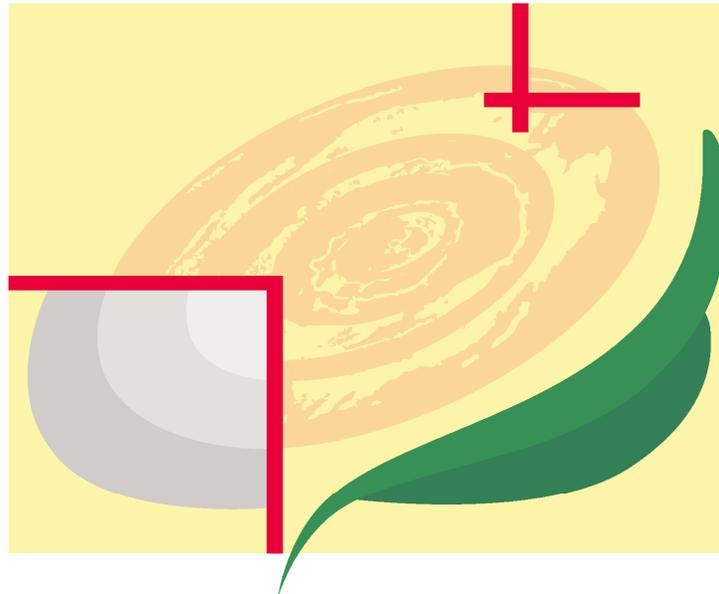


LEONARDO DA VINCI PROGRAMME
THE LANGUAGE OF SAFETY AND HEALTH SIGNS AND SIGNALS
IN WOOD INDUSTRY
No. 134575-LLP-2007-1-BG-Leonardo-LMP



LANSAWOOD

NEEDS SURVEY



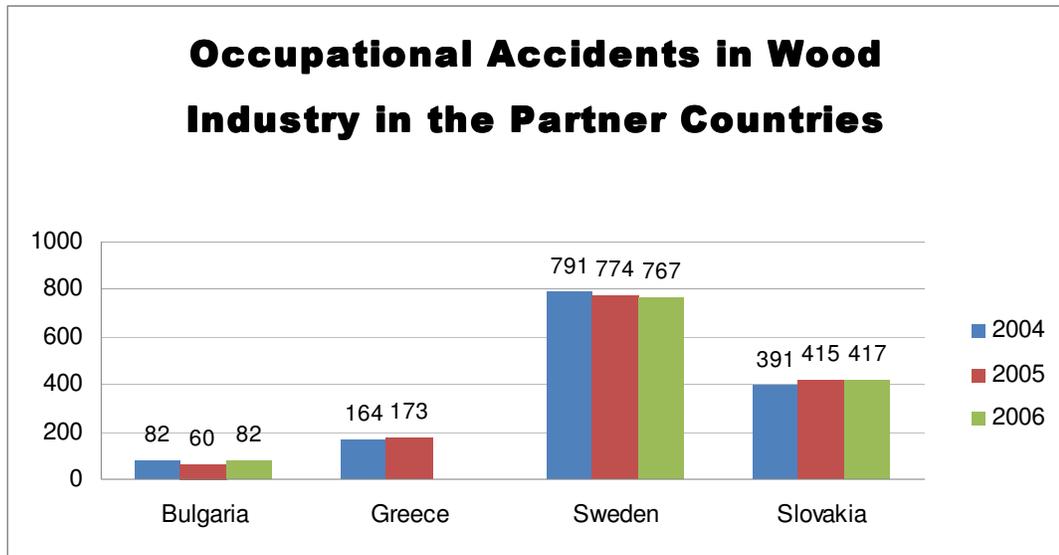
2008

1. Background

Each year thousands of accidents are recorded in Wood Industry. The recent research carried out by EuroStat and the European Agency for Safety and Health at Work has shown that a great number of people in the EU lose their lives at work and a far greater number are injured. **The rate is the highest in Wood Industry, where about 10 % of workers have an accident at work every year.** According to the European Statistics on Accidents at Work (ESAW) **about 4.8 million accidents result in more than 3 days of absence from work** in the EU countries. The latest results of the Fourth European Survey of Working Conditions have shown that almost 35% of workers in Europe feel that their job puts their health at risk. Some categories of workers are considerably exposed to occupational risks (young workers, migrant workers, etc.). Certain sectors are still particularly dangerous (construction/civil engineering, **forestry and wood industry**, agriculture, transport, etc.).

