



# **Monitoring of the learning commitment in the campaign on the construction sector**

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# **Monitoring of the learning commitment in the campaign on the construction sector**

Final Report





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## EXECUTIVE SUMMARY

This study focuses on [the campaign targeted to stakeholders of the construction sector](#)<sup>1</sup>, supported by the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) of the European Commission and carried out within the framework of the European Alliance for Apprenticeships (EAfA). The study had two main aims:

1. To overview the implementation of stakeholder commitments (pledges) in the area of construction sector apprenticeships.
2. To provide insight into construction sector apprenticeships and compile an inventory of challenges and solutions to implement construction apprenticeships.

### **Approach**

The study focuses on pledges submitted by construction sector stakeholders in the area of apprenticeships in the initial vocational education and training (VET) with a particular focus on young people and SMEs. The study focuses on a 'narrow' understanding of the construction sector without considering the real estate, architectural and engineering or construction-related manufacturing sectors. The study follows the same definition of apprenticeships used in the Commission's proposal for a Council Recommendation on a European Framework for Quality and Effective Apprenticeships:

*'Apprenticeships are formal vocational education and training schemes that combine substantial work-based learning in companies and other workplaces with learning based in education or training institutions, and that lead to nationally recognised qualifications. There should be a contractual relationship between the apprentice, the employer and/or the vocational education and training institution, and the apprentice should be paid and/or compensated for her/his work'.*

The study has included the monitoring and analysis of pledges, surveys (Annexes 2-3), 22 case studies (Annex 4) and a validation workshop on construction apprenticeships.

### **Improving construction apprenticeships**

This study identified and analysed the most important challenges as well as matched the identified challenges with their possible solutions. The identified challenges include:

1. Attracting and motivating apprentices
2. Getting employer buy-in
3. Expanding vocational guidance
4. Making training more flexible and innovative
5. Professionalising VET teachers and in-company trainers
6. Integrating a multidisciplinary and holistic approach in training
7. Providing skills in energy efficient building construction
8. Securing sufficient resources for apprenticeships
9. Fostering mobility of apprentices, teachers and trainers
10. Ensuring occupational health and safety during and outside training
11. Integrating migrants into the labour market
12. Initiating structural reforms of apprenticeship systems

The study has identified the following points to improve construction apprenticeships:

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<sup>1</sup> [http://ec.europa.eu/growth/sectors/construction/apprenticeships\\_en](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en) [accessed 12-10-2017]

- Attracting and motivating apprentices, together with employer buy-ins, are the most crucial challenges stakeholders experience while implementing construction apprenticeships. The key element to consider while trying to attract more apprentices and employers to apprenticeships **is thinking of construction apprenticeships as a service** to be sold to customers stressing various selling points (e.g. the integration of energy efficiency and cross-craft training topics in the curricula, vocational skills competitions, dual study programmes, business cases including well-balanced wages of apprentices and programmes designed in a way that allow apprentices to be more productive).
- It will not be possible to attract and maintain higher numbers of apprentices and employers without **quality apprenticeships**. In this area, significant attention should be paid to such issues as the quality of the jobs of apprentices, an emphasis on basic skills to ensure a better adaptability of workers, an integration of assessments and monitoring in apprenticeships programmes, strengthening of the 'purchasing power' of apprentices (so that they have more influence on how money is spent on apprenticeships) and on intensifying cooperation between VET teachers and in-company trainers.
- To attract more apprentices, stakeholders should focus on **changing the perceptions** of young people, their parents and employers and **addressing social myths** prevalent in society (e.g. construction work is just for men, apprenticeships are not for SMEs).
- Apprenticeships need to be developed with close consideration of the **broader education system** including well-balanced education alternatives for learners and a progression within and between education pathways.
- Employers, especially micro enterprises and small and medium-sized companies (SMEs), need stronger support to engage in apprenticeships. A key measure to build the trust of companies in apprenticeship training is an **institutional intermediary or a single point of contact**. An effective intermediary may help to overcome structural barriers for employers including information-asymmetry, the unfavourable position of SMEs in the market for accessing apprenticeships and the low quality of apprenticeship programmes.
- **Increasing the evidence base** (e.g. by providing more cost-benefit analyses) may also act as a significant motivator for non-training companies as employers most often think in numbers, especially those with limited or no experience with apprenticeships.
- **Vocational guidance** and especially quality **career coaching** could make training more effective (reduce the number of drop-outs and help companies retain new entrants to the sector) and efficient (encourage apprentices to train in skills from which they really benefit without wasting time and resources). To reach the best results, vocational guidance should also provide an unbiased array of possible education choices, build on repetitive assessments and orientation, cover the whole life-cycle of an apprenticeship (before, during and after) and applied early in the education system.
- Training in construction apprenticeships will become truly flexible and innovative not only by ensuring that the curriculum is relevant to its users and that it is delivered not only for an effective duration of time and in an effective form, way and style, but, more importantly, by **changing the learning and teaching habits of apprentices and their teachers and trainers**.
- **New approaches to teacher and trainer training** are needed to ensure workforce skills that are sufficient for ensuring the competitiveness of apprentices and their employers and that match the real needs of the market. Such approaches may include peer grouping, continuous guidance that does not end with the completion of training courses and individualised learning pathways to build on the strengths of each individual. The potential of the 'train the trainer' concept should be better exploited.
- One of the most salient issues in VET regarding energy efficient building construction is the lack of **understanding of the building as a system**. A strong cross-craft understanding built via integrated (in terms of disciplines), **problem-centred and project-based training approaches** may result in a

better construction workforce making less mistakes, working faster and better. Better integration of such an approach in apprenticeships may not only help to boost the competitiveness of training companies, but also to strengthen the long-term adaptability of apprenticeship graduates to structural changes in the labour market.

- Evidence shows that well-developed apprenticeship support systems are not only characterised by sufficient funding, but also by **wide non-financial support** that may include careful targeting (in a way that no target group in need of support is left out), a pooling of resources for training and plentiful information and guidance opportunities for users. While funding apprenticeships, it is essential to **maintain a balance between urgent skills demands** that help to address current skills challenges experienced by companies **and transferable skills** that help to ensure the adaptability of apprenticeship graduates to structural changes in the labour market over a long-term perspective.
- Successful mobility, both **between countries and careers**, needs solid national VET systems including, among other things, a careful matching of participants, personal communication to dissipate the doubts, misunderstandings and uncertainties of participants and their parents, longer-term mobility experiences and well-developed systems for the recognition of skills and qualifications acquired during mobility.
- **Occupational health and safety (OHS)** must be ensured in quality construction apprenticeships. Employers' representatives play a key role in ensuring that legal OHS requirements are realistic enough for companies to comply with, while training providers – by introducing OHS early in their curricula. Trade unions have a very important role to play in ensuring OHS and other working conditions for apprentices.
- The construction sector is probably the sector where most incoming **migrants** will be working, as it is open to low, medium and high-skilled workers. However, the identified real-life examples demonstrate the need for specifically adapting apprenticeship programmes and courses to strengthen language and transferable skills, facilitating recognition of on-the-job training and addressing existing legal constraints.
- A key challenge is implementing **apprenticeship reforms**. Evidence demonstrates that successful apprenticeship reforms often are: based on broad partnerships between key stakeholders, a well-thought out strategy and focused efforts; are quick enough to avoid national policy disturbances; based on active lobbying; rely on key reform prerequisites (e.g. timing of a reform, state of the economy and decentralisation of vocational training provision), and support of external actors; and closely involve SMEs.
- Evidence shows that construction stakeholders rarely **set benchmarks for their apprenticeship initiatives and monitor them**. However, this is crucial as: clearly formulated targets mobilise effort, motivate and contextualise, and thus often lead to better results; carefully defined targets help to better steer initiatives and avoid failures; and the determined effects may be used for the further expansion of their activities or for improving the overall apprenticeship system. Thus, monitoring should be continuous, draw on medium and long-term indicators and all available research.

### ***Improving the campaign on construction sector apprenticeships***

- The monitoring of construction sector pledges demonstrated that the EAfA campaign helps construction pledge-holders publicise activities that they were already doing before joining the campaign. In addition, the EAfA campaign creates discipline for construction stakeholders to continue working on their pledge activities.
- However, only a few construction stakeholders introduced or plan to introduce new activities or innovations as a result of the EAfA campaign. The surveyed

construction stakeholders also rarely referred to partnerships with other pledge holders. Our findings suggest that to bring an even higher value added to participating stakeholders, the EAfA campaign could particularly promote concrete examples of the added value of joining the campaign (e.g. reputational labels) and strengthen its networking component.

- The monitoring of construction pledges showed that most pledge holders wish to continue implementing the activities foreseen in their original pledges. The EAfA campaign could build on this by exploiting opportunities to form a habit for construction stakeholders to continuously work on apprenticeships.

### ***Inventory of challenges and solutions to implement construction apprenticeships***

This study has outlined a significant number of types of measures that construction stakeholders implement in the quality, image, supply and mobility areas of apprenticeships, including concrete examples of possible activities within each type. The information is presented in the form of an inventory of 'pains and gains' (i.e. challenges and solutions) in implementing construction apprenticeships (Annex 5).

## ZUSAMMENFASSUNG FÜR DAS MANAGEMENT

Diese Studie konzentriert sich auf [die Kampagne, die die Interessenvertreter im Bausektor adressiert](#)<sup>2</sup>. Sie wird vom Generaldirektorat für den internen Markt, Industrie, Unternehmertum und kleine und mittlere Unternehmen (KMU) sowie DG GROW, einer Initiative der Europäischen Kommission, unterstützt und wird im Rahmen der Europäischen Ausbildungsallianz = European Alliance for Apprenticeships (EAfA) durchgeführt. Die Studie hat zwei Hauptziele:

1. Einen Überblick über den Status der Implementierung von Zusagen gegenüber den Interessenvertretern (Versprechungen) im Bereich der Ausbildung im Bausektor zu erhalten.
2. Die Ausbildungen im Bausektor zu verstehen und ein Verzeichnis der Herausforderungen und Lösungsansätze zur Implementierung von Bau-Ausbildungen aufzustellen.

### **Ansatz**

Die Studie konzentriert sich auf Zusagen, die durch Interessenvertreter aus dem Bausektor im Bereich Ausbildung in der Berufsgrundbildung (VET) mit besonderem Fokus auf junge Leute und KMU gemacht wurden. Die Studie fokussiert auf einen "engen" Begriff vom Bausektor, ohne Berücksichtigung von Maklern, Architekten und Ingenieuren sowie baunahen Fertigungsbereichen. Die Studie richtet sich nach der gleichen Definition von Ausbildung, wie sie im Vorschlag der Kommission zu einer Ratsempfehlung bezüglich eines Europäischen Netzwerks für qualitative und wirkungsvolle Ausbildungen benutzt wird:

*"Ausbildungen sind formelle berufsbildende Erziehungs- und Schulungsschemata, die substantielles arbeitsbasiertes Lernen in Unternehmen und an anderen Arbeitsplätzen kombiniert mit Lernen in Schulen oder Schulungsunternehmen, die zu national anerkannten Qualifikationen führen. Zwischen dem Lehrling, dem Arbeitgeber und/oder der Schule oder dem Schulungsunternehmen sollte eine vertragliche Beziehung bestehen und der Auszubildende sollte bezahlt werden bzw. einen Ausgleich für seine geleistete Arbeit erhalten.*

Die Studie umfasste das Monitoring und die Analyse von Zusagen, Untersuchungen (Anhänge 2-3), 22 Fallstudien (Anhang 4) und einen Validierungs-Workshop zu Baugewerbe-Ausbildungen.

