

Lithuanian Private Forestry: the Situation, Tendencies and Problems

DIANA MIZARAITĖ*, STASYS MIZARAS AND LIANA SADAUSKIENĖ

Department of Forest Resources, Economics and Policy; Institute of Forestry, Lithuanian Research Centre for Agriculture and Forestry; Liepu-1, Girionys LT-53101, Kaunas district, Lithuania; Phone: +370-37-547221, e-mail: ekonsk@mi.lt

Mizaraitė, D., Mizaras, S. and Sadauskienė, L. 2010. Lithuanian Private Forestry: the Situation, Tendencies and Problems. *Baltic Forestry* 16 (2): 296–302.

Abstract

This paper is based on a comparative analysis of private forest owners' sociological surveys in the years 1999 and 2008. In Lithuania, private forestry arose during the last decade. Today, the private forest sector includes 236 thousand private forest owners. The annual volume from the felling in private forests is approximately 2.3 million m³ (State forest survey service, 2008). The regeneration of private forests is satisfactory and the number of recorded illegal cuttings is decreasing. Over 30 thousand individual forest management plans have been prepared for private forest estates. During the last ten years, the private forests' management legal basis and system of private forests supervision were created and the new system for private forest owners' advising and training was initiated.

During the study period, the relative importance of private forest owners' various objectives changed. The importance of wood for home consumption slightly increased. However, the interest in obtaining an income from the wood trade and developing recreational areas became less important. Furthermore, the number of forest owners who either purchased or inherited forest estates significantly increased.

The level of importance of various forest estates management problems also changed. The problem of the strict regulations on private forest management decreased in importance during the last ten years. The most important problem for private forest owners was that the forest estates were inefficient for farming due to their small size. The number of private forest owners willing to sell their forest estate decreased. The majority of private forests owners intended to retain the forest estates and to give the property rights to inheritors in the future. The new EU financial support process arose during the last years. Approximately 16% of respondents intended to apply for financial support from EU funds.

The tendency of the expansion of private forests was observed. The existing problem of the private forest owners' lack of education and training could be solved by establishing private forest services in municipalities. Furthermore, the compensation system should be improved in the future by compensating for losses in already protected areas.

Key words: private forests, owners, initial state, survey and tendencies

Introduction

Private forestry arose in 1991 in Lithuania through the restitution to the owners and inheritors of the forests. The area of private forests is 783.7 thousand ha (State forest survey service 2009), which is 36.6 % of the total forest area. The private forest sector currently includes 236 thousand private forest owners. Statistical data on the number of private forest owners in Lithuania as well as the size and characteristics of their estates are available. However, there is no social or economic data (such as the social structure of private forest owners, their education, ownership objectives and problems, their attitude towards their property, etc.).

Knowledge of forest owners' values, attitudes and ownership objectives are of crucial importance in understanding and predicting forestry behaviour in pri-

vate woodlots. This type of knowledge should be available to policy makers to ensure that effective and efficient forest policy instruments are designed (Ni Dhubhain et al. 2006). This field of inquiry is relatively young in forest science and a majority of the work was conducted in the last couple of decades (Hugoson and Ingemarson 2004). Forest owners' goals, motivations, values and management behaviours were studied by Lönnsted (1997), Lönnsted and Törnqvist (1990), and Karppinen (1998, 2000). The first sociological survey of Lithuanian private forestry was performed in 1999 (Mizaraitė 2001). Through this survey, social and economic data on private forestry were collected (e.g., the social structure of private forest owners, ownership objectives and problems, attitudes towards their property, etc.). During the period 1999–2008, private forestry underwent substantial changes.

However, few scientific researches that analyse the peculiarities of the formation of private forestry in Lithuania have been carried out.

The aim of the current study was to describe the situation and changes (ownership structure, forest owners' values, objectives etc.) in the private forestry of Lithuania during the period of 1999-2008.

Material and methods

The situation of private forestry in Lithuania was described by using private forest statistics offered by the State Forest Survey Service (different years), Lithuanian forestry statistic publications (different years), reports of scientific research and surveys on various private forestry issues. The changes in private forestry during the period 1999-2008 were analysed by comparing the data of the private forest owners' surveys carried out in 1999 (Mizaraitė 2001) and 2008. Both surveys were collected through the same methods. The data were processed using general scientific research methods such as comparison, modeling and generalisation.

