



Executive Agency, Education, Audiovisual and Culture



Vocational Training on Sustainable Buildings Maintenance and Refurbishment

Progress Report

Public Part

Project information

Project acronym: FORMAR

Project title: Vocational training on sustainable buildings maintenance and refurbishment – Agreement n. 2013 – 3147 / 001 - 001

Project number: 539465-LLP-1-2013-1-PT-LEONARDO-LMP

Sub-programme or KA: LEONARDO DA VINCI

Project website: <http://formarproject.eu/>

Reporting period: From 01/10/13
To 31/03/15

Report version: 1

Date of preparation: April 2015

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This project has been funded with support from the European Commission.

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Executive Summary

FORMAR project is aimed at carpenters, painters, bricklayers, building technicians, and installers of solar panels. Since the professionals targeted by the project acquire their training in vocational training centres and professional training schools, these are the main target groups of the FORMAR project. Other relevant stakeholders can also benefit from the outcomes of the project, like building companies and the national qualification agencies.

The main objective of the FORMAR project is to develop training materials to improve the skills of workers of the building sector on sustainable construction. In order to do so, a set of 25 hours training units will be developed and integrated in the vocational training of carpenters, painters, bricklayers, building technicians, and installers of solar panels. Also a transversal unit on sustainable construction will be developed, concerning basic concepts, principles, strategies and building techniques. FORMAR project has also the objective of improving the information provided to clients and building owners, through the development of guides to support the decisions they do when they need to buy, rent or refurbish a building, contract building professionals or buy building products and materials.

The FORMAR project partnership is composed of 10 organizations from three EU countries (Portugal, Spain and France). The partnership includes one research centre in the areas of energy and sustainability in the building sector, one vocational education and training provider for the building sector and an advisory group (composed by the associated partners) in each country.

The project started with the analysis of needs and existing training materials for each profession concerning sustainable construction and the identification of best practices and constraints in each country. These steps were already been done for all the training units.

The next steps are related to the development of the training materials and of the clients' guides for each profession. These steps were already been done for the transversal unit and are under development for the other training units. The training materials and the clients' guide for the transversal unit are already being evaluated by the associated partners. The other training materials will be evaluated later on in the project. A second evaluation step by other relevant stakeholders of the building sector will follow.

After these two evaluation steps, the training materials will be tested in classrooms. After the evaluation and testing, the final materials will be translated from English to the languages of the countries participating in the project: Portuguese, Spanish and French. The materials will then be edited in the three languages and some of them will be publicly available in the project website.

Then, a final FORMAR conference will be organized in Lisbon to present the project results and scientific papers will be prepared and submitted to scientific magazines relevant to the building sector and sustainable construction. Also, the final materials that are to become publicly available will be uploaded to the ADAM portal.

By the end of the project, the partnership will prepare the procedures for the integration of the training modules in the National Catalogue of Qualifications in each country, as well as the respective applicant dossiers.

Further information can be found in the project website at <http://formarproject.eu/>.

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1. Project Objectives

What are the objectives of the FORMAR project?

When we buy or rent a house to live in, we all expect to find a building with good construction quality for a very reasonable price, located in an adequate neighbourhood that can provide us the quality of living we are looking for. We also expect that the house was built in a way that we do not need to spend too much money in energy bills during the years we are going to live there. And, last but not least, we also look for a safe internal environment, meaning that we expect that walls, ceilings and floors were built and treated in a way and using paints, varnishes and other materials that cause no harm for our health.

Then our house will need maintenance or refurbishment works. When that happens, we want to contract good professionals that are able to do the work in a proper way for a reasonable price. And as a result of those works we also want our house to become safer and more energy-efficient.

Sustainable construction deals with these matters. It consists of several principles, strategies and techniques that allow designing, engineering, maintaining and refurbishing safe, environmentally sound and energy-efficient buildings to live in or to work at.

