



A.T3.2 LCT capacity building – Upscaling

Action plan (D.T3.3.1)

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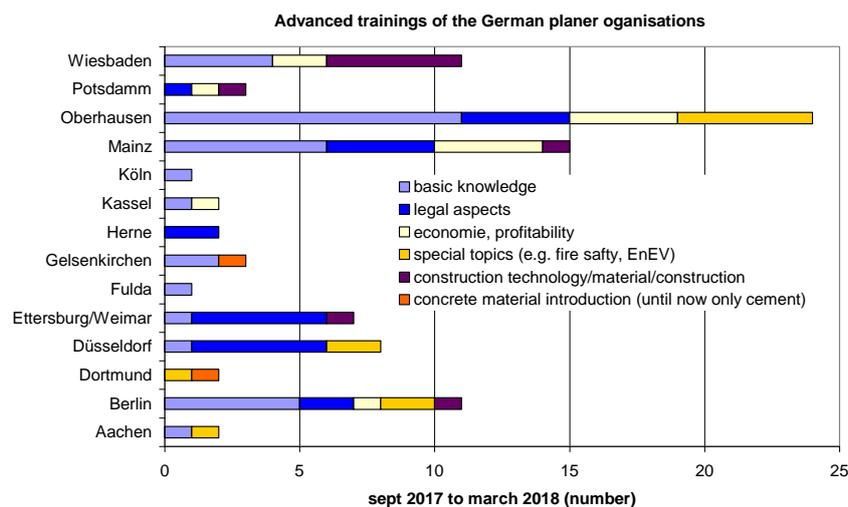
Introduction

According to several studies, the increased wood supply necessary to satisfy the timber product demand projections and wood energy policy objectives in 2020 is estimated in 448 M m³¹. Therefore, the issue of increased wood demands is of importance and the whole sector must be prepared for supplying increasing demand of wood, both for industrial processing and energy production.

An additional 233 M m³ of roundwood equivalent (“Potential Sustainable Wood Supply in Europe”, UNECE/FAO Timber section Geneva, 2008) could be supplied from various sources in Europe, if actions were to be taken by governments and all stakeholders. The EU report “Good practice guidance on the sustainable mobilisation of wood in Europe” (March 2010), clearly identifies education and training as one of the relevant measures that can contribute to this aim, and capacity building on sustainability, wood quality and assortments is a priority from the forest management to the whole wood marketing chain. The identification of the origin and the efficient allocation of wood for energy purposes and wood processing industries is vital to the success and viability of wood mobilisation.

Programmes and courses by public and private organizations, together also with the forest-based and energy industries, to provide relevant information and training, can improve efficiency and sustainability in wood mobilisation and marketing.

However, at present, although there is a growing demand for expertise on sustainability aspects both from the market and from designers and companies in the construction and furniture sector (where the ability to understand and communicate sustainability is considered an important soft skill), education and further education of craftsmen and planners lacks of contents about sustainability, climate protection and relevance of low carbon timber.



Main topics addressed by training courses of German planer organisations (source: Holz Von Hier)

¹ European Forest Sector Outlook Study (EFSOS)

This document describes the strategy and actions planned by the project partners for the exploitation and integration of the CaSCo training results in the existing educational and vocational training framework, at European, national and regional level.

The plan is developed considering the analysis of the training experience implemented in the CaSCo project and the analysis of the existing educational and training initiatives for wood and timber sector in different countries and regions participating.

Capacity building and training activities in the CaSCo project

CaSCo project identified the capacity building of timber operators as a key issue for the promotion of the environmental added value of using short supply timber (Low Carbon Timber). This was in fact one of the objectives of the project and in particular of WP3, to enforce the possibility and potential of the value chain to meet the demand for high environmental performance products both on the public and private market.

To do so, the project partners developed a training concept, addressing the different identified targets, made of different training modules to be combined in different training formats.

Module A – The environmental sustainability of products

- A.1 How to measure sustainability
- A.2 How to certify and communicate sustainability

Module B – The sustainability of wood products for construction sector

- B.1 The life cycle of wood products and sustainability
- B.2 Low Carbon Timber (LCT)

Module C – Procurement procedures and timber products

- C.1 Public procurement in the construction sector
- C.2 Green Public Procurement (GPP)

Module D - Low carbon timber strategies for the regionalization of material flows and the implementation of Carbon Smart Communities

- D.1 Innovation and organization of the supply chain for LCT promotion
- D.2 Requisites and properties of wood as a driver for LCT in construction sector

The implementation of the trainings outlined the following main strengths and opportunities:

- The use of wood as a construction material and its application in different sectors give a benefit to the projects in term of sustainability and reduction of emissions;



