

Technical Working Group 1 Finance (sustainability)

Final Deliverable

1. Document details

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Description	This report concerns the final deliverable of TWG1. The report focuses on synthesising the knowledge gathered by the TWG and based on that formulates short-, medium- and long-term policy measures recommended in order to ensure the sustainability or continuation in the future of training schemes developed by BUILD UP Skills projects.

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2. Introduction to TWG1 Finance - Background

Financing of trainings and garnering knowledge from the Technical Working Group 1 (TWG1), is not only of interest for construction companies and its blue-collar workers, but also for white-collar workers, federations and training institutions and the encompassing construction industry.

At present, there are various challenges related to the financing (bearing the costs) of trainings, most of which concern market barriers. Predominantly, these barriers include the following:

- **Price of certification of trainings** e.g. *Cost and affordability of certification* from the consumer side (the person or company who is going to pay for the training).
- **The incentive for trainings** e.g. If training is not required for a particular trade then it can deter workers from participating in programmes, as they do not deem the benefits necessary from the training. Continuous professional development may be adopted.
- **Cost of trainings** e.g. from the consumers' perspective, the *cost of trainings, materials, travel costs*. From the suppliers' side, the costs of setting the *right infrastructure, personnel, certification* (trainers and exam committees).
- **Opportunity cost** which results in a loss of income that the worker and/or the SME cannot afford e.g. opportunity costs for time not spent working, travel costs, time preparing for exams, etc.) should be covered by funding schemes.
- **Increased worker employability** e.g. Companies may not be willing to invest in trainings for an individual as this may increase their bargaining power with their employer and/or their capacity to seek employment at another company.
- **Downward pressure on costs** e.g. Competition with illicit businesses drives renovation costs down and many home owners choose the cheapest offer when selecting a company for their renovation, without sufficient consideration to the quality of the work.
- **Public funding is unstable and often depends on the situation of the economy** e.g. when the economy is growing below a threshold, funding is targeted to training the unemployed.

Purpose of TWG1

Against this background, the purpose of the Finance Technical Working Group (TWG) is to discuss the longer-term sustainability or continuation of the trainings and schemes developed throughout the BUILD UP Skills programme, after completion. In other words, this TWG is concerned with how to finance the implementation of courses or the pilots of the trainings developed by the BUILD UP Skills country projects.

In doing so, this TWG has also addressed other topics. To date, this TWG has dealt with:

- Availability of funding programmes -at the local, national and European level- to finance training schemes in the construction sector
- Best-case scenarios in regards to financing trainings in the construction sector
- Key barriers / challenges regarding the financing of training projects
- Status of mandatory trainings in a number of countries
- Ways to attract private funding (cost-sharing) of training scheme costs
- Non-financial incentives to ensure sustainability of projects.

Ultimately, based on the knowledge gathered on the above points, the aim of TWG1 is to derive an overview of potential measures - divided into short, medium and long-term measures.

Link between TWG1 and the other TWGs

The themes and work completed within the four TWGs have been moderated to interlink with the periods running from the 7th EU Exchange Meeting in January 2016 to the 10th EU Exchange Meeting in May 2017.

The long-term sustainability / continuation of projects (the main objective of TWG1) depends on availability of finance, however, there are non-financial aspects that can help to steer the projects. In fact, TWG1's work is intrinsically linked with that of TWG2 on mutual recognition and TWG4 on market acceptance. These two aspects are non-financial incentives that help ensure the continuation or sustainability of projects. Aspects such as a good marketing strategy for training and market acceptance overall (dealt with in TWG4) should facilitate the market uptake of trainings and hence assist with the continuation of the BUILD UP Skills projects. Indeed, enhancing the attractiveness of the courses and the dissemination thereof, is crucial for obtaining funding. The work of TWG4, and in particular the Business Model Canvas for trainings developed therein, are therefore of interest for TWG1. The linkage with TWG3 on training methods and materials is slightly more subtle - enhancing the attractiveness of the courses by initiating innovative methods, interactive techniques, using high quality materials etc. are viewed as important factors for increasing the appeal of trainings.

3. Sources of finance for trainings in the construction sector

As well as personal contributions, there are market-based and grant-based opportunities for funding. Predominantly, a combined approach is necessary with access-to-finance modified for each type of stakeholder (SMEs, blue collar workers, white collar workers, technology suppliers, federations, VET centres) and their relevant motivations.