The survey carried out by the project partners has shown similar situation in the partner countries. The partners' network has recognized the lack of thorough training on the specific system of safety and health signs and signals, as an essential part of the whole training for Occupational Safety and Health. All partners confirmed the lack of sufficient training on the system of safety and health signs and signals in the curricula in their educational systems. The established contacts with managers from SMEs and companies in Wood Industry also confirmed the current needs for this particular training. SMEs, in particular, have fewer resources to put complex systems of worker protection in place and tend to be more affected by the negative impact of health and safety problems. A great number of hazardous situations occur either due to little knowledge by **newly appointed workers** or underestimation by experienced ones of the system of safety and health signs and signals.

The graph below shows the total number of accidents at work in the partner countries. The rate is the highest in Sweden, which can be explained by the large number of people - 39456, employed in 4250 wood industry enterprises. The lowest rate, as seen from the graph, is in Bulgaria due to a number of unreported cases of occupational accidents. The data for accidents at work in Greece is only for 2004 and 2005, due to the lack of statistic data. In Slovakia the number of occupational accidents for the studied period is almost the same.



As well as the human suffering involved, there is an economic impact. Individuals, businesses and society all pay the price, so it is vital to stay on our guard to combat against accident risks. The mobility of workforce in the EU makes it necessary to establish easy of access, based on European Standards, training on the system of healthy and safe signs and signals in wood industry.

The project is in accordance with the five-year strategy for Safety and Health launched by the European Commission, covering the period of 2007 – 2012 and aiming to reduce by 25% the total incidence rate of accidents at work per 100 000 workers in the EU.

2. Project Objectives

The pilot project aims at providing training methodology and materials for lifelong learning for vocational college students, university students, and professionals in Wood Industry and SMEs in relation to the language of safety and health signs and signals. The goal is to further train existing and future professionals in the field of Wood Industry in order to improve their qualification skills in providing safer, healthier and more productive working environment in accordance with the objectives of the Community Strategy 2007 – 2012.

3. Methodology

The specific purpose of the project The Language of Safety and Health Signs and Signals in Wood Industry is to obtain and understand the level of knowledge of the people

involved in the Wood Industry on matters of safety and more specifically on safety signs and signals. The three target groups that are of great interest are vocational college students, university students and professionals in the respective field.

The main goal of the project part WP 2 is to develop the training methodology for the system of safety/health signs and signals in Wood Industry for the three different target groups. In the first phase of this process it is necessary to gain information on the level of knowledge of each target group on the safety/health signs and signboards at work in Wood Industry. It is hard to assess concepts like knowledge and it is even more difficult to measure the differentiated skills of the target groups surveyed. For that reason, two different types of questionnaires were developed, with differentiated approach according to the target group: a more simple and common questionnaire with *Yes* and *No* answers was prepared for both vocational college students and university students, and a second more complicated one, with multiple-choice questions, was developed for the professionals. Questionnaires were prepared having in mind that the person surveyed should spend as less time as possible on filling them in. The questions were structured in such a way as to receive an honest answer for accurate results. The questionnaires were discussed and approved by the project partners as well as by representatives from vocational schools, universities and professionals.

4. Data Analysis

The analysis compares the results of the target groups.

The results of the questions are given in percentage and are briefly analyzed. Each partner presented data concerning the actual state in his country. On the basis of the received data, Partner 1 (the University of Forestry) has summarized and concluded the obtained data.

The following table shows the number of questionnaires from each partner country which the survey was based on.

Target group	Bulgaria	Greece	Sweden	Slovakia	Total
1	2	3	4	5	6
Vocational College Students	62	49	45	85	241
University Students	38	51	32	30	151
Professionals	29	27	14	31	101
TOTAL					493

4.1. College Students and University Students

Question 1

Vocational College students

Does your curriculum include a subject Safety Regulations?