- Short supply timber is a key issue for an integrated approach to sustainability in the use of timber, including the origin (sustainable managed forestries) and the sustainability of the project mainly based on wood (sustainable design and construction techniques and knowledge is required)
- Architects and engineers play an important role in orienting the demand of their clients for short supply chain timber
- Wood coming from sustainable forestry and short distances can improve regional economy and enterprises (“social” dimension of the sustainability principle)
- Innovation in timber use and applications can facilitate the matchmaking between timber offer and market demand, in particular in the regions where the chain of value for wood products is weaker and less structured, or the quality of assortments is affected by the historical lack of forestry planning and management policies (“economic” dimension of the sustainability principle)
- The use of a label to recognise the local wood can be a good solution, but public technicians and professionals have to be prepared in order to understand the value of this label and compare it to other environmental product labels
- In public procurement, a specific knowledge is often requested in order to supervise tenders and procurement procedures in which the use of the Low Carbon Timber is promoted or requested.
- Identification and presentation of practical examples of existing Low Carbon Timber value chains and applications of wood elements (labels, GPP ...) serve as models to make understanding and motivation of stakeholders easier, even if these chains are small in size
- All categories of stakeholders should understand the inter-connected issues of Low Carbon Timber (environmental impact, labels, stakeholders, technologies, GPP, ...), at least on basic level, so that they understand why they are important and why cooperation is important.
- Wood supply chain experts as coordination points of regional wood chains are missing in most of the regions. Such experts could facilitate and support replication of trainings
- Trainings are an important opportunity to gather different stakeholders together and start networking

The educational and vocational training system at EU level

Knowledge of the organization of the national system of education represents the preliminary step to assure that the CaSCo training results are integrated with local and national criteria for training and re-training courses aimed at unemployed people, young people at first job and skill conversion of existing workers, according to the ISCED, the European Qualification Framework (EQF) and the Classification of Learning Activities (CLA) for Lifelong Learning.

ISCED (International Standard Classification of Education)

The International Standard Classification of Education (ISCED) is a statistical framework for organizing information on education, maintained by UNESCO, designed in the early 1970s to serve as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally. It is focused on **features and aims** of educational and training programmes.

Level	Description	Main features
0	Early childhood education (01 early childhood educational development)	Education to support initial development in preparation for participation in school and society. For children under 3 years of age.
	Early childhood education (02 Pre-primary education)	Education to support initial development in preparation for participation in school and society. For children from 3 years old to the beginning of primary education.
1	Primary education	Programs typically aimed at providing students with the basic skills in reading, writing and mathematics, and at establishing a solid foundation for general learning.
2	Lower secondary education	First stage of secondary education, which is based on primary education, typically with a more subject-oriented curriculum.
3	Upper secondary education	Second/last stage of secondary education preparing for tertiary education and/or providing skills for labour market integration. Usually with a wide range of subjects to choose from.
4	Post-secondary non-tertiary education	Programmes that provide learning experiences based on secondary education and prepare for the labour market. The content is more extensive than secondary education but not as complex as tertiary education.
5	Short-cycle tertiary education	First short, typically practical, employment-specific tertiary programmes and preparations for entry into the labour market. These programmes may also provide entry to other tertiary programmes.
6	Bachelor or equivalent	Programmes aimed at providing intermediate level professional and/or academic knowledge, qualifications and skills, leading to a first tertiary degree to an equivalent certificate.
7	Master degree or equivalent	Programmes aimed at providing advanced professional and/or academic knowledge, qualifications and skills, leading to a second tertiary degree to an equivalent certificate.

8	PhD or equivalent	Programs aimed primarily at obtaining a certificate of advanced research, usually concluded with the delivery and defense of a considerable dissertation based on original research, of such quality as to be publishable.
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EQF – European Qualifications Framework

The European Qualifications Framework (EQF) is a system for comparing the professional qualifications of citizens of European countries. A "qualification" is a formal certification issued by a competent authority at the end of a training course as proof of having **acquired knowledge, skills and competences** compatible with the standards set by the national education system.

As of 14 February 2008, for each qualification issued in Europe, the corresponding EQF level can be identified and this allows to compare qualifications acquired in different countries.

The EQF adopts a system based on the learning outcomes obtained at the end of the training path.

Learning outcomes are defined in terms of Knowledge, Skills and Competences. The overall result is an index, between 1 and 8, which aims to identify in a quick and univocal way the level of in-depth learning achieved in a certain area.

Level	Knowledge	Skill	Competence	Qualification
1	Basic general	Fundamentals needed to perform single tasks	Working or studying under direct supervision, in a structured environment	Diploma of final license of the first cycle of education
2	Basic practice in a work or study environment	Cognitive and basic practices necessary to use relevant information to perform tasks and solve routine problems using simple rules and tools	Work or study under supervision with a certain autonomy	Certification of basic skills acquired as a result of compulsory education
3	Knowledge of facts, principles, processes and general concepts in a work or study environment	Cognitive and practical necessary to perform tasks and solve problems by choosing and applying basic methods, tools, materials and information	Take responsibility for the completion of activities in work and study Adapt your behaviour to your circumstances in solving problems	Certificate of professional operator qualification
4	Practical and theoretical in broad contexts, in a work or study environment	Cognitive and practical skills needed to solve specific problems in a field of work or study	Self-management within the guidelines in work or study contexts that are usually	Professional diploma of technician, high school diploma, diploma of technical