The first survey of private forest owners in Lithuania was carried out in 1999. At that time, there were 85.5 thousand private forest owners in Lithuania (01-01-1999), who together owned 263.5 thousand ha of forest. The average area of an estate was 3.2 ha. The majority of owners in Lithuania (86.9%) owned up to 5 ha of forest. Using the prepared questionnaire, 267 respondents were interviewed. The survey was carried out in all 10 counties of Lithuania. Since the survey was collected, the characteristics of private forest owners have been presented and the key ownership objectives and problems as well as the demand for forestry-related services and their nature have been identified (Mizaraitė 2001, Mizaraitė and Mizaras 2005).

The second survey of the private forest owners was performed in the year 2008. The standard questionnaire prepared for the survey included 22 questions. The questionnaire contains questions that cover the following topics: the respondent's characteristics (age, gender, education, occupation), forest ownership (area, distance from the living place, the number of estates), the acquisition of the forest estate, ownership objectives and problems, the forest management activities for the estate, demand and nature of services, and knowledge about the EU support. The ownership objectives and problems questions were answered using a five-level ordinal Likert scale (1= "absolutely not important" and 5= "very important").

In both surveys, quota sampling was applied. The sample size was estimated using the following formula (Kardelis 1997):

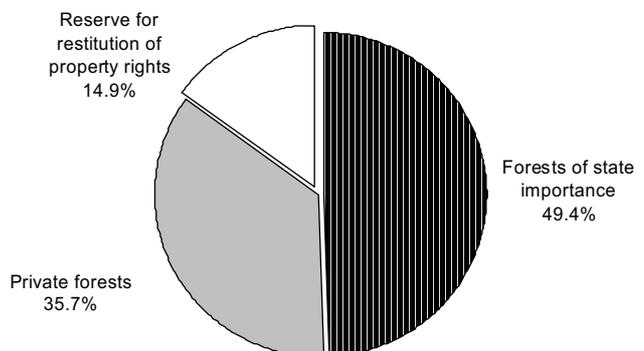
$$n = (z^2 \times s^2) / \Delta = (1.96^2 \times 43.3^2) / 5^2 = 288$$

where: n – sample size; z – coefficient from the Student distribution tables, chosen according to the intended reliability. In this case, the reliability was 95% ($p = 0.05$), $z = 1.96$; s – standard deviation of the sample; Δ – permissible inaccuracy.

Using the standard questionnaire, 317 respondents were interviewed. The survey was carried out in all 10 counties of Lithuania in randomly selected locations. The number of private owners surveyed in each county was distributed proportionally based on the number of forest owners in that county. The participation rate for the face-to-face survey was 100%. Data obtained by questionnaires were analysed using statistical methods.

Description of Lithuanian private forestry

Following the restoration of independence in 1990 and the implementation of the land reform, forests were returned to their owners or inheritors. The area of private forests increases each year. Of the total forest area, 35.7% consists of private forests (Figure 1). In addition, over 305.7 thousand ha (14.9%) of forests are reserved for the restoration of proprietary rights. The remaining forest area (49.4%) consists of state importance forests (01-01-2008).



Source: Lithuanian Statistical Yearbook of Forestry, 2008

Figure 1. Forest land by ownership in Lithuania (01-01-2008)

On January 1, 2008, the private forest sector included 228.6 thousand private forest owners. Private forest estates were small in size. The average size of a forest estate was 3.34 ha. Of the 83.5 thousand forest estates, approximately 38% were up to 5.0 ha (Figure 2).

With the increase in the area of private forests, the volume of cuttings increased until 2003. During the period 2004-2006, the amount of wood cut in private forests slightly decreased; however, in 2007, it reached its maximum (2.9 million m³). This surge was related to

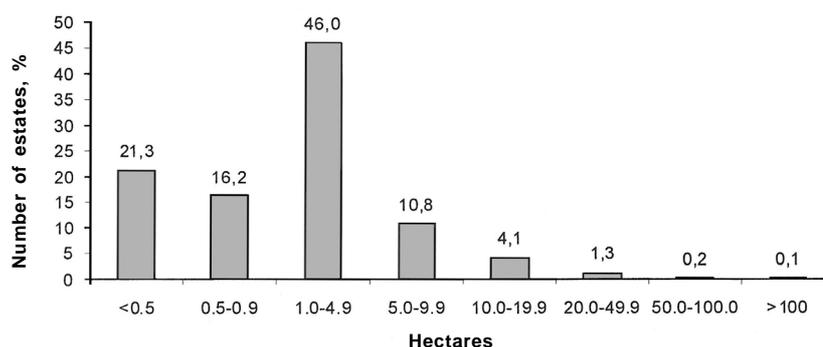


Figure 2. Private forests estates by size (01-01-2008)

