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ECO4VET
Improvement of Vocational Education and Training
related to Ecodesign and Sustainable Production
in the Furniture Sector

Final Report

Public Part

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Executive Summary

The main objective of ECO4VET project is to **develop tools and methods for training professionals in the furniture industry in Ecodesign and Sustainable Production**. They will benefit **individuals working in furniture companies** (design, production, environment, logistics,..), **students or unemployed, training organisations and any European and national entity or authority participating in education or employment active policies**.

The project involves 9 partners from 6 different European countries (representing close to 40% of the whole furniture production in Europe) and 3 complementary fields: **the world of work or labour market, the world of Vocational Education and Training and Vocational Education and Training Policy Makers**. Thus, the partnership includes a high level of implication in the furniture sector, experience in training, interactive learning, ecodesign and/or sustainable production and good relations to regional or national authorities in charge of education and work.

The approach adopted for achieving the project objectives is as follows:

1. **Identifying training needs** of the furniture sector regarding Ecodesign and Sustainable Production in the form of learning outcomes¹
2. **Development of different qualifications** according to the needs of each professional profile and defining the units and learning modules that cover the desired learning outcomes
3. **Development of appropriate content and materials** for these qualifications **and an e-learning platform** considering innovative learning tools
4. **Conducting 5 pilot tests** in different countries in order to test learning outcomes achievement and training experience and, if necessary, to improve the developed curriculum.

The project has **already finalized and achieved important results**. The first one was the **identification and definition of vocational skills, knowledge and competence mismatches** among professionals of the furniture sector, regarding concepts of Ecodesign and Sustainable Production. These findings greatly contributed to the **design of the curriculum** where **three qualifications have been defined** corresponding to three professional profiles (general manager, production manager and designer).

The two previous results contributed as key inputs to the **development of the training materials and creation of the on-line platform framework** hosting the online course. Once the platform and all materials were ready, **5 pilot training tests were conducted in 5 different languages (English, Spanish, Polish, Romanian and Turkish)**. **52 test participants from different European countries, in addition to learning, gave their feedback** in order to improve the modules composing the course on Ecodesign and Sustainable Production.

The project was supported by **dissemination activities**, which included, among others, a website (www.eco4vet.com), a newsletter and various publications and events.

Regarding the sustainability of the project, the partnership has created a **plan with some activities** for the first year after the funding period that include **workshops, training courses and promotion events and activities**. Furthermore a Memorandum of Understanding has been signed by all partners with the objective, among others, of

¹ See chapter 7. Technical glossary

keeping active, current and available ECO4VET platform and course for all interested students.

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1. Project Objectives

The main objective of ECO4VET project is to **develop tools and methods for training professionals in the furniture industry in Ecodesign and Sustainable Production** and thus, at long term, **reducing the furniture industry's environmental impact**.

There's an identified educational gap between training offer and skills demand related to ecodesign and sustainable production. Furthermore, **there is not an official curriculum in these matters at European level**.

This fact directly affects the traditional manufacturing furniture industry. **Some new factors have appeared that make companies need this knowledge and skills**, such as new restrictions in environmental legislation, the release of standard guidelines for incorporating ecodesign, and specially the appearance of emerging markets very demanding with the product sustainability.

ECO4VET aims at addressing this situation through its specific objectives:

1. **To define the training needs** regarding Ecodesign and Sustainable production in the furniture sector.
2. **To design and develop an Official Curriculum** on *Ecodesign and Sustainable Production in the Furniture Industry* that considers innovative learning methods.
3. **To develop a Platform for distance training** with content in different languages.
4. **To promote innovative methods for vocational education and training** like learning from experience or personal project development.
5. **To involve vocational education and training policy makers** contributing to disseminate the curriculum and the possibility of recognizing it as a standard model.
6. **To develop a Memorandum of Understanding** for recognition of this training among different entities.
7. **To develop training recommendations** for teaching these subjects that can be adopted by training institutions in all EU countries.

The training methods and tools developed will benefit:

- **Individuals working in furniture enterprises** (design, production, environment, logistics,..) by increasing their skills and thus their company competitiveness.
- **Students or unemployed** by increasing their skills and thus their employability and access to better jobs.
- **Training entities** that will increase their curriculum offer.
- **Any European and national entity or authority participating in education or employment active policies** by increasing employability and competitiveness in their region.