Level	Knowledge	Skill	Competence	Qualification
			<p>predictable, but subject to change</p> <p>Supervise the routine work of others, taking some responsibility for evaluating and improving work or study activities</p>	<p>education, certificate of higher technical specialization</p>
5	Practical and theoretical, complete and specialized in a work or study field and awareness of the boundaries of such knowledge	A comprehensive range of cognitive and practical skills needed to develop creative solutions to abstract problems	<p>Manage and supervise activities in work or study contexts exposed to unpredictable changes.</p> <p>Control and develop your own and others' performance</p>	Diploma of superior technician
6	Advanced in a field of work or study, which requires a critical understanding of theories and principles	Advanced, demonstrating mastery and innovation necessary to solve complex and unpredictable problems in a specialized field of work or study	<p>Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts.</p> <p>Take responsibility for managing the professional development of people and groups</p>	Bachelor's degree, first level academic degree
7	Highly specialized, which can be the vanguard of knowledge in a work or study field, as the basis of original thinking and/or research. Critical awareness of knowledge issues in one field and the interface between different fields	Specialized problem solving needed in research and/or innovation, in order to develop new knowledge and procedures and to integrate knowledge from different fields	<p>Manage and transform complex contexts of work or study that are unpredictable and require new strategic approaches</p> <p>Take responsibility for contributing to professional knowledge and practice and*or verifying the strategic performance of the groups</p>	<p>Master's degree, 2nd level academic diploma, 1st level university master's degree, specialization academic diploma, advanced or master's degree</p>
8	More advanced level of knowledge in a field of work or study and the interface between fields	More advanced and specialised techniques, including synthesis and evaluation, needed to solve complex research and/or innovation problems and to	Demonstrate real authority, innovation, autonomy and integrity typical of the scholar and professional and a continuous commitment to	<p>Doctorate of research, academic diploma of research training, diploma of specialization, university master's degree, academic</p>

Level	Knowledge	Skill	Competence	Qualification
		extend and redefine existing knowledge or professional practice	developing new ideas or cutting-edge processes in work or study contexts, including research	diploma of specialization, postgraduate or master's degree

CLA – Classification of Learning Activities

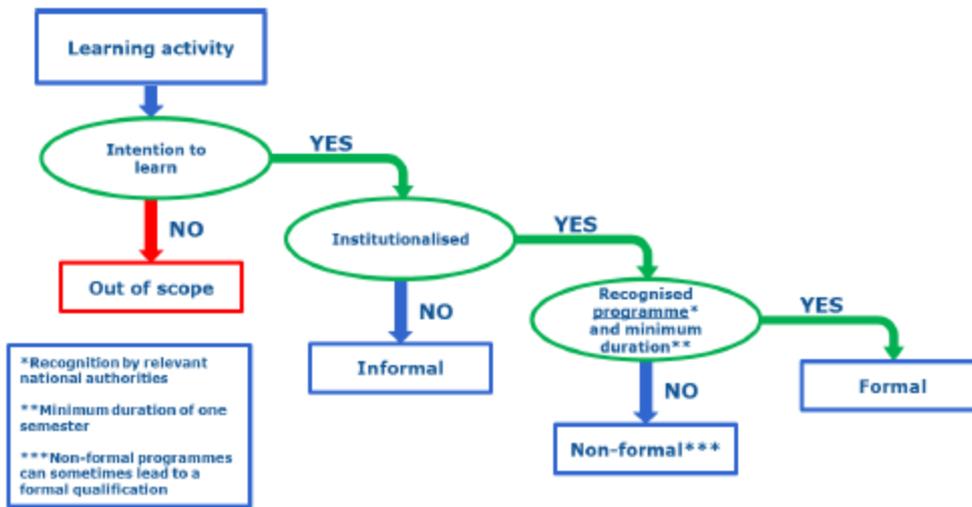
The concept of lifelong learning (LLL) is not simply a summing up of traditional education programmes and modern learning opportunities. While traditional educational institutions have been primarily concerned with transmitting knowledge, modern learning opportunities and the LLL approach emphasises the **development of individual capabilities and each person's capacity to learn**. LLL implies a paradigm shift from the dominance of traditional education institutions to a diverse field of traditional and modern learning opportunities that are more process- and outcome oriented, as well as of a modular structure. At the same time, responsibility for education and learning is shifting from public to professional and business interest groups and to individuals themselves (cfr. CLA Manual, 2016 edition).

The classification proposed in the CLA is based on three broad categories: **formal** education and training (FED), **non-formal** education and training (NFE), and **informal learning** (INF). It should be possible to classify all learning activities into one of these three broad categories.

	Criterion	Formal	Non-formal	Informal
(a)	Intention to learn	X	X	X
(b)	Organisation	X	X	
(c)	Institutional framework and location	X	X	
(d)	Hierarchy level-grade structure ('ladder')	X		
(e)	Admission requirements	X		
(f)	Registration requirements	X	(X)	
(g)	Teaching/learning methods (predetermined/not flexible)	X	X	(X)
(h)	Duration of at least one semester (minimum of 30 ECTS ²⁴)	X		
(i)	Recognition of the programme by the relevant national education or equivalent authorities	X		

Source: Classification of learning activities, manual (ed. 2016)

The process of classifying learning activities based on broad categories is summarised in the decision-making flowchart below.



