered as the least important activities. The nature-protecting function is considered as the most important forest function, followed by soil-conservation, climatic, hydrological and health (recreational) functions. Timber production and non-timber production are the least important functions according to the respondents. 20% of respondents claimed that increased costs needed to improve non-market forest functions, used by the visitors, should be partially or fully financed from the timber sales revenues, while only 6.5% of respondents say the costs should be partially or fully financed from payments by the users of forest functions.

Keywords: Czech Republic; forest functions; forest operations; importance; sources of finance

An objective survey of what forest visitors know about the issues in question is a very important informative source for forest policy and forestry public relations plans and activities. Many inhabitants of the Czech Republic (CR) are keen forest visitors, and are obviously influenced by all kinds of information, media, family and school education. It is rather complicated to inquire about visitors' opinions on forest functions, on the importance of forest operations and on sources of financing forest functions. The questions in the survey have to be appropriately formulated, as most forest visitors are not acquainted with the issues of forestry, forest functions and their providing.

The survey is a part of a Research Project supported by the Grant Agency of Lesy ČR, state enterprise (Forests of the Czech Republic, FCR) *Evaluation of the socio-economic importance of recreational forest functions in selected areas of the FCR in 2007–2009* (ŠIŠÁK et al. 2009; POSPÍŠILOVÁ, ŠIŠÁK 2009). Methodical support of both theoretical and practical

aspects of the survey came from Research Project No. QH71296 *System of evaluation of the importance of socio-economic forest functions including criteria and indicators of multifunctional forest management*. The structure of forest functions and their evaluation have been discussed in many publications; systems of forests functions are also manifold (lately, for example: MERLO, CROITORU 2005; MAVSAR et al. 2008; ČABOUN et al. 2010). The survey also made use of previous research projects in this field in the Czech conditions (ŠIŠÁK 1996, 2006; ROČEK 1997; ŠIŠÁK et al. 2007). The structure of forest functions was formulated in accordance with what the forest visitors in the CR know about forest and its functions. Forest visitors' opinions on the respective issues were surveyed for the first time in the CR. Nevertheless, the visit rate in the forests of the CR has been monitored annually since 1994 (ŠIŠÁK et al 1997; ŠIŠÁK, PULKRAB 2009), though only in the framework of the whole CR, using a representative sample of respondents (quota sample).

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MATERIAL AND METHODS

The survey was conducted in three selected areas of the CR in 2008, with the results processed in 2009. Forest visitors received inquiry forms (face to face interviews, random sample). Properly instructed surveyors at 12 signposted stands in selected localities distributed inquiry forms to visitors who filled them in. The surveyors explained any unclear points to the respondents. Visitors were asked not only to share their opinions but also to provide basic personal information (age, sex, education, population of their home town or village, distance from the selected area).

Three localities were selected, all with an above-average forest visit rate and high recreational and tourist importance. The localities included a mountain area (Nová Louka in the Jizerské hory Mts. in the north of CR), a highland area (Pasecká skála in the Czech-Moravian Highlands in the central part of CR) and a lowland forest (Knížecí les in the south-eastern part of CR by the Svatka River).

Data were collected in the selected localities on eight days in 2008. To be methodologically compatible, the survey was carried out on the same days of the week, one half of the days being weekdays, the other half being weekend days, in all four seasons of the year (spring, summer, autumn, winter). The questions were worded as follows:

- (1) To what extent is it necessary to carry out forest operations, with their classification into timber transport, protection and maintenance of stream banks in forests, young tree protection, road maintenance, tree planting and timber harvesting. The respondents were asked to mark the importance on a scale from 1 (the most important) to 5 (the least important).
- (2) What functions should be provided by the Forests of the Czech Republic, with their classification into timber production, non-timber production, hydrological functions, soil conservation, and climatic, health (recreational) and nature protection functions. The respondents were asked to mark the importance on a scale from 1 (the most important) to 5 (the least important).
- (3) What source of finance should be used for covering the costs of increased realization of non-market forest functions – from timber sales revenues, from state budget, other public budgets, international sources, payments from users of forest functions. The respondents ticked off one of the three alternatives: fully, partially, not at all.

The importance of forest operations and the realization of forest functions by the FCR were marked using a five-mark scale: 1 – the most important; 5 – the least important. The order of importance 1–5 was adjusted according to the weight of the number of respondents' answers, like in the case of some forest operations and forest functions to which the respondents attributed low importance or in which the number of answers was very low, especially in the case of low importance (4, 5), and that degraded the importance of the respective activities even more. The adjusted order takes into account this influence.

