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## EMPLOYMENT TRENDS IN THE FORESTRY INDUSTRY IN LATVIA

### TRENDY W ZATRUDNIENIU W PRZEMYSŁE LEŚNYM NA ŁOTWIE

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**Streszczenie.** W ostatnich latach pojawiły się badania dotyczące różnych aspektów zatrudnienia na Łotwie, wśród nich zaś badania dotyczące możliwości promocji zatrudnienia i podniesienia konkurencyjności pracowników na rynku pracy. Jednakże, wiele palących problemów związanych z zatrudnieniem pozostaje nierozwiązanych. Niniejsza praca ma na celu analizę trendów w zatrudnieniu w przemyśle leśnym na Łotwie oraz wskazanie kluczowych czynników wpływających na atrakcyjność zatrudnienia w tym właśnie przemyśle. Wyniki badań wskazują na to, że na Łotwie około 45–50 tysięcy osób jest bezpośrednio zatrudnionych w przemyśle leśnym, a podatki płacowe przez tychże pracowników stanowiły w przybliżeniu 1/12 część budżetu krajowego. Według specjalistów, których opinie zebrano za pomocą kwestionariusza, czynnikiem najbardziej decydującym o atrakcyjności pracy w przemyśle leśnym było wynagrodzenie, którego poziom uznawano za adekwatny w stosunku do wykonywanej pracy i zakresu obowiązków. Oczywiście, poziom płac w tym sektorze odpowiada sytuacji panującej na rynku pracy na Łotwie. Badaniem objęto okres od 2007 do 2014 roku, zaś w innych przypadkach okres objęty badaniem jest różny, w zależności od dostępności danych. W pracy wykorzystano następujące metody badawcze: metodę monograficzną, opisową, analizę i syntezę, metodę graficzną, analizę dokumentów, analizę statystyczną i metodę socjologiczną – specjalistyczną.

**Key words:** employment, factors affecting employee attraction, forest industry.

**Słowa kluczowe:** czynniki wpływające na atrakcyjność zatrudnienia, przemysł leśny, zatrudnienie.

## INTRODUCTION

Forests along with land and the sea are Latvia's greatest national resources. Since ancient times, Latvians have had cultural, historical, emotional and economic ties with forests that have, in the course of time, developed, mutually enriching each other. Latvia lacks mineral deposits, high mountains or oil deposits; however, it has forests that used to be called Latvia's "green gold". Forests are an invaluable natural resource that benefits the society ecologically, socially and economically (Salins 2000). In her 2010 research paper, D. Plantonova pointed that employment was an important factor for sustainable development of Latvia's rural areas. In 2007, L. Herslunds, too, analysed the employment trends in one of Latvia's largest cities, comparing Rezekne and Estonia's town of Viljandi. The main problems that were revealed were as follows: rural areas suffered from high unemployment rate, low income and high

proportion of elderly people. Scientists in Latvia have not analysed specific issues regarding employment problems in the forestry industry, focusing mainly on analyses of employment problems in general. Executive director of the Latvian Forest Industry Federation K. Klauss, in his research papers, describes the employment situation in this industry, and in 2012 he pointed that one of the factors needed for the development of the forestry industry was qualified labour force.

In Latvia, many scientists have researched employment trends and their affecting factors. In 2012 Zvirbule-Berzina and Vilcina analysed the main employment problems in Latvia's regions and their effects on the entrepreneurship environment. In 2013, Zvaigzne, Saulaja and Zeiferte analysed women's competitiveness in Latvia's labour market. In 2011, Zasova examined the role of labour market institutions in increasing the employment rate.

The Forest Strategy for the European Union stipulates that one of the forest sector pillars, which contributes to increasing its competitiveness, is a skilled, educated and safe labour force. Qualified forest managers, workers and entrepreneurs pave the way for a sustainable and competitive forest sector that plays an essential role in rural development and in the whole economy while providing social benefits (Forest Strategy for the European Union 2013).

The present research aims to examine the employment trends in the forestry industry in Latvia and to identify the key factors affecting the attraction of employees to this industry.

Research tasks:

1. To describe the forestry industry and its employment situation.
2. To identify the main factors affecting the attraction of employees to the forestry industry.

Research methods employed are the following: the monographic method, the descriptive method, analysis and synthesis, the graphic method, document analysis, statistical analysis and a sociological method – the expert method.