Overall, there are funding programmes available at the European, National and Regional level, as well as funding schemes provided by professional bodies (e.g. Employers, company revenues, etc.) and market actors (e.g. companies, trainees, etc.). There is an agreement that European, followed by national funding, are currently the primary ways of financing trainings, with the opportunities to fund trainings varying among countries.

Consequently, sources of funding for trainings are identified as follows:

- EU (for both employed and unemployed)
- State, through central budget, ministries (e.g. of education, economy), a National Employment Fund (for the employed and unemployed)
- Regions (for the employed and unemployed)
- Autonomous Provinces
- Construction Federations
- VET schools
- Social partners (inter-professional funds - investment of a % of labour cost)
- Construction companies, producers of materials & technology, manufacturers
- Employment office (for the unemployed)
- Employers

- Employees, Trainees (employed, self-employed)

The table below highlights the different sources of funding available in the main case study countries.

Table 3-1 Summary table of financing training, courses, schemes

Country	Cost of training borne by	Training provider	Financial tools
Italy	<ul style="list-style-type: none"> • EU {unemployed} • State • Regions • Autonomous Provinces • EU • Social partners (inter-professional funds - investment of a % of labour cost) • Construction companies, producers of materials & technology • Employees, trainees 	<ul style="list-style-type: none"> • Education Training Boards (ETBs) • Professional institutes (e.g. architects, engineers and surveyors) • Private training companies • Product manufacturers 	<ul style="list-style-type: none"> • Sectoral funds • Interbranch funds • Regional funds • Dowries training / training voucher • European funds • Inail funds
Ireland	<ul style="list-style-type: none"> • EU {unemployed} • State {employed, unemployed} • Employers {employed} • Employees, trainees {employed especially self-employed and low-paid} 	<ul style="list-style-type: none"> • 3rd Level Institutes of Technology (IOTs) • Universities • Education Training Boards (ETBs) • Professional institutes (e.g. Architects, Engineers and Surveyors) • Construction Industry Federation, CIF • Private training companies • Product manufacturers 	<ul style="list-style-type: none"> • Springboard (%50 European Social Fund (ESF); 50% the State's National Training Fund (NTF)) • Skillnets (partly funded by the State's NTF) • Apprenticeships (partly funded by the State's NTF)
Hungary	<ul style="list-style-type: none"> • EU • State (Central budget and National Employment Fund) • Regions {unemployed} • Employers (Company revenues and vocational training contribution) • Producers, manufacturers • Trainees 	<ul style="list-style-type: none"> • School-based educations (always indicated within the National Qualification Register) • Non-school based trainings listed in the National Qualification Register • Non-school based trainings listed in the Register of Qualification Programme • Market-based, non-regulated trainings 	<ul style="list-style-type: none"> • TÁMOP (EU Structural Funds + State) • Employment tax (1,5% of employer contribution of salary)

Greece	<ul style="list-style-type: none"> • EU • State • Employer 	--	<ul style="list-style-type: none"> • NSRF (structural funds + State) • LAEK (0,24% of employer contributions for workers)
Estonia	<ul style="list-style-type: none"> • State <ul style="list-style-type: none"> · Ministry of Education and Science) · Employment office {unemployed} · Ministry of Economy and communication or it's subordinate organisations 	--	<ul style="list-style-type: none"> • Training cost per participant per hour partly financed by the State • Order of training the unemployed by the employment office • State tenders (field specific) by the Ministry of Economy and communication or it's subordinate organisations
Austria	<ul style="list-style-type: none"> • EU • State • Regional funds • Employment office 	--	<ul style="list-style-type: none"> • Especially the Public Employment Service Austria (AMS) funds further education measures in Austria¹ (see). • On the national level the simplest type of funding is to use the “opportunity of tax reduction” for training of employees. • Regional funding opportunities are changing very frequently.
Portugal	<ul style="list-style-type: none"> • EU • State • Regional funds • Employment office 	<ul style="list-style-type: none"> • Professional schools & institutes • Employment and Vocational Training Center (IEFP) 	<ul style="list-style-type: none"> • European Social Fund (e.g. Programa Operacional Capital Humano - POCH²) • National co-financing (e.g. Programa Operacional Capital Humano - POCH³) • ‘Cursos profissionais financiados’⁴ training courses whose costs are fully borne by the Portuguese State. The main objective of this initiative is to equip Portuguese citizens with better professional skills. Courses vary in level and range between 1000 and 3000 hours.