Source: Classification of learning activities, manual (ed. 2016)

Codes	Broad categories / classes / sub-classes
1.	Formal education
2.	Non-formal education
2.1.	Non-formal programmes
2.2.	Courses
2.2.1.	Courses conducted via classroom instruction (including lectures)
2.2.2.	Combined theoretical-practical courses (including workshops)
2.2.3.	Courses conducted through open and distance education
2.2.4.	Private tuition (private lessons)
2.3.	Guided-on-the-job training
2.4.	Other not specified elsewhere
3.	Informal learning
3.1.	Taught learning
3.1.1.	Coaching / informal tuition
3.1.2.	Guided visits
3.2.	Non-taught learning
3.2.1.	Self-learning
3.2.2.	Learning-group
3.2.3.	Practice
3.2.4.	Non-guided visits

Categories, classes and sub-classes for the classification of learning activities

Source: Classification of learning activities, Eurostat manual (ed. 2016)

Opportunities from non-formal education to increase capacity building in wood and timber sector

Besides the learning opportunities offered by the formal education and training programs and courses (for which usually a final EQF level is established), the training offer in wood and timber sector is characterized by other several types of courses, mainly offered by the industrial sector or other organizations representing the operators.

In fact, professional training in Europe for the wood-using industries was traditionally industry-based, and actually lot of training courses are organized with the collaboration of private companies providing advisory, technical expertise, sponsorships or opportunities and facilities for training on the job periods (dual training system, apprenticeship schemes or similar).

This category also includes continuous vocational training opportunities.

Non-formal education refers to institutionalized learning activities for which the programme is not recognized by the relevant national education or equivalent authorities. It includes structured programmes that are not recognized by the relevant national education or equivalent authorities, usually because the provider is not recognized as being part of the country's regular education system (e.g. professional organizations, private commercial companies, nongovernmental organizations).

Company training programs

These are typical initiatives of private companies (timber product manufacturers, house builders, advisors in the field of evaluation and certification of construction products or building projects). Many of them are enterprises which provide a follow up service associated to their product, and are interested to train installers and/or final users on the quality of their product, opening the training to all potential providers and clients that are interested to be informed (*Timber academies*). Training becomes part of a marketing strategy, as more and more happens particularly in the construction sector.

Some other companies establish partnerships with specialized academies and education institutes, hosting groups of students for workshops, states or apprenticeship periods.

Examples:

- Metsa group e learning tool for wood professionals (<https://www.metsawood.com/global/Tools/timber-academy/Pages/default.aspx>)
- Rubner Holding post secondary training programme for timber carpenter, based on 3 levels and including apprenticeship (<https://www.rubner.com/it/gruppe/lavora-con-noi/rubner-come-datore-di-lavoro/la-formazione-in-rubner/>)
- Biohaus academy, accrediting professionals for timber construction <https://www.biohaus.it/biohaus-academy-investire-in-formazione.html>

Business support organization training courses

Chambers of Commerce, company thematic clusters, umbrella organizations, sectoral agencies, usually propose specific training initiatives targeted to individual sectors or professional groups. The construction of the training programs takes in consideration the strategic economic sectors of the territories and the priorities proposed by local stakeholders

Examples from the project partner and other countries:

- Training centre of the Italian wood industries association, <http://www.poloformativo-legnoarredo.it/formazione/>
- Energy Institute of Vorarlberg (Austria), <https://www.energieinstitut.at>
- Slovenian Wood Industry Cluster, <https://www.lesarski-grozd.si/en/lesarski-grozd/>
- Slovenian Association of wood processing and furniture industry https://www.gzs.si/zdruzenje_lesne_in_pohistvene_industrije#
- Pole Excellence Bois de la Savoie (France), <http://www.poleexcellencebois.fr/>
- <https://www.bwf.org.uk/courses/timber-and-sustainability-training/> (British Woodworking Federation)
- <https://tff.co.uk/about-ttf-timber-trade-federation/> (Timber Trade Federation)

Professional association and chambers training initiatives

National regulations and associations governing the conduct of the professions require a mandatory amount of continuous training (calculated as credits or bonus points). Professional associations dealing with building and construction (architects, planners, engineers) offer to all their members a certain number of courses and workshops to satisfy the yearly requested need of training. The training programs are built according to the needs of the members and the market trends, and sometimes the catalogues also include external or online courses accredited by the chambers.

Examples from the project partner countries

- Turin Architects Foundation (<https://www.fondazioneperlarchitettura.it/sistema-formazione/offerta/>)
- Chamber of Architecture and Spatial Planning of Slovenia (ZAPS), http://www.zaps.si/index.php?m_id=57&m_name=front&lang=2
- Chambers of Architects and Engineers of Saxony region, <https://www.fortbilder.de/>
- Chambers of Architects of Turingia region, <https://architekten-thueringen.de/fortbildung/>
- Chambers of Architects of Baden-Wuerttemberg region, <https://www.akbw.de/fortbildung.html>
- Slovenian Chamber of Engineers, <http://www.izs.si/en/>

Opportunities for integration of Low Carbon Timber related contents in the existing educational and training structures

The CaScO training initiatives, together with the engagement of educational and training centres in the project activities, allowed to identify a set of opportunities of integration of the CaScO training contents as a qualified contribution to the learning outcomes provided by several educational, vocational and continuous training programmes and courses dealing with wood and timber sector.

Thanks to its practical-oriented contents, the CaScO training concept could be also included in the work-based learning programs, that represent a chance for companies to get in touch with high-skilled young people prepared to support companies to maintain their position on a changing market.