The present research is based on various scientific publications, publicly available documents, as well as information from the databases kept by the Republic of Latvia, expert survey results and other sources of information.

## **ENTERPRISES AND EMPLOYMENT IN THE FORESTRY INDUSTRY**

Forest is an important natural resource to the Latvian economy. Nowadays, 50.3% of all Latvia's forests are state-owned and the remaining 49.7% are under different ownership – municipalities, private forest owners, protected forests and others. Historically, this percentage distribution has changed with the political situation and the shift of power. Due to that, the percentage of forest land owned by the state has decreased by 34%, while the share of other forms of ownership has increased. The total area of forested land has grown by 53%. According to the Forest Fund, in 1921 Latvia had 1.8 million hectares of forest, while, by the forest statistical inventory data for 2011, forests now cover 3.5 million hectares of the country's territory. It means that there are 1.5 hectares of forest per inhabitant in Latvia, almost twice as much as at the time of the first Republic of Latvia. The total area of forests in Latvia has increased from 0.9 hectares to 1.5 hectares per capita (Zalite and Auzina 2013).

Forests expand naturally as well as are expanded in a conscious effort, by afforesting unfertile and unutilised agricultural land. Yet, another indicator is more important – annually, the total growing stock increases three times faster than the forest area. This is an obvious confirmation that Latvia's forest cover does not increase at the expense of the shrub area that is not even included in forest area statistics; on the contrary – purposeful forestry activity takes place in the country. In the recent decade, on average, 12 million m<sup>3</sup> of timber were logged in Latvia's forests annually. This is less than the natural increase of timber; for this reason, Latvia's forestry may be termed as sustainable (Forest sector... 2014).

The forest area in Latvia increased 9.5% in 2009 compared with 2007, which was a very fast increase because in 2008 in comparison with 2007 this area even decreased by 0.2%, while in the period 2009–2014 the forest area expanded by only 0.6% (Fig. 1).

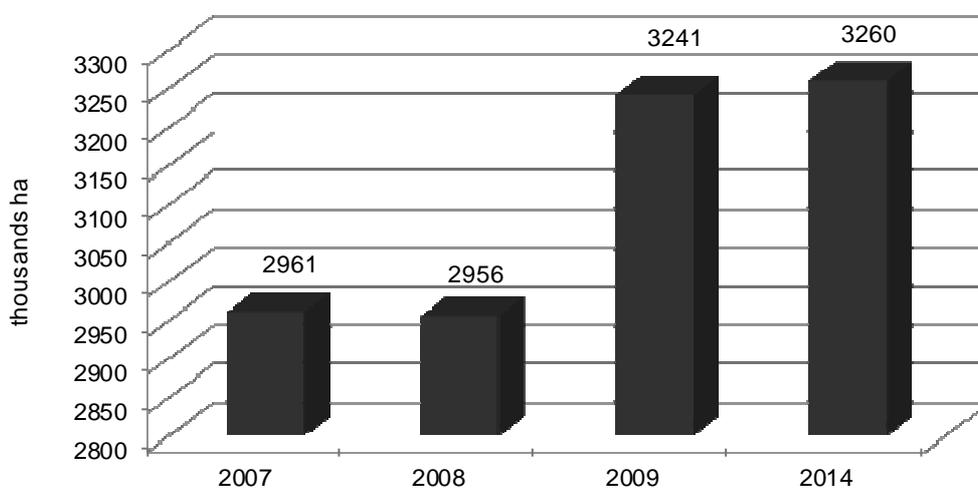


Fig. 1. Forest area in Latvia in the period 2007–2014, thousand ha  
Source: CSB data.

Latvia is mentioned as a country with high natural diversity; endangered plants and animal species are preserved in a reasonable and sustainable way. None of tree species have perished from Latvia's forests in recent centuries because of economic activity. In Latvia's forests, the diversity of tree species mixture within the stands and also soil structure is very high. Biodiversity is higher than in the temperate climate zone in Central Europe and in the southern part of the Scandinavian Peninsula (Environment plan... 2012). High forest coverage, the forests' qualities and geographical localisation make Latvia one of the regions where the forest sector is a major contributing sector to the country's economy.

Employment in the forest sector has always been and continues to be an important contributor to rural economies and to the livelihood of rural areas. Almost four million people in Europe still earn their living from working in forestry and forest-based industries, out of which about 750 000 work in forestry. Even if the number of people directly employed in forestry is undergoing a steady decline, forestry and forest-based production still are an important basis for value chains in rural areas. (State of Europe's Forests... 2012). The forestry industry, too, is one of the strongest pillars of the national economy in Latvia. In total, it involves more than 2500 various enterprises that employ approximately 59 000 individuals.