In the last years sustainable construction has become an important priority of the European Union for the building sector. There are already building companies, architects and engineers implementing sustainable construction in their work, and also more and more clients are demanding it, whether they are private companies, public organizations or families.

It has been noticed, however, that there is a lack of training concerning these issues among the different professionals of the building sector. Professionals like painters, carpenters or bricklayers are often not fully aware that, during the course of their work, they can use techniques and choose products and materials that are more consistent with sustainable construction.

In this sense, the main objective of the FORMAR project is to develop training materials to improve the skills of workers of the building sector on these matters. In order to do so, a set of 25 hours training units will be developed and integrated in the vocational training of carpenters, painters, bricklayers, building technicians, and installers of solar panels. Also a transversal unit on sustainable construction will be developed, concerning basic concepts, principles, strategies and building techniques.

But there is also the need to act at the demand level, and because of that the FORMAR project has also the objective of improving the information provided to clients and building owners, through the development of guides to support the decisions they do when they need to buy, rent or refurbish a building, contract building professionals or buy building products and materials.

Who are the target groups of the FORMAR project and how are they involved in the project?

Since the professionals targeted by the project acquire their training in vocational training centres and professional training schools, these are the main target groups of the FORMAR project. Also other relevant stakeholders of the building sector can benefit from the outcomes of the project, like building companies, consultants, business associations, universities, and the national qualification agencies.

FORMAR was prepared in a way that allows all these stakeholders to contribute to the outcomes of the project and thus ensure that the final products are of good quality and consistent with the objectives of the project. These companies and organizations are involved in the project through their participation in the National Advisory Groups (NAG) as associated partners of the project.

The associated partners are asked to evaluate the training materials and the clients' guides, either using the project website through a dedicated communication platform, either by the participation in evaluation workshops.

Furthermore, stakeholders that are not associated partners of the project will also have the opportunity to contribute to the project. FORMAR includes a second evaluation step that will involve these other institutions, thus promoting a wider dissemination of the project outcomes and a multiplying effect of the project impact. Also, the partnership decided to organize open workshops in the end of all project meetings, which is also an opportunity to involve local relevant stakeholders.

What is the potential impact upon the target groups and what are the benefits to the target groups?

During the duration of the project, FORMAR offers to its associated partners free access to the training materials and also visibility of the institution in the project materials.

Furthermore, the partnership is very committed to developing training materials with such a quality that they may be integrated in the National Catalogues of Qualifications, once they are evaluated and tested. The national qualification agencies – some of them are associated partners of the project – will review the training materials in order to improve their potential to be integrated in the national catalogue of the three countries participating in the FORMAR project.

This integration will allow reaching the main target groups of the project also after it is finished. Vocational training centres and professional training schools will be able to offer vocational training on sustainable construction for carpenters, painters, bricklayers, building technicians and installers of solar panels. Furthermore, the development of training materials with transversal contents on sustainable construction will be available to other professions. So, the professionals of the building sector will have the opportunity to acquire skills that are more adjusted to the market needs.

An adequate dissemination of the training materials and the clients' guides through the stakeholders of the building sector will contribute to increase the demand for training materials concerning sustainability issues. In order to do so, the project website will continue after the end of the project and will contribute to disseminate the materials developed under the FORMAR project.

2. Project Approach

What is the methodology applied?

The project aims to develop 25 hours training units and clients' guides for carpenters, painters, bricklayers, building technicians and installers of solar panels, as well as a 25 hours training unit with transversal content on sustainable construction.