2. Project Approach

The adopted approach for achieving the project objectives is as follows:

1. **Identifying training needs** of the furniture sector regarding Ecodesign and Sustainable Production in the form of learning outcomes
2. **Development of different qualifications** according to the needs of each professional profile and defining the units and learning modules that cover the desired learning outcomes
3. **Development of appropriate content and materials** for these qualifications **and an e-learning platform** considering innovative learning tools
4. **Conducting 5 pilot tests** in different countries in order to test learning outcomes achievement and training experience and, if necessary, to improve the developed curriculum.

It was considered that this approach was the most appropriate because it **comes from the real needs of the furniture industry** to develop and deliver **tailored training that really cover these needs**.

For this reason, **the furniture industry was involved from the beginning of the project**, both through entities that are part of the consortium as by having an important role in the activities, in which industry experts and manufacturers' employees have been consulted and have participated.

During the development of the curriculum, e-learning platform and training content, **training institutions and policy makers** that are part of the consortium **were involved**. This ensured the representativeness of all the targets and the applicability of results.

Moreover, **end users have performed the test of this training in a real environment** so that it could be checked whether the project results met the expectations or not. These users were **monitored and surveyed** to collect their feedback and suggestions for improvement. The more feasible improvement suggestions were considered for their implementation, some during the project funding period and some remaining for further development.

The **profiles of the furniture sector** that have been considered in the project, giving that they can act on ecodesign and sustainable production in a company, are:

- **General Manager**
- **Production Manager**
- **Designer**

Regarding the issues for the training to cover, the partners had previously identified four **pillars of interest in which training should focus** and it was confirmed by the study of the sector needs that was performed. These pillars are:

- Basic principles of **management systems**
- **Environmental management systems** and their application in the furniture industry
- Strategies for **reducing the environmental impact** of the industrial processes and the final product in the furniture sector
- **Ecodesign** and its application in furniture

Concerning the methodology for the development of the qualifications **ECVET², EQF¹ and learning outcomes¹ were used.**

To implement ECVET, which is an European instrument to support lifelong learning, the mobility of European learners and the flexibility of learning pathways to achieve qualifications, it is necessary that qualifications are described using units of learning outcomes so as to be able to relate the outcomes of assessed or validated learning experiences in a common methodology.

According to this, **the furniture industry identified needs were translated into learning outcomes** that are statements of what a learner knows, understands, and is able to do on completion of a learning process defined in terms of knowledge¹, skills¹, and competences¹.

These **learning outcomes were used for defining three qualifications** (one for each professional profile: general manager, production manager and designer), designing the curriculums, and to guide assessment based on knowledge, skills, and competences, etc. A set of those learning outcomes make up a study unit, and a collation of study units make a full qualification.

Regarding EQF, each level has some descriptors for the type of learning outcomes that are achieved through a qualification of that level. For ECO4VET qualifications, according to the learning outcomes that learners achieve through each qualification, **an EQF level was established.**

The use of these recommendations and instruments of the European Commission will **make easier the recognition and integration of the developed qualifications into the European Union education systems** and thus, the sustainability of the project.

² See chapter 7. Technical glossary

3. Project Outcomes & Results

ECO4VET's first step was the **identification and definition of vocational skills, knowledge and competence mismatches** among professionals of the furniture sector, regarding concepts of Ecodesign and Sustainable Production and its integration in the furniture industry. The completion of this phase entails the **achievement of objective 1**.

These mismatches have been identified through:

- **Interviews with experts and questionnaires to furniture sector professionals** to define the importance and grade of achievement of different learning outcomes (knowledge, skills and competences) related to Ecodesign and Sustainable Production.
- A research to **identify current training programs on Ecodesign and Sustainable Production and its contents analysis** in four European countries.
- **A comparison between the contents** of current training programs **and the learning outcomes that professionals from furniture industries consider important and needed**.

These findings have greatly contributed to the **design of the curriculum**, another key step for the project that has been completed (**achievement of objective 2**).

From the identified learning outcomes needs, **three qualifications have been defined** that correspond to the three target profiles (general manager, production manager and designer). Each qualification has been named and weighted according to ECVET points and EQF level and also the possibilities of different and adapted training paths is being considered.