### **Verbessern von Bau-Ausbildungen**

Die Studie hat die wichtigsten Herausforderungen identifiziert und analysiert und darüber hinaus die identifizierten Herausforderungen an die möglichen Lösungen angepasst. Die identifizierten Herausforderungen umfassen:

1. Wecken von Interesse und Motivation von Auszubildenden
2. Erzielen von Unterstützung der Arbeitgeber
3. Ausweiten der berufsschulischen Führung
4. Flexibilisieren und innovativeres Gestalten von Trainings/Schulungen
5. Professionalisierung von VET-Ausbildern und internen Trainern im Unternehmen
6. Integrieren eines multidisziplinären und holistischen Ansatzes im Schulungsbereich
7. Vermittlung von Fähigkeiten in energieeffizientem Bauen
8. Sicherstellen von ausreichenden Ressourcen für Ausbildungen

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<sup>2</sup> [http://ec.europa.eu/growth/sectors/construction/apprenticeships\\_en](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en) [veröffentlicht am 12.10.2017]

9. Unterstützen der Mobilität von Auszubildenden, Lehrern und Schulungsexperten
10. Sicherstellen von Gesundheit und Sicherheit am Arbeitsplatz während und außerhalb der Ausbildung.
11. Integrieren von Flüchtlingen in den Arbeitsmarkt
12. Initiieren von strukturellen Reformen von Ausbildungssystemen

Die Studie hat die folgenden Punkte zur Verbesserung von Bau-Ausbildungen identifiziert:

- Anziehen und Motivieren von Auszubildenden, mit der Unterstützung der Arbeitgeber sind die kritischsten Herausforderungen, denen sich Interessenvertreter gegenübersehen, während sie Bau-Ausbildungen durchführen. Das Kernelement das bedacht werden muss, wenn man mehr Auszubildende und entsprechende Arbeitgeber finden will, ist das **Verstehen der Bau-Ausbildung als Service**, der den Kunden unter Berufung auf zahlreiche Verkaufsargumente verkauft werden muss ( z.B. Integration der Energieeffizienz und berufsübergreifender Schulungsthemen in die Curricula, Wettbewerbe zu berufsschulischen Fähigkeiten, Ausbildungsprogramme im dualen System, Business Cases einschließlich ausgeglichener Gehälter für Auszubildende und Programme, die so konzipiert sind, dass sie es Auszubildenden ermöglichen, produktiver zu arbeiten).
- Ohne **qualitativ hochwertige Ausbildungen** wird es nicht möglich sein, die Anzahl der Auszubildenden und beteiligten Arbeitgeber zu steigern. In diesem Bereich sollte hinsichtlich Qualitätsthemen den Ausbildungsstellen, den Basiskenntnissen, die den Auszubildenden helfen, ihre Inhalte zu verstehen, sorgfältige Aufmerksamkeit gewidmet werden. Ferner sollten beachtet werden: die Integration der Beurteilungen und die Überwachung der Ausbildungsprogramme, die Stärkung der "Einkaufsmacht" der Auszubildenden (damit sie mehr Einfluss auf die Verwendung der Gelder, die für Ausbildungen aufgewendet werden, erhalten) und die Intensivierung der Kooperation zwischen VET-Lehrern und internen Trainern.
- Um mehr Auszubildende anzuziehen, sollten die Interessenvertreter sich darauf konzentrieren, die **Wahrnehmung** der jungen Leute, ihrer Eltern und Arbeitgeber **zu verändern**. Dies sollte auch dadurch geschehen, dass **soziale Mythen adressiert** werden, die in der Gesellschaft herrschen (z.B. Arbeit auf dem Bau ist ein Männerberuf, Ausbildungen passen nicht zu KMU).
- Ausbildungen müssen im **großen Umfeld des Bildungssystems** entwickelt werden und ausgewogene Bildungsalternativen für die Lernenden ebenso umfassen wie eine Durchlässigkeit zwischen den Bildungswegen.
- Arbeitgeber, vor allem Kleinbetriebe und KMU, benötigen mehr Unterstützung bei der Schaffung und Unterhaltung von Ausbildungsstellen. Eine Schlüsselmaßnahme zum Aufbau von Vertrauen der Unternehmen in Ausbildung wären ein **institutioneller Moderator oder eine dedizierte Kontaktperson**. Ein effektiver Moderator kann helfen, strukturelle Barrieren der Arbeitgeber zu überwinden, wie etwa Informations-Asymmetrie, die ungünstige Position der KMU im Markt für Auszubildende und die geringe Qualität der Ausbildungsprogramme.
- **Verbessern der Faktenlage** (z.B. durch Anbieten von mehr Kosten-/Nutzen-Analysen) kann die Motivation von Unternehmen, die nicht ausbilden, deutlich verbessern, denn Arbeitgeber denken oft in Zahlen, vor allem dann, wenn sie wenig oder gar keine Erfahrung mit Ausbildung haben.
- **Berufsberatung** und besonders qualitatives **Karriere-Coaching** können die Ausbildung effektiver machen (die Anzahl der Abbrecher reduzieren und den Unternehmen helfen, neue Mitarbeiter im Berufsfeld nicht wieder zu verlieren) und auch effizienter (Ermutigen der Auszubildenden, sich in den Fertigkeiten unterweisen zu lassen, die wirklich Nutzen bringen, ohne dabei Zeit und Ressourcen zu vergeuden). Um die bestmöglichen Ergebnisse zu erzielen, sollte Berufsberatung auch vorurteilsfrei auf eine ganze Reihe von Ausbildungsmöglichkeiten hinweisen, dabei etwa auf Wiederholungsprüfungen

und Stand der Orientierung aufbauen, den ganzen Lebenszyklus der Ausbildung umfassen (vor, während und nach) und früh auf dem Weg durch das Bildungssystem stattfinden.

- Das Training in einer Bau-Ausbildung soll wirklich flexibel und innovativ werden, nicht nur durch Sicherstellung eines für den Nutzer relevanten Curriculums. Und das sollte nicht nur für einen effektiven Zeitraum und in effektiver Weise, Form und Stil geschehen, sondern noch wichtiger durch **Verändern der Lern- und Lehrgewohnheiten der Auszubildenden und ihrer Lehrer und Trainer**.
- **Neue Ansätze für Lehrer- und Trainer-Weiterbildung** werden die Fähigkeiten der Belegschaft eines Unternehmens so verbessern, dass sie die Wettbewerbsfähigkeit der Auszubildenden und ihrer Arbeitgeber so steigern, dass sie den realen Markterfordernissen entsprechen. Solche Ansätze können das Zusammenfassen von Peer Groups, kontinuierliche Orientierung, die nicht nach dem Abschluss des Training-Kurses und individuellem Lernen, das auf den Stärken jedes Individuums umfassen. Hierzu soll das Potential des 'Train-the-trainer'-Konzepts bestmöglich ausgenutzt werden.
- Eines der zentralen Themen in der VET bezüglich einer energie-effizienten Bauweise ist der Mangel an **Verständnis eines Baus als System**. Ein starkes Gewerk übergreifendes Verständnis, das durch integrierte Bauweise (in Bezug auf Disziplinen) sowie **problemfokussierte und projekt-basierte Trainingsansätze** aufgebaut wurde, kann zu besserem Bau-Personal führen, das weniger Fehler macht und auch schneller und besser arbeitet. Bessere Integration eines solchen Ansatzes zur Ausbildung, kann nicht nur helfen, die Wettbewerbsfähigkeit des Unternehmens zu steigern, sondern auch die langfristige Anpassungsfähigkeit der fertig ausgebildeten Bauhandwerker an strukturelle Veränderungen im Arbeitsmarkt stärken.
- Es gibt Belege dafür, dass gut entwickelte Systeme für Unterstützungsmaßnahmen von Ausbildungen nicht nur dadurch gekennzeichnet sind, dass sie finanziell gut gefördert werden, sondern auch **umfassende nicht-finanzielle Unterstützung** erfahren, die eventuell durch sorgfältige Auswahl (so dass jede Zielgruppe, die Unterstützung benötigt, auch berücksichtigt wird), und eine Zusammenfassung der Ressourcen für Training und umfassende Informationen sowie Beratungsmöglichkeiten für Nutzer. Bei der bezahlten Ausbildung ist es grundlegend wichtig, eine **Balance zwischen dringend benötigten Fähigkeiten** zu halten, die helfen soll, sich um die gegenwärtigen Herausforderungen bezüglich der Fähigkeiten im Unternehmen zu kümmern. Auch **übertragbare Fähigkeiten** sollen helfen, die Anpassungsfähigkeit von Ausgebildeten an strukturelle Veränderungen im Arbeitsmarkt mit langfristiger Perspektive sicherzustellen.
- Erfolgreiche Mobilität, sowohl **zwischen Ländern wie auch zwischen Karrieren**, verlangt nach soliden nationalen WET-Systemen einschließlich, neben anderen Dingen, einer sorgfältigen Suche nach zusammen passenden Teilnehmern, persönlicher Kommunikation, um die Zweifel zu zerstreuen, Missverständnissen und Unsicherheiten bei Teilnehmern und ihren Eltern, längeren Mobilitätserfahrungen und gut entwickelten Systeme zur Erkennung von Fähigkeiten und Qualifikationen, die aufgrund der Mobilität angenommen wurden.
- **Gesundheit und Sicherheit am Arbeitsplatz (OHS)** muss während einer qualitätsvollen Bau-Ausbildung gewährleistet sein. Die Repräsentanten der Arbeitgeber spielen eine Schlüsselrolle im Sicherstellen, dass die gesetzlich vorgegebenen OHS-Anforderungen realistisch genug sind, dass Unternehmen sich nach ihnen richten, während Veranstaltungen von Trainings-/Schulungsanbietern diese frühzeitig in ihre Curricula aufnehmen müssen. Auch Gewerkschaften spielen eine sehr wichtige Rolle in der Sicherstellung von OHS und anderen Arbeitsbedingungen für Auszubildende.
- Der Bau-Sektor ist wahrscheinlich der Sektor, in dem die meisten **Flüchtlinge** arbeiten werden, weil die Branche offen ist für niedrig-, mittel- und auch

hochqualifizierte Arbeitskräfte. Die identifizierten Beispiele aus dem Arbeitsleben, demonstrieren die Notwendigkeit für die Annahme von Ausbildungsprogrammen und -kursen zur Stärkung der sprachlichen und der Transfer-Fähigkeiten, was die Anerkennung des On-the-job-Trainings fördert und die Adressierung bestehender legaler Hürden.

- Eine Herausforderung ist die Implementierung der **Ausbildungsreformen**. Es gibt Belege dafür, dass erfolgreiche Ausbildungsreformen oft erfolgreich sind, weil sie auf Partnerschaften zwischen den wichtigsten Interessenvertretern beruhen, außerdem auf einer wohldurchdachten Strategie und fokussierten Bemühungen; sie sind schnell genug, um Störungen der nationalen Politik zu vermeiden; basierend auf aktiver Lobby-Tätigkeit; beruhend auf Schlüssel-Reform-Voraussetzungen (z.B. Zeitraum für eine Reform, Status der Wirtschaft und der Dezentralisierung der Berufsausbildung), und Unterstützung externer Akteure; sowie enge Einbeziehung von KMU.
- Es gibt Belege, dass Bau-Interessenvertreter **selten Benchmarks für ihre Ausbildungs-Initiativen setzen und diese auch nicht überwachen**. Das ist kritisch, weil: klar formulierte Ziele Bemühungen mobilisieren, motivieren und in Kontext setzen, und sie führen dadurch oft zu besseren Ergebnissen; vorsichtig definierte Ziele helfen, Initiativen besser zu steuern und Fehler zu vermeiden. Und die Effekte können genutzt werden für die weitere Expansion ihrer Aktivitäten oder zur Verbesserung des gesamten Ausbildungssystems. Auf diese Weise sollte die Überwachung kontinuierlich sein, sich auf mittel- oder langfristige Indikatoren beziehen und auf alle bekannten Forschungsergebnisse.

### ***Stärken der Kampagne zur Ausbildung im Bausektor***

- Die Überwachung von Zusagen im Bau-Sektor hat es an den Tag gebracht, dass die EAfA-Kampagne es ermöglichte, dass die Unternehmen, die vor der Kampagne Zusagen hinsichtlich Ausbildung gemacht hatten, diese nachträglich publiziert haben.
- Nur wenige Bau-Interessenvertreter haben neue Aktivitäten oder Innovationen als Ergebnis der EAfA-Kampagne geplant oder vorgestellt. Die untersuchten Bau-Interessenvertreter haben sich also selten auf Partnerschaften berufen mit anderen Unternehmen, die Zusagen gemacht haben. Unsere Ergebnisse legen es nahe, dass die Kampagne einen höheren Mehrwert für die teilnehmenden Interessenvertreter gebracht hat. Die EAfA-Kampagne könnte insbesondere konkrete Beispiele für den Mehrwert der Teilnahme an der Kampagne kommunizieren (z.B. bezüglich Reputation) und die Netzwerk-Komponente stärken.
- Das Überwachen der Zusagen weist darauf hin, dass die meisten zusagenden Unternehmen sich wünschen, auch weiterhin die Aktivitäten, die in ihren Zusagen vorgesehen waren, zu implementieren. Die EAfA Kampagne könnte darauf aufbauen durch Nutzen der Gelegenheiten, eine Gewohnheit aus der kontinuierlichen Arbeit an Ausbildungen für Bau-Interessenvertreter zu schaffen.

