



Training Need Grid:

Tackling Environmental Sustainability through Blended Learning Opportunities for iVET in the Furniture and Wood Sector



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Abbreviations

I-VET	Initial Vocational Education and Training
VET	Vocational Education and Training
EWP	Engineered Wood Products
EPR	Extended Producer Responsibility

Introduction

The aim of this document is to summarize and concretize the outcomes of the **TABLE Survey on environmental sustainability**. According to the survey results, 5 key pillars were defined. This document is part of the *AI activity – Perform a Training Need Assessment*.

1 Survey

The survey was implemented in a joint of manner by TABLE partners. The questionnaire was developed by EUROCREA MERCHANT SRL. The translated questionnaire in all partners languages (including in English), was applied using the online survey tool SurveyMonkey.

1.1 Number of answers

The questionnaire was developed by EUROCREA MERCHANT SRL, and was addressed to the experts of the focus groups which were created by each partner, and others experts from the wood and furniture field. They are professionals belonging to: I-VET/VET institution, Private school for wood working, University, Public school and Technical/ professional institution and other institutions. Figure 1 presents the responses provided by the experts. The experts from Spain filled in the questionnaires in Spanish and English language.

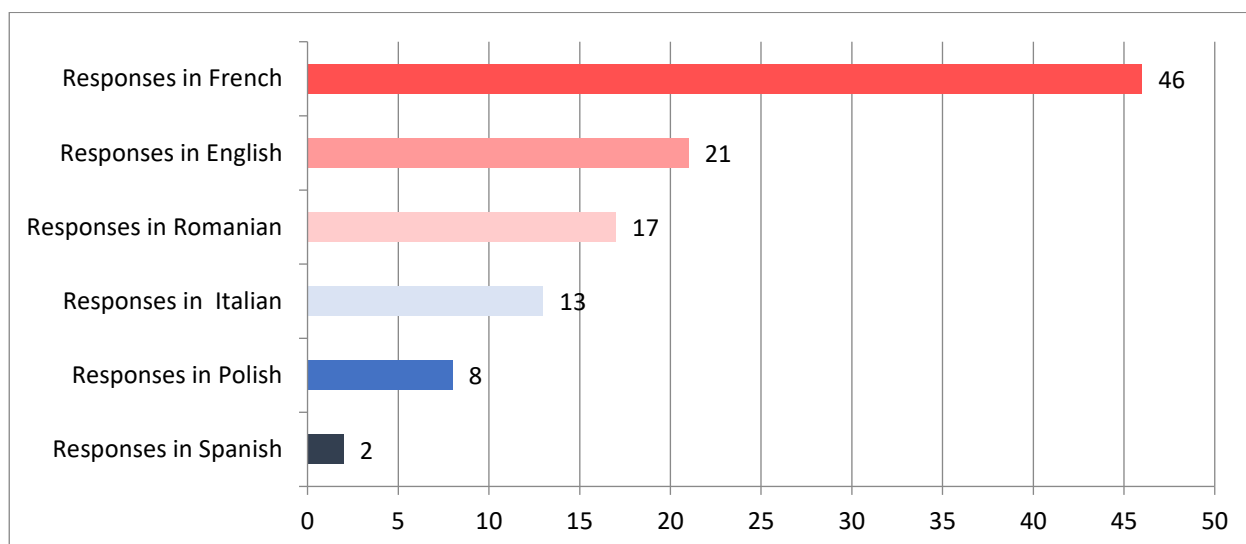


Figure 1. The number of answers to the questionnaire

1.2 Analysis of the questionnaire answers

Question no. 1

The first question refers to the institution type where the respondents work. As can be seen in Figure 2, a percentage of 25.23% work in Universities and 20.56% belong to I-VET/VET institutions and technical / professional institutions. The responses provided by experts from public schools are about 14.95% and only 3.74% are employed in private schools for wood working. In the category “Others”, different kind of professional profiles and experts were included.

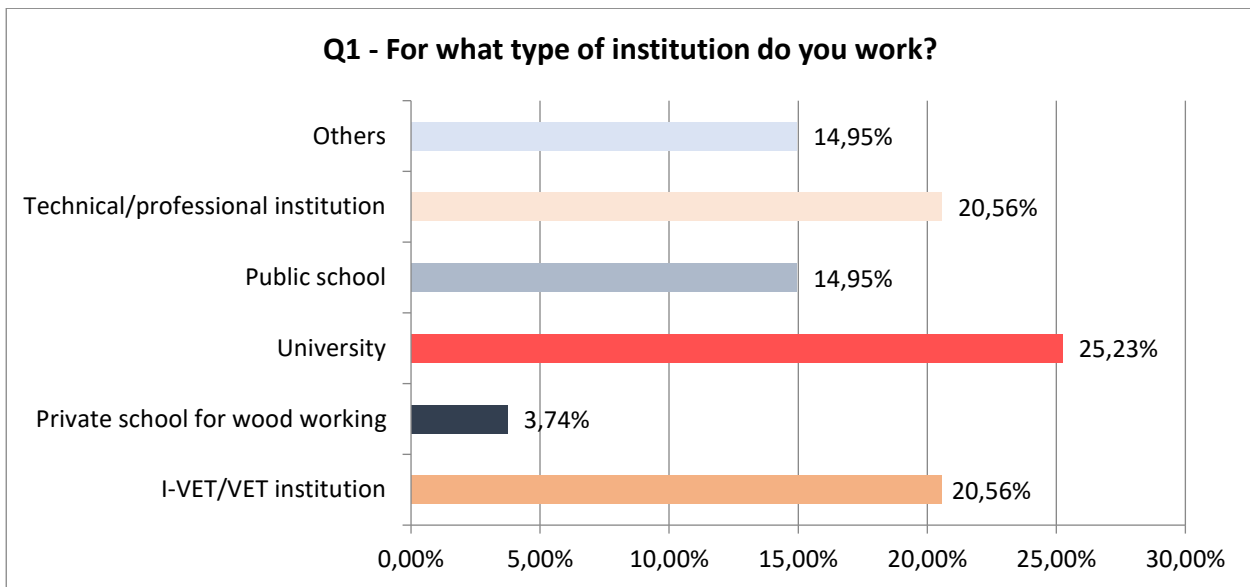


Figure 2. The number of answers per type of work institutions

Question no. 2

As expected, the majority of respondents are experts in wood and furniture, in forestry as well as in environment and sustainability sectors (Figure 3), but there is also a percentage of specialists who are experts in different "Other" categories, as detailed under Question no. 3.