In order to do so, a methodology with 9 steps is applied in the FORMAR project:

- 1) Analysis of needs and existing training materials for each profession concerning sustainable construction in each country;
- 2) Identification of best practices and constraints in each country;
- 3) Development of training modules, which means the unit program and the session plans;
- 4) Development of the training resources, which means the training contents, practical exercises, and the trainer's manuals;
- 5) Development of the clients' guides for each profession (and the one related to the transversal unit);
- 6) Evaluation of the training materials by the NAG and other stakeholders of the building sector:
 - a. A first evaluation will be done by the NAG, either on-line using the project website, either in 2 evaluation workshops per country;
 - b. A second evaluation will be done by other relevant stakeholders that will be identified by the project team in each country.
- 7) Testing of the training materials: it will be done in classrooms and will be organized by the vocational training organizations that are partners of the FORMAR project;
- 8) Improvement of the training materials as a result of the evaluation and testing;
- 9) Translation of the final materials from English to the languages of the countries participating in the project: Portuguese, Spanish and French.

What has been done so far?

So far, steps 1) and 2) were already been done for all the training units.

Steps 3), 4) and 5) were already been done for the transversal unit and are under development for the other training units. The training materials and the clients' guide for the transversal unit are already being evaluated by the NAG members. The other training materials will be evaluated by the NAG members later on in the project.

The preparation of step 6) has already started with the set-up of the NAG in each country. In Portugal and in Spain the first evaluation workshop was already organized. In France the first evaluation workshop will be organized in April.

Steps 7), 8) and 9) are expected to be started more close to the end of 2015.

What is the added value of the project approach?

The added value of the project approach is closely related to the involvement of the stakeholders of the building sector in the evaluation of the training materials. The establishment of national advisory groups in each country – the NAG, as well as the initiative of preparing a second step of evaluation allowing the participation of other relevant stakeholders that are not associated partners of the project, are ways of optimizing the quality of the materials developed under the project and of the final results. Because it is very clear to the FORMAR project partnership that only good quality training materials will allow the project to reach its objectives.

A good functioning of the NAG, either using the communication platform of the project website or the organization of well organized workshops, will allow not only the improvement of the training materials, but also to reach other relevant stakeholders of the building sector using networking strategies through the channels of the associated partners. These other stakeholders will also have the opportunity to contribute to the project and, if the training materials are good enough, they will also facilitate the dissemination of the project outcomes.

What is the dissemination and exploitation strategy of the project?

The dissemination strategy is a key element for the success of the implementation of the project. It includes the definition of the target groups, and the definition of proper internal and external communication tools.

In order to reach the widest audience possible, several different types of instruments will be used during the project, namely:

- Project website;
- One final workshop in each country to present the project results to the national advisory groups and other stakeholders;
- One final European Conference to be organized in Portugal;
- Dissemination through the associated partners' channels;
- Dissemination through existing networks in the building sector, on sustainable construction and on vocational training in Europe;
- Participation in scientific conferences;
- Publication of project related information in specialized magazines.

The project website will be the main channel to disseminate and promote the project activities and results for the partners and the public in general. The project website includes a platform for the communication between the core partners, as well as between the core partners and the associated partners in each country.

The exploitation strategy of the FORMAR project aims at maximizing the exploitation potential of the project results and allowing the maintenance of the project website and the update of the developed products after the project funding.

The associated partners of the FORMAR project will have free access to the training materials. Some of the materials and the clients' guides will be available to all stakeholders registered in the project website, free of charge.

Some of the project final products could be marketed. This commercialization possibility is still under discussion within the project partnership.

The commercialization of the project products is very important because it will enable the project sustainability after the Leonard programme funding, allowing the maintenance of the project website and the update of the developed products.

3. Project Outcomes & Results

What are the major achievements and results so far?

The project deliverables that are the result of steps 1) and 2) (see chapter 2) are concluded for all the training units.

The project deliverables that are the result of steps 3), 4) and 5) for the transversal unit, are currently in the version to be evaluated by the NAG members. This evaluation process is now on going. The other training materials will be evaluated by the NAG members later on in the project.

The main achievement related to step 6) is the set-up of the NAG in each country.

Where can they be found?

Up so far all the materials developed under the project are still for internal use or to be delivered to the NAG members only. Later on in the project some of the materials will be available to all stakeholders registered in the project website.

The list of the NAG members is already on line in the project website and it is available to the public.