¹ <http://www.ams.at/english.html>

² https://www.portugal2020.pt/Portal2020/Media/Default/Docs/Programas%20Operacionais/BROCHURAS%20PO/tr%C3%ADptico_POCH.pdf

³ https://www.portugal2020.pt/Portal2020/Media/Default/Docs/Programas%20Operacionais/BROCHURAS%20PO/tr%C3%ADptico_POCH.pdf

⁴ <http://www.maiscursos.org/2017/01/24/cursos-profissionais-financiados/>

			<ul style="list-style-type: none"> • The national public employment service (IEFP) offers specific regional or sectoral programs and measures aimed at alleviating the social impact of the mismatches resulting from the current socio-economic situation, particularly in geographical areas with particular employment problems.⁵
Latvia	<ul style="list-style-type: none"> • EU (ESF) • State <ul style="list-style-type: none"> · Ministry of Education and Science · Employment office {unemployed, for seasonal unemployment} · Ministry of Economy and communication or it's subordinate organisations 	<ul style="list-style-type: none"> • Vocational education • Private training companies • Product manufacturers 	<ul style="list-style-type: none"> • State tenders • European Social Fund • Trainings ordered by employer could be partly supported by unemployment office
Netherlands	<ul style="list-style-type: none"> • EU (ESF) • State • Provinces • Municipalities • Regional funds • Social partners/sectoral educational funds (employed and unemployed) • Employers • Producers of materials or suppliers • Employees, trainees 	<ul style="list-style-type: none"> • Educational training boards • Professional schools and institutes (vocational education) • Private training institutes • Product manufacturers 	<ul style="list-style-type: none"> • ESF-funds • Sectoral funds • Regional funds • Training voucher • DIA (arrangement for sustainable employability from the CAO Bouw, collective labour agreement)

⁵ <https://www.iefp.pt/regionais-e-setoriais>

4. Best Practice cases for financing trainings

The best-practice trainings are sometimes financed by the EU, the State through its Ministry of Employment or equivalent; energy agencies by employers through a vocational training contribution or through company revenues; or by trainees who pay for these independently.

Examples of optimum financing of trainings	
Italy	<ul style="list-style-type: none"> • Inter-professional funds are financed by the companies with a percentage of 0,3% on the mass of salaries • Inter-professional fund for medium and large companies 'Conto Formazione' through which one pays an amount which can be claimed back at a later stage • Professional funds for sectorial VET system (building schools "scuole edili" national network)
Ireland	<ul style="list-style-type: none"> • The Back to Education Programme allows the unemployed to retain their welfare payments whilst attending courses towards the next qualification level; <ul style="list-style-type: none"> · The Back to Education Allowance (BTEA) Scheme (full time) · Springboard (part time / evenings option) • Education, Training and Development Option (short courses) • Further Education and Training (FET) Courses (update/new skills, first job) (ESF co-financing 50%) in the form of short modular courses (ex. 6 -24 weeks) mainly in ETB Training Centres • Sustainability Skillnets: free network for trainees paid by Skillnets or employers, nationally funded to a degree • Construction Industry Federations (CIF): provides training at reduced fees for CIF member linked with the Construction Industry Register Ireland (CIRI); voluntary register for construction companies (mandatory July 17) requires companies to carry out Continuous Professional Development for workers • Construction IT Alliance (CITA): membership open to construction industry, provides grants from Skillnets Ltd for IT construction specific courses
Hungary	<ul style="list-style-type: none"> • Adult education through state support to train employees at the workplace • Adult education through company revenues (43% in 2012, 30% in 2013) and vocational training contribution (19% in 2011, 2% in 2012, 1% in 2013) which obliges employers to contribute a gross amount per month to training employees • Social Renewal Operative programme training for adults through the National Development Plan Human Resources Programme (2004-2006) and the New Hungary Development Plan (2007-2013) (financed through EU resources resulting from Hungary's accession to the EU) • There is a contribution of 1.5% of the workers' salary that is allocated into vocational training
Greece	<ul style="list-style-type: none"> • Employers contribution - via the LAEK fund (Special Fund for the Employment and Vocational Training) • IME GSEVEE (under the framework of ESPA structural funds) has designed and implemented training courses
Estonia	<ul style="list-style-type: none"> • State support system for training at vocational level (continuing education, long courses focused at full skills of one professional standard) (finance provided is low though)
Sweden	<ul style="list-style-type: none"> • Bygga-bo-dialogen (Build-live-dialogue) active 2004 - 2010 trained 3000 trainers who in turn trained 40000 people. The training providers were the Swedish Environment Institute and Swedish Technical Research

Institute. The cost of the trainings was borne by employees, trainees themselves as well as by the government and the Swedish Energy Agency. The cost of the training varied between 0 - 75 Euros. Each training counted 10-25 trainees and lasted two days in a classroom.