**Yes
69%**

**No
31%**

University students

Does your curriculum include a subject Safety Regulations?

**Yes
74%**

**No
26%**

Question 1 shows us that both target groups seem to have a subject relative to Safety at work in their curriculum. Furthermore, there seems to be no significant difference in percentage between vocational college and university students.

Question 2

If so, how many hours?

Vocational school students:
average 40 hours per term

University students:
average 60 hours per semester

Again, both target groups have answered similarly. The university students seem to have higher level of knowledge than college students in the field of occupational safety.

Question 3

Vocational College students

Does this subject contain study of the safety/health signs and signals in Wood Industry?

**Yes
41%**

**No
59%**

University students

Does this subject contain study of the safety/health signs and signals in Wood Industry?

**Yes
38%**

**No
62%**

Both target groups think that study of the safety/health signs and signals in Wood Industry is not part of the subject Safety Regulations.

Question 4

Vocational College students

Do you know which legislation document determining the use of safety/health signs and signals is?

Yes	No
34%	66%

University students

Do you know which legislation document determining the use of safety/health signs and signals is?

Yes	No
58%	42%

This question is a more in-depth question and examines the legislation aspect of the educational curricula. Obviously, the majority of the students are not very familiar with the legislation regarding the use of safety/health signs and signals.

The university students seem to have better knowledge for the legislation in the area of safety/health signs and signals in Wood Industry.

Question 5

Vocational College students

Are you familiar with the hazardous factors in Wood Industry?

Yes	No
61%	39%

University students

Are you familiar with the hazardous factors in Wood Industry?

Yes	No
82%	18%

Unlike the previous question the huge majority of both vocational college and university students seem to be well informed about the hazardous factors in Wood Industry.

Question 6

Vocational College students

Are you familiar with the harmful health factors in Wood Industry?

Yes	No
78%	22%

University students

Are you familiar with the harmful health factors in Wood Industry?

Yes	No
80%	20%

Vocational college students and university students are familiar with the harmful health factors in Wood Industry.

Question 7

Vocational College students

Are you familiar with the requirements concerning the microclimatic conditions in Wood Industry enterprises?

Yes	No
36%	64%

University students

Are you familiar with the requirements concerning the microclimatic conditions in Wood Industry enterprises?

Yes	No
23%	77%

The university students have less information about the microclimatic conditions in Wood Industry enterprises while college students have a better knowledge – it might be because they have more practical exercises in such an environment.

Question 8

Which are the most dangerous machines in Wood Industry?

Both target groups consider the spindle moulder to be the most dangerous machine in Wood Industry. The other dangerous machines mentioned in the answers are: circular saw, bandsaw, planer, etc. Both groups seem to have a good level of knowledge of this question.

Question 9

Vocational College students

Are you familiar with the signs and signboards providing safety operation of woodworking machines?

Yes	No
35%	65%

University students

Are you familiar with the signs and signboards providing safety operation of woodworking machines?

Yes	No
77%	23%

The university students seem to have a better knowledge on the safety signs and signboards providing safety operation of woodworking machines unlike the vocational college students who are not familiar with them.

Question 10

Vocational College students

Are you familiar with the requirements to the work clothing when operating a woodworking machine?	Yes	No
	81%	19%

University students

Are you familiar with the requirements to the work clothing when operating a woodworking machine?	Yes	No
	84%	16%

Both target groups are quite familiar with the requirements to the work clothing when operating a woodworking machine.

Question 11

Vocational College students

Are you familiar with the safety signs ensuring proper footwear for the specific workplace conditions?	Yes	No
	52%	48%

University students

Are you familiar with the safety signs ensuring proper footwear for the specific workplace conditions?	Yes	No
	49%	51%

The results are rather different from the previous question – it seems that both groups of students have not got a sufficient level of knowledge about the appropriate footwear for specific workplace conditions.

Question 12

Vocational College students

Are you familiar with the requirements to the personal protective equipment?	Yes	No
	85%	15%

University students

Are you familiar with the requirements to the personal protective equipment?

Yes	No
92%	8%

The majority of students are familiar with the requirements to the personal protective equipment in Wood Industry.