4. Partnerships

What is the added value of the multi-country partnership in executing the project?

The FORMAR project partnership is composed of 10 organizations from three EU countries (Portugal, Spain and France). These three countries have adopted the principles of the European Qualifications Framework, and have similar interests regarding vocational profiles. The partners were invited according to their experience and complementary skills, expertise and competences, in order to ensure the production of high quality training materials that meet the needs of the target groups.

The partnership includes one research centre in the areas of energy and sustainability in the building sector, one vocational education and training provider for the building sector and an advisory group (composed by the associated partners) in each country. The partners are recognized institutions, both at national and international level.

The European cooperation that is established in the context of the FORMAR project will allow the exchange of experiences between three different networks of stakeholders (national advisory boards), with very similar problems and different local conditions and constraints regarding the building sector and vocational training needs. The learning experience obtained by the project core partners, associated partners and other stakeholders that will have the opportunity to participate in the different project activities will allow the development of more consistent and relevant training units, which can be used in and adapted to the specific conditions of other European countries.

Also the multi-country partnership established in the context of the FORMAR project will allow:

- Providing the project partners with an innovative common European approach, adjustable to their national contexts;
- Considering the methodological principles of the European Credit System for Vocational Education and Training in the development of the training units;
- Providing an opportunity for the development of better training itineraries, allowing the adaptation of existing skills to the demands of the present job market, increasing the employability and the labour mobility;
- Making the connection between the areas of sustainability, the construction sector and pedagogical concerns related to the need of appropriate qualified professionals, giving the possibility to national stakeholders to learn from the experience of stakeholders from other European countries, and discuss how to better adapt the lessons learned to their own national and local conditions.

What are the benefits of the partnerships established with the target groups?

The project activities have already led to some experiences of cooperation between the project partners and other institutions, namely the associated partners, which are members of the NAG, in each participating country.

In Portugal, the first evaluation workshop was considered a success by the Portuguese NAG members, which declared their interest on further cooperation with the FORMAR project partners related to vocational training oriented to sustainable construction and related issues.

In Spain, the first evaluation workshop was an opportunity of cooperating with other EU projects and expanding the network around the project. As a result it was possible to gather new members for the Spanish NAG and further disseminate the project. The optimization of the synergies between projects is also becoming an opportunity of further cooperation between the participating institutions.

In France, the set-up of the French NAG is also becoming an opportunity of discussing further ways of cooperation with institutions of the building sector. The first evaluation workshop will be organized in April and it is expected to be an event that allows all the associated partners to know each other better and thus promote the opportunity for further cooperation in the future.

Furthermore, the organization of open workshops following the partnership meetings in each country have been a opportunity not only to further disseminate the project but also to discuss new possibilities of cooperation with relevant local stakeholders related to vocational training and the building sector.

5. Plans for the Future

What are the plans to carry out the remaining work to achieve the project objectives?

The development of the materials for the training units oriented to carpenters, painters, bricklayers, building technicians and installers of solar panels is under development. Also, the development of the respective clients' guides is under development.

Once these materials are finalized they will be evaluated by the NAG members and other stakeholders of the building sector:

- a) A first evaluation step will be done by the NAG, either on-line using the project website, either in 2 evaluation workshops per country. In Portugal and in Spain the first evaluation workshop was already organized; in France the first evaluation workshop will be organized in April. The second evaluation workshop will be organized later on in the project in the three countries.
- b) A second evaluation step will be done by other relevant stakeholders that will be identified by the project team in each country. In Portugal, this second evaluation will be organized in three different cities (Águeda, Santarém, and Faro), in close cooperation with the respective municipalities; in Spain and France, this second evaluation will be organized by the research institutions that are partners of the FORMAR project.

After these two evaluation steps, the training materials will be tested in classrooms. The testing will be organized by the vocational training organizations that are partners of the FORMAR project.

After the evaluation and testing, the final materials will be translated from English to the languages of the countries participating in the project: Portuguese, Spanish and French. The materials will then be edited in the three languages and some of them will be publicly available in the project website.