RESULTS

In all, the surveyors counted 7,369 visitors on 8 census days, from 8 a.m. to 4 p.m. (4 weekdays – Wednesday and 4 weekend days – Saturday). Out of them, 36% of visitors were counted in winter season, 30% in summer season, over 29% in spring season and less than 5% in autumn.

In the three localities together, 1,122 questionnaires were filled in, 30% of respondents rejected to answer the questions, the main reason being their lack of time (especially in the case of bikers and skiers). On average, for almost 16% visitors it was their first visit to the locality, 40% visit the locality once or twice a year and 44% more often. It means that the localities are quite popular and many visitors return there. It might be an important fact for public relations development.

Another important factor for PR might be the education of forest visitors in the respective areas. 37% of visitors were persons with university degree (CR claims 9% of the population with university degree), 41% had secondary education with graduation examination (28% in CR), only 15% of visitors had secondary education without graduation examination (though it is 38% in CR) and 7% of visitors had only primary education (23% in CR). It implies that the education of visitors, albeit slightly distorted by the random sample and by possible willingness or unwillingness to fill in the form, is substantially higher than the average of the population in CR.

The size and population of the visitors' home town or village is another important factor for PR and for evaluation of their knowledge and opinion on forests and forest management. The localities were visited by 19% of people coming from Prague (the population over 1 mil.) while Prague citizens account only for 12% of the Czech Republic population. Visitors from cities with over 100 thousand

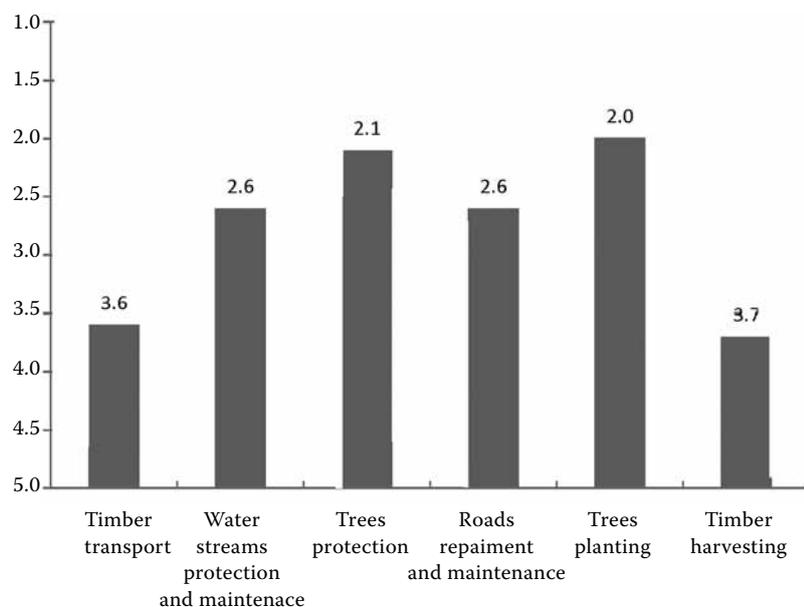


Fig. 1. Opinions on the importance of forest operations (scale of order: 1 – the most important, 5 – the least important)

citizens accounted for 21%, while their percentage in CR is only 12%.

Importance of forest operations

Respondents consider tree planting and tree protection as the most important forest operations. Road and water stream protection and maintenance follow, while timber transport and timber harvesting are considered the least important (Fig. 1).

Forest operations can be related, to a certain extent, to forest functions as timber harvest and timber transport are related to the forest function of timber production, and there is also a link between the other particular operations and individual environmental and/or social forest functions. No significant difference between the opinions of forest visitors from large cities and from rural areas was determined.

Importance of realization of forest functions

Among the forest functions that should be provided by the FCR is nature protection at the first place, followed by soil conservation, climate protection, hydrological function, health (i.e. recreational) function, timber production function and finally non-timber production function (Fig. 2).