Portugal

- The Qualifica Program for adult education and training. It aims to foster lifelong learning to get to the European average. It has the following targets: to ensure that 50% of the active population completes upper secondary education; to achieve an adult participation rate in lifelong learning activities of 15%, and 25% by 2025; to achieve 40% of higher education graduates in the 30-34 age group; to extend the Qualifica. Adults who do not have basic, secondary and / or vocational qualifications, as well as young people who have dropped out of school and are not working or studying can be included in this program which places emphasis (unlike other national programmes) on the qualification "with compulsory referral for certified training" adjusted to the needs of each trainee.⁶
- For unemployed workers, all training courses developed under the National Institute of Employment and Training (IEFP) or in partnership with other training centres are free of cost. This is of utmost importance for the creation and maintenance of jobs, through measures appropriate to the economic context and the characteristics of the employers and also for the professional insertion of the various citizens through specific measures, in particular for those with a greater risk of exclusion from the market of job.
- The training For Renewables and Energy Efficiency in Buildings Sector developed as part of BUILD UP Skills FORESEE. The training is provided by a training centre (private) and targets trainers (1^a Phase), and workers and Installers (2^a Phase). The training has been provided for free during the duration of the project. Each training counted around 15 participants and lasted 25 and 50 hours. The bases are created to integrate the 25 hour and 50 hour training courses developed in the framework of FORESEE project into short training units (UFCD) of the National Qualification Catalogue (NCQ) but there are some aspects that are necessary to overcome, in particular, to bring together the Sectorial Council 582 (Civil Construction and Civil Engineering), the Sectorial Council 522 - Electricity and Energy. The inclusion of the different UFCDs resulting from FORESEE project seems to include into the NCQ as follows:
 - Windows Installers in locksmith (521049)
 - "PV Systems" and "Wind Systems" in "Electrical Installations Technician" (522238) qualification.
 - Lighting Systems installers in Electrical installation technician (522238).
 - Solar Thermal Systems and Biomass Boiler in Installer of Thermal Systems of renewable energies (522348).
 All the other will also be included but are currently expecting the reformulation of professional profiles

Austria

- The cross-craft training for blue collar workers (craftsmen) developed as part of BUILD UP skills CrossCraft. The training lasts from 4 hours to 4 days and costs 43€ (four training hours) to 401€ (four training days / 8 training hours per day) per trainee. The number of trainees per training varies between 7 and 22. The pilot courses have been financed by the EU through BUILD UP Skills. The developed trainings are currently offered by one of their former project partners (Innovative Buildings Austria). It has been particularly shown that short, onsite training can be sold without extra funding. The Austrian funding programs for qualification measures for craftsmen are primarily focused on the achievement of formal training objectives. Only a few funding programs can be used for training measures in terms of CrossCraft, and in many cases the valid requirements strongly restrict the funding opportunities.

Latvia

- The employer can order the necessary staff training and trainings could be partly supported by State Employment Agency if training program are licensed and has been accepted by agency. During project activities Qualification platform formed and trainings programs developed. Two continuing education programmes and training materials elaborated for provision of training for building industry workforce. Licences issued for two continuing education

⁶ <https://www.qualifica.gov.pt/#/pesquisaOferta>

programmes. During project activities 30 trainers selected and trained. State Service of Education Quality offering curriculums developed as examples for others training centers and schools. Programs developed serves as a example for other educational and training institutions. Presentations and training materials freely available for others to use. Trainings programme included in list of programmes supported by State Employment Agency (seasonal unemployment).

Netherlands

- ESF-funding for young unemployed in professional and sectoral training courses.
- Available education and training programs as well as institutes are categorised, linked to professions in the BUILD UP Skills advisor app (for both Android and Apple smartphones). Basic learning on technical modules is offered as e-learning for free.
- With a new collective labour agreement in 2015 employees in construction now can make a choice. For sustainable employability up to pension age the employer pays 3.21% of the annual salary as individual budget. Employees can choose to build up their skills through training and education and use the individual budget or to buy extra leave.
- With a DIA (sustainable employability analysis) every employee in construction has the opportunity once every five years to achieve a consultation for necessary education or training. Funding is dependent on if the employer, sector of industry or the employee is paying. Every employee is given an extra individual budget of EUR 2500 to spend.