### ***Liste der Herausforderungen und Lösungen zur Implementierung von Bau-Ausbildungen***

Diese Studie hat eine signifikante Anzahl von Arten von Maßnahmen umrissen, die Bau-Interessenvertreter in den Bereichen Qualität, Image, Vorhandensein von Ressourcen und Mobilität implementieren - einschließlich konkreter Beispiele für Maßnahmen und Aktivitäten in jedem Bereich. Die Information wird in Form einer Auflistung von "Pros und Cons" (etwa Herausforderungen und Lösungen) angeboten, die bei der Implementierung von Bau-Ausbildungen auftreten (Anhang 5).



## RÉSUMÉ

Cette étude se concentre sur [la campagne ciblée sur les parties prenantes du secteur de la construction](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en)<sup>3</sup>, soutenue par la Direction générale du marché intérieur, de l'industrie, de l'entrepreneuriat et des PME (DG GROW) de la Commission européenne et réalisée dans le cadre de l'Alliance européenne pour l'apprentissage (EAfA). L'étude avait deux objectifs principaux:

1. Présenter un aperçu de la mise en œuvre des engagements des parties prenantes en matière d'apprentissage dans le secteur de la construction.
2. Offrir un éclairage sur l'apprentissage dans le secteur de la construction et établir un inventaire des défis et des solutions pour mettre en œuvre l'apprentissage dans le secteur de la construction.

### Approche

L'étude se focalise sur les engagements présentés par les parties prenantes du secteur de la construction en matière d'apprentissage dans l'enseignement et la formation professionnels (EFP) initiaux, en mettant particulièrement l'accent sur les jeunes et les PME. L'étude porte sur une compréhension « étroite » du secteur de la construction sans tenir compte des secteurs de l'immobilier, de l'architecture et de l'ingénierie ou de la production liée à la construction. L'étude suit la même définition de l'apprentissage que celle utilisée dans la proposition de la Commission pour une recommandation du Conseil relative à un cadre européen pour un apprentissage efficace et de qualité :

*« tout programme formel d'EFP qui associe une composante importante de formation en milieu professionnel (entreprise et autres lieux de travail) et une composante de formation dispensée dans des établissements d'enseignement ou de formation, qui débouche sur des certifications reconnues à l'échelon national et se caractérise par l'existence d'une relation contractuelle entre l'apprenti, l'employeur et/ou l'établissement d'EFP et par la rémunération ou indemnité versée à l'apprenti pour son travail ».*

L'étude a inclus le suivi et l'analyse des engagements, des enquêtes (annexes 2-3), 22 études de cas (annexe 4) et un atelier de validation sur l'apprentissage dans le secteur de la construction.

### Améliorer l'apprentissage dans le secteur de la construction

Cette étude a identifié et analysé les défis les plus importants, et elle a établi une correspondance entre les défis identifiés et les solutions possibles. Les défis identifiés incluent :

1. Attirer et motiver les apprentis
2. Obtenir l'adhésion de l'employeur
3. Élargir l'orientation professionnelle
4. Rendre la formation plus flexible et innovante
5. Professionnaliser les enseignants d'EFP et les formateurs en entreprise
6. Intégrer une approche pluridisciplinaire et holistique dans la formation
7. Apporter des compétences dans la construction de bâtiments efficaces au plan énergétique
8. Assurer des ressources suffisantes à l'apprentissage
9. Favoriser la mobilité des apprentis, des enseignants et des formateurs
10. Assurer la santé et la sécurité au travail pendant et en dehors de la formation

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<sup>3</sup> [http://ec.europa.eu/growth/sectors/construction/apprenticeships\\_en](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en) [accédé le 12-10-2017]

11. Intégrer les réfugiés sur le marché du travail
12. Initier des réformes structurelles des systèmes d'apprentissage

L'étude a identifié les points suivants pour améliorer l'apprentissage dans le secteur de la construction :

- Attirer et motiver les apprentis, ainsi que l'adhésion des employeurs, sont les principaux défis que les parties prenantes rencontrent lors de la mise en œuvre de l'apprentissage dans le secteur de la construction. L'élément clé à prendre en compte pour attirer vers l'apprentissage davantage d'apprentis et d'employeurs est **de considérer l'apprentissage dans le secteur de la construction comme un service** à vendre aux clients en soulignant les différents arguments de vente (par exemple, l'inclusion des thématiques de l'efficacité énergétique et de la formation transversale dans le programme, les concours de compétences professionnelles, les programmes d'études en alternance, les analyses de cas d'entreprise, y compris les salaires bien adaptés des apprentis et des programmes conçus de manière à permettre aux apprentis d'être plus productifs).
- Il ne sera pas possible d'attirer et de maintenir un plus grand nombre d'apprentis et d'employeurs sans un **apprentissage de qualité**. Dans ce domaine, une attention particulière devrait être accordée à des questions telles que la qualité des emplois des apprentis, et l'accent devrait être mis sur les compétences de base pour assurer une meilleure capacité d'adaptation des travailleurs, une inclusion des évaluations et du suivi dans les programmes d'apprentissage, le renforcement du « pouvoir d'achat » des apprentis (afin qu'ils aient plus d'influence sur la manière dont l'argent est dépensé pour l'apprentissage), et l'intensification de la coopération entre les enseignants d'EEP et les formateurs en entreprise.
- Pour attirer plus d'apprentis, les parties prenantes devraient se concentrer sur le **changement des perceptions** des jeunes, de leurs parents et des employeurs et **s'attaquer aux mythes sociaux** répandus dans la société (par exemple, travailler dans le secteur de la construction est réservé aux hommes, l'apprentissage n'est pas pour les PME).
- L'apprentissage doit être développé en tenant en compte du **système éducatif dans son ensemble**, en incluant les alternatives d'éducation bien équilibrées pour les apprenants et une progression dans et entre les parcours d'éducation.
- Les employeurs, en particulier les micro-entreprises et les petites et moyennes entreprises (PME), ont besoin d'un soutien plus important pour s'engager dans l'apprentissage. Une mesure clé pour développer la confiance des entreprises dans la formation en apprentissage est **un intermédiaire institutionnel ou un guichet unique**. Un intermédiaire efficace peut aider les employeurs à surmonter les obstacles structurels, y compris l'asymétrie de l'information, la position défavorable des PME sur le marché de l'accès à l'apprentissage et la faible qualité des programmes d'apprentissage.
- **Accroître la base des éléments probants** (par exemple, en fournissant davantage d'analyses coûts-avantages) peut également être une motivation plus importante pour les entreprises non formatrices car les employeurs pensent le plus souvent en chiffres, en particulier ceux qui ont peu ou pas d'expérience en matière d'apprentissage.
- **L'orientation professionnelle** et surtout un **accompagnement professionnel** de qualité pourraient rendre la formation plus efficace (réduire le nombre de décrochages et aider les entreprises à retenir les nouveaux entrants dans le secteur) et efficiente (encourager les apprentis à se former pour les compétences dont ils ont réellement besoin sans perte de temps ni de ressources). Afin d'obtenir les meilleurs résultats, l'orientation professionnelle devrait également offrir un éventail impartial de choix éducatifs possibles, s'appuyer sur des évaluations et une orientation répétées, couvrir tout le cycle de l'apprentissage (avant, pendant et après) et être appliqué tôt dans le système éducatif.

- L'apprentissage dans le secteur de la construction deviendra réellement flexible et innovant pas uniquement en veillant à ce que le programme soit pertinent pour ses utilisateurs et qu'il soit proposé pour une durée efficace, et sous une forme, façon et style efficaces, mais, encore plus important, **en modifiant les habitudes de formation et d'enseignement des apprentis ainsi que de leurs enseignants et formateurs.**
- **De nouvelles approches pour la formation des enseignants et des formateurs** sont nécessaires pour assurer des compétences suffisantes des travailleurs qui garantissent la compétitivité des apprentis et de leurs employeurs et correspondent aux besoins réels du marché. De telles approches peuvent inclure le regroupement de pairs, une orientation continue qui ne s'arrête pas à la fin des cours de formation, et des parcours de formation individualisés pour s'appuyer sur les qualités de chaque individu. Le potentiel du concept de « former le formateur » devrait être mieux exploité.
- L'un des problèmes les plus marquants de l'EFP en matière de construction de bâtiments efficaces au plan énergétique est le manque de **compréhension du bâtiment en tant que système.** Une solide compréhension transversale des métiers, construite par le biais d'**approches** de la formation intégrées (en termes de disciplines), **axées sur les problèmes et basées sur des projets,** pourrait produire une meilleure main-d'œuvre du secteur de la construction qui fait moins d'erreurs et travaille plus vite et mieux. Une meilleure intégration d'une telle approche dans l'apprentissage peut non seulement permettre d'accroître la compétitivité des entreprises formatrices, mais aussi renforcer la capacité d'adaptation à long terme des apprentis diplômés aux changements structurels du marché du travail.
- Les données montrent que des systèmes de soutien à l'apprentissage bien développés ne se distinguent pas seulement par un financement suffisant, mais aussi par un **large soutien non financier** qui peut inclure un ciblage judicieux (de manière à ce qu'aucun groupe cible ayant besoin de soutien ne soit exclu), un regroupement des ressources pour la formation et de nombreuses possibilités d'information et d'orientation pour les utilisateurs. En finançant l'apprentissage, il est essentiel de **maintenir un équilibre entre les demandes de compétences urgentes** qui permettent de relever les défis actuels en matière de compétences des entreprises **et les compétences transférables** qui contribuent à assurer la capacité d'adaptation des apprentis diplômés aux changements structurels du marché du travail dans une perspective à long terme.
- Une mobilité réussie, à la fois **entre pays et carrières,** nécessite des systèmes nationaux d'EFP solides comprenant, entre autres, une correspondance minutieuse des participants, une communication personnelle pour dissiper les doutes, les malentendus et les incertitudes des participants et de leurs parents, des expériences de mobilité à long terme et des systèmes bien développés de reconnaissance des compétences et qualifications acquises pendant la mobilité.
- **La santé et la sécurité au travail (SST)** doivent être garanties dans le cadre d'un apprentissage de qualité dans le secteur de la construction. Les représentants des employeurs jouent un rôle clé en veillant à ce que les exigences légales en matière de SST soient suffisamment réalistes pour que les entreprises s'y conforment, tout en formant les prestataires avec une introduction de la SST tôt dans leurs programmes. Les syndicats ont un rôle très important à jouer pour assurer aux apprentis la sécurité et la santé au travail ainsi que les autres conditions de travail.
- Le secteur de la construction est probablement le secteur où une grande partie des **réfugiés** entrants vont travailler car il est ouvert aux travailleurs peu, moyennement et hautement qualifiés. Toutefois, les exemples concrets identifiés montrent la nécessité d'adapter spécifiquement les programmes et les cours d'apprentissage pour renforcer les compétences linguistiques et

transférables, faciliter la reconnaissance de la formation sur le lieu de travail et répondre aux contraintes juridiques existantes.