The identified opportunities in the project partner regions are listed and classified in the table included in this paragraph, which includes opportunities coming from:

Formal education

- Educational and vocational training schools
 - o Secondary education
 - Professional certificate (wood technician), EQF 4
 - o Post-secondary non tertiary education
 - IFTS (EQF 4)
 - ITS (EQF 5)
 - o Short cycle tertiary education
 - First level degree (EQF 6)
 - o Bachelor or equivalent
 - Second level degree (EQF 7)
 - First level master for specialization (EQF 7)
 - Second level master for specialization (EQF 8)

Non formal education

- Continuous vocational training
 - o Public funded training initiatives. This category includes training courses directly or indirectly funded by public authorities or interprofessional funds (for example by training vouchers granted with the contribution of FSE, European Social Funds), such as:
 - Training courses for timber processing techniques (window frame production, furniture, carpentry for the construction sector, ...)
 - Training programs designed by accredited training agencies for specific economic sectors, professional profiles or territorial districts
 - o Private training initiatives
 - Company training programs, planned by medium-large sized timber companies for the improvement of the staff skills



- Business support organization training courses (chambers of commerce, wood cluster organizations, ...)
- Professional associations training initiatives, with a mandatory annual amount of trainings to be certified through credits or bonus points

The following table summarizes the results of the preliminary research conducted by the CaSCo project partners to identify the main existing training courses where the integration with the CaSCo training concept could represent a relevant added value.

Formal education programs and courses with final EQF from 1 to 3 (mandatory educational courses and basic vocational trainings for craftsmen) are not considered.



Formal education

ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
Short cycle tertiary education (ISCED 2)	IUT, Instituts Universitaires de Technologie (France)	4	France (Savoie)	Professional training ai IUT (University of Savoie/Mont Blanc) for: <ul style="list-style-type: none"> - construction site responsible - design and realization of timber constructions http://www.iut-chy.univ-savoie.fr/index.php/formations/les-licences-professionnelles-lp/metiers-du-batiment	1 year	YES
Secondary education (ISCED 2)	Lower professional education <ul style="list-style-type: none"> - Wood Processor - Program carpenter 	4	Slovenia (Podravje region)	Secondary wood and forestry school Maribor https://www.lsmb.si/srednja/index.php/standardni-videz-prispevka/obdelovalec-lesa https://www.lsmb.si/srednja/index.php/standardni-videz-prispevka/mizar	2 years + stage	YES
Secondary education (ISCED 3)	Upper secondary education <ul style="list-style-type: none"> - Woodworking technician - Wood technician (pti) 3 + 2 	4	Slovenia (Podravje region)	Secondary wood and forestry school Maribor https://www.lsmb.si/srednja/index.php/standardni-videz-prispevka/lesarski-tehnik https://www.lsmb.si/srednja/index.php/standardni-videz-prispevka/lesarski-tehnik-32	4 years	YES
Secondary education (ISCED 3)	Professional course for wood technician	4	Slovenia (Pomurje region)	http://193.2.128.4/izobrazevanja/lesarstvo (SPTS professional and technical school)	3 years +2 years	NO



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
Secondary education (ISCED 3)	EDC – Institute for Vocational Education Kranj – High School Program in Civil Engineerings	4	Slovenia (Gorenjska region)	https://edckranj.com/index.php/vss-izobrazevalni-programi/gradbenistvo/	4 years	YES
Secondary education (ISCED 3)	Škofa Loka School Center – High School: Wood Engineering Programme	4	Slovenia	http://www.scsl.si/o-mic-u/mic-english Programmes: Technical courses for wood technicians and environmental technicians	4 years	YES
Secondary education (ISCED 3)	Ljubljana School center – Secondary Carpenter School (4 vocational programmes)	4	Slovenia	https://www.lesarska.sclj.si/en Programmes: <ul style="list-style-type: none"> • The Carpentry Technician Programme – Vocational programme (4 years) • PTI Technician Programme – Vocational programme (2 + 3 years) • Woodworking Programme – Vocational programme (3 years) • Wood Processor Programme – Vocational programme (2-3 years) 	2-4 years	
Post-secondary non tertiary	ITS, Istituti Tecnici Superiori (Italy)	5	Italy	<ul style="list-style-type: none"> • Timber furniture technician http://www.cosmob.it/scuola-di-alta-formazione/its-legno-arredo/ (Marche region) 	2 years (including stage)	



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
education (ISCED 4)				<ul style="list-style-type: none"> Marketing and internationalization in timber sector Design and industrialization in timber sector http://www.poloformativo-legnoarredo.it/wp-content/uploads/2019/05/Polo_brochure_2019_web.pdf (Lombardia region) Communication and marketing timber technician http://www.sistemait.it/corsi-tecnici-superiori-formazione-post-diploma-dettaglio.php?id=62&area=4&ambito=2&figura=2 (Veneto region) 		
Post-secondary non tertiary education (ISCED 4)	BTS, Brevet de Technicien Superieur	5	France	BTS, Brevet de technician Superieur for carpenters https://www.dimension-bts.com/bts-charpente-couverture/64	2 years	
Post-secondary non tertiary education (ISCED 4)	POSTGRADUATE COLLEGE OF WOOD AND DESIGN - Study Program on wood science and technology	5	Slovenia (Podravje region)	Postgraduate college of wood and design Maribor http://lsmb.si/visja/index.php/sl/studij/lesarstvo http://lsmb.si/visja/index.php/sl/studij/oblikovanje-materialov	2 years	YES