Reimbursement of costs of increased non-market forest functions

For the first time in CR, respondents were asked about possible financial sources for the increased costs of improved non-market forest functions of which they are users and which do not bring any revenues. Their suggestions are surprising. 6.3% of respondents suggested that the improve-

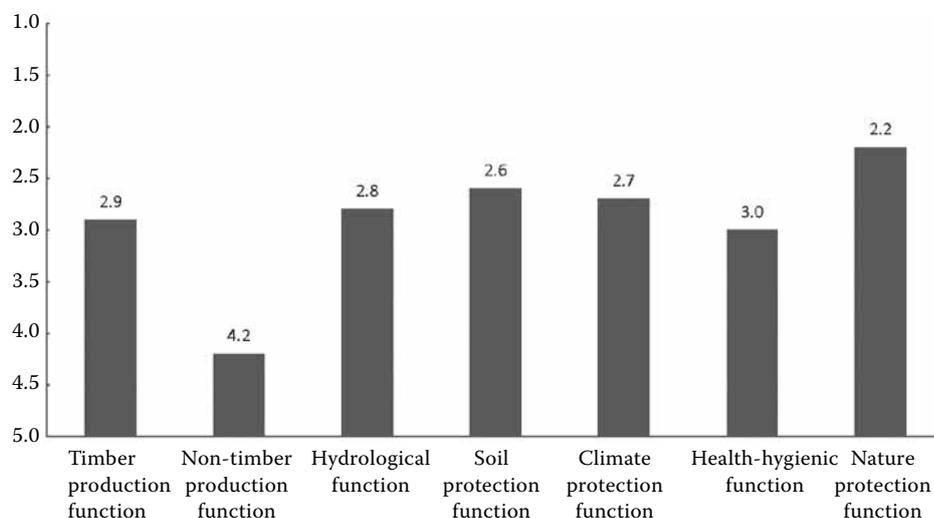


Fig. 2. Importance of forest functions (scale of order: 1 – the most important, 5 – the least important)

Table 1. Sources of finance for non-market forest functions from the point of view of the visitors (frequency and percentage of respective classes)

Source of finance	Frequency			Percentage		
	totally	partially	not at all	totally	partially	not at all
Revenues from timber sales	261	567	52	6.3	13.7	1.3
State budget	229	620	48	5.5	15.0	1.2
Other public budgets	59	632	118	1.4	15.3	2.9
International sources	65	426	269	1.6	10.3	6.5
Payments by forest functions users	31	237	454	0.8	5.7	11.0
Not known	63	1	1	1.5	0	0

ment of non-market forest functions which they use should be fully financed from timber sales revenues, 13.7% partially from timber sales revenues and only 1.3% claim they should not be financed from timber sales revenues. It means that 20% of forest visitors in CR who use non-market forest functions want to transfer the costs of such improved forest functions to the forest function of timber production which is, nevertheless, significantly limited and even impaired by their demands as they increase the costs of timber production and lower the revenues. By persisting on these suggestions the respondents would paradoxically destroy the market basis, in other words the suggested source of financial means for non-market forest functions (Table 1).

When public sources are concerned, 5.5% of respondents prefer financing the non-market forest functions fully from the state budget, 15.0% partially from the state budget, and only 1.2% suggest not to cover the costs from the state budget at all. Only 1.4% of respondents want to cover the costs of non-market forest functions fully from regional and municipal budgets, 15.3% partially, and 2.9% not at all. 1.6% of respondents suggest covering the costs of non-market forest functions fully from international sources (EU), 10.3% partially, and 6.5% not at all, even though the beneficial and wholesome effects of non-market forest functions are used especially by home respondents.

It is also surprising that only few respondents are willing to pay directly for the non-market forest functions. Only 0.8% of respondents agree that the increased costs of improved non-market forest functions should be covered from payments by users of forest functions; only 5.7% suggest at least the partial coverage of these costs from payments by users of forest functions. As many as 11.0% of respondents think that the costs of improved non-market forest functions should not be paid for by their users at all.

These opinions are very surprising and in this sense they contradict the principles of market economy. It is necessary to seriously consider them in respective PR activities and keep surveying them.

CONCLUSION

The survey confirmed that all three localities, i.e. Nová louka, Pasecká skála and Knížecí les, have a high turnout of visitors. Numbers of visitors vary to some extent according to different size, accessibility, recreational and sports facilities and recreational attractiveness of the localities. The most important forest operations, according to respondents, are tree planting and protection followed by road and water stream bank maintenance. Timber transport and timber harvesting are considered as the least important activities (differences among the localities are insignificant). The most important forest function to be provided by the FCR is the function of nature protection followed by soil conservation, climatic, hydrological, health (i.e. recreational) function, and timber production function (their importance is descending only slightly). The least importance is assigned to the non-timber production function (rather low importance in comparison with the previous functions). Differences among the localities are insignificant. It means that the respondents who came to the forest seeking recreation and relaxation advance their interests (though maybe inadvertently) and they may also be influenced by the information environment in CR.