5. Situation of mandatory trainings in the EU

Making trainings mandatory can be considered a non-financial incentive to stimulate the uptake of trainings, and hence ensure the continuation of the outputs (trainings) developed by the BUILD UP Skills projects.

Nearly all EU countries have mandatory trainings in place⁷ (Estonia does not, where the Ministry of Economic Affairs explicitly stated that they will not make trainings mandatory and instead leave trainings to market regulation and motivation of companies and individuals).

The mandatory trainings are diverse, yet some are recurrent. The mandatory safety training for blue collar workers is the most common training, followed by the mandatory first entry training / basic training in the building sector for blue collar workers. After these, mandatory training for non-environmentally friendly technologies / hazardous components and mandatory certification for professionals / type of works are the most common.

Additionally, drawing from main case study countries that TWG1 has analyzed, the following table elaborates on some successful cases for mandatory trainings that allows a better understanding of the type of trainings that currently falls under this category:

Mandatory training success cases	
Italy	<ul style="list-style-type: none"> • The “16 Hours MICS -Modules Integrated construction in Safety”: first entry in the building sector training and basic training of blue collars • The “16 Hours MICS work equipment” • Training on dry building systems: the case of plasterboard
Ireland	

⁷ Based on a survey responded by country representatives from 8 countries different to those already present in TWG1

<ul style="list-style-type: none"> • Safe Pass: Health and Safety training legally required for all construction workers on site • Construction Skills Certification Scheme (CSCS): legally required for plant operators, scaffolders, roofers, roadworkers, mobile access tower operatives and shotfirers. • Registered Electrical Contractors Ireland (RECI) • Registered Gas Installers (RGI) • BER Assessors: legally required for all energy auditors
Hungary
<ul style="list-style-type: none"> • A certification required since 2012 for the companies who intend to submit an offer for a public tender on 5,10 or 16 storey high concrete panel buildings. • Fluorinated greenhouse gas certification mandatory for 7 years now • Mandatory (but not very consistent) trainings / qualifications required in the fields of hazardous and non-environmentally friendly technologies, equipment and processes.
Greece
<ul style="list-style-type: none"> • Energy Auditors need to be engineers and have a certificate for new building or sale/rental of existing buildings.
Sweden
<ul style="list-style-type: none"> • First entry training / basic training in the building sector for blue collar workers • Certification for professionals / type of works • Safety training for blue collar workers
Portugal
<ul style="list-style-type: none"> • Certification for professionals / type of works • Safety training for blue collar workers • Hygiene and Safety at work
Austria
<ul style="list-style-type: none"> • Basic education for craftsmen. This is regulated by the vocational training act (Berufsausbildungsgesetz). The ordinances for the different craftsmen professions are fixed by the Federal Advisory Board on Apprenticeship (Bundes-Berufsausbildungsrat), appointed by the Federal Ministry of Economy, Family and Youth. The curricula for the different vocational schools are appointed by the Federal Ministry for Education, Arts and Culture.
Latvia
<ul style="list-style-type: none"> • There are mandatory trainings only for specific crafts (electricity, gas, plumbing, boilers and special machinery), engineering and architect level. There are not mandatory qualification requirements for other construction professions.
Netherlands
<ul style="list-style-type: none"> • There is basic education for craftsmen organised in a qualification structure of more than 3000 qualifications. This is centrally regulated by Samenwerkingsorganisatie Beroepsonderwijs Bedrijfsleven or S-BB (Cooperative organisation for Vocational Education) for all crafts. A qualification file (or cross-over qualification) is a result of cooperation between business and professional schools. The S-BB is appointed by the Dutch Government to ensure the quality of educational content, learning goals, exams, accreditation and certification, • Mandatory safety trainings

6. Other (non) financial elements of trainings

Other elements that could play a role in the financial sustainability of BUS trainings are:

- **Direct and indirect cost of the trainings.** Direct costs include the rent of the training facilities (e.g. classroom, workshops), the materials for practical trainings, personnel costs (i.e. salary of the trainers) and the travel costs of the trainees. Indirect costs include lost revenues from workers attending the training course (and therefore not having worked), which in some countries could be the highest hidden cost, and the fear from employers of losing employees after they have followed a training, as it is assumed that it would be easier for them to find a new job.
- **Costs of the training depends on the length of the courses.** This could vary from two and a half days to hundreds of hours. The length of training could be the most important element for the indirect costs. As such, shorter courses tend to be much more popular when talking about training courses on a voluntary basis. A longer timeframe is probably most suitable for mandatory training courses.
- **The training courses could be theoretical or practice oriented.** The number of the trainees is rather limited for practical exercises (up to 15-20 students), meanwhile theoretical courses could host more than one-hundred trainees.
- **There are different beneficiaries of training courses:** blue collar/white collar workers, workers in different positions of the value chain e.g. designer/contractor/supervisor/investor/client. It is normally more difficult to attract blue collar workers for voluntary trainings, as they are more vulnerable to the indirect costs aforementioned.
- **Accreditation / certification.** The cost of the trainings could be influenced by this. The regional/national/ or international accreditation also influence the costs.
- **Training materials-tools:** books/ PPT-s/ audio/ visual interactive e-learning/ APP. These could be relevant for the self-learning process and could help decrease personnel costs.
- **The trainers.** These could be teachers or experienced professionals. The cost of experienced professionals could be much higher in some countries.
- **Manufacturer/supplier involvement** in the courses. This could reduce the costs of the trainings as they frequently sponsor the courses with training materials, materials for practical exercises, lecturers etc.

7. Sustainability (longer-term continuation) of the projects - training courses developed by the BUILD UP Skills projects

Further to discussions with the TWG1, the following section has been divided into 3 measures from short-term, medium-term to long-term. Each measure highlights important factors which affect the sustainability of the training courses and we have aimed to provide suitable solutions and suggestions to carry these tasks forward.

7.1 Short term measures

Short term measures should consider the following:

- **Cost:** Minimise cost of training and determine breakeven point. Consider impact of course and incentives to get workers to attend.

- Types of training: focus on blue collar + site managers: provide a general training of no more than 3 days add-on training courses can then be provided, as well as on-site training modules/toolkits or specific training. This guarantees flexibility and adaptable courses when required.
- Trainers: ensure level of qualification criteria for trainers to deliver quality training and ensure competency. Transparency of competent trainers is essential to deliver suitable training.
- Training content: Ensure quality of training content and training units and make sure that the required information is transferred correctly.
- Certification and/or recognition of the course will provide value to the construction workers. Proof of completion is important for self belief and encouragement into further training.
- Access for all. Training facilities should be available for as many construction workers as possible, nationwide. It is essential to use simple language as many workers have not attended any courses since leaving school and their confidence in attending a course will be very low.
- Promotion: through construction federations and training organisations initially to start to spread the word.

The initial promotion of a course is always difficult unless there are obvious incentives for the workforce. Using the obvious Social Media is always useful to keep the information rolling, however this requires substantial time allocations to manage and ensure that the audience is reached. It is important to ensure that the construction industry federation is on board, in addition to other useful bodies relating to energy efficiency and construction. Using short 3-minute videos can efficiently provide more information to the workers than a long-written report. Using animations and actual case studies can reach a wider audience as people tend to tweet these and the use of YouTube is proliferating. Radio is a useful medium if an important event is due to happen, whilst utilising well-known figures to promote the course can garner interest.

7.2 Medium term measures

- Sustainability funding plans / private funding. Investigate national funding schemes.
- Grants and other financial incentives: make it compulsory to show evidence that work has been done by certified or trained workers
- Develop links with ESCO's / building companies
- Bank-loan scenario - banks give loans for training at nearly zero %
- Tender: In the Green public procurement - start to encourage the architects and engineers to tender for companies that have their workers trained (meat system) as this shows competency of the workforce and should provide a higher quality of works for their client.
- Value for construction workers and construction companies to encourage further training. Provision of additional training options (add-ons) should be provided.
- Level of VET should be standardized starting with courses for site managers, construction workers (CW) in general and then craft workers. This can then lead to EFQ levels for all trainings, developing regulation of the industry.
- Training content: updating training material by approved training organisations/products by manufacturers should be reviewed regularly.
- Trainers: further training or refreshers for trainers as technologies advance, EU and national policies update and learning techniques develop.

- Apprenticeships: provide both basic and specific training. This can initially be an add-on but can then be incorporated into general training practices.
- Promotion: hand in hand with the construction sector (or sector associations). Involve the public sector such as municipalities as they generally have construction companies listed working on existing and proposed projects. Encourage municipalities to request training of these workers within companies.