Source: State Forest Survey Service (<http://www.lvmi/vmt>)

the high price of wood. In 2008, the price of wood decreased and the volume of wood cut in private forests decreased to 2.3 million m³. In total, approximately 5.8 million m³ of wood were cut in Lithuanian forests in 2008. Of the total amount of wood cut, 40% was cut in private forests and 60% in state importance forests. Of the permissions issued for cutting, 73% allowed for an amount of only 100 m³ or less.

According to the Forest Law, the cleared cutting area should be regenerated no later than in the three years after the felling. In the year 2007, the officers of the Regional environmental protection departments inspected 6120 ha or 96% of the cleared cutting areas of the year 2003, which following forest management projects, should have been regenerated artificially. The inspection showed that cleared cutting areas of the year 2003 were reforested by 96%.

The number of recorded illegal cuttings in private forests is decreasing. The volume of the recorded illegally cut timber for 1 thousand ha private forest area fell from 79 m³ in the year 2006 to 13 m³ in the year 2007.

Private forests should be managed, used and regenerated according to the individual forest estate management project, which is prepared for a 10-year period. The obligatory project sections are the following: the norm of the commercial fellings for a decade (exceeding this amount is strictly prohibited), regeneration, and requirements for environmental protection. Over 30 thousand individual forest management plans have been prepared for private forest estates (Kupstaitis 2007).

The economic activity of the private forests is mainly regulated by the Forest Law and the Regulations for Private Forest Management and Use. In addition, many other rules and regulations are obligatory for private forest owners.

The policy of private forestry is formed by the Ministry of Environment. The Private Forests Division is the structural subdivision of the Forest Department. The Private Forest Division is responsible for private forestry at the state level. Environmental protection agencies are located in every district. In these districts'

agencies, several officers carry out the control of private forests, issue permissions for forest felling and advise forest owners. The 42 state forest enterprises are responsible for the fire prevention and sanitary protection of private forests.

Currently, in Lithuania, there are two associations that unite forest owners: Forest Owners Association of Lithuania and the Private Forest Owners Association. Both associations represent private forest owners' interests and provide advice and trainings regarding the issues of private forest use, regeneration, environmental protection, timber trade and other forestry-related activities. Membership in these associations is voluntary and small. No essential differences exist between these associations.

Private forest owners can take advice from the regional environment protection agencies, state forest enterprises and national parks specialists. Forest owners' trainings are organised by the state forest enterprises and national park directions, Forest owners' associations. Approximately 15,000 or 8% of forest owners completed training courses during the last ten years.

In the years 2004-2006, private forest owners could get EU support to cover the expenditure of the following measures: infrastructure (forest roads, drainage trenches and equipment etc.); pre-commercial thinnings; recreational equipment; wood harvesting equipment; reforestation of forest areas damaged by natural disasters and fires; afforestation of agricultural land.

During the new period of support (the years 2007-2013), the range of supported activities has been expanded considerably. Support could be provided for the improvement of forests' economic value; attainment of wood-fuel (chips) production equipment; improvement of rural infrastructure; vocational training and information actions; use of advisory services *etc.*

Comparative analysis of the private forest owners' surveys

During the period 1999-2008, the education of forest owners slightly changed. The number of forest

owners having higher education increased from 45% to 50%. Furthermore, there was also an increase in the number of forest owners with primary and general lower secondary education (from 18% to 27%) (Figure 3). This can be explained by the fact that well-educated people had more information and knowledge to overcome bureaucratic obstacles and to retrieve their forest estates early.