- Le principal défi est la mise en œuvre des **réformes de l'apprentissage**. Les données montrent que des réformes réussies en matière d'apprentissage sont souvent : fondées sur de larges partenariats entre les principales parties prenantes, une stratégie bien pensée et des efforts ciblés ; assez rapides pour éviter des bouleversements de la politique nationale ; basées sur un lobbying actif ; dépendantes de préalables essentiels de la réforme (par exemple, le calendrier de la réforme, l'état de l'économie et la décentralisation de la formation professionnelle) et le soutien d'acteurs externes ; et elles impliquent étroitement les PME.
- Les données montrent que les parties prenantes du secteur de la construction rarement **établissent des tests de référence pour leurs initiatives en matière d'apprentissage ni les surveillent**. Toutefois, ceci est essentiel car des objectifs clairement formulés mobilisent l'effort, motivent, contextualisent et conduisent ainsi souvent à de meilleurs résultats, des objectifs soigneusement définis permettent de mieux diriger les initiatives et éviter les échecs, et des effets déterminés peuvent être utilisés pour une future expansion de leurs activités ou améliorer le système global d'apprentissage. Ainsi, le suivi devrait être continu, s'appuyer sur des indicateurs à moyen et long terme et sur toutes les recherches disponibles.

### ***Améliorer la campagne pour l'apprentissage dans le secteur de la construction***

- Le suivi des engagements du secteur de la construction a montré que la campagne EAfA permet à ceux qui prennent les engagements dans le secteur de la construction de faire connaître les activités qu'ils réalisaient déjà avant de rejoindre à la campagne. De plus, la campagne EAfA crée une discipline pour les parties prenantes du secteur de la construction pour continuer à travailler dans les activités de leurs engagements.
- Toutefois, peu de parties prenantes du secteur de la construction ont introduit ou prévoient d'introduire de nouvelles activités ou innovations suite de la campagne EAfA. Les parties prenantes du secteur de la construction interrogées ont aussi rarement fait référence à des partenariats avec d'autres qui prennent les engagements. Nos résultats suggèrent qu'afin d'apporter une valeur ajoutée encore plus grande aux parties prenantes participantes, la campagne EAfA pourrait tout particulièrement promouvoir des exemples concrets de la valeur ajoutée en rejoignant la campagne (par exemple, les labels de réputation) et renforcer sa composante réseautage.
- Le suivi des engagements du secteur de la construction a montré que la plupart de ceux qui prennent les engagements souhaitent poursuivre la mise en œuvre des activités prévues dans leurs engagements initiaux. La campagne EAfA pourrait s'appuyer sur ce point en exploitant les opportunités afin que les parties prenantes du secteur de la construction prennent l'habitude de travailler en permanence avec l'apprentissage.

### ***Inventaire des défis et des solutions pour mettre en œuvre l'apprentissage dans le secteur de la construction***

Cette étude a décrit un nombre important de types de mesures que les parties prenantes du secteur de la construction mettent en œuvre en matière de qualité, d'image, d'offre et de mobilité d'apprentissage, y compris des exemples concrets d'activités possibles pour chaque type. Les informations sont présentées sous la forme d'un inventaire des « pertes et gains » (c'est-à-dire les défis et les solutions) dans la mise en œuvre de l'apprentissage dans le secteur de la construction (annexe 5).

## INTRODUCTION

### *Aims, tasks and focus of the study*

[The European Alliance for Apprenticeships \(EAfA\)](http://ec.europa.eu/social/main.jsp?catId=1147&langId=en)<sup>4</sup>, established in 2013, is a unique platform bringing together stakeholders for the common goal of strengthening the quality, supply, image and mobility of apprenticeships in Europe. As part of EAfA, the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) of the European Commission is supporting [a campaign targeted to stakeholders of the construction sector](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en)<sup>5</sup>. This is the first and currently the only sectoral campaign of EAfA. The motivation to initialise this campaign was rather straightforward as the construction sector is highly dependent on the availability of a skilled workforce to meet the demand for projects. As companies can only sell what they can build, their capacity to operate may be undermined by a lack of skilled workers. Hence, skills shortages may lead to commercial problems and compromise the sector's capability to plan and grow. Vocational education and training (VET), especially initial VET, is natural for the construction sector. Initial VET is the main gateway to construction sector jobs for young people. DG GROW knew that construction companies were active in the area of VET and wanted them to demonstrate how active they were. With this campaign, DG GROW therefore intends to bring somewhat higher visibility to the construction sector and to improve the image of the sector.

The study 'Monitoring of the learning commitment in the campaign on the construction sector' commissioned by the DG GROW focuses on this campaign with two main aims:

1. To overview the implementation of stakeholder commitments (pledges) in the area of construction sector apprenticeships.
2. To provide insight into construction sector apprenticeships and compile an inventory of novel, specific and/or effective solutions to key challenges in this respect.

The above-indicated two aims have been carried out through the following main tasks:

1. Monitoring: Monitor and summarise EAfA's implementation in the construction sector
2. Case studies: Develop selected case studies of pledge holders and a few construction stakeholders who did not make a pledge
3. Workshop: Contribute to the organisation of a workshop on the apprenticeship in IVET in the construction sector
4. Synthesis: Summarise findings and provide recommendations stemming from the evidence collected in this study

The study focuses on pledges submitted by construction sector stakeholders in the area of apprenticeships (incl. dual VET, see definition below) during initial vocational education and training (VET) with a particular focus on young people and SMEs. The study focuses on a 'narrow' understanding of the construction sector without considering the real estate, architectural and engineering or construction-related manufacturing sectors.

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<sup>4</sup> <http://ec.europa.eu/social/main.jsp?catId=1147&langId=en> [accessed 12-10-2017]

<sup>5</sup> [http://ec.europa.eu/growth/sectors/construction/apprenticeships\\_en](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en) [accessed 12-10-2017]

This study is based on the following definition of apprenticeships adopted by the Commission in its recent [proposal](#)<sup>6</sup> for a Council Recommendation on a European Framework for Quality and Effective Apprenticeships:

*Apprenticeships are formal vocational education and training schemes that combine substantial work-based learning in companies and other workplaces with learning based in education or training institutions, and that lead to nationally recognised qualifications. There should be a contractual relationship between the apprentice, the employer and/or the vocational education and training institution, and the apprentice should be paid and/or compensated for her/his work.*

### **The structure of this report**

The structure of this report mirrors the twofold aim of the study and is structured as follows:

- Chapter 1 provides an overview of construction sector apprenticeships in the EU as well as insights stemming from 22 case studies of construction stakeholder initiatives aimed at improving construction apprenticeships.
- Chapter 2 describes the monitoring of the campaign of the European Alliance for Apprenticeships for pledges in the construction sector and reports on the participation of construction pledge holders in the EAfA campaign largely based on the results of an online survey of construction pledge holders and carried out case studies.
- The final part – conclusions and recommendations – sums up the evidence collected and derives a number of recommendations for improving construction sector apprenticeships and communication on construction sector apprenticeships and EAfA.
- The annexes include methodology (Annex 1), online survey questionnaires used for the study (Annexes 2-3), a complete set of all 22 case studies (Annex 4) and an inventory of 'pains and gains' (i.e. challenges and solutions) in construction apprenticeships (Annex 5).

### **Main features of the approach**

This study is built on the following key methodological elements for the implementation of its tasks:

- A single conceptual framework facilitating a common understanding of apprenticeship and other relevant terms. The contractor mostly relied on the common analytical framework for apprenticeships developed by CEDEFOP (unpublished) and the concept of the life-cycle of apprenticeships (ILO/ WB 2013) spanning from recruitment/selection/induction, to training and assessment (on- and off-the job), to support during an apprenticeship and, finally, to completion and follow-up.
- Creating the following extensive evidence based high quality templates and guidance:
  - 22 case studies (17 construction pledge holders and 5 non-pledgers; 16 vertical ones focusing on a particular pledge and 6 horizontal ones focusing on a particular issue at stake such as mobility or the inclusion of women). Case studies are the major source of evidence for this study.
  - An online survey of pledge coordinators carried out in May – June 2017 with 28 complete responses (52% response rate). The survey was a major source of evidence for reporting on the participation of construction stakeholders in the EAfA campaign.

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<sup>6</sup> <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2873&furtherNews=yes> [accessed 12 10-2017]

- An online survey of members of European construction sector associations (i.e. FIEC, EFBWW and EBC) carried out in December 2016 – January 2017 with 28 complete responses. The survey helped to identify features of apprenticeships that are specific to the construction sector, but also to identify five additional case studies of construction stakeholders that did not make a pledge. The additional five case studies of non-pledgers were included to ensure a better spread of case studies both in terms of their thematic focus and geographical coverage.
- Coordination with the DG EMPL study '[European Alliance for Apprenticeships - Assessment of progress and planning the future](#)'<sup>7</sup> (Visionary Analytics was part of the team) in aligning the monitoring frameworks (the same elements were used to monitor the construction pledges to allow for a comparison of future monitoring exercises).
- An international workshop in Brussels aimed at practitioners in charge of implementing construction apprenticeships initiatives and stimulating their discussion of challenges and solutions in relation to the day-to-day implementation of construction sector apprenticeships.

### ***Duration***

The duration of the study was 14.5 months, from 1<sup>st</sup> June 2016 to 15<sup>th</sup> October 2017. The original deadline of the contract (31<sup>st</sup> May 2017) was prolonged by 4.5 months due to delays in the submissions of pledges and a need to align the assignment (e.g. of the monitoring framework) with a parallel study commissioned by the Directorate-General for Employment, Social Affairs and Inclusion 'European Alliance for Apprenticeships - Assessment of progress and planning the future' (European Commission 2017c).

### ***Consortium***

The consortium includes the following organisations and experts:

- Lead partner: Visionary Analytics, based in Lithuania
- Partner: InterVal GmbH, based in Germany
- Sub-contractor: European Builders Confederation (EBC)

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<sup>7</sup> <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8033&furtherPubs=yes> [accessed 12-10-2017]

## 1. OVERVIEW OF CONSTRUCTION SECTOR APPRENTICESHIPS

This chapter is the first attempt to provide an overview on how apprenticeships are implemented in the EU. It consists of three sections. The first section discusses features that are specific to construction sector apprenticeships. The second is the main section of this chapter as it is devoted to an analysis of challenges and solutions experienced by construction stakeholders when implementing construction apprenticeships. The third section emphasises the importance of formulating and monitoring the effects of various initiatives aimed at improving construction apprenticeships.

There have been attempts to map good practices in construction apprenticeships.<sup>8</sup> However, this study, and especially its first chapter, provides a first step towards a more comprehensive analysis of construction apprenticeships in Europe. Further research efforts are needed to increase the evidence-base on this topic.

### 1.1. *Features that are specific to construction sector apprenticeships*

Case studies and an online survey of members of European construction sector associations suggest that there are certain particularities about apprenticeships in construction sector-related programmes. Based on the latter, responders from 11 EU Member States argued that the IVET apprenticeship system in the construction sector has at least some specific feature(s) compared to standard VET practices in other sectors in the country (see table 1.1). Construction sector-specific features of apprenticeships systems identified in both of the sources included the following:

- **Sectoral training funds** for construction exist in a number of countries including Germany, the Netherlands and the United Kingdom.
- **Remuneration for apprentices** tends to be regulated/fixed in France, Germany, Italy and the Netherlands.
- **Requirements for companies** providing apprenticeships tend to be stricter in Belgium, France, Germany, the Netherlands and the UK. This corresponds to the trends for stricter sector occupational health and safety requirements reported in various studies as the construction sector presents one of the most dangerous challenges for workers as their work may include operating heavy machinery, working at heights, exposure to a variety of dangerous substances, a mobile working place, etc. (see, for example, the case study 'Addressing occupational health and safety issues in apprenticeships');
- **A formal contract** (i.e. based on the Labour Code or similar regulations) is concluded more often in construction apprenticeships in Belgium, France and the Netherlands. This is related to the above-mentioned point and the fact that apprentices are often minors and therefore they need extra legal protection. Meanwhile, a formal contract is mandatory for all dual VET in Germany and Austria. In the case of minors, legal representatives (e.g. parents) also have to sign this contract in Germany.
- In the on-the-job training part of apprenticeships, construction apprentices, compared to apprentices in other sectoral programmes, are more likely to be trained on construction **sites** rather than in closed training environments.