Qualifications and their units, recommended training and assessment methods have been summarised in the **document “Training guidelines”** with a **dual functionality**:

- **For VET providers:** reference document for implementing the qualifications. Qualifications are detailed in this document with their corresponding units and learning outcomes so that, from this document, they can generate related training contents.
- **For VET trainees:** reference document about the different qualifications available, their units and its requirements and the learning outcomes that can be achieved depending on the selected units for a personal training path.

The document, initially created in English, was translated to Spanish, Polish, Turkish and Romanian in order to reach a wider spectrum of target users. This document, which corresponds to the **achievement of objective 7**, is public and can be found at the ECO4VET website: <http://www.eco4vet.com/results-and-outputs>

The two previous results contributed as key inputs to the **creation of the on-line platform framework** that hosts the online course **and to the development of the training materials**. Both can be considered the key project outputs, **representing the achievement of objectives 3 and 4**.

The training materials consist of **14 units containing theory, exercises and assessment plus a personal project** to be done following 12 steps, each of them corresponding to one of the units. These materials were created in English and translated into Spanish, Polish, Turkish and Romanian and they were also **transformed into interactive objects** for been integrated into the e-learning platform.

The e-learning platform was created from **functional and non-functional specifications** that were defined by the partnership. Existing elearning tools were assessed against the specifications to determine if they could be used for the ECO4VET course. An existing tool, Chamilo, was selected to be adapted for being **the ECO4VET platform**. Necessary modifications were done and **the interactive content was uploaded** into the platform. Then, all requirements were internally checked in the environment of the platform with multiple test cases and final adjustments were made.

Additionally, **“How to” guidelines were delivered** in order to make possible the use of the platform by trainers and learners. These “Guidelines on how to use the Learning Platform” are public and accessible through the project website where **different documents and videos are available**: <http://www.eco4vet.com/results-and-outputs>

Once the platform and all materials were ready, **5 Pilot training tests were conducted in 5 different languages (English, Spanish, Polish, Romanian and Turkish)**. The test was carried out following the instructions of the previously released plan, a document describing how the pilot test activities should had to be carried on and how to evaluate the level of success of the pilot test. The **52 test participants from different European countries, in addition to learning, gave their feedback** in order to improve the modules composing the course on Ecodesign and Sustainable Production. The aim was **improving these courses so that they could be offered during next years** to the furniture sector professionals in order to reduce the knowledge gap within the sector and support the sustainability of the project on the long term.

Additionally, some activities during the whole project were **focused on dissemination** for spreading the objective, the evolution and results of the project and creating awareness among stakeholders from companies, workers (active and unemployed), students, vocational education and training policy makers, associations and organizations of the furniture sector and educational sector at local, national and European levels. These activities, which **contributed to the achievement of objective 5**, included the **website www.eco4vet.com, newsletters, press releases, articles, dissemination events, small group meetings, fairs participation,...** It’s important to highlight that, in order to boost the dissemination impact at European level, the partnership created a Database including around **100 national and pan-European entities** from the furniture and wood sectors. These included national and Pan-European associations of companies’ professionals and Trade Unions across Europe active in the Furniture Sector. Moreover, the consortium participated to a **meeting of the European Social Dialogue Committee – Furniture** that involves key European stakeholders and key-players from the furniture sector.

The dissemination activities played a relevant role for the overall success of the ECO4VET project, this is true not only for the information delivered to the different target groups, but also for the feedbacks and opinions received during the several meetings held with the different stakeholders. The **feedbacks received from the different target groups** were, in general, **very positive** in relation to the topics targeted by the project (Ecodesign and Sustainable Production). These are gaining a growing importance in the markets and could allow European companies to make stronger their competitive advantages while dealing with the importance of reducing the environmental footprint of the sector. These feedbacks were **very positive** also in relation to the content of the new **joint curricula** and the related content of the **ECO4VET course**.