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
	- Study program on Material design					
Short cycle tertiary education (ISCED 5)	College/advanced training course (Kolleg, Aufbaulehrgang), diploma	5	Austria	College/advanced training course for interior design and wood technology, training branches wood technology, interior design and furniture construction (Höhere technische Bundes-Lehr- und Versuchsanstalt Rankweil) https://www.ausbildungskompass.at/ausbildungen/3083-kolleg-innenraumgestaltung-und-holztechnik/	2 years	
Short cycle tertiary education (ISCED 5)	College of Construction Engineering Kranj - Higher education professional program civil engineering	5	Slovenia	https://vsgi.si/studijski-program/visokosolski-strokovni-program-gradbenistvo/	3 years	YES
Short cycle tertiary education (ISCED 6)	Bachelor	6	Italy	Bachelor code L25: agricultural and forestry sciences and technologies http://www.cestor.it/atenei/l025.htm	3 years	
Short cycle tertiary education (ISCED 6)	Bachelor	6	Germany	https://www.th-rosenheim.de/technik/holz-energie-bau/ (Technische Hochschule Rosenheim, Germany)	3 years	
Short cycle tertiary	Bachelor	6	Slovenia	http://www.bf.uni-lj.si/en/deans-office/study-programmes (University of Ljubljana, study	3 years	



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
education (ISCED 6)				<p>programmes in wood science and technology, forestry and renewable forest resources)</p> <p>http://www.fa.uni-lj.si/filelib/2_novice/mojca_rozman/brosure-info/emsa-2021ang.pdf ((University of Ljubljana, 1st cycle study programs in civil engineering and construction management)</p>		
Master degree or equivalent (ISCED 7)	Degree	7	Italy	<p>Degrees code L73: forestry and environmental sciences and technologies</p> <p>http://www.cestor.it/atenei/lm073.htm</p> <p>10 different degree courses in Italy (Torino, Viterbo, Padova, Nuoro, Reggio Calabria, Palermo, Potenza, Napoli, Firenze, Campobasso)</p> <p>Master degree in advanced technologies for timber use in construction and furniture sector (University of Florence)</p> <p>https://www.temalegno.unifi.it/</p>	5 years	



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
Master degree or equivalent (ISCED 7)	Degree	7	Slovenia	http://www.bf.uni-lj.si/en/deans-office/study-programmes/master-study-programs-second-cycle/ (University of Ljubljana, 2 nd level study programmes in wood science and technology, forestry and economic of natural resources) http://www.fa.uni-lj.si/filelib/2_novice/mojca_rozman/brosure-info/emsa-2021ang.pdf (University of Ljubljana, study programme in architecture) https://www.en.fgg.uni-lj.si/study/2nd-cycle-study-programmes/ (University of Ljubljana, 2 nd level study programmes in civil engineering and buildings)	5 years	
Master degree or equivalent (ISCED 7)	Degree	7	France (Auvergne-Rhone Alpes)	INSA (National Institute of Applied Sciences), 1st and 2nd cycle degrees in engineering and materials science https://www.insa-lyon.fr/fr/formation	3 to 5 years	YES
Master degree or equivalent (ISCED 7)	First level master course (1 year as a minimum)	7	Italy	Master degree in management and engineering in timber industries (Università degli Studi di Bologna)	1 year	



ISCED level	Type of training course	EQF level	Country/Region	Main existing courses	Duration	Inclusion of sustainability topic in the training subjects (YES/NO)
Master degree or equivalent (ISCED 7)	MSc (Master of Science Culture Timber Architecture)	7	Austria	The university course “überholz” is a part-time interdisciplinary training for architects, structural engineers and timber constructors at the University of Art in Linz. https://www.ueberholz.ufg.ac.at/	2 years (4 semesters postgraduate)	YES
PhD or equivalent (ISCED 8)	Second level master course	8	Italy	Master degree in timber construction architecture (Torino) https://didattica.polito.it/master/costruzioni_in_legno/2019/master_in_un_click Master degree in timber construction (Bologna) https://master.unibo.it/costruzioni-legno-dicam/it/il-master	1 year	
PhD or equivalent (ISCED 8)	Second level master or PHD	8	France	ENTPE (Ecole de Management Durable des territoires), Specialization in Green Building design and construction https://www.entpe.fr/gbbv	2 years	YES