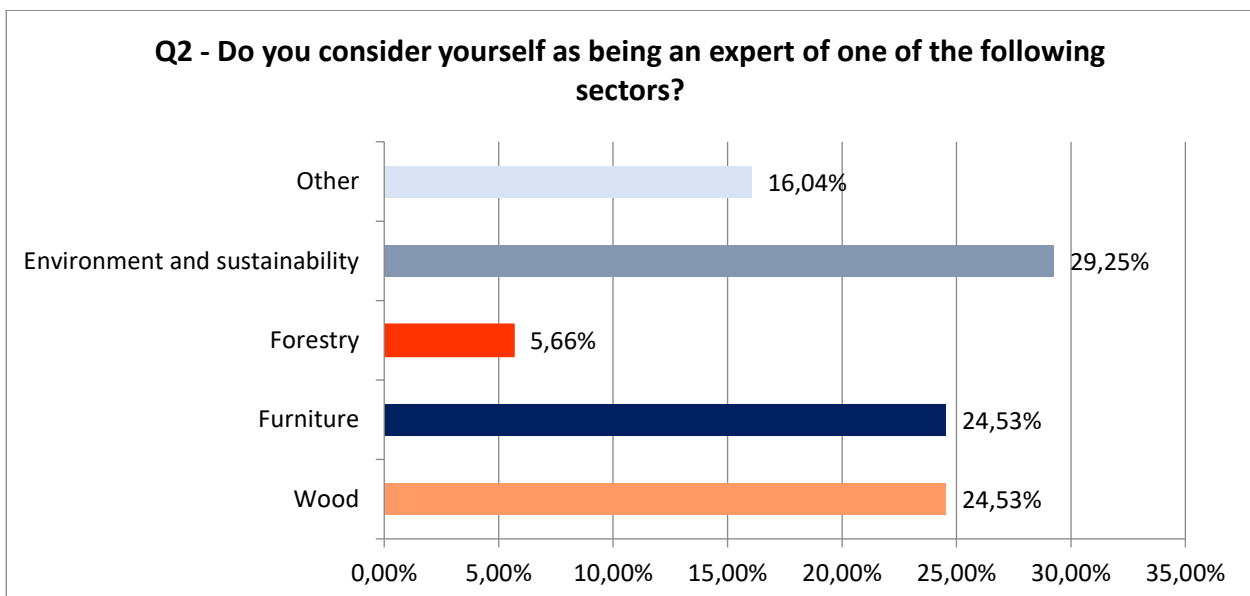


Figure 3. The sectors in which the respondents are experts

Question no. 3

The "Other" categories in which the respondents are experts are as follows:

- New technologies in education;
- Economics and Finance;
- ICT (Information and Communication in Technologies);
- Professional Qualification - Wood and Furniture;
- General Education;

- Woodworking CNC machines
- NGO;
- Association;
- Water, environment, environmental health;
- Regional Agency;
- Association;
- Design & communication;
- Product design;
- Architectural project;
- Design;
- Construction;
- Business administration in the secondary wood processing industry;
- Wood and furniture;
- Economic disciplines;
- Electrical installations;
- Health.

Question no. 4

As can be observed in Figure 4, most respondents appreciated that they have more than 10 years of experience in their work sectors.

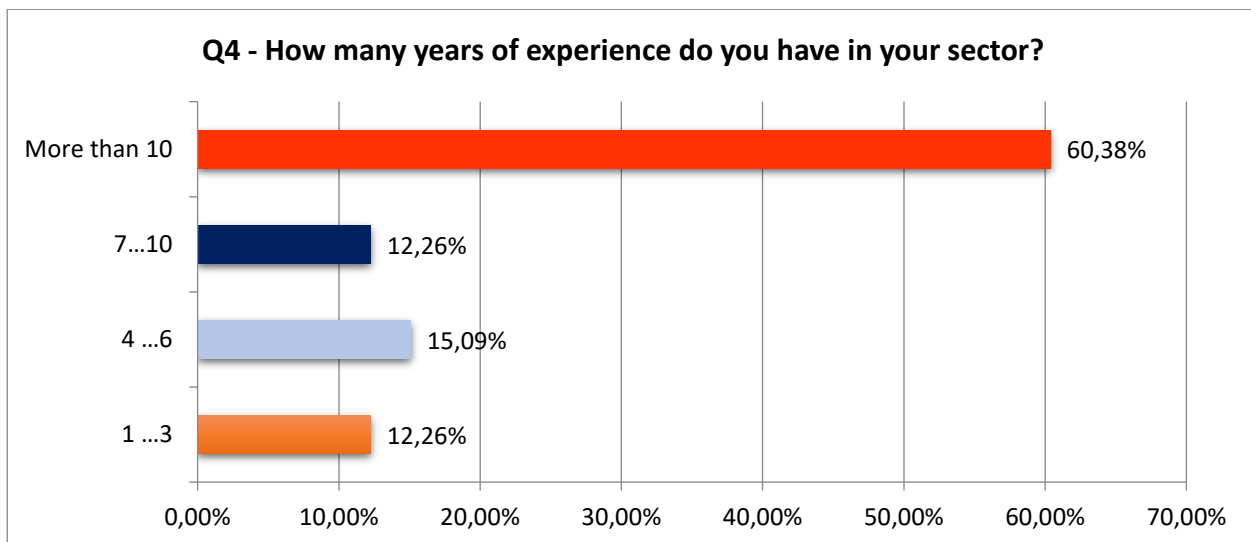


Figure 4. The experience of the specialists in their sectors

Question no. 5

Figure 5 shows that often (38.32%), or at least sometimes (35.51%), the environmental sustainability is discussed or addressed in their courses, or in their institutions. Only 14.04% responded that this concept is taught in their courses or institutions.