In Latvia, in terms of turnover, the largest enterprises in the forestry industry are the following two ones: JSC “Latvijas valsts meži” (Latvia’s State Forests) and JSC “Latvijas finieris”. The turnover of JSC “Latvijas valsts meži” reached EUR 305.5 million in 2011, while in 2012 it decreased to EUR 253.4 million or by 17.1%. However, the turnover of JSC “Latvijas finieris” stood at EUR 168.7 million in 2011, while in 2012 it was EUR 179.3 million, which was a 6% increase (Lursoft database 2014).

The situation in 2013 started improving, as the turnover and profit of JSC “Latvijas valsts meži” rose – by 3% and 23%, respectively (The largest... 2014).

An analysis of average turnover and profit of 10 most successful enterprises shows that in 2012 compared with 2011, on average, the turnover fell by 15.7%, while the profit, in the same period, rose by 186%.

An analysis of the number of employed individuals revealed that the mentioned enterprises employ mostly individuals. In 2011, JSC “Latvijas valsts meži” had 1137 employees, while JSC “Latvijas finieris”, in the same period, had 1532. Even though the turnover of JSC “Latvijas valsts meži” decreased in 2012 compared with 2011, the number of employees increased by 97 or 8.5% in 2012. However, the number of employees of JSC “Latvijas finieris” reached 1625 in 2012 – 6.1% more than in 2011 (The largest... 2014).

Approximately 45–50 thousand individuals are directly employed in Latvia’s forestry industry. It accounts for 7% of the total number of nongovernmental jobs in Latvia and means that the taxes paid by the industry’s employees comprise approximately 1/12 of the national government budget. Besides, most of jobs in forestry and wood-processing are located in Latvia’s rural regions, where forestry enterprises are often the most significant if not the only employers. For this reason, the number of jobs indirectly dependent on the forestry industry is also large. Many small rural stores, petrol stations and other service providers, to a great extent, depend on local wood-processing and forestry enterprises that provide jobs to people in the area. Accordingly, a total of approximately 80 000 people have jobs owing to the forestry industry in Latvia (Head Joint Stock Company... 2014).

A significant turning point in forest property rights’ protection occurred in 1999 when, based on the order of the Latvian Cabinet of Ministers No. 453 On the Creation of Joint Stock Company “Latvia’s State Forests”, the company “Latvia’s State Forests” (LSF) was established. It is an enterprise owned entirely by the state of Latvia. LSF started its economic activity in 2000 (Forest sector... 2003).

From the economic standpoint, the creation of LSF has provided several positive benefits. Firstly, the corporation pays the state a duty for using its capital, and it pays taxes to the state and municipality budgets. Secondly, it has created new jobs, employing 987 people in 2012. Thirdly, forests are managed in accordance with the principles of sustainability which include maintaining and increasing the value of state’s forests in the long term (Zalite and Auzina 2013).

As of 2013, according to the State Revenue Service (SRS), there were 15108 taxpayers in the forestry industry (4.9% of the total taxpayers); of them, 4007 (26.5% of the total taxpayers of this industry) were VAT (value added tax) payers, of which 88.2% or 3535 were legal entities and 1213 (8.0%) were MET (microenterprise tax) payers (Table 1).

Table 1. Statistics on taxpayers in the forestry industry as of 15 August 2013

Nace activity name	Taxpayers						Total
	legal entities	%	natural persons – economic activity performers	%	incl. individual merchants	%	
Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	2792	45.9	702	7.8	147	30.2	3494
Forestry and logging	3291	54.1	8323	92.2	340	69.8	11 614
Total	6083	100.0	9025	100.0	487	100.0	15 108

Source: Information about forest sector... 2014.

Approximately 1.8% of the total taxpayers – legal entities – registered in the forestry industry were engaged in the industry for less than a year, while 32.9% of the taxpayers were operating for more than 17 years.

In 2012, 73.3 thousand or 8.4% of employees were working in forestry, agriculture and fisheries. This number has dropped by 14.6 thousand since 2008. For comparison, 18.7% of all Latvia's employees work in the trade, accommodation and food services sector, which comes top among all sectors. The forestry industry ranked as fifth in 2012.