Then, a final FORMAR conference will be organized in Lisbon to present the project results and scientific papers will be prepared and submitted to scientific magazines relevant to the building sector and sustainable construction. Also, the final materials that are to become publicly available will be uploaded to the ADAM portal.

By the end of the project, the partnership will prepare the procedures for the integration of the training modules in the National Catalogue of Qualifications in each country, as well as the respective applicant dossiers.

6. Contribution to EU policies

How does the project contribute to key EU policies, objectives and priorities?

The training materials developed under the FORMAR project will provide innovative concepts and the acquisition of new skills on sustainable construction, which are expected to improve the professional performance of carpenters, painters, bricklayers, building technicians and installers of solar panels. The contents of the training materials are relevant to the needs of the labour market, thus facilitating employability and mobility. In this way the FORMAR project will contribute to the development of quality lifelong learning and to promote high performance, innovation and a European dimension in the practices of the building sector, especially in maintenance and refurbishment of buildings.

Also, the introduction of new skills on sustainable construction allows meeting the need to bridge the lack of contents and pedagogical resources that can improve the quality of vocational training in the building sector, thus helping improving the quality, attractiveness and accessibility of the opportunities for lifelong learning available within Member States.

FORMAR project will allow the development of products that can provide new skills tailored to the needs of labour market in EU countries, particularly in matters that specifically are related with sustainable construction, facilitating the employability and mobility of the construction professionals. And because the development of the training materials will follow the methodological framework on the national catalogue of qualifications of each country, and the principles of ECVET, it will support improvements in quality and innovation in vocational education and training systems, institutions and practices, in each country.

The development of the training materials will be tested by all partners in each country, and the final results will be disseminated in conferences and workshops and in the project website. These outcomes will be oriented to professionals in the construction sector and will benefit from the technical contributions and the transfer of know-how between all partners, thus facilitating the development of innovative practices in the field of vocational training, and their transfer, including from one participating country to others.

The training materials developed under the FORMAR project will be developed based on the description of learning outcomes, leading to qualifications, grouped by units. Procedures and criteria will be developed for the assessment of learning outcomes and the development of a proposal for the allocation of credits. The experimentation of qualifications and quality standards for ECVET will be made in the national contexts of the partnership. For this reason FORMAR project addresses the priority of implementing ECVET for transparency and recognition of learning outcomes and qualifications.

FORMAR project will also contribute to combat all forms of discrimination and promote equal treatment because it aims to develop training units that will be integrated into National Catalogue of Qualifications in each country. These units will be available for all carpenters, painters, bricklayers, building technicians and installers of solar panels, who intend to get more skills in the field of sustainability, independently from their sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

FORMAR project also demonstrates complementarities with other EU policies, namely the Europe 2020 Strategy, because it aims to improve the skills on sustainability issues of workers of the building sector, adapting the existing skills to the demands of the present job market. Thus, it will contribute to attain the employed target through the empowerment of people by developing their skills, increasing the employability and the labour mobility. FORMAR project will also contribute to the 20/20/20 climate/energy targets, because the

contents of the training materials include construction techniques aiming at the construction and refurbishment of buildings that are more energy-efficient.

EU thematic strategy on the urban environment is also addressed by the FORMAR project. This European strategy considers sustainable construction as a priority and the FORMAR project aims at improving the skills of different professions of the building sector so that they can contribute to produce and renovate buildings and a built environment that:

- Is attractive, durable, functional, accessible, comfortable and healthy to live in and use;
- Is resource efficient, in particular with respect to energy, materials and water, favouring the use of renewable energy sources;
- Respects the neighbourhood and local culture and heritage, and a competitive price.

Due to the contents of the training materials developed under FORMAR project it is also important to mention that the project is in line with the goals of the renewable energies directive (2009/28/EC) and the buildings energy performance directive (2010/31/EU).