In order to guarantee the sustainability of the project, the partnership has created a **plan on exploitation activities** to be carried out after the project that includes **training courses, workshops and promotion events and activities**. Additionally, a **Memorandum of Understanding** has been signed by all partners, **achieving objective number 6** and covering the following objectives:

1. To **keep active, current and available** platform for all students interested in ECO4VET courses.
2. To **involve VET policy makers** contributing to the dissemination of project results.
3. To think and **develop new projects** related to Ecodesign & Sustainable Production.
4. **Honor and respect the agreements** signed in ECO4VET project.

4. Partnerships

The project involves 9 partners from 6 different European countries and 3 complementary fields:

- **The world of work or labour market.**
Partners who are in direct contact with furniture industries and relevant stakeholders. They have the expertise for skills needs analysis and have played an important role during dissemination, exploitation and pilot test activities.
 - AMUEBLA - Innovative business association of furniture manufacturers and related in the Murcia Region - SPAIN
 - OIGPM - Polish chamber of commerce of furniture manufacturers - POLAND
- **The world of Vocational Education and Training**
Partners who are familiar with the joint curriculum design and delivery, the development of the learning platform, and quality assurance for ensuring that the project developments and results comply with the expected quality.
 - CENFIM - The wood and furniture technology centre of Catalonia - SPAIN
 - PERA - Pera fine arts Education Centre - TURKEY
 - GM - GRIGORE MOISIL Technological high school Braila - ROMANIA
 - CCS - Crystal Clear Soft - GREECE
 - KAIROS - Kairos S.p.A. - ITALY
- **Vocational Education and Training Policy Makers.**
Entities involved in developing VET policy and socially inclusive practices and who are in contact with occupational orientation services, representative educational organisations and relevant national, regional or local authorities.
 - SOC - Catalanian occupation service - SPAIN
 - BUDOWLANI - Związek Zawodowy Budowlani Trade Union - POLAND

Thus, the partnership is very well **balanced in terms of the partners' field**: most of the partners have a high level of implication in the furniture sector, experience in training, interactive learning, ecodesign and/or sustainable production, good relations to regional or national authorities in charge of education and work, which is an excellent basis for mainstreaming the project results at political level, and cover all the target groups of the project.

The **geographical balance** of the consortium **ensures the European Perspective** and is a guarantee for the successful project objectives and results dissemination and exploitation, covering a big European area.

Since some of the objectives of the project is to define a **harmonised European Curricula** and to draft training recommendations that can be adopted by **training institutions in all EU countries** the **added value of carrying out the project with partners from several European countries** is evident, as cooperation is needed to **align the same curriculum for EU avoiding differences between the European countries**.

Moreover, ECO4VET platform will connect experts and students from the furniture sector. Users will have the chance of sharing information, knowledge and experiences with other

EU users. ECO4VET will also become the first step for collaborations, which is aligned with the purposes of the EC: an approach to enhance the **EU cooperation in ecodesign activities**.

Finally, from the dissemination and exploitation point of view, the **European coverage** is a good point in order to publicize the project and its evolution and results in all the consortium countries: the participating countries **represent close to 40% of the whole furniture production in Europe**.

5. Plans for the Future

ECO4VET partners are interested in an **improved exchange of information, communication and collaboration** regarding the vocational education and training related to Ecodesign and Sustainable Production in the furniture sector. They are also interested in **further development of learning contents and skills, knowledge and competence** related to ecodesign, new sustainable methods of working processes, innovative methodologies and new technologies used in the furniture sector.

Furthermore, they are convinced that to remain leaders of innovation and quality, the European furniture industry needs to **upgrade the qualifications** customized to requirements of furniture industry. They also believe that it is essential to **strengthen the link between innovation and industry** and facilitate permeability between vocational training and industries and that it is crucial to achieve the **intensification of cross-border cooperation** of the various stakeholders in the field of vocational training for the furniture industry.

With these aims, the partnership has signed a Memorandum of Understanding under which for, at least, two years after completion of the project, the partners undertake to fulfill the following objectives:

- **To keep active, current and available ECO4VET platform and course for all students interested in courses.** The necessary domains will stay active, as well as hosting where the platform is housed. Also the course content will be kept updated. The course will keep available in five different languages: English, Spanish, Polish, Romanian and Turkish.

The partnership has created a **plan with some activities** for the first year after the funding period that include **workshops, training courses and promotion events and activities**.