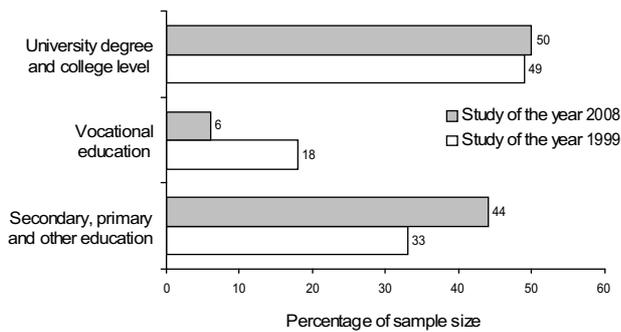


Figure 3. The distribution of respondents by education

The data of both surveys clearly show the ongoing processes of forest estates purchasing, selling and transferring to inheritors. The number of respondents who bought forest estates increased from 19% in 1999 to 24% in 2008. In addition, during this period, there was an increase in the number of respondents who inherited forest estates (1999- 10%; 2008- 36%). A new way of acquiring forests is the afforestation of abandoned agricultural land. Of the respondents, 3% became forest owners through this method (Figure 4).

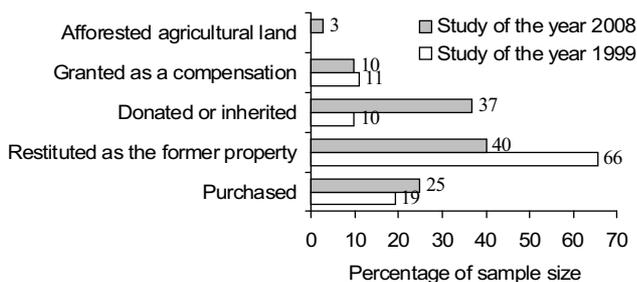


Figure 4. The manner by which the forest estate was acquired

During the last ten years, a change in the relative importance of different objectives was observed (Figure 5). The importance of wood for home consumption (mostly firewood) remained in the first position and slightly increased (from a mean score of 4.1 in 1999 to 4.5 in 2008, the difference was significant at $p=0.05$). The firewood prices also increased during

this period in Lithuania, increasing the importance of personal forest resources.

The interest in obtaining an income from the wood trade became less important for the respondents in 2008 (1.9 mean score) than it was in 1999 (2.9 mean score). The surveys showed that the willingness to develop recreational areas significantly decreased (from a mean score of 3.2 in 1999 to 1.3 in 2008).

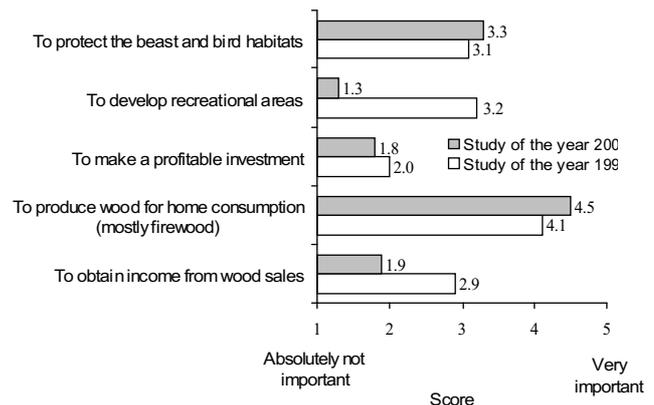


Figure 5. The importance of ownership objectives

During the last ten years, the importance of ownership problems also changed (Figure 6). In 1999, one of the most important problems for private forest owners was the strict regulations on farming activities (3.4 mean score). Based on the 2008 survey, the significance of this problem decreased (1.6 mean score). The legal acts regulating private forestry were liberalised during this period; many of the strict regulations were overruled or modified. Therefore, the results of the surveys are in line with the situation.

The only problem that experienced an increase in importance during the study period was the difficult farming conditions in the forest estates (from a mean score of 2.5 to 3.1). In 2008, respondents often identified the presence of bad roads or the lack of roads to their forest estate as an important problem. Furthermore, some difficulties were indicated if the forests were wet.

The small size of forest estates was also stated as a hindrance to effective management. This problem was evident in 1999 (3.9 mean score) and remained important in 2008 (3.1). The average area of forest estate was nearly unchanged during this period (3.2 ha in 1999 and 3.3 ha in 2008); therefore, this problem remained important.

The problem "Lack of financial resources for forestry-related activity" became less important. The mean score of this problem decreased from 3.4 in 1999 to 2.4 in 2008.