To ensure sustainability it would be important to provide a flexible course which can be easily updated every 2 years especially as new technologies are introduced and building regulations improve. To develop a continuous training plan for the individual it would be important to provide a refresher course every 2 years and give the option for add-ons. These add-ons could provide learning to a particular trade or provide hands-on practical training days such as air tightness or insulation installation training. If the main general training is supported by the government, then these add-ons could be run privately but should be quality controlled and certified.

Additionally, to ensure the uptake of the entire construction industry, this course should be provided as a day or evening option. The larger companies or public bodies may prefer the day option yet the smaller companies or sole traders often prefer the evening option as work time is more valuable.

Costs of these courses will have to be self-sufficient and costs should be covered. The break-even point should be assessed to determine the minimum number of trainees on each course to cover costs. Consider the minimum and maximum numbers for each course so that the course can be run effectively.

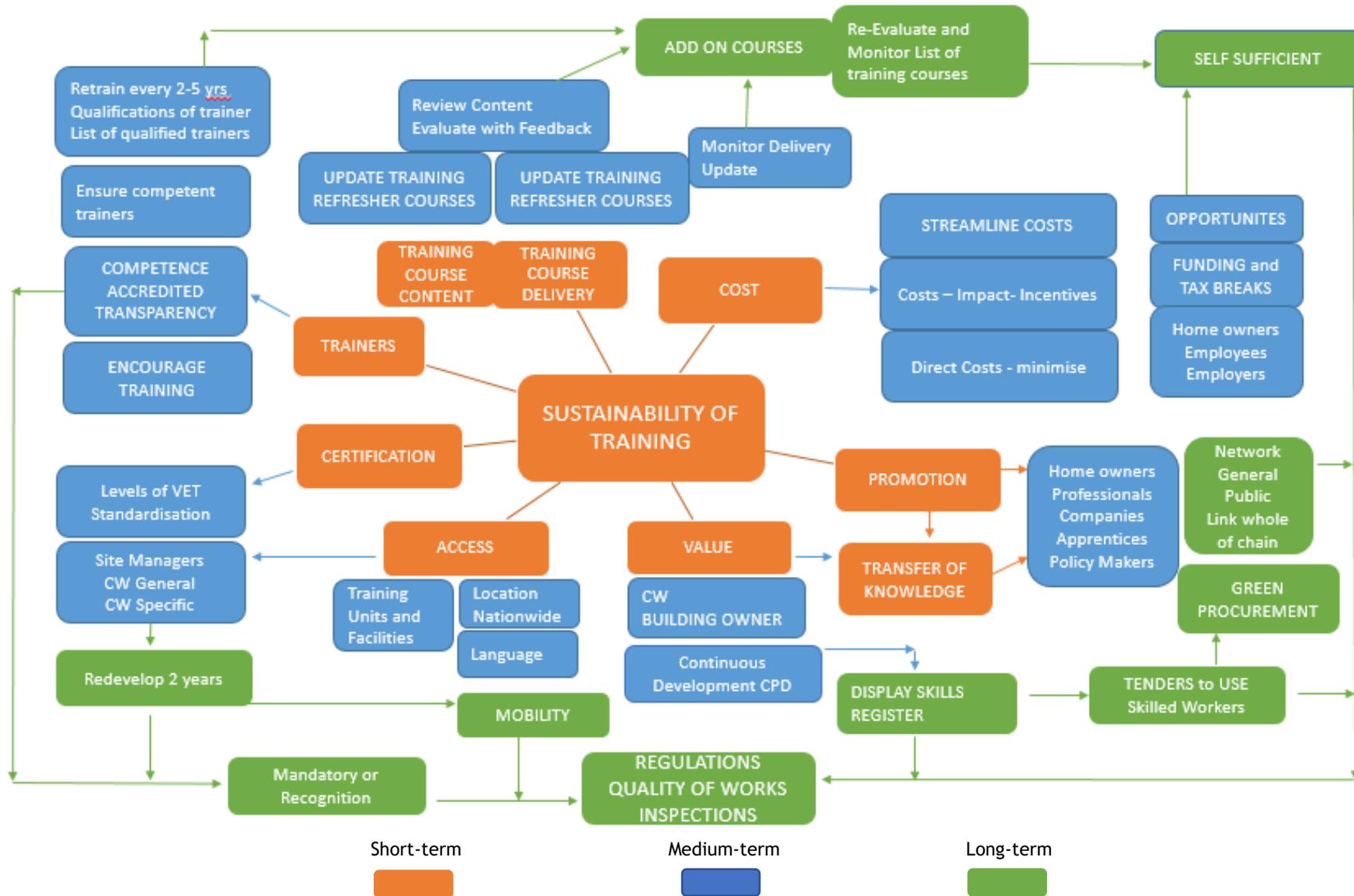
7.3 Long term measures

- Create value/recognition. This can be provided with certification and provision of additional courses to encourage further training in certain specific areas.
 - For the construction workers: CW require recognition and incentive to take training courses. They need to be able to display their skills and qualifications which will allow them to stand out above other less qualified CW.
 - For companies: If companies have a trained and skilled workforce they can provide quality buildings and reduce the time in construction, therefore saving money with best practice management and communication between all trades on site.
- Skills register: Ensure register for companies is in place and develop a skills register for CW.
- Training courses: List of training programmes should be available to further CPD
- Mobility for CW can be put in place for recognised /approved trained workforce for specific crafts and general operatives, to allow movement across Europe to work in “boom” sectors.
- Tenders: In the Green Procurement process it is legally required that each company should provide proof of skills and qualifications of workforce
- Education/training in schools. Provide basic training in quality nZEB construction within the construction studies.
- Mandatory: Trainings should lead to certification or becoming mandatory for all workers. This will lead to regulation of training programmes whilst ensuring a qualified workforce leads to quality low energy or nZEB construction.

Ideally, to ensure sustainability on a longer-term basis the general course needs to be mandatory, with add-ons or refresher courses required on a yearly basis to ensure up to date skills and learnings. A register showing suitable training programs should be available.

Mobility with recognized training across Europe can be achieved using the EQF system. Training will be recognized in all countries reducing the issues of skills shortages and unemployment depending on supply and demand. Languages should be addressed within the training process. A register for all skills to be on display and connected with continuous professional development. This will lead to a regulated, skilled workforce, with quality assurance on-site for all construction.