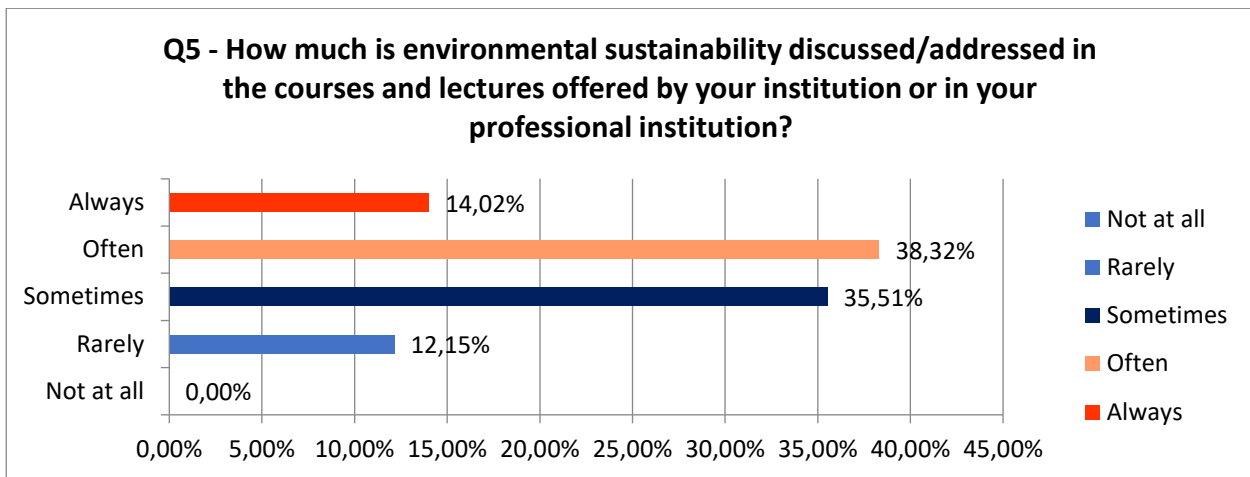


Figure 5. Approaching sustainability in courses offered by the respondents' institutions

Question no. 6

The implementation in the institution, of some topics related to sustainability, is revealed by Figure 6. Most of the respondents affirmed that sustainability can be included in pre-existing lectures (33.64%) or practical classes (21.50%).

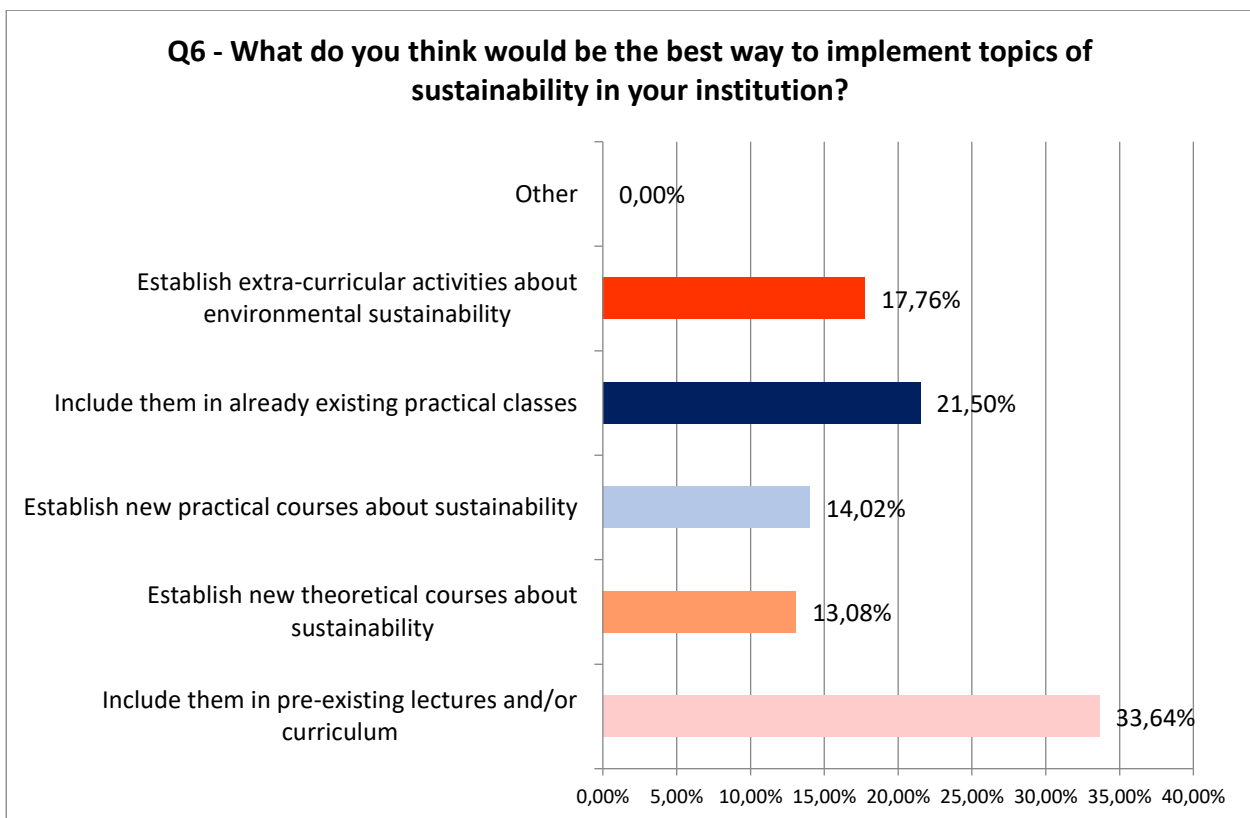


Figure 6. The implementation in the institution of some topics related to sustainability

Many respondents affirmed that this domain can be included in new practical, extracurricular (17.76%) or theoretical courses (13.08%).