The opinion on forest operation importance is though incompatible with the visitors' opinion on the coverage of increased costs of non-market forest functions. 20% of respondents suggest that non-market forest functions they use should be fully or partially financed from timber sales revenues. A larger proportion of respondents think that the in-

creased costs of non-market forest functions they use should be covered from public budgets – state, regional or municipal budgets as well as international budgets. On the other hand, most respondents disapprove of covering the increased costs of improved non-market functions from payments by the users (differences among the localities are insignificant).

Forest visitors apparently adhere to the opinion that increased costs of forest functions they use should be paid for by someone else than the users, but such an attitude poses a problem in market economy and society and reflects fixed stereotypes of the past. The survey implies substantial ambiguity, lack of objectiveness and incoherency of opinions and attitudes of the respondents, possibly caused by ignorance and misinformation brought about by school education (and education in general) and mass media on the socio-economic multifunctional nature of forests and forest management.

The survey clearly shows the opening gap that needs the attention of PR in the forestry sector. It is necessary to improve communication between the forestry sector and the public, to support education and objective information about the real socio-economic conception of forest functions and their financing. The results of the survey have to be verified and analyzed by further research in this field.

References

- ČABOUN V., TUTKA J., MORAVČÍK M. et al. (2010): Research, classification and application of forest functions in landscape. Report for the final opponency of a research and development project. National Forest Centre, Forest Research Institute, Zvolen: 267. (in Slovak)
- MAVSAR R. et al. (2008): Study on the Development and Marketing of Non-Market Products and Services. [Study Contract N: 30-CE-0162979/00-21.] DG AGRI: 127.
- MERLO M., CROITORU L. et al. (2005): Valuing Mediterranean Forests. Towards Total Economic Value. Wallingford, CABI Publishing: 406.
- POSPÍŠILOVÁ V., ŠIŠÁK L. (2009): Forest frequentation in chosen localities of the Czech Republic. In: MARUŠÁK R., KRATOCHVÍLOVÁ Z., TRNKOVÁ E., HAJNALA M. (eds): Proceedings of the Conference Forest, Wildlife and Wood Sciences for Society Development. Prague, 16.–18. April 2009. Prague, Czech University of Life Sciences, Faculty of Forestry and Wood Sciences: 223–230.
- ROČEK I. (1997): Investigation of the Czech Republic inhabitants attitudes to forest and forestry management. [Research report.] Prague, Faculty of Forestry of CULS Prague: 65. (in Czech)
- ŠIŠÁK L. (1996): Forest frequentation by inhabitants of Czech Republic. *Lesnictví-Forestry*, **42**: 245–253. (in Czech)
- ŠIŠÁK L. (2006): Importance of non-wood forest product collection and use for inhabitants in the Czech Republic. *Journal of Forest Science*, **52**: 417–426.
- ŠIŠÁK L., PULKRAB K. (2009): Social Importance of Non-market Forest Production and Collection in Czech Republic – Fifteen Years of Systematic Investigation. Praha, Grada Publishing, a.s.: 110. (in Czech)
- ŠIŠÁK L., PULKRAB K., KALIVODA V. (1997): Importance of forest frequentation and main non-timber forest products collection by inhabitants of areas with forests affected by immissions. *Lesnictví-Forestry*, **43**: 245–258. (in Czech)
- ŠIŠÁK L., ŠACH F., KUPČÁK V., ŠVIHLA V., PULKRAB K., ČERNOHOUS V., STÝBLO J. (2007): System of valuation of socio-economic forest functions importance including criteria and indicators of multifunctional forest management. Periodical report. [Research Project QH71296.] Prague. Faculty of Forestry and Wood Sciences of the CULS Prague: 105. (in Czech)
- ŠIŠÁK L., PULKRAB K., POSPÍŠILOVÁ V., SLOUP R., VENTRUBOVÁ K., STÝBLO J. (2009): Valuation of recreational forest functions socio-economic importance in selected areas of the Forests of Czech Republic, state enterprise. [Research Report.] Prague, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences: 118. (in Czech)

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Corresponding author:

Prof. Ing. LUDĚK ŠIŠÁK, CSc., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, 165 21 Praha 6-Suchdol, Czech Republic
e-mail: sisak@fld.czu.cz