Question 13

Vocational College students

If so, do you know the signs determining their application?

Yes	No
47%	53%

University students

If so, do you know the signs determining their application?

Yes	No
39%	61%

The results of this question show that the two target groups are not really sure about the signs determining the application of personal protective equipment.

Question 14

Vocational College students

Are you familiar with the safety technical means used for operating woodworking machines?

Yes	No
73%	27%

University students

Are you familiar with the safety technical means used for operating woodworking machines?

Yes	No
35%	65%

The university students have just an average knowledge about the safety technical means. College students are more practically oriented in their study, so they have a higher level of knowledge in this area.

Question 15

Vocational College students

Are you familiar with the signs/signboards determining their application?

Yes	No
54%	46%

University students

Are you familiar with the signs/signboards determining their application?

Yes	No
46%	54%

The lack of knowledge on signs and signals is obvious as only about one half of the students of each target group are familiar with the signs specifying the technical means used for operating woodworking machinery.

Question 16

Vocational College students

Are you familiar with the harmful chemical substances used in Wood Industry?

Yes	No
52%	48%

University students

Are you familiar with the harmful chemical substances used in Wood Industry?

Yes	No
63%	37%

College students need more training on the harmful chemical substances used in Wood Industry, as 52 % are not familiar with them. University students appear to be more aware of the hazardous chemicals. Both target groups of students are familiar with the harmful chemical substances but the need for further training is obvious.

Question 17

Vocational College students

If so, are you familiar with the signs/signboards, determining their usage and way of storage?

Yes	No
43%	67%

University students

If so, which are the signs/signboards, determining their usage and way of storage?

Yes

No

51%

49%

It is obvious that both target groups need serious training in this area although almost half of them claim to be familiar with this part of the system of signs and signboards.

Question 18

Vocational College students

Are you familiar with the signs and signals in case of emergency?

Yes

No

63%

37%

University students

Are you familiar with the signs and signals in case of emergency?

Yes

No

72%

28%

Both the vocational college and university students have an acceptable level of knowledge about the signs and signals in case of emergency.

Question 19

Vocational College students

Are you familiar with the technical means and respective signs and signals in case of fire?

Yes

No

91%

9%

University students

Are you familiar with the technical means and respective signs and signals in case of fire?

Yes

No

93%

7%

The majority of the students in both target groups seem to be well informed about the technical means and respective signs and signals in case of fire, probably because these signs are the most common ones installed.

Question 20

Vocational College students

Are you familiar with the signs and signboards determining manual handling operations?

Yes	No
53%	47%

University students

Are you familiar with the signs and signboards determining manual handling operations?

Yes	No
64%	36%

Manual handling operations are not well known field for half of the vocational college students whereas the university students appear to know more about them. Yet most of the students need more thorough training.

Question 21

Vocational College students

Do you consider you need more sufficient knowledge on the system of safety/health signs and signals in Wood Industry?

Yes	No
78%	22%

University students

Do you consider you need more sufficient knowledge on the system of safety/health signs and signals in Wood Industry?

Yes	No
89%	11%

As expected, the vast majority of the students acknowledged the need for in-depth training on the system of safety and health signs and signals in the Wood Industry.

4.2. Professionals

Question 1

How many people are working in your enterprise?

a. 1-10	b. 11-30	c. 31-100	d. more than 100
6%	26%	64%	4%

The majority of people that have filled in the questionnaire work for SMEs.

Question 2

Your enterprise activity is:

a. exclusively woodworking	b. mainly in woodworking	c. equally in woodworking and other activities	d. primarily in other activities and less in woodworking
78%	18%	3%	1%

Question 3

The machinery used in your company meets safety requirements (has been manufactured with the appropriate safety features, safety signs, conspicuous operation & safety instructions and labels):

a. totally	b. partly	c. none	d. I am not sure
41%	22%	3%	34%

As it is seen workers' lack of knowledge is considerable.

Question 4

The signs and instructions on the machinery are clear and understandable:

a. fully	b. partly	c. not at all	d. I am not sure
60%	32%	3%	5%

Although the majority of the professionals who have answered this question think the signs and safety instructions are clear and understandable, there are many who do not understand them fully.