The “Other” alternatives, in a very small percentage, are detailed under Question no. 7.

Question no. 7

The “Other” responses related to implementation in the institution, of some topics related to sustainability, are emphasized by respondents in the following:

- Extracurricular activities;
- Raising students' awareness on environmental issues, giving a clear direction to the whole didactic activity.

Question no. 8

Many of the answers (74.53%) offered by the respondents (Figure 7), stated that during the last 3 years, they did not have an opportunity to participate in courses related to environmental sustainability.

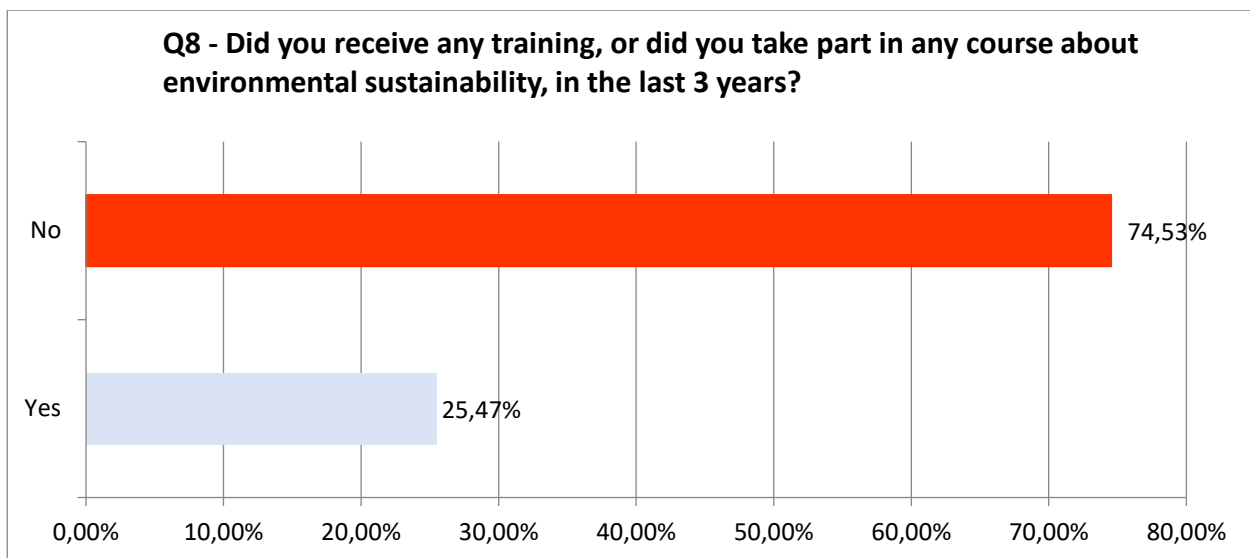


Figure 7. Participation in training courses related to environmental sustainability during the last 3 years

Question no. 9

For those who had this opportunity, the majority of respondents (62.96%) stated that the training courses related to environmental sustainability had a duration of less than 1 month, as can be observed in Figure 8.

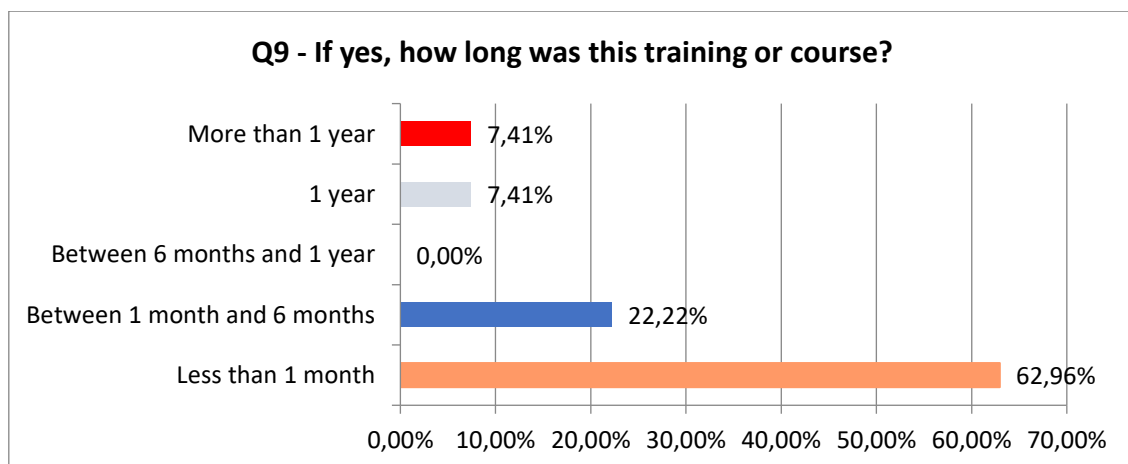


Figure 8. The training courses duration

Question no. 10

Regarding their knowledge about environmental sustainability, most of the respondents (43.81%) considered that this is situated on a middle scale between values 1 to 5 (Figure 9). Only 8.57% of them affirmed that they have higher knowledge about environmental sustainability.