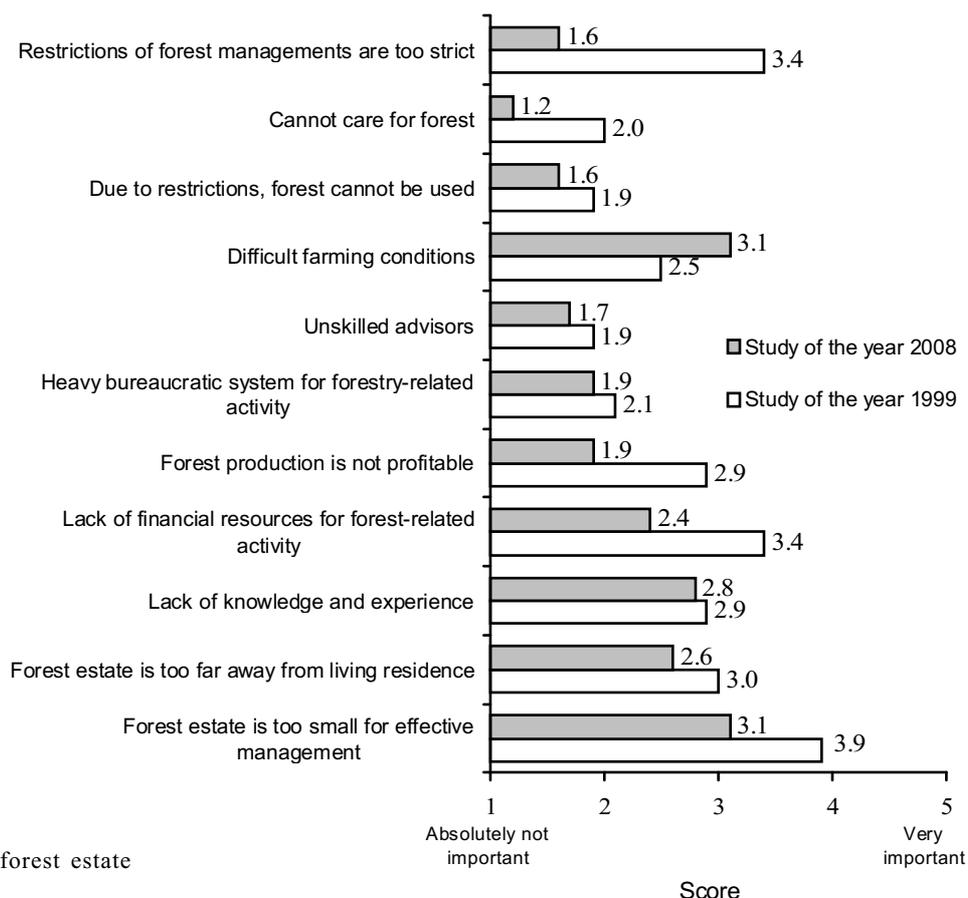


Figure 6. The importance of forest estate farming problems

The structure of the forest owners' intentions regarding the future disposition of the forest estate slightly changed during the study period. The majority of respondents planned to retain the area of their forest estates and to give them to their inheritors in the future (65% in 1999 and 79% in 2008). The number of forest owners willing to sell their forest estates decreased from 5% to 2%. Similarly, the percentage of respondents who were undecided regarding the future disposition of their forest estate decreased (12% in 1999, 4% 2008). As the number of respondents who purchased forest estates increased by 6% during this period and many estates were given to inheritors, the conclusion can be drawn that the changes in forest ownership arose rapidly but may be slower in the future as only 2% of respondents intended to sell their estates.

Approximately 16% of respondents intended to expand their estates. There are few ways to expand forest estates: through the purchase of another forest estate or the afforestation of abandoned agricultural land. In 2008, 6% of respondents planned to become involved in the afforestation of the agricultural land. Some respondents intended to apply for the EU support.

In the future, private forest estates may become larger due to the purchase, inheritance and afforestation of agricultural land. The newly afforested abandoned agriculture land will slightly increase the total area of private forests in Lithuania.

Conclusions

Small-sized private forestry has been initiated in Lithuania, but according to its area and social-economic importance, it is close to the state forestry. The main characteristic of private forestry is small-sized estates. The average area of forest estates could slightly increase in the future as the forest owners intended to expand upon them by purchasing forest land or through the afforestation of abandoned agricultural land.

The legal system designed for private forestry precisely regulates the management and control of private forests. The private forestry control system is well organised, but the education and training should be improved. In addition, private forest services would be located in municipalities.