In the first half of 2013, according to the SRS, on average 9624 employees were engaged in forestry and logging, while in the manufacture of wood and wood and cork products, on average, 23 082 employees were employed.

Of those employed in the forestry industry, in the first half of 2013, 37.3% received a minimum wage or a wage below the average wage in the country (30.0%).

In 2012, 38.9% of the industry's employees were paid the country's minimum wage or less, which however was more than the average in the country (31.6%) (Report about forest... 2014).

The number of individuals employed in the forestry industry has declined twofold since 2004; at the same time, productivity and overall economic efficiency have risen. A very sharp decline in the number of employed individuals has been observed since 2008, which was the economic recession period, when cost reductions and a rational use of resources were the cornerstones of competitiveness and survival of enterprises. In 2010, 52 thousand were employed in the forest industry (Fig. 2).

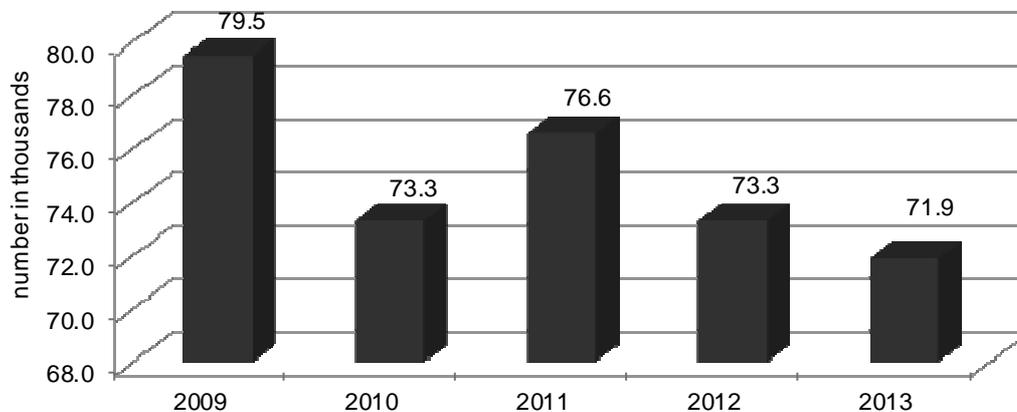


Fig. 2. Number of individuals employed in agriculture, forestry and fisheries in Latvia in the period 2009–2013, thousand  
Source: CSB data.

According to the Central Statistical Bureau (CSB), the number of individuals employed in the forestry industry was unsteady, as it fell by 7.8% in 2010 compared with 2009. In contrast, in 2011 compared with 2010, it rose by 4.5%. Over the next years, the number of employed individuals tended to decline – by 4.5%, compared with 2011 and by 1.9% if compared with 2012.

During the crisis period, wages in the forestry industry were more stable than on average in Latvia, being within a range of EUR 426.86–640.29 (Fig. 3).

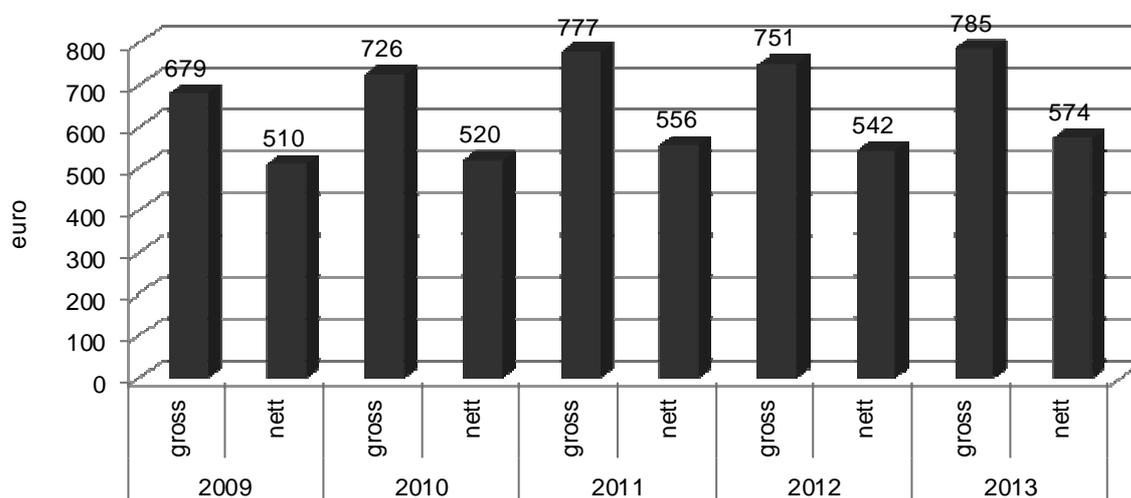


Fig. 3. Average wages in the forestry industry in Latvia in the period 2009–2013  
Source: CSB data.