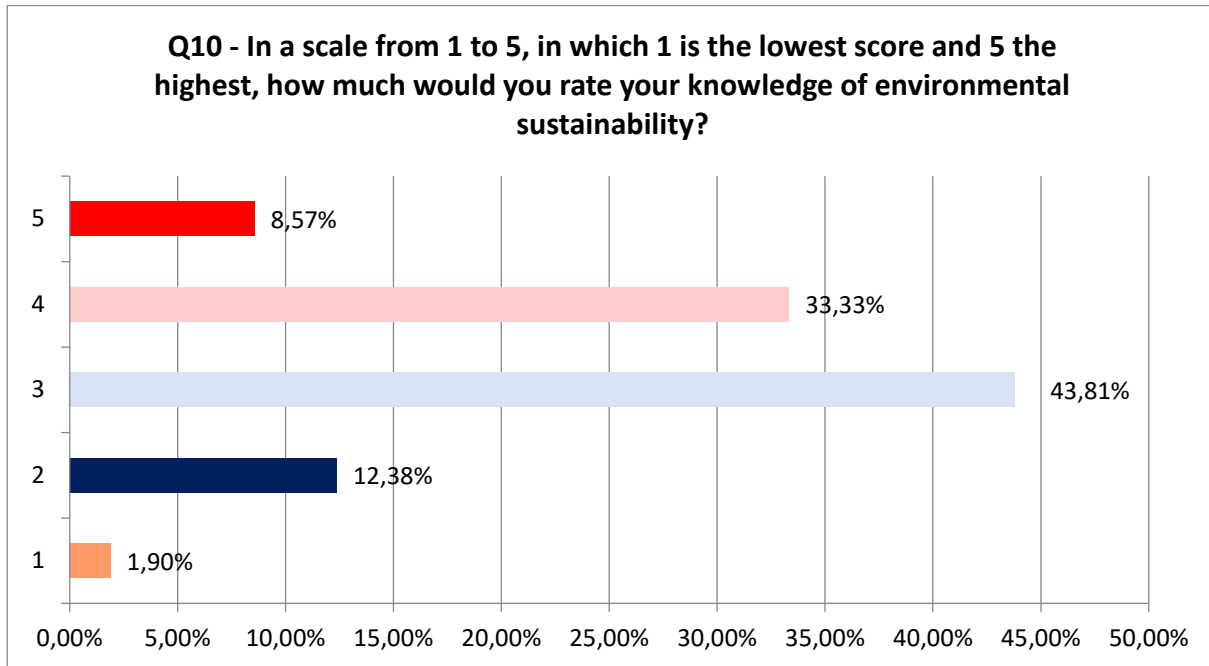


Figure 9. The respondents' answers regarding their knowledge related to environmental sustainability

Question no. 11

As can be observed in Figure 10, 64.76% of the respondents considered that environmental sustainability and competencies are very important for the furniture and wood sectors.

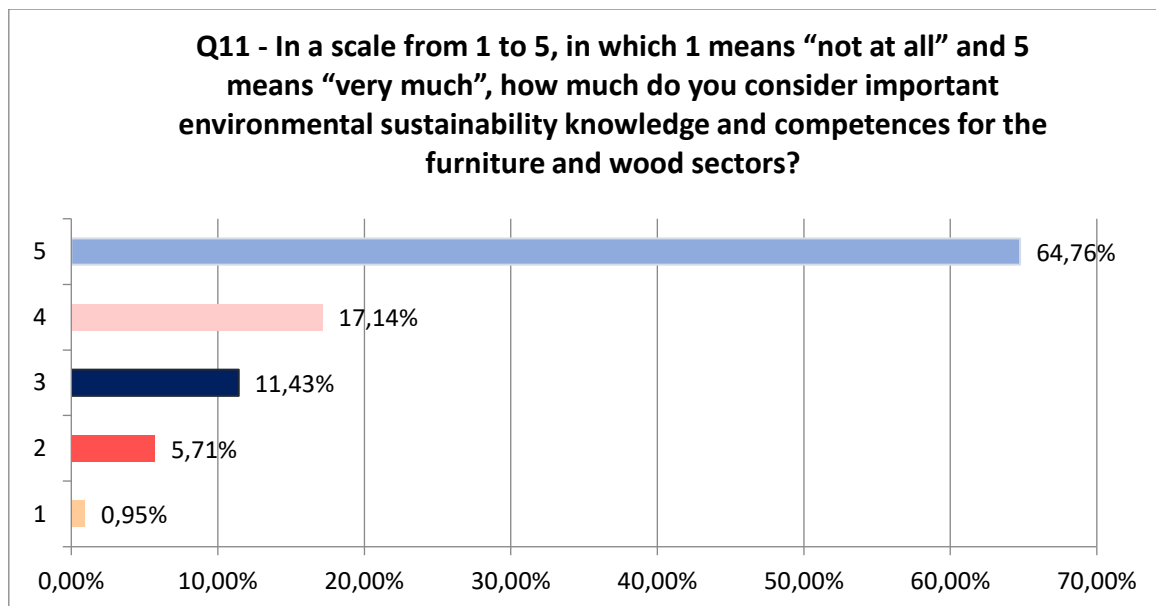


Figure 10. The importance of environmental sustainability and competencies for the furniture and wood sectors

Question no. 12

By analyzing the chart revealed in Figure 11, it can be stated that the following issues related to environmental sustainability can be taken into account:

- Eco-design (32.32%);
- Sustainable development (20.20%);
- Waste management (19.19%);
- Preservation of forest and their effects on health (15.15%);
- Pollution problems and their effect on health (15.15%);
- Renewable energies (10.10%);
- Others (1.01%) are detailed under Question no. 13.