The cooperation and association of private forest owners are at the primary stage. Small-sized private forestry could be more efficient, if more individ-

uals became members of the related organisations. As the process of private owners' cooperation and association is quite slow, the state should encourage private owners' cooperation and association through political or financial means.

The study showed the ongoing processes of forest estates purchasing, selling and transferring to inheritors. As many forest estates were restituted to elderly people, these were passed down. The number of respondents who purchased forest estates also increased during the study period. Furthermore, the EU support motivates land owners to become involved in the afforestation of abandoned agricultural land. Of the respondents, 3% became forest owners through this method.

The market of forest estates is forming in Lithuania. In 2008, 9% of respondents intended to expand upon their forest estate in the future by purchasing more forests; however, only 2.0% of respondents intended to sell their forest estates.

In the future forest owners could have other forest management objectives as today. The forests are most important for forest owners as a source of wood (mostly firewood). As wood prices during the study period increased, the importance of wood for home consumption also slightly increased. However, the interest in obtaining an income from the wood trade and developing recreational areas became less important.

The legal acts that regulate private forestry were liberalised during the study period and the problem of the strict regulation of farming activities significantly decreased. The most important problem was that the small size of the forest estates hindered effective farming activities.

Some private forests are located in protected areas with many restrictions on the use of wood resources. The compensation system should be improved in the future by compensating for the losses in already protected areas.

There is a need to undertake a survey of private forest owners every few years. Such a survey would not only help test the tendencies of private forest sector changes but also allows to formulate proposals for changes of legislation basis.

References

- Härtdter, U. 2002. Urbanised owners of private forest property. Paper presented at IUFRO – International Symposium on Contributions of Family Farm Enterprises to Sustainable Rural Development. Gengenbach/Schwarzwald, 29 July - 1 August 2002.
- Hugosson, M. and Ingemarson, F. 2004. Objectives and Motivations of Small-scale Forest Owners; Theoretical Modelling and Qualitative Assessment. *Silva Fennica* 38(2): 217-231.
- Kardelis, K. 1997. Mokslinių tyrimų metodologija ir tyrimų metodai [The methodology and methods of scientific research]. Kaunas, *Technologija*, 207 p.
- Karppinen, H. 1998. Objectives of Non-industrial Private Forest Owners: Differences and Future Trends in Southern and Northern Finland. *Journal of Forest Economics* 4(2): 147-173.
- Karppinen, H. and Hanninen, H. 2000. Forest Conservation and Economic Utilisation: Public Attitudes in Finland. *Journal of Forest Economics* 6(1): 55-78.
- Kline, J. D., Alig, R. J. and Johnson, R. L. 2000. Fostering the production of non-timber services among forest owners with heterogeneous objectives. *Forest Science* 46: 302-311.
- Kuliešis, A. 2008. Kontrolinis metodas grindžiamas medienos prieaugio kontrole auginant mišką ir naudojant jame išaugintą medieną [Control method based on wood volume increment control for forest growing and usage]. Oral presentation; conference "Wood resources usage theory and practice: present and perspectives", Academy of Science, 19-06-2008. [Linked 08-12-2008; <http://www.mi.lt>].
- Kupstaitis, N. 2007. Miškotvarkos projektai – palankesniems savininkui sąlygomis [Forest Management Plans for Individual Estate – the favourable for private forest owners]. 2007-02-09. [Linked 08-12-2008; http://www.am.lt/VI/article.php3?article_id=6105].
- Kuuhivainen, J., Karppinen, H. and Ovaskainen, V. 1996. Landowner objectives and non-industrial private timber supply. *Forest Science* 42: 300-309.
- Lidestav, G. 1998. Women as non-industrial private forest landowners in Sweden. *Scandinavian Journal of Forest Research* 13: 66-73.
- Lidestav, G. and Ekstrom, M. 2000. Introducing gender in surveys on management behaviour among non-industrial private forest owners. *Scandinavian Journal of Forest Research* 15: 378-386.
- Lönnstedt, L. 1989. Goals and cutting decisions of private small forest owners. *Scandinavian Journal of Forest Research* 4: 259-265.
- Mizaraitė, D. 2001. Privačių miškų savininkų tikslai, problemos bei juos lemiantys veiksniai [Objectives, problems and needs of the private forest owners as well as dependence on various factors] *Miškininkystė* 1 (49): 33-46.
- Mizaraitė, D. 2004. Forestry extension for private forest owners in Lithuania. Proceedings of IUFRO working party S6.06-03. Extension. 7th Extension Working Party Symposium "Communication Strategies for Multiple Partner Involvement in Forestry Extension". September 27-October 1, 2004: 121-130.
- Mizaraitė, D. and Mizaras, S. 2005. Empirically based grouping of private forest owners in Lithuania. *Baltic Forestry* 11(1): 80-87.
- Mizaraitė, D. and Mizaras, S. 2005. The Formation of Small-scale Forestry in Countries with Economies in Transition: Observations from Lithuania. *Small-scale Forest Economies, Management and Policy* 4(4): 437-450.
- Mizaras, S. and Mizaraitė, D. 2004. Issues in the Evolution of Private Forestry in Countries with Economies in Transition: Lithuania. Proceedings of IUFRO Research Group 3.08.00: Small-scale Forestry. International Symposium "Human Dimensions of Family, Farm and Community Forestry". March 19 – April 3, 2004, Pullman, Washington, USA, 39-42.
- Mizaras, S. and Mizaraitė, D. 2005. Private forest owners forests management attitudes: Lithuania. Small-scale for-