According to the data presented in Figure 3, average wages in the forestry industry rose in the period 2009–2013. The increase was insignificant and slow – on average, EUR 44 each year. A slight decrease by EUR 26 or 3.4% was observed in 2012 compared with 2011. The inclusion of employees in the labour market is facilitated by practical training placements that are provided by the largest forestry enterprises, for instance, JSC “Latvia’s State Forests”. New employees have an opportunity to acquire practical knowledge, as well as refresh theoretical knowledge obtained during university studies. If a new employee proves him/herself knowledgeable and skilful, he or she may be hired as a permanent employee.

## KEY FACTORS AFFECTING ATTRACTION OF EMPLOYEES TO THE FORESTRY INDUSTRY

Within the present research, a survey of experts was carried out, in which five experienced professionals of various levels that were working in the forestry industry were questioned. Five experts participated in the survey. In Table 2 experts are marked with letters A, B, C, D, E.

Expert A – higher professional education in forest sector with engineering qualification, Master’s Degree of Environmental Engineering, more than 10 years working experience in forest sector: forestry and planning.

Expert B – Bachelor’s Degree in Agriculture, more than 10 years of experience in forest sector.

Expert C – highest professional education in the forest industry with engineering qualification, Bachelor’s and Master’s Degree in Economics, 9-year-long experience in the forest sector, specialist in forest resources.

Expert D – Doctoral Degree in Economics, with research experience in economic issues, including the forest sector.

Expert E – highest professional education in the forest industry with engineering qualification, Master's Degree in Economics, 12-year-long experience in the forest sector.

Table 2. M. Kendall's W test: expert evaluation scores, ranks, the concordance coefficient. Data were obtained in August 2014 by the expert commission by ranking the factors affecting the attraction of employees in the forestry industry

Factors	Experts					Rank sum $L_i$	$d_i = L_i - L_{vid}$	di2	Rank R
	A	B	C	D	E				
	Ratings								
<b>Prestige of the industry and its profitable enterprises</b>	1	3	3	3	4	14	-8.7	7569	3
<b>Stable employment</b>	3	2	2	1	1	9	-13.7	187.69	2
<b>Wage</b>	2	1	1	2	2	8	-14.7	216.09	1
Employment in a long-term	4	4	4	4	3	19	-3.7	13.69	4
Social guarantees	7	5	5	3	2	22	-0.7	0.49	5
Educational and training opportunities in Latvia	6	10	8	6	6	36	13.3	176.89	8
Career opportunities	5	9	6	5	5	30	7.3	53.29	6
Employer cares about the working environment, the safety and health of employees	10	8	9	8	2	37	14.3	204.49	9
Professional prestige	8	7	7	7	6	35	12.3	151.29	7
Safe working environment, labour protection	9	6	10	9	7	41	18.3	334.89	10
$n = 10$	$m = 5$					$\sum L_i = 251$	0	$S = 1414.5$	

Source: authors' calculations.

The expert survey was carried out to identify key current factors affecting the attraction of employees to the forestry industry; the factors were ranked by significance – on a scale from 1 (the most significant or Priority 1) to 10 (the most insignificant or Priority 10). The expert evaluation results may be viewed in Table 2.

To identify the key factors affecting the attraction of employees, the experts' ratings of the factors were evaluated in terms of concordance of the experts' opinions (Table 2).

Kendall's W coefficient of concordance allows to determine the correlation between several variables. The W coefficient indicates if one variable is determined in different ways or it has been evaluated by different experts. Kendall's W coefficient determines how close are experts answers and how close is the coincidence between the given answers (Paura and Arhipova 2002).

In the case of direct rating of parameters, the experts' concordance was evaluated by means of the concordance coefficient (Kendall 1955; Djakova and Krug 1966) calculated according to Formula 1:

$$W = \frac{12 \sum_{i=1}^n \left\{ \sum_{j=1}^m r_{ij} - \frac{1}{2} m(n+1) \right\}^2}{m^2 (n^3 - n)} \quad (1)$$

where:

$W$  – concordance coefficient,

$n$  – number of factors to be rated,

$m$  – number of experts,

$r_{ij}$  – rank for the  $i$ -th object based on the  $j$ -th expert's opinion.