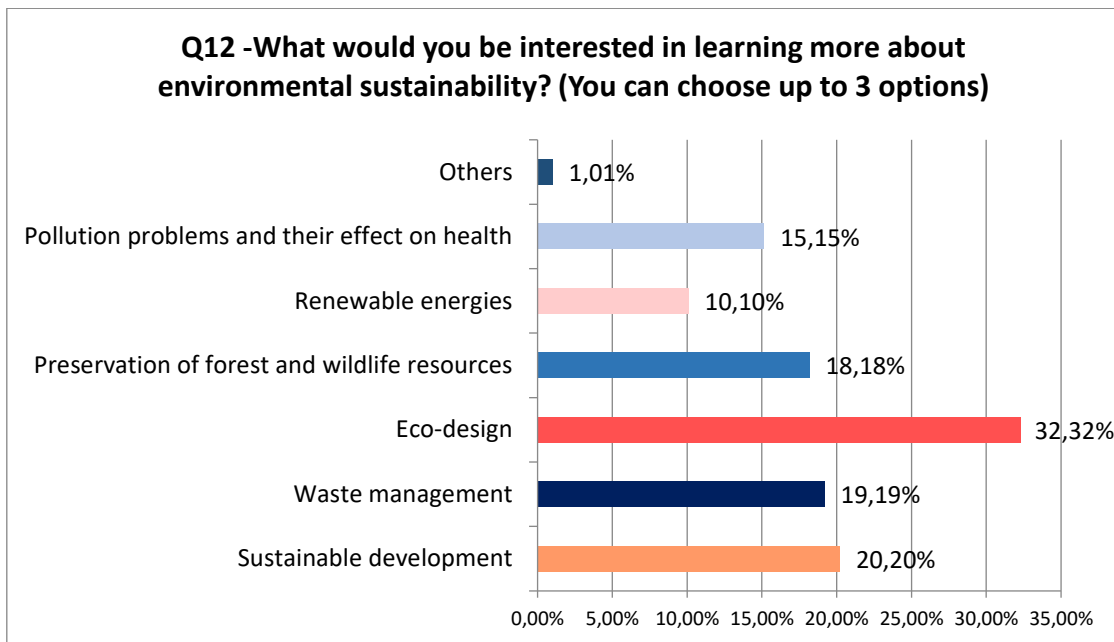


Figure 11. Important topics about environmental sustainability

Question no. 13

The “Other” responses propose the following topics:

- How to inspire traditional SMEs on sustainability issues: new materials, eco-design, circular processes;
- Steps to follow in carrying out a project in the field.

Question no. 14

Most of the answers given by experts (Figure 12) showed that environmental sustainability knowledge and competences are relevant in finding a job in the furniture and wood sectors. There are some participants that considered that knowledge is not quite relevant in order to find a new job in the domain which was mentioned above.

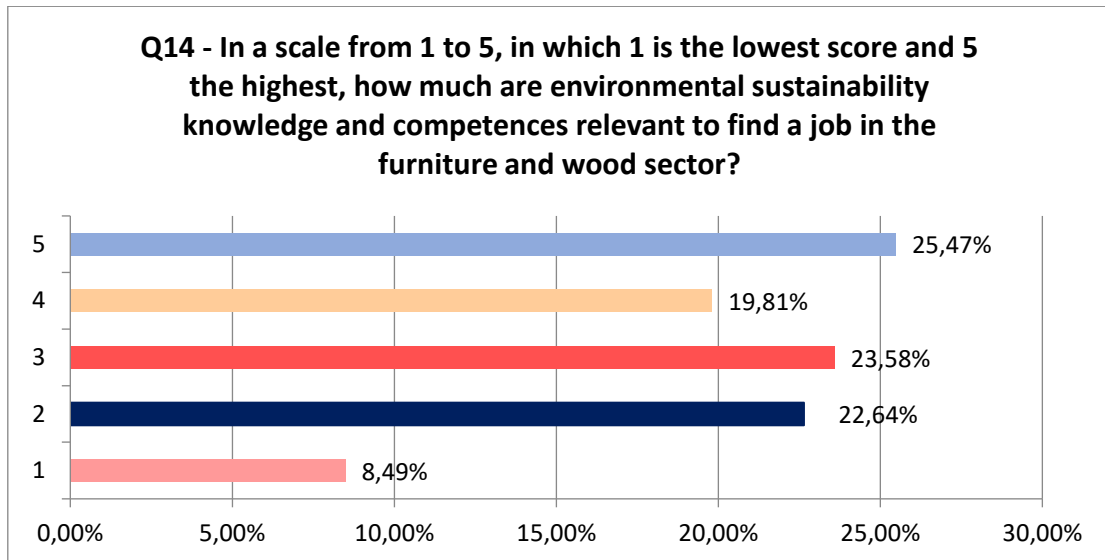


Figure 12. The relevance of knowledge and competences on sustainability in finding a job in the furniture and wood sectors

Question no. 15

When we talk about “green skills” a numerous number of relevant skills were defined by the experts (Figure 13).