estry in a changing environment. International symposium IUFRO 2005. May 30-June 4, 2005, Vilnius, Lithuania: 289.

Mizaraitė, D. and Mizaras, S. 2006. Afforestation of Agricultural Land as a Tool of Rural Forestry Development in Lithuania. Small-scale Forestry and Rural Development the Intersection of Ecosystems, Economics and Society. Proceedings of IUFRO 3.08 Conference. Galway-Mayo Institute of Technology, Galway, Ireland, 305-311.

Mizaras, S., Mizaraitė, D., Sadauskienė, L., and Ozolinė, R. 2007. Improving incomes from small-scale forestry of Lithuania. Proceedings of IUFRO conference. Armoc city, Philippines: 425-429.

Ni Dhubháin, Á. and et al. 2006. The values and objectives of private forest owners and their influence on forestry behaviour: The implications for entrepreneurship. Anssi Niskanen (ed.). Research notes 169. Issues effecting enterprise development in the forest sector in Europe. University of Joensuu, Finland: 71-83.

Ni Dhubháin, Á. and Wall S. 1999. The new owners of small private forests in Ireland. *Journal of forestry* 97(6): 28-33.

Ripatti, P. and Jarvelainen, V.-P. 1997. Forecasting structural changes in non-industrial private forest holdings in Finland. *Scandinavian Forest Economics* 36: 215-230.

Received 23 September 2009

Accepted 18 June 2010

ЧАСТНОЕ ЛЕСНОЕ ХОЗЯЙСТВО ЛИТВЫ: СОСТОЯНИЕ, ТЕНДЕНЦИИ И ПРОБЛЕМЫ

Д. Мизарайте, С. Мизарас и Л. Садаускене

Резюме

Статья основана на базе анализа двух социологических опросов (1999 г. и 2008 г.) частных собственников. В течении двух последних десятилетий в Литве сформировалось частное лесное хозяйство. В настоящее время насчитывается 236 тысяч частных собственников лесов. Ежегодно в частных лесах вырубается около 2,3 миллиона м³ древесины. Вырубки возобновляются удовлетворительно. Нелегальные рубки сокращаются. Было подготовлено более 30 тысяч индивидуальных лесопроектов. Создана правовая база для ведения частного лесного хозяйства, создаётся система консультирования и обучения частных собственников лесов.

За анализируемый период менялись цели лесных собственников. Увеличивалось значение обеспечения древесиной домашнего хозяйства. Снизилась оценка значимости лесов как источника денежных доходов. Значительно выросла доля собственников, которые унаследовали или купили леса.

Также менялись и проблемы частных собственников лесов. Регламентирование частного лесного хозяйства стало менее проблематичным. Самой важной проблемой остаётся слишком малые площади лесовладений. Снизилась доля собственников, желающих продать свои леса. Большинство желают в будущем оставить леса наследникам. Появилось новое явление в частном лесном хозяйстве Литвы: финансовая помощь Европейского Союза.

Имеющиеся проблемы консультирования и обучения лесных собственников могли быть решены путём создания служб частного лесного хозяйства. Необходимо создание системы компенсации за ограничения ведения лесного хозяйства на охраняемых территориях.

Ключевые слова: частные леса, собственники, нынешняя ситуация, опросы, тенденции