In the research for the value  $W$  determination, interval scale is used and values are expressed in ranks, and also summery of the ranks have been set (Paura and Arhipova 2002).

Values of concordance coefficients  $W_t$  and  $W_p$  vary within a range of  $0 \leq W \leq 1$ ; besides,  $W = 0$  if no correlation exists between ranks and  $W = 1$  if all experts have ranked the objects equally. The authors assumed that  $W \geq 0.5$  is a sufficient concordance coefficient, as it is considered that experts' unanimity is sufficiently high (Kendall 1955; Diakova and Krug 1966).

By using Formula 1 and Table 2 data, a concordance coefficient was calculated:

$$W = \frac{12 \times 1414,5}{25 \times 10 \times (100 - 1)} = 0,69$$

An average value of  $L$  may be calculated using Formula 2 (Kendall 1955, Diakova and Krug 1966):

$$L_{vid} = \frac{\sum Li}{n} \quad (2)$$

By using Formula 2 and Table 2 data, the average value of  $L$  was calculated:

$$L_{vid} = \frac{\sum Li}{n} = \frac{251}{10} = 25,1$$

The concordance coefficient ( $W$ ) was equal to **0.69**, which was a high value and showed that the experts' opinions were unanimous.

The experts were unanimous on the following most significant factors affecting the attraction of employees to the forest industry:

Priority 1 – wage,

Priority 2 – stable employment,

Priority 3 – prestige of the industry and its profitable enterprises etc.

Among all the factors, the key priority in attracting employees to the forest industry, according to the experts, is wages. The experts believed that the amount of wages in Latvia's forestry industry corresponded adequately to the volume of labour and scope of employee's duties; the wage level reflected the remuneration level in Latvia. Enterprises operating in the forest sector should be aware of factors affecting recruitment, and every CEO should use these factors to the enterprise's benefit.

The experts believed that in general in comparison with other industries, employment in the forest industry was stable, and it was one of the most significant factors affecting the attraction of new employees to the industry and encouraged individuals to acquire a profession in this field. The prestige of the forestry industry and the enterprises engaged in this industry, on the whole, was high, according to the experts. Small and medium size enterprises in the forest sector need to increase production volumes, therefore amount of workplaces will increase, triggering the boosting the entire employment sector.

## CONCLUSIONS

Employment problems in Latvia's industries can still be called urgent.

The present research aimed to examine the employment trends in the forestry industry in Latvia and to identify the key factors affecting the attraction of employees to this industry. The research findings showed that in Latvia, approximately 45–50 thousand individuals were directly employed in the forestry industry. It accounts for 7% of the total number of nongovernmental jobs in Latvia and means that the taxes paid by the industry's employees comprise approximately 1/12 of the national government budget. Besides, most of jobs in the forestry and wood-processing are located in Latvia's regions.

As of 2013, according to the State Revenue Service (SRS), there were 15108 taxpayers in the forestry industry (4.9% of the total taxpayers); of them, 4007 (26.5% of the total taxpayers of this industry) were VAT (value added tax) payers, of which 88.2% or 3535 were legal entities and 1213 (8.0%) were MET (microenterprise tax) payers.

The average wage in the forestry industry rose in the period 2009–2013. The increase was, on average, EUR 44 each year. Of those employed in the forestry industry, in the first half of 2013, 37.3% received a minimum wage or a wage below the average wage in the country (30.0%).

In Latvia, in terms of turnover, the largest enterprises in the forestry industry are the following two ones: JSC "Latvijas valsts meži" and JSC "Latvijas finieris", which are the largest employers in the industry as well.

Within the present research, a survey of experts was carried out, in which five experienced professionals of various levels from the forestry industry were questioned. The expert survey was carried out to identify the current key factors affecting the attraction of employees to the forestry industry and to rank them by significance.

The experts were unanimous on the following most significant factors affecting the attraction of employees to the forest industry: wages, stable employment and the prestige of the industry and its profitable enterprises.

Our main recommendations are: small and medium size enterprises in the forest sector need to increase their production volumes, which will lead to increased number of jobs and development of whole employment sector. Enterprises operating in the forest sector should be aware of the factors affecting recruitment and definitely managers should strengthen these factors.

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