Question 5

What does the term Occupational Safety and Health mean to you:

a. additional cost	b. wasted man-hours	c. production quality improvement
3%	9%	72%

d. I am not sure	e. other (specify)
15%	1%

As it can be seen from the answers, many people are not convinced in the significance of the training for Occupational Safety and Health in Wood Industry.

Question 6

Has a risk assessment been carried out for your workplace?

a. yes	b. no	c. I am not sure
78%	9%	13%

The risk assessment is an important step in protecting the workers and the business, as well as complying with the law. It helps employers focus on the risks that really matter in the workplace – the ones with the potential to cause real harm.

Question 7

To what extent are you informed about the content of the Risk Assessment for your workplace?

a. Well informed	b. Average	c. Poorly informed	d. Not at all
37%	37%	12%	14%

Only 37% of the professionals stated they are well informed about the risk assessment carried out in their company, which is very insufficient. Obviously, further training is needed.

Question 8

The main employee safety and health risks in woodworking companies are (please check all that apply):

a.	injuries from machinery use	42%
b.	noise	11%
c.	vibrations	7%
d.	dust	17%
e.	fire	2%
f.	skeletomuscular disorders	1%
g.	other risks	15%
h.	employees work in a risk-free environment	1%
i.	I am not sure	4%

Almost half of the employees pointed out the injuries from machinery use as the main safety and health risks. Over two thirds of accidents at work in Wood Industry occur at just three types of machine: vertical spindle moulders, circular saws, bandsaws. For comparison, in the manufacturing industry, only around 10% of major injuries are caused by machinery.

Causes of accidents can largely be attributed to inadequate guarding and poor systems of work, often resulting from **insufficient training and supervision**.

Question 9

Have you been trained in safe lifting techniques?

a. Fully	b. Adequately	c. Poorly	d. Not at all
39%	43%	12%	6%

In Wood Industry, manual handling causes approximately 30% of the work-related injuries reported each year. The potential for injury is present during: handling of timber and board material, machining and assembly, handling and storage of the finished product.

Various lifting and handling aids are available, and these can significantly reduce the risk of injury.

Only 39% of the employees answered they have been fully trained in safe lifting techniques, so the need for sufficient training is obvious.

Question 10

Employees in the wood industry companies are at risk from exposure to chemical substances:

a. true	b. false	c. I am not sure
86%	9%	5%

The majority of the professionals seem to be well informed about the risks from chemical substances in Wood Industry. Although, an ongoing training, including potential health effects of the substances used, control measures, correct use of personal protective equipment with regular revision of safe procedures, is necessary. The purpose of the training is to provide information and skills that will allow employees to work safely and to react appropriately in an emergency situation.

Question 11

Safety signs in the workplace are:

a. optional	b. compulsory	c. I am not sure
9%	76%	15%

Although the majority of workers say safety signs at workplace are compulsory, there are still many who are not fully aware of their importance.

Question 12

Match the colours of the signboards with the meaning:

1. red 2. black 3. green 4. blue 5. yellow

	1. red	2. black	3. green	4. blue	5. yellow
obligation	3%	6%	10%	77%	4%

	1. red	2. black	3. green	4. blue	5. yellow
rescue	0	11%	79%	10%	0

	1. red	2. black	3. green	4. blue	5. yellow
warning	0	3%	2%	7%	86%

	1. red	2. black	3. green	4. blue	5. yellow
prohibition	95%	0	0	2%	3%

It is obvious that many of the workers are not adequately trained and do not know the basic information concerning safety colours which can expose them to danger at their workplace.

Question 13

Are you familiar with the personal protective equipment requirements?

a. Fully	b. Adequately	c. Poorly	d. Not at all
31%	19%	47%	3%

Only one third of the professionals answered they are fully familiar with the personal protective equipment used in the Wood Industry. A sufficient training is necessary to ensure that anyone using personal protective equipment is aware of why it is needed, when it is to be used, repaired or replaced.

Question 14

If so, do you know the signs determining the application of personal protective equipment?

a. yes	b. no	c. I am not sure
31%	42%	27%

Again, only one third of the employees stated they know the signs determining the use of personal protective equipment. The employers must provide adequate training for the system of signs and signals dealing with personal protective equipment.