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<sup>8</sup> See <http://www.construction-for-youth.eu> [accessed 12-10-2017]



**Table 1.1: Specific features of IVET apprenticeships in the construction sector in relation to standard practices in surveyed countries, as a share of all answers for respective countries\***

Country	No. of respondents who answered this question	Does your country's apprenticeship system in initial vocational education and training have any specific features for the construction sector compared to the average/ standard/ usual practice in your country?	
		Yes	No
Belgium	8	50%	50%
Czech Republic	2	50%	50%
Denmark	4	0%	100%
France	5	100%	0%
Germany	4	75%	25%
Greece	1	0%	100%
Hungary	1	0%	100%
Ireland	2	50%	50%
Italy	5	60%	40%
Latvia	1	100%	0%
Netherlands	8	38%	62%
Portugal	2	0%	100%
Romania	1	100%	0%
Spain	3	0%	100%
Sweden	1	100%	0%
Switzerland	1	0%	100%
United Kingdom	3	100%	0%
<b>Total</b>	<b>52</b>	<b>26 respondents = 50%</b>	<b>26 respondents = 50%</b>

\* Respondent from Slovenia indicated that there were no apprenticeships in that country.  
Source: Visionary Analytics consortium based on an online survey of members of European construction sector associations, Dec 2016 – Jan 2017.

EU Member States vary significantly in terms of how they implement apprenticeships in construction sector occupations. For example, the online survey of members of European construction sector associations suggests a number of differences between countries:

- In Germany and Italy, construction apprentices tend to be *younger*, whereas in Romania and the Netherlands, they tend to be *older*
- The *duration* of apprenticeship programmes in the construction sector tend to be longer in France and the UK, but shorter in Romania
- In the UK, *more learning venues* are involved in the provision of training, whereas in France there are *less learning venues* involved
- *Social partners* are reported to have stronger engagement/a leading role in the implementation of apprenticeship programmes in Belgium, France and Italy. The role of social partners in the implementation of apprenticeship programmes was indicated to be of a more limited/consultative role in Romania.

The variation of construction apprenticeship approaches is further illustrated in Box 1.1 below. Examples show that countries differ not only in terms of their details of governance, VET provision, but also in their funding and engagement of/support to companies.

### **Box 1.1: The design of apprenticeships in the construction sector in nine EU Member States**

#### **Belgium**

In Belgium, multiple authorities are responsible for managing the educational process, therefore there are three different IVET designs in the French speaking, Dutch speaking and German speaking regions. For example:

- In **Wallonia** and in the **Brussels-Capital Region**, the French speaking community, apprenticeships and IVET for those between 15 and 25 years of age are mainly organised through part-time training and education centres (*Centre d'Enseignement et de Formation en Alternance (CEFA)*). These centres coordinate apprenticeship placements with individual companies. General education schools may also offer dual-training pathways via the same coordinating procedures, but they seldom do so. The Centre for Alternating Training in Construction (*Centre de Formation en Alternance de construction, FAC*) is responsible for the organisation and coordination of construction apprenticeships in the CEFA schools of the Brussels-Capital region. In addition, FAC acts as a socio-professional integration body (*Organisme d'Insertion socio-professionnelle, O.I.S.P.*) by helping school dropouts find employment or enrol in training schemes. Furthermore, FAC develops various projects in cooperation with partners such as the Brussels Formation or Funds for Professional Learning in Construction (FFC).
- The IVET system in **Flanders** is currently undergoing a reform that seeks to merge the two existing apprenticeship pathways into one: (1) Part-time vocational secondary education (*Deeltijds beroepssecundair onderwijs, DBSO*) set up in the 1980s by the government and (2) Apprenticeship (*Leertijd*), organised by SYNTRA, the Flemish Agency for Entrepreneurial Training, set up 50-60 years ago. It is not yet fully clear how the two above-mentioned apprenticeship systems will be merged into one. As social partners are historically very involved in the design of apprenticeship systems in Flanders, it is likely that a newly established sectoral partnership for construction will be able to shape the new system. A sectoral partnership is responsible for training conditions in the construction sector, including training mentorship, occupational health and safety and workplace training. The bylaws of the sectoral partnership have recently been completed. The official start of the partnership was foreseen for the end of 2016. The main focus of this partnership is the screening of companies to determine whether they are qualified to take on apprentices. The main risk in the work of the partnership is the possibility that imposing stricter regulations on workers (e.g. limiting the maximum number of apprentices per one in-company mentor, requirements for safety in the workplace, requirements for specific technical and mentoring knowledge for the in-company trainer) might make it much more difficult for companies to qualify for providing on-the-job training for apprentices. The support of the service organisation Constructiv for the construction sector is of particular importance for the involvement of stakeholders in the reform. Constructiv has a wealth of information on the sector and has access to relevant decision makers. Therefore, it is a constructive partner in all VET governance-related matters.

#### **France**

A single professional body, the French National Committee of Apprenticeships in the Construction Industry (*Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics, CCCA-BTP*), is the main body responsible for the development of IVET and apprenticeships in the construction sector. CCCA-BTP is financed by sectoral partners in the construction sector. CCCA-BTP manages its own network of dual-training centres (*Centre de formation d'apprentis, CFA*), organises the training of its trainers and in-company tutors, and oversees overall programme

development. Apprenticeships are encouraged by the government through numerous subsidies and tax incentives. For example, companies may benefit from a national training fund and two tax credit schemes, while apprentices can also benefit from tax credits and grants.

## **Germany**

Apprenticeships in the construction sector are based on the German dual VET system. This system combines theoretical training in a vocational school, practical training in a company and construction training centres. German apprentices have a contract with their company. Usually, an apprenticeship lasts three years. VET in the construction sector also has the specific feature of being organised in a stage model:

- In the first year, the contents of all training occupations in construction are identical, permitting joint education and training
- In the second year, there are three curricula for three broad categories of training occupations, namely building construction, civil engineering or construction finishing
- In the third year, apprentices learn the specifics of their training occupation, such as plastering, carpentry or track-laying, just to name a few examples

Apprenticeships in the construction sector do not include only training at firms and vocational schools. Training is complemented by a third training site – the inter-company vocational training centre (*Überbetriebliche Berufsbildungsstätte, ÜBS*). ÜBS operates on a sector-specific basis. The inter-company training centres<sup>9</sup>: ensure that an apprentice has the broad knowledge required for his/her profession, even if not all of these skills are used/taught in the training company (thereby safeguarding a skilled labour supply); ensure the ability of many SMEs to provide vocational education and training; support the competitive capability of SMEs through training and provide quality assurance in vocational education and training. Currently, Germany has more than 1,000 of these inter-company training centres in different sectors of the economy, most of them related to crafts (BMBF, 2016).

An important specific feature of apprenticeships in the construction sector that makes it attractive for companies (compared to dual VET in other sectors) is the system of financing. All companies in the sector must pay a financial contribution to [SOKA-BAU<sup>10</sup>](#), the umbrella name for two paritarian social funds of the German construction industry (i.e. the Holiday and Wage Compensation Fund and the Supplementary Pension Fund). SOKA-BAU supports apprenticeships in two ways: (1) by co-financing courses in ÜBS (courses in vocational schools are financed by the government) and (2) by reimbursing companies a part of the salary they pay to apprentices. This system increases the attractiveness of apprenticeships considerably compared to other sectors, where such a system of reimbursement does not exist.

## **Greece**

Apprenticeships in the construction sector usually do not differ from apprenticeships in other sectors. Most apprenticeship schemes in Greece are available at the post-secondary education level. There is only one scheme available at the upper-secondary education level provided by the Technical Apprenticeship Schools (*Εκπαίδευση ΕΠΑΣ Μαθητείας, EPAS*) and operated by the Manpower Employment Organisation (*Οργανισμός Απασχόλησης Εργατικού Δυναμικού-, ΟΑΕΔ, OAED*). EPAS provides two-year school-based VET and includes paid work for four days a week in accordance to

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<sup>9</sup> <https://www.bibb.de/en/12303.php> [accessed 12-10-2017]

<sup>10</sup> [http://www.soka-bau.de/soka-bau\\_2011/desktop/de/Arbeitgeber/Berufsausbildung/Ueberbetriebliche\\_Ausbildung/](http://www.soka-bau.de/soka-bau_2011/desktop/de/Arbeitgeber/Berufsausbildung/Ueberbetriebliche_Ausbildung/) [accessed 12-10-2017]

the principle of dual-VET. However, this scheme only trains for basic trades in the construction sector (e.g. carpenters, masons) and does not involve middle management or higher-level workers. Overall, apprenticeship schemes are not very popular in the sector and there was no systematic training prior to 2010. Previously, there was no need for any specific apprenticeship schemes as few workers faced any difficulties in finding a job (there was high employability in the sector). Motivation and basic work skills were sufficient for obtaining an employment contract. Only during the past few years, mostly due to the financial and economic crisis, have there been more attempts to strengthen apprenticeships in the construction sector. Grants are available for companies training apprentices to cover parts of the costs of training.

### **Ireland**

Out of the 27 apprenticeship programmes in Ireland, 25 are construction sector-related crafts. Craft apprenticeship in Ireland is a dual system incorporating both on- and off-the-job training, providing at least 50% workplace based training. The training is divided into seven phases of alternation between the workplace and an education facility. The apprenticeship system is demand-led and employer-led meaning that in order to begin a craft apprenticeship, the potential apprentice has to find an approved employer in his/her chosen craft and become employed. The schools are not responsible for finding an apprenticeship place for apprentices. Construction companies may benefit from a national training fund and a tax allowance scheme to finance training. In addition, apprentices are entitled to a training allowance – a State-financed grant.

### **Netherlands**

Apprenticeships in the construction sector in the Netherlands are run by multiple specialised training companies. These companies may only award branch-certificates and therefore they collaborate with general education schools in order to provide certified IVET diplomas. These companies receive subsidies from SMEs and have a lot of freedom in the organisation of training. While the government imposes a general structure (e.g. the levels of training or the types of contracts the apprentices may sign) most of the training content depends upon the training companies. Since SMEs are willing to finance education in the sector, apprentices are generally quite well paid. Moreover, the country finances apprenticeships via multiple co-funding instruments, sectoral training funds and grants for companies training in shortage qualifications, as well as through universal grants for companies training apprentices.

### **Romania**

In Romania, education in the construction sector is mainly school-based. Pupils may enrol either in Technical High Schools (*Liceu Tehnologic*) or Technical Colleges (*Colegiul Tehnic*) that offer four year programmes for various low to medium skill professions in the construction sector (e.g. civil engineering technicians, assistant architects). Most of the training takes place in classrooms and school workshops. Alternatively, pupils may also choose to attend Schools for Arts and Crafts (*Școala de arte și meserii*) that offer two to three year programmes in the construction sector such as for bricklayers or carpenters. While two apprenticeship schemes exist, very few companies offer access to work-based training. Between 2006 and 2012, only 100 apprenticeship contracts were concluded in all of Romania. To encourage young people and companies in apprenticeships, the government provides different financial support measures: a tax allowance scheme for companies, a grant of around EUR 200 per month for 12 months to companies offering apprenticeship placements for recently graduated professionals regardless of their professional level (e.g. civil engineers, bricklayers etc.), a grant for learners following VET programmes with dual training, and a payback clause for apprenticeships in the workplace.

Dual VET was established in 2012 as a different pathway for acquiring the same

qualifications that are available for acquisition via a school-based VET. Dual VET is being progressively introduced in Spain through projects developed by Autonomous Communities since 2012. Some of the projects are still being implemented on a pilot or experimental basis. The newly introduced dual VET framework has some important aspects. Most important, permeability within the VET system is guaranteed, as the dual VET is based on the same qualifications that are available via a traditional school-based VET. Moreover, dual VET is not confined to certain programmes and this educational pathway is open for use in all existing programmes that are based on the national catalogue of occupational standards. However, even though the number of companies providing apprenticeships has increased tenfold from 513 in the school year 2012/2013 to 5,665 in the school year 2015/2016, it is still difficult for companies in Spain to provide training. Approximately 90% of all construction companies are SMEs with up to five employees. Therefore, most work at worksites is carried out by highly specialised small and micro-sized companies. This means that it is impossible for most companies to cover the entire apprenticeship curriculum. In addition, the legal framework for hiring an apprentice in Spain requires the apprenticeship to last a minimum of one year. This apprenticeship contract is hard to implement in practice since companies only hire apprentices for a few months. It is also difficult for such small companies to dedicate one of their employees to act as a full-time training tutor for the apprentices.