Figure 7-1 Interplay between the short term, medium term and long term measures to influence the financial sustainability of trainings



The following examples from Ireland help to substantiate some of the suggestions and solutions proposed.

Box 7-2 QualiBuild FES programme

Short Term: Example is the QualiBuild FES programme which is a condensed 3-day course with classroom contact but requires additional learning with continuous assessment to achieve 5 credits or EFQ equivalent of level 4. The general training course should be both theory and practical based preferably with a hands-on approach. It is well known that construction workers learn with visual materials and understand more by doing or completing a task themselves. The intention of this course is to cover the basics of national building regulations, and explain the principles of air tightness, continuous insulation, thermal bridging, ventilation systems and best practice installations. An additional topic should include good communications on site between the trades to provide quality low energy building or nZEB. The delivery of the course should be visually interesting with group participation and working in groups on certain topics. This interaction enables the workers to communicate effectively and provide a relaxed environment for learning. It should be noted that construction workers often have no or limited training after leaving school and are not inclined to voluntarily participate in training. Therefore, alleviating their anxieties and gaining their trust is important. Costs of these courses will have to be self-sufficient and costs should be covered. The break-even point should be assessed to determine minimum number of trainees on each course. Consider the participant numbers in this case to be a minimum of 13, and a maximum of 20 for each course.

Box 7-3 Example from QualiBuild about the uptake of the training courses by education

Medium - Long Term: As the proposed general training is EFQ 4 and is the equivalent contact of 3 days or 24 contact hours, the content can be introduced into the school curriculum as part of construction studies or similar. The QualiBuild FES course handbook has been already issued to a couple of schools in Ireland to trial out as an addition to the existing construction studies course at Leaving Cert level (final year of secondary school) to 17/18-year olds. The results or evaluation of interest is yet to be determined but understanding the principles of air tightness and insulation and ventilation can easily become part of the curriculum.

An alternative network for the training programmes include apprenticeships. Although each apprentice is learning a craft-specific trade, it is important to understand the main principles of construction at a holistic level. Understanding communications is equally important. This 3-day course can run alongside the existing apprenticeship, preferably in the first year.

There has been particular interest from fire officers and site managers. Promotion to the general CW is still an issue and resources to encourage workers to partake on the FES course is still problematic and time consuming especially as a cost of €340 is required for the course. Reducing costs is feasible if the course is open and accredited through NFQ (QQI) and run and managed by the main training board of Ireland SOLAS. The courses have been shown to be self-sufficient if the 140,000 CW take part. Increasing to 170,000 by 2020.