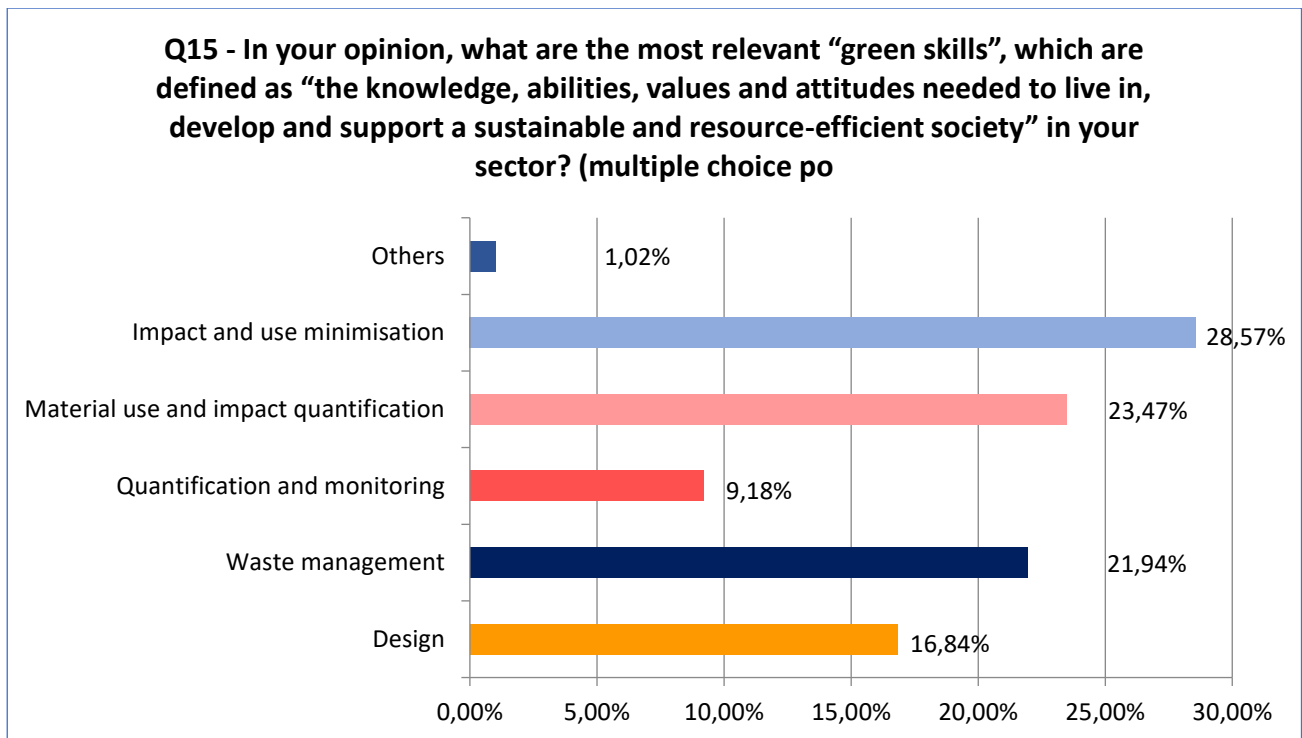


Figure 13. The most relevant “green skills”

These are:

- Impact and minimisation (28.57%);
- Material use and impact quantification (23.47%);
- Waste management (21.49%);
- Design (16.87%);
- Quantification and monitoring (9.18%).

Question no. 16

The “Other” options which were expressed on Question no. 15 were:

- Promotion of viewpoint on that subject;
- Disciplining people in waste process selection.

2 Conclusions

The aim of this chapter is to summarize and concretize the results of the TABLE **Survey on environmental sustainability**.

It is stated that “*environmental sustainability is a responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality. The practice of environmental sustainability helps to ensure that the needs of today's population are met without jeopardizing the ability of future generations to meet their needs*” (<https://study.com/academy/lesson/environmental-sustainability-definition-and-application.html>).

The conclusions that can be stated after analysing the survey results are as follows:

- The environmental sustainability related with wood and furniture field needs to be discussed in the courses and lectures;
- The sustainability issues need to be implemented in pre-existing lectures and courses and/or curriculum of furniture and wood sector education providers. Also, it can be included in existing practical classes, in new practical courses and in extra-curricular activities;
- The I-VET/VET teachers and trainers need to participate at courses about environmental sustainability;
- The courses about environmental sustainability that can be developed are: Eco-design, Sustainable development, Waste management; Preservation of forest and their effects on health, Pollution problems and their effect on health, Renewable energies;
- The most relevant “green skills” which need to be learned are: Impact and minimisation, Material use and impact quantification, Waste management, Design, Quantification and monitoring.

3 Training need grid

Taking into account the survey results, we defined 5 key pillars. Each key pillar is divided in competences, criteria and several indicators.

As is mentioned in the “*Amended version of competencies for trainers working at the international level with criteria and indicators, the following definitions for Competences, Criteria, and Indicators*” can be emphasized (https://www.salto-youth.net/downloads/4-17-3862/ETS-Competence-Model%20_Trainers_Amended_version.pdf):

“*Competences refers to a system of values, attitudes and beliefs, and skills and knowledge that can be applied in practice to manage various complex situations and tasks successfully*”.

“Criteria are the principles or standards according to which the effectiveness and potential success of the competences in question may be assessed. Each criterion is described related to knowledge, skills and attitudes”.

”Indicators are obvious elements that demonstrate that the criteria have been met. They describe actions and reactions expressed in terms of:

- ways of thinking and approaching (applying knowledge);
- ways of doing (expressing skills);
- ways of expressing (emotions or attitudes) ”.

Taking into account the above principles, we define the following key pillars:

1 – Sustainable development

Competences	Criteria	Indicators
Terms and Definitions	Knowledge of the terms	Demonstrates and understands the of the terms
	Knowledge of definitions	Demonstrates and understands the of the definitions
	Openness an readiness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
Concept evolution	Knowledge of stages/phases of sustainable development	Demonstrates and understands the stages of sustainable development
	Skill to transfer knowledge and related values to the group learners	Applies methods and approaches for the transfer of knowledge and values in learning processes
	Openness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
Actual approaches	Knowledge of actual approaches in sustainable development	Demonstrates and understands the of the actual approaches of sustainable development
	Skill to transfer knowledge and related values to the group learners	Applies methods and approaches for the transfer of knowledge and values in learning processes
	Openness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively

2 – Sustainable design

Competences	Criteria	Indicators
Terms and Definitions	Knowledge of the terms	Demonstrates and understands of the terms
	Knowledge of definitions	Demonstrates and understands of the definitions
	Openness an readiness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
Concept evolution and actual approaches	Knowledge of stages/phases and actual approaches of sustainable design	Demonstrates and understands the stages and actual approaches of sustainable design
	Skill to transfer knowledge and related values to the group learners	Applies methods and approaches for the transfer of knowledge and values in learning processes
	Openness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
Strategies and criteria for sustainable design in furniture field	Knowledge of the concept of minimising of resources consumption and its criteria	Demonstrates and understands the concept of minimising of resources consumption and its criteria in a learning context
	Knowledge of the concept of selecting low impact resources and processes and its criteria	Demonstrates and understands the concept of low impact resources and processes and its criteria in a learning context
	Knowledge of the concept of product lifetime optimisation and its criteria	Demonstrates and understands the concept of product lifetime optimisation and its criteria in a learning context
	Knowledge of the concept of extending the lifespan of materials and its criteria	Demonstrates and understands the concept of extending the lifespan of materials and its criteria in a learning context
	Knowledge of the concept of facilitating disassembly and its criteria	Demonstrates and understands the concept of facilitating disassembly and its criteria in a learning context
	Skill to transfer knowledge and related values to the group learners	Applies methods and approaches for the transfer of knowledge and values in learning processes
	Openness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
	Skill to apply methods and ways encouraging creativity, problem-solving and “out-of-the-box” thinking	Enables participants to be creative and innovative

3 - Waste management

Competences	Criteria	Indicators
Prevention and minimization of hazardous wastes	Knowledge of new policy direction in waste management	Identify new policy and waste sources
	Skills to construct a resource recycling society	Identify the hazardous wastes Assess the resource recyclability Identify the technological development for clean production and green products
	Attitude of reducing the hazardous resource consumption in furniture manufacturing	Identify the hazardous resource consumption Explain the methods to reduce resource consumption
Waste reduction	Awareness of restraining the use of disposable products	Identify the cause for which the disposable products are restricted to be used
	Skill to collect and use information about disposable products and propose green products	Define appropriate ways to collect information and use it to propose green products
	Attitude of reduction the negative impact on the environment by proposing green products.	Create green products ideas
Extended Producer Responsibility System (EPR) in wood industry	Awareness of the obligations of the manufacturers and importers to recycle a certain amount of their products/ by-products	Make relevant use of information regarding the recycling of a certain amount of the products / by-products
	Skill to valorise by-products resulted in the furniture manufacturing process	Define appropriate ways to recycle/ valorise the products/ by-products
	Attitude to find solutions of waste valorisation and recycling	Understand the valorisation/ recycling process and evaluate the benefits
Furniture Recyclability Evaluation	Understand the ways of retrieving energy from waste, and then processing it in an environmentally friendly manner	Assess the methods to process the waste into the environmentally friendly products
	Ability to oversee every step from production to disposal	Define the technological process and supply chain management
	Attitude of designing environmentally friendly products	Identify solutions to transform the waste into environmentally friendly products
Waste safety management and waste to energy	Knowledge of waste disposal systems of hazardous treated wood	Understand the importance of waste disposal in terms of waste safety management

Competences	Criteria	Indicators
	Ability to transform wood waste into fuels	Assess the balance of CO ₂ emissions
	Awareness of balancing the CO ₂ emissions in the new designed environmentally friendly products	Create energy from waste

4 - Impact and use minimization

Competences	Criteria	Indicators
Material use	Knowledge of engineered wood products (EWP) as derivative wood products	Define the structure and composition of EWP
	Knowledge on sustainable use of wood resources	Demonstrates an understanding of the concept of competence in a learning context
	Skill to evaluate the ecosystem introduced by human design or interaction with the environment.	Encourages observation, experience and reflection on the interaction between the ecosystem introduced by human design and environment.
	Skill to convey the awareness for the rational use of wood resources	Communicates the concept of competence to groups of learners
	Ability to assess the impact of the EWP to the environment and human health	Define the emission control and harmful emissions
	Openness to discuss various perceptions	Debates on various perceptions
Impact quantification	Knowledge on legislation	Selects feasible strategies
	Knowledge on potential environmental impact	Implements feasible strategies to reduce the potential impact
	Skill to identify impact quantification methods	Identifies and discusses impact quantification methods
	Skill to convey the awareness of each person's responsibility	Enables learners to take responsibility by means of case studies
Impact monitoring	Knowledge on impact monitoring techniques	Identifies the existing techniques
	Skill to identify impact monitoring methods	Identifies and discusses impact monitoring methods
	Skill to organise existing appropriate resources	Organises existing appropriate resources

5 - Renewable energies

Competences	Criteria	Indicators
Importance of renewable energies	Knowledge of the concept and dynamics worldwide	Demonstrates an understanding of the concept of competence in a learning context
	Knowledge of the strengths and weaknesses of renewable energy sources compared to conventional energy sources	Refers to strengths, weaknesses and adaptation opportunities in relevant fields and contexts
	Skill to convey the awareness for the use of renewable energies	Communicates the concept of competence to groups of learners
	Openness and readiness to accept and discuss various perceptions	Reflects on various perceptions and debates them constructively
Renewable energy technologies	Knowledge of existing technologies	Identifies the existing technologies
	Skill to transfer knowledge and related values to the group of learners	Applies methods and approaches for the transfer of knowledge and values in learning processes
	Skill to adjust the educational approach to learners' needs	Addresses learners' needs through a tailored educational approach
Promoting creativity, innovation and problem- solving thinking	Knowledge of methodologies used in youth training	Explains the methodologies used in youth training when choosing, adapting and creating methods
	Skill to apply methods and ways encouraging creativity, problem-solving and 'out-of-the-box' thinking	Enables participants to be creative and innovative
	Skill to give, receive and integrate feedback in a constructive way	Gives, receives and integrates feedback in a constructive way
	Skill to identify risk factors	'Scans' risk factors and addresses any that appear
	Curiosity and openness to improvise and experiment	Dares to improvise and experiment and to acknowledge the importance of this

4 Bibliography

[https://www.salto-youth.net/downloads/4-17-3862/ETS-Competence-Model%20 Trainers Amended version.pdf](https://www.salto-youth.net/downloads/4-17-3862/ETS-Competence-Model%20Trainers%20Amended%20version.pdf)

<https://study.com/academy/lesson/environmental-sustainability-definition-and-application.html>

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