### ***United Kingdom***

Apprenticeships in the UK's construction sector have a number of specific features:

- Construction apprenticeships in the 1960s and 1970s lasted for as long as three years. Nowadays, apprenticeships in the sector last a maximum of two years. Apprenticeship experts argue that this is not long enough to learn a craft in the sector.
- The alternation of training between company and school has changed from a block release (13 weeks at school followed by 13 weeks on the job) to a day release (one day in school followed by four days of on-the-job training). Apprenticeship experts argue that there is a deficit of college- and workshop-based learning since not all necessary skills can be learnt by doing.
- The requirements for construction apprenticeships are stricter than for apprenticeships in other sectors due to the more dangerous nature of work in construction (e.g. working at heights, operating heavy machinery, working in big power plants)
- The sectoral training fund is operated by the Construction Industry Training Board (CITB). The challenge is that the levies raised are difficult to apply to apprenticeships, as companies are reluctant to take on apprentices for many different reasons. For example, many workers in the construction sector are self-employed and are subcontracted by large firms. Therefore, the latter are not willing to take on apprentices. However, the number and size of construction firms is also decreasing. This is troubling, as smaller firms do not take on apprenticeships due to a lack of resources to dedicate to training and/or the current economic climate. Even if smaller firms take on apprentices, they cannot cover the breadth of skills and activities required for the high-quality training needed to obtain a profession. In turn, the use of grants from the levy raised has been expanded to a wider range of training that is not limited to apprenticeships. Furthermore, Apprenticeship Training Agencies (ATAs) were established to support employers in recruiting, administering and supervising apprentices.
- Finally, the government has introduced an apprenticeship levy, to be paid from 6 April 2017 by all employers with a pay bill over £3 million (approx. €3.5 million) each year. This will certainly affect some (larger) construction companies that were already participating in the sectoral training fund.

Sources: Visionary Analytics consortium based on: an online survey of members of European construction sector associations, Dec 2016 – Jan 2017; Case studies of organisations in respective countries (i.e. 'Monitoring of pilot projects of dual VET', 'Online platforms attracting potential apprentices', 'Creating new construction apprenticeship standards', 'Strengthening cooperation between VET schools and companies', 'Training of trainers', 'Initiating structural change to apprenticeships', 'Introducing innovative training techniques in construction', 'Innovative training tools', 'Establishing new training programmes', 'Attracting young people to sustainable construction' and 'Promotion of roofing to young people').

The above is a 'helicopter' overview of construction apprenticeships in Europe. The next section shifts attention to the ground level - analysing the experiences of different types of stakeholders in implementing construction apprenticeships.

## **1.2. Implementing construction sector apprenticeships**

This section focuses on how construction apprenticeships are implemented in practice. In particular, it focuses on the challenges and solutions/successes experienced by key actors, including apprentices, employers, training providers, social partners and governments. The challenges and solutions discussed in this section cover, directly or indirectly, all stages of the apprenticeship-life cycle including recruitment, training, support, completion and follow-up.

The key challenges that often dominate the agendas of education policy makers, practitioners, experts and other stakeholders, in no particular order of priority, are the following:

1. Attracting and motivating apprentices
2. Getting employer buy-in
3. Expanding vocational guidance
4. Making training more flexible and innovative
5. Professionalising VET teachers and in-company trainers
6. Integrating a multidisciplinary and holistic approach in training
7. Providing skills in energy efficient building construction
8. Securing sufficient resources for apprenticeships
9. Fostering the mobility of apprentices, teachers and trainers
10. Ensuring occupational health and safety during and outside training
11. Integrating migrants into the labour market
12. Initiating structural reforms of apprenticeship systems

Each of the above-identified challenges is discussed in more detail in the sub-sections below. The sub-sections also summarise a wide array of inspirational practices, collected both in this and other studies, providing different approaches for solving the challenges in question. Challenges and their solutions have been succinctly summarised in the inventory of 'pains and gains' (i.e. challenges and solutions) in construction apprenticeships (see Annex 5).

The 22 case studies analysed in this section (complete set of case studies is provided in Annex 4), were mostly identified from 56 pledges. They were submitted by construction stakeholders from nine EU countries (covering Western, Southern Europe and Bulgaria) since the launch of the European Commission's apprenticeship pledge campaign for the construction sector in 2015 (see Figure 1.1 below).



**Figure 1.1: Countries represented by pledge contact persons\***



\* One pledge was submitted jointly by Bulgarian and German organisations. For this reason, the pledge contact persons add up to 57 in the figure, even though there were only 56 pledges. European stakeholders may represent countries from outside the EU.

Source: Visionary Analytics consortium based on publicly available Commission's [database of EAfA all pledges<sup>11</sup>](#) and [database of pledges in the construction sector<sup>12</sup>](#).

Out of 22 case studies analysed in this study (see Annex 4), 17 were of pledge holders representing nine EU Member States: Belgium, Bulgaria, Denmark, France, Germany, Greece, Italy, Spain and the United Kingdom. Out of these case studies, 11 were vertical (four German, two Belgian, two French, one Spanish, one Greek and one British) and six were horizontal - focused on one issue in more than one country (covering the European level, Denmark, Italy, Germany, Romania, Spain and the United Kingdom).

In addition, the contractor also selected five vertical case studies of non-pledgers representing two already-covered countries (France and Germany) and three additional countries (Ireland, Romania and the Netherlands). The additional five case studies of non-pledgers were included to ensure a better spread of case studies both in terms of their thematic focus and geographical coverage.

### **1.2.1. Attracting and motivating apprentices**

Most European countries struggle with the low number of young people interested in undertaking an apprenticeship. This is often coupled with a lack of motivation to excel at or even complete training, high dropout rates and the general unappealing image of a career in the construction sector. VET tracks are usually seen as a 'second-choice' or 'second rate education' in most European countries (for example, Denmark, Lithuania, Ireland, Belgium, etc.), with the exception of Germany and Austria, which have established traditions of quality VET. Most young people, often encouraged by their

<sup>11</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>12</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mxi=50> [accessed 12-10-2017]

parents and society as a whole, choose an academic path. Difficulties in attracting and motivating apprentices are further exaggerated by the following related issues:

- While there is a high demand for apprentices in certain occupations (e.g. painters, decorators, plasterers, bricklayers), especially for technical professions, **the skills shortages appear in higher qualified personnel** and are often a particularly important obstacle to growth. **The demand for skilled workers is increasing** with the recovery of the construction sector<sup>13</sup>.
- **Insufficient quality of apprenticeship programmes** signalled by apprenticeship graduates, the media or other sources (quality apprenticeships are discussed more in-depth below). Furthermore, there could be a high quality apprenticeship programme. However, it may not attract a sufficient number of young people due to inadequate branding and marketing efforts. Thus, branding is also important (European Parliament 2017).
- **Training culture in some construction companies still needs to be improved** as, for example, not all companies fully understand that an apprentice is not an employee who can do whatever tasks an employer assigns him/her. Some companies are interested primarily in immediate benefits (e.g. profit) at the expense of longer-term benefits (e.g. a well-functioning apprenticeship system providing them with new workers).
- **A negative image** is often attributed not only to the construction sector, but also to construction apprenticeships. Firstly, positive developments in the sector (e.g. less physical work due to technological innovations and more managerial work) are not well known in society and do not significantly affect the existing image. Secondly, the numerous advantages of working in the sector are not very well known (e.g. it is relatively easy to work independently and establish one's own enterprise, there are good opportunities for career progression, starting salaries are higher than expected). The construction sector's current image can therefore be seen as a misinterpretation. Finally, parents and communities often do not see jobs in the construction sector as a good option for their children. A stereotype of construction workers as 'cowboy builders' who are incompetent, impolite, 'macho' attitude driven, dishonest and tax evading is still present in society (ECSO 2017). Due to their parents' influence, pupils often consider the construction sector as a 'last choice'. Construction apprenticeships thus have a lower 'parity of esteem' compared to, for example, higher education.
- **Insufficient variety of apprenticeship offers** is yet another challenge. Completing an apprenticeship in such countries as Germany and Norway acts as a pathway to employment in a wide variety of industries and occupations, ranging from the traditional trades sector to white collar work. Rich apprenticeship offers help to meet the diverse needs of young people and improve their perceptions of apprenticeship pathways in comparison to higher education or other VET pathways (OECD/ ILO 2017).
- The existence of some very **appealing alternatives to apprenticeships**. Apprenticeships need to be considered in the broader educational context. For example, if alternative pathways to apprenticeships, such as different forms of post-secondary education, receive greater public funding than apprenticeships and have a higher status (e.g. university fees are zero), then young people may avoid apprenticeships because of the more appealing alternative. Apprentices may then be unattractive to employers, as the latter may treat apprentices as a group of learners with weak school attainment that prevented them from entering other forms of post-secondary education (Kuczera 2017).

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<sup>13</sup> According to Eurostat, average vacancy rates in the EU28 construction sector have increased from 0.9% in 2009 to 1.1% in 2015. An example of skills shortage in the United Kingdom: <https://www.fmb.org.uk/about-the-fmb/newsroom/construction-skills-shortage-gets-worse/> [accessed 12-10-2017]



- Apprenticeships programmes often lack sufficient **opportunities for upskilling and moving to other education and training or occupational paths** to avoid a 'lock-in'. Apprenticeships may also be seen as a trap when they do not lead to formal qualification or certification (OECD 2014b). A first European public survey on VET (CEDEFOP 2017) showed that VET is also not perceived as offering progression opportunities to higher education; this was a major argument for those who opted for general education.
- **Open apprenticeship placements are often not sufficiently widely advertised.** For example, in Ireland apprenticeship placements are traditionally filled by spreading the word about a vacancy through local circles. However, these local circles are often comprised of a small number of people. As a result, other people willing and able to take on an apprentice are excluded.
- **A lack of information among youth about new career opportunities** offered in the construction sector as a result of mechanical and technological evolutions. These new careers may, for example, be linked to green innovations (e.g. roofers installing solar panels), new technology (e.g. BIM Coordinator), to occupational health and safety or to communication around a construction company's activities. A related challenge is that **very few vocational schools monitor the labour market outcomes of their apprenticeship programmes.** This information could be essential for potential apprentices and their parents when choosing an education pathway. It should be understood that young persons (and their parents) also invest in apprenticeships and expect positive returns on their investment through higher wages, better career opportunities and social status (Kuczera 2017).
- **Minors and disadvantaged young people may be harder to engage** in apprenticeships due to legislative requirements, financial issues, prohibitive entry requirements, lack of basic skills, attitudes and behaviour towards work, a lack of awareness of the value of an apprenticeship and a lack of mentorship and support (Buzzeo et al 2016).

Box 1.2 below outlines a number of inspirational measures stakeholders take to attract and/or motivate apprentices. Examples demonstrate that the key element to consider when implementing these measures is to think about construction apprenticeships as a service that needs to be sold to its customers and identify selling points (e.g. tertiary level apprenticeships, energy efficiency training and voluntary work opportunities – see Box below).