Question 15

Use of Personal Protective equipment (goggles, gloves, masks, etc) is:

a. mandatory	b. optional (at the employee's discretion)	c. optional (at the employer's discretion)	d. I am not sure
83%	7%	6%	4%

The employers must regularly check that the personal protective equipment is used and investigate fully any reasons why it is not.

Question 16

Personal Protective equipment, if required, is provided to the employees:

a. by the employer	93%
b. by the union	1%
c. by the insurance companies	0
d. none of the above, employees must buy them by themselves	4%
e. I am not sure	2%

It is out of the question that this kind of equipment should be provided to the employees by the employers as most of the answers show.

Question 17

Which one of the following people have to be trained on occupational safety and health in your company:

a. the employer	6%
a. all employees	46%
c. both the employer and the employees	34%
d. nobody	2%
e. I am not sure	12%

The employees have a legal duty to take reasonable care for the health and safety of themselves and the other workers.

Employers have a legal duty to ensure that those who use woodworking equipment have received adequate training for health and safety, including training in methods of work, the risks created and the precautions to be taken.

Supervisors and managers of people working in the Wood Industry also have to be adequately trained for health and safety purposes.

Question 18

How do you think training on occupational safety and health (legislation, technical issues, signs & signals, etc.) would affect your company:

a. positively	b. negatively	c. no change	d. I am not sure
86%	0	6%	8%

The vast majority of the professionals think the training in occupational safety and health will definitely have a positive impact on their company.

Question 19

How long do you think a course should be to cover sufficiently your training needs in occupational safety and health:

a. 2-3 hours	b. 2-3 days	c. 2-3 weeks	d. other (specify)	e. I am not sure
28%	66%	3%	0	3%

5. Conclusions

5.1. Vocational College and University Students

The results of the two target groups (vocational college and university students) are very similar in most of the questions in all partner countries. The majority of students have a subject Safety Regulations (or similar course for occupational health and safety) but they do not have a course specifically related to the system of safety/health signs and signals. The majority of the vocational college students are not very familiar with the legislation regarding the use of safety/health signs and signals while the university students seem to have better knowledge for the legislation in the field of Wood Industry. Most of the students appear to know the harmful health and hazardous risk factors in the Wood Industry but still the percentage of those who are not good at it is relatively high which means they need some specific knowledge in this area. Both groups have a good level of knowledge for the most dangerous woodworking machines; the university students seem to be more familiar with the signs and signboards providing safety operation of these machines. Most of students are familiar with the requirements to the personal protective equipment in Wood Industry but they do not seem really sure about the signs determining their application.

The vast majority of the students acknowledged the need for thorough training for the system of safety and health signs and signals in the Wood Industry. Both target groups of students consider the area of safety at work as very important and they would like to improve their knowledge in it.

5.2. Professionals

Most of the answers of the professionals' questionnaire are from enterprises which primary activity is exclusively or mainly woodworking. The main result of the questionnaire is that the professionals are more educated than the students but there are some aspects to be emphasized. The workers think that the signs and instructions on the machinery are clear and understandable. The knowledge for the risk assessment at the workplace is low. The workers do not have enough knowledge about the risk assessment and they have not been informed by the company management. The greatest risk at the workplace is, without any doubt, connected with the injuries from machinery use. Dust and noise are also pointed out as significant safety and health risk factors. It is therefore understandable that the need for their prevention is vital. The training in safe lifting techniques in the enterprises is insufficient and needs to be improved. The knowledge for the personal protective equipment and the signs and signboards

determining its use is not at the necessary level. The vast majority of the professionals agreed that an adequate training in Occupational Safety and health (legislation, technical issues, safety/health signs and signals, etc.) will positively affect their company. Most of the workers think that a 2-3 day course in occupational safety and health will be sufficient.

Training costs money, but untrained workers are more likely to have an accident and the consequences will cost more.

In conclusion, better level of knowledge concerning the occupational safety and health issues (and in particular the system of safety/health signs and signals) will definitely have a positive impact on the Wood Industry sector as a whole.