People interested in the course, can **contact** the VET providers and company associations below, according to their language of interest, to get **more information and check dates and availability to participate to the course** and improve their professional profile:

- CENFIM for English and Spanish - info@cenfim.org
 - AMUEBLA for Spanish - direccion@amueblacooperacion.es
 - OIGPM for Polish - oigpm@oigpm.org.pl
 - GRIGORE MOISIL for Romanian - moisil.braila@yahoo.com
 - PERA FINE ARTS for Turkish - pera@peraguzelsanatlar.com.tr
- **To involve VET policy makers contributing to the dissemination of project results.** Each of the partners directly related to VET policy makers will carry out exploitation activities with the aim of involving representative organizations as well as to relevant national, regional or local authorities, for implementing these courses and recognizing them as an standard VET model, which will ensure a high impact on VET policies.
 - **To think and develop new projects related to Ecodesign & Sustainable Production.** From analysis of the results obtained, each partner will draw conclusions that allows them to generate new proposals or project ideas, which involve improving both the quality of Vocational and Educational Training as sustainability in SMEs in the furniture sector.

6. Contribution to EU policies

The EU 2020 strategy and its two **flagships Initiatives on “Sustainability growth” (“Resource efficient Europe” and “Industrial Policy”)** are EU policies where **ECO4VET project can strongly contribute**, as these policies emphasise the objectives of sustainable development and give an increased attention to resource efficiency and EU competitiveness.

Regarding competitiveness, a key goal under EU 2020 is **to support companies to compete globally while they shift to a greener economy**. Thus, to increase competitiveness of the European Furniture Industry while making their activity more sustainable, professionals from the sector will have to acquire the skills and training needed to work in the green economy. **ECO4VET project develops tools for it.**

In relation to the above, another EU 2020 flagship initiatives **“New Skills for New Jobs agenda”** addresses the transition to a low carbon economy by helping Europe anticipate its future labour market needs in this area.

Furthermore, one of the main training pillars that **ECO4VET will address** is **Ecodesign** and **it is foreseen the extension of the Ecodesign Directive to cover non-energy related goods (i.e furniture)**. This will be a very important instrument for sustainable growth policy and will contribute to get a coherent framework for policy implementation.

7. Technical glossary

- **Competence**

Competence is the proven ability to use knowledge, skills and other abilities to perform a function against a given standard in work or study situations and in professional and/or personal development. In the EQF, 'competence' is described in terms of responsibility and autonomy.

- **Ecodesign**

Ecodesign is a design methodology responds to demand for using more environmentally friendly materials and processes by developing products that reduce their environmental impact throughout their life cycle (raw material selection and use, manufacturing, packaging, transport and distribution, installation and maintenance, use and end-of-life).

- **ECVET points**

European Credit system for Vocational Education and Training is a common methodological framework that facilitates the accumulation and transfer of credits for learning outcomes from one qualifications system to another. It aims to promote transnational mobility and access to lifelong learning. It is not intended to replace national qualification systems, but to achieve better comparability and compatibility among them. ECVET applies to all outcomes obtained by an individual from various education and training pathways that are then transferred, recognised and accumulated in view of achieving a qualification. This initiative makes it easier for European citizens to gain recognition of their training, skills and knowledge in another Member State.

- **EQF level**

The European Qualifications Framework (EQF) is a translation tool that helps communication and comparison between qualifications systems in Europe. Its eight common European reference levels are described in terms of learning outcomes: knowledge, skills and competences. This allows any national qualifications systems, national qualifications frameworks (NQFs) and qualifications in Europe to relate to the EQF levels. Learners, graduates, providers and employers can use these levels to understand and compare qualifications awarded in different countries and by different education and training systems.

- **Knowledge**

Knowledge is the outcome of the collection and assimilation of information through learning. In the EQF, knowledge is described as theoretical and/or factual.

- **Learning outcomes**

Learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process.

- **Skills**

A skill is the ability to apply knowledge and use know-how to complete tasks and solve problems. In the EQF, skills are described as cognitive (use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).

- **Sustainable Production**

Sustainable Production is the manufacturing of products using processes that are non-polluting; conserve energy and natural resources; economically viable; safe and healthy for employees, communities, and consumers.

- **Vocational Education and Training (VET)**

VET is defined as education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market.