**Box 1.2: Examples of measures aimed at attracting and/or motivating apprentices**

- Every two years, the Federation of Master Builders (FMB), the largest trade association in the **UK's** construction industry, presents Master Builder **Awards** that include the categories 'Apprentice of the Year' and 'Apprentice Employer of the Year'. This is a members-only award scheme, thus FMB can actively encourage its members to participate by submitting nominations. A nation-wide winner is then chosen from the nominations that have won at the regional level. An award logo is provided to all regional and national winners with guidelines regarding its use. Prizes are intriguing: for example, the Master Builder Awards Winner 2017 won a Vauxhall Vivaro van worth up to £20,000 (approx. €23,690), while the Master Builder Apprentice Winner 2017– a cheque for £500 (approx. €592). More information can be obtained [here](https://www.fmb.org.uk/about-the-fmb/master-builder-awards/)<sup>14</sup>. (Case study 'Creating new construction apprenticeship standards').
- The Irish Construction Industry Federation (CIF), an Irish employer association, set up a [website](http://apprentices.ie/)<sup>15</sup> for **guiding people to apprenticeships**. Career guidance

<sup>14</sup> <https://www.fmb.org.uk/about-the-fmb/master-builder-awards/> [accessed 12-10-2017]

<sup>15</sup> <http://apprentices.ie/> [accessed 12-10-2017]

teachers can direct apprentices to this website that contains all relevant information about construction apprenticeships in one single place. Apprentices.ie contributes to opening up communication around apprenticeship supply and demand from closed 'word of mouth' to a much wider audience. It fills a substantial information gap relevant to the process of enabling apprenticeships that was pointed out to CIF by guidance teachers. (Case study 'Apprentices.ie' online platform). There are, however, many websites similar to Apprentices.ie, e.g. (ECSO 2017):

- The Austrian website '[Build Your Future](http://www.bau-deine-zukunft.at)'<sup>16</sup> (Bau Deine Zukunft) is an information gateway for young people interested in careers in construction and aims at motivating them to start apprenticeships in the construction sector.
- The British website '[bconstructive](http://www.bconstructive.co.uk)'<sup>17</sup> encourages young people to apply for apprenticeships in construction.
- A similar initiative in Denmark called '[Building the Future](http://www.bygfremtiden.dk)'<sup>18</sup> (Byg Fremtiden) provides information on the 16 VET programmes in the Danish construction sector.
- The Finnish online platform [TheMesta.net](http://www.themesta.net)<sup>19</sup> is a place where young people can find information about construction careers and different professions.
- **Expanding VET/apprenticeships to the tertiary level** is a widely spreading trend of higher VET in Europe, with Germany, Ireland, Italy, Poland, Finland and the United Kingdom providing various tertiary VET qualifications with significant workplace training elements. It is, however, crucial not only to establish higher VET/apprenticeship programmes, but also to **ensure an easier progression between the different levels of education and training**. A number of experiments within this area are ongoing in different parts of Europe, for example:
  - In the school year 2017/2018, the United Kingdom offered around [75 higher and degree apprenticeships](#)<sup>20</sup> including programmes in construction management. Higher and degree apprenticeships combine working in a company and training in a selected university, college or other training provider.
  - In Germany, dual-studies programmes are actively promoted by a number of stakeholders including inter-company training centres (such as Handwerkskammer Aachen, Bildungszentrum BGZ Simmerath, the inter-company vocational training centre of the crafts chamber Aachen in Simmerath) and companies (e.g. Heinrich Weber, Straßen- und Tiefbau GmbH & Co. KG or Franz Trippe GmbH). The experience of these stakeholders identifies a number of important lessons to be learned to effectively move apprenticeships to higher education. (Case study 'Dual study programmes in Germany'):
    - Dual study programmes require considerable coordination efforts. In-company training, university courses and courses at the inter-company vocational training centres must all be combined usefully and within a sensible curriculum. This creates organisational challenges for all of the partners involved in its delivery. Inter-company training centres often take on the role of coordinating study programmes with the universities involved.
    - Dual study programmes are only a solution for skills shortages in higher qualified personnel, as companies still have the highest need for persons

<sup>16</sup> <http://www.bau-deine-zukunft.at> [accessed 12-10-2017]

<sup>17</sup> <http://www.citb.co.uk/bconstructive/> [accessed 12-10-2017]

<sup>18</sup> <http://www.bygfremtiden.dk/> [accessed 12-10-2017]

<sup>19</sup> <http://themesta.net> [accessed 12-10-2017]

<sup>20</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/607531/COMPLETE-GUIDE-TO-APPRENTICESHIPS-201718.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607531/COMPLETE-GUIDE-TO-APPRENTICESHIPS-201718.pdf) [accessed 12-10-2017]

with a 'standard' vocational degree. Such positions remain hard to fill.

- Dual study programmes are challenging for participants, as they have to pass exams in a university as well as examinations at the crafts chamber. The contents of these examinations differ. In addition, there is limited eligibility: these programmes are available only for persons who possess a university entrance qualification and high management, organisation and learning skills as the training is more demanding than a traditional apprenticeship.
  - Dual study demands for somewhat higher quality training in companies and inter-company training centres and this requires additional skills from trainers in both types of involved organisations.
  - Only companies of medium or large size offer positions for higher qualified personnel such as, for example, construction managers. In smaller companies, this role is often taken over by the owners.
  - Administrative procedures may be seen as less of a burden after some experience has been gained.
- In Greece, the Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE) and the Technical University of Athens introduced an **apprenticeship scheme for civil engineering students** enrolled in a five year programme (results in obtaining a Master's degree), in their final year of studies. The students take part in various construction projects in the city of Athens or its surrounding regions for a period of three months. The training programme is designed by the university and the company at which the student trains. Most of the time, students are encouraged to undergo training in specialised companies (e.g. focusing on bridge construction or marine infrastructure etc.) in order to develop highly specialised skills. (Case study 'Establishing new training programmes').
  - The case study of the Berufsförderungswerk (BFW) der Bauindustrie NRW (Vocational Training Institute of the Construction Industry in North Rhine-Westphalia), a German non-profit training provider operating three inter-company training centres, illustrates the role of **sustainable construction in attracting apprentices**. Firstly, sustainability in construction is a good selling point for increasing the attractiveness of apprenticeships in construction for young workers and also soon-to-be school leavers or future graduates (who might enter an apprenticeship pathway). Highlighting sustainability is a way to improve the general image of apprenticeships in construction because it stresses the importance of advanced technology and materials in construction occupations that are generally viewed as 'traditional'. Secondly, the promotion of sustainable construction needs support: **inter-company training centres** have a significant role to play in the modernisation of German VET because they are able to implement larger projects than single companies would be able to; **the availability of support programmes** for sustainable construction and inclusion of this aspect in VET is crucial. (Case study 'Attracting young people to sustainable construction').
  - Stuck Belz, a German construction company, carries out a number of measures addressing the challenge that the training occupation of plasterer is not well known among young soon-to-be school leavers or future graduates. (Case study 'Vocational guidance via voluntary social work placements'):
    - It offers **places for voluntary social service** in the company with a focus on building heritage conservation (this measure is related to the fact that social service of approximately one year was mandatory for all male soon-to-be school leavers or future graduates who did not serve in the army until 2011). **Volunteering acts as a selling point**, as it creates regular regional press coverage and this helps to boost the image of the company and attract potential apprentices. Voluntary social service is based on **mutual beneficial**

**cooperation with a partner** – the German Foundation for Monument Protection; while Stuck Belz learns from the Foundation's experience in volunteer management, the foundation benefits from the opportunities offered by Stuck Belz to volunteers for gaining hands-on conservation work experience. Furthermore, **the company benefits from the work of the volunteers**, especially after initial training has been completed.

- In the programme 'Ambassadors for Vocational Education', **experienced apprentices** (usually in their last training year) **visit schools** and inform soon-to-be school leavers or future graduates about their training occupations and their companies. The company has developed an individual leaflet with information about training opportunities (apprenticeships, internships, voluntary work placements) for the purposes of this programme.
  - Company employees regularly participate in **national and international competitions** for artistic plastering. Such events provide the company with regional press coverage, improve general awareness about the field of work and the company's image specifically.
  - Company experience shows that a lack of applicants for apprenticeships may be due to inadequate vocational guidance. **Constant orientation and promotion activities** (not only for the firm, but for the occupation and the plastering subsector as a whole) are thus crucial for securing a sufficient number of potential apprentices.
- The increasing importance of **offsite modular construction** can help to attract more apprentices to the sector. For example, an offsite factory may enhance the appeal of the construction sector for new entrants. Offsite modular construction relies on new approaches and tools such as Building Information Modelling (BIM), Lean production or enterprise resource planning (ERP) software. The integration of such approaches and tools in apprenticeship programmes may help to improve the image of the sector and, as a result, attract more apprentices (ECSO 2017).
  - A significant source for boosting the number of apprentices **is the public sector**. For example, the United Kingdom is considering establishing an [apprenticeship target](https://www.gov.uk/government/consultations/public-sector-apprenticeship-targets)<sup>21</sup> in England that will be a minimum 2.3% starts each year based on the headcount of employees working for the public sector. The proposal is that the duty to employ apprentices will apply to public sector bodies and organisations that have 250 or more employees in England. The idea is to also encourage smaller public bodies to deliver apprenticeship growth to support the target.
  - Some young people need extra support to enter apprenticeships (e.g. disadvantaged youth due to underdeveloped basic skills). **'Pre-apprenticeship' programmes** address basic skills deficits and sensitise apprentices to the occupation and sector that they are about to enter. They have also been found to increase completion rates. An example of such a programme in Germany is called 'Einstiegsqualifizierung' (EQ). It is a work-based training programme that provides a form of introductory training for those aged under 25 and is comprised of a 6-12 month internship combined with VET. It was developed in order to provide basic vocational competences and company-based qualifications for jobseekers who have been unable to secure apprenticeships. After the successful completion of an EQ internship, the company is able to take on a candidate as an apprentice for a shortened duration. In June 2014, more than 11,000 adolescents took part in the introductory training scheme (OECD/ ILO 2017).

Sources: Visionary Analytics consortium based on case studies and other sources, identified next to each example.

A key factor that would help attract more apprentices (and companies) into construction apprenticeships is **quality**. High quality standards would help to ensure that initiatives do not lead to apprenticeships in low-skilled jobs. Apprentices who

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<sup>21</sup> <https://www.gov.uk/government/consultations/public-sector-apprenticeship-targets> [accessed 12-10-2017]

undertake only unskilled work learn few new skills, while experiencing foregone earnings. This may lead to a high dropout rate from apprenticeship programmes and young persons may tend to shun apprenticeships. In the long run, even a small proportion of low-quality apprenticeships can damage the overall image of apprenticeships (Kuczera 2017). A number of issues are particularly relevant for improving the quality of apprenticeships:

- **Ensuring job quality in apprenticeship companies.** Low(er) job quality in apprenticeship companies (incl. skills development, career and employment security, health and well-being and reconciliation of working and non-working life, Eurofound 2002) could be a contributing factor to making apprenticeships less desirable for young people. Unattractive working conditions often include situations when apprentices are asked to carry out tasks for which they are over- or under-qualified, which may further demotivate them from entering or staying in the sector. One possible way of improving the working conditions of apprentices is to establish a register of apprenticeship companies that satisfy some pre-determined criteria (e.g. minimum pay for apprentices, availability of in-company trainers) in relation to apprenticeships. The latter should be balanced so as not to deter new companies from offering apprenticeships. However, it may be a difficult trade-off to manage between ensuring that the costs of firms investing in apprenticeships (e.g. in terms of labour costs, compliance costs, etc.) are not too high while ensuring that apprentices have suitable working conditions.
- **Maintaining a balance between occupation-specific and basic skills.** Recent research (Hanushek et al, 2015; Hanushek, Woessmann and Zhang 2011) suggests that the skills acquired in vocational education appear to better facilitate a transition into the labour market, but later on become obsolete at a faster rate compared to skills acquired in general education. The main reason for this is that general education graduates have somewhat stronger basic skills<sup>22</sup> and are better able to adjust to technological and structural changes in the economy. For example, the first European public survey on VET (CEDEFOP 2017) showed that VET is perceived as less effective than general education in such areas as speaking a foreign language, cultural awareness and mathematic skills. **Policy discussions and decisions around apprenticeships should thus be broader** and consider not only the temporary benefits of VET and apprenticeships in improving the transition from schooling to work, but also their long-term effects in terms of ensuring the adaptability of workers to technological and structural changes in the economy. The key focus should be on the right mix of general education and more occupation-specific education in VET and apprenticeship programmes. Apprenticeships and other forms of VET should not be a substitute for providing strong basic skills. Countries should define and apply relevant **quality standards** covering all learning outcomes including both occupation-specific and esp. basic, but also transferable skills (Kuczera 2017). As a result, apprenticeships would not be too skills-specific and graduates would be able to switch between jobs more easily due to well-developed transferable job qualifications. Meanwhile, companies would be assured that to-be-hired apprentices have at least the minimum level of knowledge and skills required for respective positions. Furthermore, the basic skills of apprentices depend on **the level of apprenticeships** – apprenticeships embedded in higher levels of education (e.g. post-secondary VET) are associated with stronger basic skills (Kuczera 2017). Therefore, stakeholders should think well before determining the level of apprenticeship qualifications needed.

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<sup>22</sup> Research (Kuczera 2017) shows that, in general, individuals selected into or choosing apprenticeship programmes have lower basic skills than those entering academic pathways.