Non formal education

Instruction level (ISCED)	Type of training course	EQF	Country/Region	Main existing courses (Piedmont/Italy)	Duration	Inclusion of sustainability topic in the training units (YES/NO)
-	Continuous vocational training	-	Austria (Vorarlberg)	Energy Institute Vorarlberg (Dornbirn): <ul style="list-style-type: none"> • Training course for municipal climate protection officers (for municipal employees and private persons) https://www.energieinstitut.at/events/lehrgang-zur-zum-kommunalen-klimaschutzbeauftragten/ • Building & Energy Basic Course (https://www.energieinstitut.at/events/gebaeude-energie-basislehrgang/) 	6-8 days	YES
-	Continuous vocational training	-	Austria (Vorarlberg)	Umweltverband/Gemeindeverband Vorarlberg: trainings for municipal employees (https://www.umweltverband.at/lernen/)	1 day	YES
-	Continuous vocational training	-	France	https://www.scop-les2rives.eu/content/formations-courtes	From 2 to 7 days	YES
-	Continuous vocational training	-	Germany	Federal Education Centre for timber construction https://www.bubiza.de/kurse/seminare.html (Kassel, Germany)	From 1 to several days	NO



Instruction level (ISCED)	Type of training course	EQF	Country/Region	Main existing courses (Piedmont/Italy)	Duration	Inclusion of sustainability topic in the training units (YES/NO)
				Chambers of Architects and Engineers of Saxony region https://www.fortbilder.de/ (Hannover, Germany) Chambers of Architects of Turingia region https://architekten-thueringen.de/fortbildung/ (Erfurt, Germany) Chambers of Architects of Baden-Wurttemberg region https://www.akbw.de/fortbildung.html (Bubsheim, Germany)		
-	Continuous vocational training	-	Italy	http://www.scuolaedilecuneo.it/formcont.asp (Official construction school in the province of Cuneo, Italy) http://www.poloformativo-legnoarredo.it/formazione-continua-e-permanente/ (Training competence center of FederlegnoArredo, the Italian association of timber processing companies)	From half to several days	NO



Instruction level (ISCED)	Type of training course	EQF	Country/Region	Main existing courses (Piedmont/Italy)	Duration	Inclusion of sustainability topic in the training units (YES/NO)
				<p>https://scuolesancarlo.org/lavorazione-legno?settore=3 (Training centre with specialization on wood sector, with presence in the provinces of Turin and Cuneo)</p> <p>https://www.oato.it/formazione/offerta-formativa-ordine-e-fondazione/ Turin Foundation of Architects. The catalogue of training courses, which are valid for the continuous mandatory training of planners, also includes workshops, meeting with companies, online courses</p> <p>Istituto Giordano https://www.giordano.it/fc-311-corsi-settore-legno.php</p>		
-	Continuous vocational training	-	Slovenia	Chamber of Architecture and Spatial Planning of Slovenia (ZAPS). Regular educations, training and best practice visit on different topics of sustainable architecture and constructions http://www.zaps.si/index.php?m_id=57&m_name=front&lang=2	1-3 days	YES
-	Continuous vocational training	-	Slovenia	Slovenian wood industry cluster, Occasional educations, training and best practice visit on	1-2 days	YES



Instruction level (ISCED)	Type of training course	EQF	Country/Region	Main existing courses (Piedmont/Italy)	Duration	Inclusion of sustainability topic in the training units (YES/NO)
				different topics of sustainable architecture and constructions https://www.lesarski-grozd.si/en/lesarski-grozd/		
-	Continuous vocational training	-	Slovenia	Slovenska gozdno-lesna tehnološka platforma (SGLTP) http://www.sgltp.net/ /Slovenian Forest-Based Technology Platform (SiFTP) http://www.forestplatform.org/#!/ Occasional educations, training and best practice visit on different topics of sustainable wooden architecture and constructions, wood and forestry technologies, ...	1-2 days	YES
-	Continuous vocational training	-	Slovenia	Slovenian Chamber of Engineers Occasional educations, training and best practice visit on different topics of sustainable constructions and technologies, ... http://www.izs.si/en/	1-3 days	YES
-	Continuous vocational training	-	Slovenia	Association of Wood Processing and Furniture Industry	1 day	YES



Instruction level (ISCED)	Type of training course	EQF	Country/Region	Main existing courses (Piedmont/Italy)	Duration	Inclusion of sustainability topic in the training units (YES/NO)
				Occasional educations, training and best practice visit on different topics of sustainable constructions and technologies, ... https://www.gzs.si/zdruzenje_lesne_in_pohistvene_industrije#		



Upscaling and integration action plan

This CaSCo training upscaling action plan considers as a priority the necessity to provide all the operators of timber processing value chain with a complete and comprehensive vision of the sustainability aspects to consider, from the forest to the final user and consumer of the products.

The basic principle is that it's necessary to **overcome the traditional vision of trainings for wood professionals**, mainly based on technical wood processing and technological aspects. In fact, the promotion of sustainable and low carbon timber requires first of all a common knowledge of a series of environmental related issues for all the involved operators, to facilitate dialogue and cooperation between wood suppliers (harvesters), planners, timber processing companies, brokers, public authorities and final users.

To this aim, the CaSCo training concept can be integrated and provide added value to a list of topics, targeting different categories, which are relevant for the promotion of the use of timber as a sustainable material:

- Sustainable planning and management of forestry
- Valorization and commercialization of timber sortments for high quality and sustainable products
- Planning and realization of wood construction
- Evaluation and certification of environmental aspects for building projects
- Introduction of criteria to improve the sustainability of the supply chain for environmental friendly organizations in the private sector (target: procurement and technical offices)
- Introduction of sustainability in the marketing strategies (target: marketing offices)
- Introduction of criteria for green public procurement of timber related products and services
- Environmental innovation in timber sector, also in relation to the opportunities coming Industry 4.0 technologies, digital transformation processes and waste valorization (circular economy). Environmental awareness and environmental management skills and competences are included, for example, in the "Innovation manager/advisor for the wood industry" curriculum ²

² EQ-WOOD project, <https://www.eqwood.org/>



Phase/Objective	Action	Timeline
Implementation of the governance of the CaSCo training program	Definition of contact persons in partner countries for the development and implementation of a trans-national CaSCo program	May-June 2020
Design of the CaSCo training program	Adaptation and integration of the CaSCo training concept and tool kit contents according with: <ul style="list-style-type: none"> - The content of curricula and professional profiles being defined at European and national level in the wood sector - The ongoing changes in the vocational training system to meet market needs in the wood sector 	September-December 2020
	Implementation of a CaSCo e-learning platform integrated with the Smart Places Network (also eventually in MOOC modality)	
Promotion of the CaSCo training program	Dissemination of CaSCo training concept and identification of local approaches	January-March 2021
	Identification of training organizations, VET centers, private companies and other umbrella organizations for the establishment of cooperation in the implementation of the CaSCo training program. At a first instance, the following opportunities will be checked: <ul style="list-style-type: none"> - Integration in the catalogues of compulsory professional training opportunities for architects and engineers - Integration with the training courses for environmental quality of construction projects according with the main existing certification schemes - Integration in the courses for companies and professionals interested to supply products and projects compliant with the criteria of EU green public procurement criteria 	



Phase/Objective	Action	Timeline
	<ul style="list-style-type: none"> - Organization of sustainable timber workshops, in collaboration with Low Carbon Timber member companies - Integration with the training courses provided by umbrella organizations and industry associations (see as example the “Wood for Good” initiative, https://woodforgood.com/training-and-development/online-courses) - Integration with the training courses about sustainability aspects of wood sector that area actually mandatory for wood and timber sector (EUTR courses, for instance) 	
Implementation of the CaSCo training program	<ul style="list-style-type: none"> - Co-design and integration of training courses with the identified organizations interested to cooperate - Development of a specific professional profile of <i>sustainable wood value chain management expert</i>, with a specific curriculum including all relevant issues about environment and innovation, to be integrated in the official public funded vocational training offers 	March-June 2021
Networking	<ul style="list-style-type: none"> - Creation of a low carbon timber planners and experts’ trans-national network - Establishment of a stable frame of cooperation with professional associations for the training implementation and the accreditation of LCT training courses for the achievement of additional scoring or training credits required by national/regional regulation 	Continuous activity

Annex – List of relevant stakeholders and multipliers involved in the dialogue

This annex includes the list of organizations addressed for the evaluation of opportunities to integrate LCT components in the existing educational and training programs. For some of them the dialogue led to some kind agreement, for others to the identification of a potential collaboration in the future exploitation of project results.

Austria

Organization	Category of stakeholder
Höhere technische Bundes-Lehr	Training organization
Versuchsanstalt Rankweil	Training organization
University of Art in Linz	Training organization
Energy Institute Vorarlberg	Public authority
Umweltverband/Gemeindeverband Vorarlberg	Training organization

France

Organization	Category of stakeholder
University of Savoie/Mont Blanc	Training organization
INSA (National Institute of Applied Sciences)	
ENTPE (Ecole de Management Durable des territoires)	

Germany

Organization	Category of stakeholder
Chamber of architects Thuringia	Professional association
Chamber of architects Lower Saxonia	Professional association
Chamber of architects Baden-Wurttemberg	Professional association
Chamber of architects Hesse	Professional association
Association of German Builders – section Bavaria	Professional association
Bavarian chamber of engineers and architects	Professional association
Federal association of German Interior architects	Professional association
Hessen Rohstoffe e.V.	Training organization
Construction center Munich	Training organization
University of Augsburg	Training organization
Educational center for carpentry	Training organization
Technical university of applied sciences Rosenheim	Training organization

Italy

Organization	Category of stakeholder
Scuole tecniche San Carlo (Turin / Cuneo)	Training organization
Polo formativo Federlegno Arredo	Training organization
Politecnico di Torino – Design and Architecture dep.	Training organization
Scuola edile di Cuneo	Training organization
Turin Foundation of Architects	Professional association
Chamber of Commerce of Cuneo	Business support organization
IFTS / Scuola del legno di Isasca	Training organization

Slovenia

Organization	Category of stakeholder
Secondary wood and forestry school Maribor	Training organization
Postgraduate college of wood and design Maribor	Training organization
University of Ljubljana	Training organization
Chamber of Architecture and Spatial Planning of Slovenia (ZAPS)	Professional association
Slovenian Wood Industry Cluster	Business support organization
Slovenska gozdno-lesna tehnološka platforma (SGLTP)	Business support organization
Slovenian Forest-Based Technology Platform (SiFTP)	Business support organization
Slovenian Chamber of Engineers	Professional association
Association of Wood Processing and Furniture Industry	Business support organization
Pomurje chamber of commerce and industry	Business support organization
Institute of forest Murska Sobota	Public authority
Society of Architects of Pomurje	Professional association