- **Integrating assessments and monitoring in apprenticeship programmes.** Assessments of apprenticeship programmes could reduce the information asymmetry between participating stakeholders and thus increase their trust in the apprenticeship system. A twofold assessment of apprentices could be adopted: (1) assessment before apprenticeship to screen an apprentice's level of knowledge and skills (where needed, also physical abilities). This could ensure a better match of apprentices with apprenticeship placements and (2) assessment during/after apprenticeship (of both off-the-job and on-the-job training) to check whether all targets have been reached. The latter assessment should be formal, done by a third party (to avoid bias) and result in necessary improvements. Finally, monitoring the effects of apprenticeships, not only for the short, but also medium- and longer-term, should both inform the participants and help to further adjust the apprenticeship curricula.
- **Strengthening the 'purchasing power' of apprentices (so that they have more influence on how money is spent on apprenticeships).** Apprentices are the main beneficiaries of apprenticeship programmes. To ensure quality, apprentices need to better know their rights and responsibilities and have stronger representation (e.g. similar to student unions). The latter could strengthen their influence in the education and training system and allow them to contribute to policy decisions on what they should learn and how. Furthermore, apprentices could contribute to the development of a non-formal feedback system on apprenticeship experiences (e.g. in the form of a web-based platform). There, apprenticeship participants could share and discuss their experiences and thereby reduce information asymmetries in the market.
- **Strengthening cooperation between VET teachers and in-company trainers.** Teachers and trainers are essential for adopting training innovations and ensuring the overall quality of construction apprenticeships. Any initiative on construction apprenticeships should strive to further strengthen their qualifications and experience and, more importantly, ensure stronger cooperation between teachers and trainers. The latter would ensure that apprentices have the opportunity to develop all of the learning outcomes necessary for a given apprenticeship programme, receive adequate support during training and are involved not only in unskilled, but also productive work.

Of course, there are more criteria that characterise quality apprenticeships. On 5<sup>th</sup> October 2017, the European Commission adopted a proposal for **the European framework for quality and effective apprenticeships**. The framework is a step toward higher quality construction and other apprenticeships across the EU. It is based on 14 quality criteria broken into the following two groups (European Commission 2017a):

- Seven criteria for learning and working conditions: (1) Written contract (2) Learning outcomes (3) Pedagogical support (4) Workplace component (5) Pay and/or compensation (6) Social protection (7) Work, health and safety conditions.
- Seven criteria for framework conditions: (8) Regulatory framework (9) Involvement of social partners (10) Support for companies (11) Flexible pathways and mobility (12) Career guidance and awareness raising (13) Transparency (14) Quality assurance and graduate tracking.

Construction is seen as a male domain. The overriding stereotype remains that women are not physically capable of being active in the construction sector. **Women** must not only regularly prove their technical ability; they must also show that they 'fit in'. In society, women are sometimes discouraged from applying or are often discriminated against when competing for construction apprenticeship placements. As a result, the sector is characterised by a low rate of women among construction workers. According



to Eurostat, in 2015, women represented only 10%<sup>23</sup> of the sector's workforce, whereas young women aged 15-24 years accounted for less than 1% of employees in the sector. The problem has continued to grow due to the demographic challenge of the sector as the male-dominated population of active workers is growing older and not enough young people are taking their place<sup>24</sup>. However, construction is no longer a dusty sector where people just get their hands dirty. Today, tasks involve less physical force and are more mechanical and are thus suited for any age and gender.

Box 1.3 illustrates a few measures aimed at promoting women apprentices both at the national and international level. It is true that promoting women working in different construction occupations may require some initial investment (e.g. installation of extra toilets and changing rooms), however, these investments will soon be offset by positive effects including an improvement in image and a reduction of skills shortages.

### **Box 1.3: Examples of measures aimed at attracting women apprentices**

- The Federation of Master Builders (FMB), the largest trade association in the UK's construction industry, together with the National Federation of Builders (NFB), established a Women's Network in 2016. Within this network, FMB encourages its female members to join the Construction Industry Training Board's (CITB) **ambassador programme**. Since September 2017, female members in this programme give **talks about construction to school-children**. (Case study 'Creating new construction apprenticeship standards').
- The European Builders Confederation (EBC) identifies some measures for promoting the inclusion of women at the European level. (Case study 'Promoting construction apprenticeships to women'):
  - Discussing the issue at **the European Social Dialogue Committee for Construction**. There is a great interest from EBC's national members to discuss the issues related to apprenticeships (i.e. EBC members can push their European representative to be more active in the area).
  - **Exhibitions of visualised stories** from women on their experiences from working in the construction sector (e.g. what challenges they encounter, what prospects they see for the future). Exhibitions were organised in 2015 at the European Parliament (as part of a **dinner-debate**) and in 2016 in the European Economic and Social Committee (EESC). The event at the European Parliament was attended by about 120 people, including members of the European Parliament (MEPs) and their assistants.
  - Based on stories presented at the exhibition, EBC produced 150 **brochures** that were distributed in the EESC and EBC still distributes them at various events.
  - **Annual Conference** in 2015 on how to provide equal opportunities for young people and women in the construction sector.
- Young Women's Trust (YWT), a UK-based charity organisation representing young women aged 16-30 who are at risk of low or no income and life in poverty, launched their **campaign** 'Making apprenticeships work for young women' in March 2016 with a view to addressing skills gaps and imbalances in apprenticeship by expanding apprenticeship opportunities for young women and helping to make the government's plans to make 3 million new apprenticeships by 2020 a reality. The YWT campaign is addressed to women, yet it is a perfect example on how networks similar to the European Alliance of Apprenticeships can function at a national or lower scale. Measures used by the YWT campaign (e.g. research-based

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<sup>23</sup> According to Eurostat, countries with the highest share of women in the construction workforce in 2015 included Germany (13%), the United Kingdom (11.6%) and Austria (11.5%).

<sup>24</sup> According to Eurostat, the share of adult employees aged 25-49 years has shrunk from 65.3% in 2008 to 61.8% in 2015, while the share of older workers aged 50-64 years has increased from 22.2% in 2008 to 28% in 2015.

campaigning, focus groups, an advisory panel comprised of ten young women, networking events, political lobbying and negotiations with national authorities, etc. – see case study) could help to engage stakeholders more actively. YWT especially focused on encouraging SMEs to join the campaign by making employer pledges (i.e. commitments to promote gender diversity in apprenticeships). At the moment of completing this study, eight companies have signed pledges<sup>25</sup>, with discussions ongoing with six more potential pledgers. YWT expects to have 20 employer pledges by the end of 2017. According to YWT, inclusion of SMEs as drivers of gender diversity in apprenticeships is a must if any major breakthroughs in the construction sector are to be achieved. (Case study 'Promoting construction apprenticeships to women').

- A number of EU funded projects aim to boost the participation of women in the construction sector. For example, the EU-funded 24-month **project 'High Heels: Building opportunities for women in the construction sector'**<sup>26</sup>, carried out in 2012-2014 in Bulgaria, Greece, Romania and Cyprus, trained women in strengthening their soft skills (e.g. leadership, active listening, negotiation, conflict resolution, communication, planning and management, emotional awareness) in order to improve their performance in the construction industry. The ultimate goal was to allow women to enter and advance in an industry that is traditionally male-dominated. The project focused on the integration of women in construction sector jobs, not specifically in apprenticeships. Even considering this broader perspective, it is still relevant for construction apprenticeships.
- The numbers of women in apprenticeship programmes in Ireland remain low, reflecting the concentration of apprenticeships in sectors that have traditionally low levels of female employment (including construction). To address this, SOLAS, the Further Education and Training Authority offered **a bursary** of €3,000 for employers who take on female apprentice in these areas. However, the level of take-up of apprenticeships by females remains low. To engage more women in apprenticeships, **SOLAS has recently commissioned a study**<sup>27</sup> exploring the low take-up of apprenticeships among women. The study is conducted in cooperation with the National Women's Council of Ireland and will include focus group research to help identify the barriers to female participation in crafts, including construction. Finally, as part of the **Action Plan to Expand Apprenticeship and Traineeship in Ireland 2016-2020**<sup>28</sup>, SOLAS will also introduce a **new branding and marketing campaign** that will promote the value of apprenticeships to women and their potential employers.

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

### **1.2.2. Getting employer buy-in**

As apprenticeships are proven to ensure better labour market transitions and a better skills match, a sufficient supply of quality apprenticeships is a key factor in reducing skills shortages in the sector. Employer engagement builds on a sufficient supply of talented and motivated apprentices. For apprenticeships to be attractive to employers, they also need to be attractive to learners – if they are attractive to learners, then motivated young people will compete to be apprentices and employers will be able to get benefits from apprenticeships. However, companies are crucial actors not only in implementing, but also in designing a successful apprenticeships pathway for future apprentices. If companies are not engaged in the apprenticeship system, this poses a major challenge for the success of the system as a whole. A number of different elements surround the challenge of engaging companies in apprenticeships:

<sup>25</sup> See <https://www.youngwomenstrust.org/employerpledge/signatories> [accessed 12-10-2017]

<sup>26</sup> <http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector> [accessed 12-10-2017]

<sup>27</sup> See <https://www.irishtimes.com/news/education/why-snobbery-around-apprenticeships-must-end-1.3002646> [accessed 12-10-2017]

<sup>28</sup> <http://www.solas.ie/SolasPdfLibrary/ActionPlanDec16.pdf> [accessed 12-10-2017]



- **Companies are not motivated to offer apprenticeship placements.** This may be due to a number of factors including an imbalanced distribution of costs and benefits from apprenticeships, the lack of a training culture (when employers treat apprenticeships as a cost and not as an investment), the widespread negative image of construction apprenticeships, a general lack of trust in the apprenticeship system, a lack of well-documented and disseminated evidence on the return on investment from providing apprenticeships, their limited involvement in the delivery, assessment and certification arrangements of apprenticeship schemes and/or administrative burden (e.g. complex application process for apprenticeships).
- **Employers are often not well acquainted with the possibilities for apprenticeships** provided by law, because apprenticeship systems are often very complex and characterised by a fragmented institutional landscape and training offer. Stronger awareness-raising is especially needed in countries where the apprenticeship system is newly-introduced or fragmented. Companies need to know what they need to do to get an apprentice, support the apprentice during training and how they can support an apprenticeship to graduate.
- **Most construction works are carried out by specialised SMEs<sup>29</sup> that are in an unfavourable position for training apprentices.** For example, in Ireland and in the UK, large construction companies prefer to operate by sub-contracting smaller enterprises to carry out work as this involves less risk. This means that SMEs employ most of the actual workforce, but they face a number of difficulties in terms of training apprentices (Kuczera 2017; OECD/ ILO 2017. European Commission 2010 and 2009):
  - SMEs, esp. specialised, are less likely to **meet the apprentice training criteria** (e.g. offering a training plan of two or more years at the company; ensuring all learning outcomes of on-the-job training). SMEs thus need to cooperate in order to be able to provide quality apprenticeships, but this requires more coordination between companies than is currently present.
  - For SMEs, it is more difficult to **access accurate and timely information** as they do not have training departments and staff dedicated to training issues, while these are usual in large companies.
  - SMEs, especially micro enterprises, often **do not enjoy the reputation and network benefits** associated with larger firms and may struggle in recruiting the best apprentices. Apprentices with stronger basic skills are more likely to be found in big companies. Therefore, companies, especially SMEs, fear **poaching** and often doubt whether young workers during their training will be as loyal to the company as fully-fledged workers.
  - SMEs have a **limited capacity in terms of the number of apprenticeship places** (needed for the company), which may stimulate multiple employers to cooperate (e.g. to reach some economies of scale).
  - Smaller employers find **apprentice training costs** (incl. recruitment and training of apprentices, use of available financial support) **too high** as they are less able to benefit from the economies of scale that can reduce the unit cost of apprenticeship training. There is, however, a trade-off between ensuring that the costs of company investment in apprenticeships are low enough to promote their engagement, but at the same time remain high enough to ensure quality placements for apprentices. SMEs are typically not organised in a strong sector body which complicates communication with other stakeholders, such as

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<sup>29</sup> According to Eurostat, in 2014 94% of the construction sector was composed by SMEs that have less than 10 employees.

vocational schools in, for example, designing or adapting training programmes or arranging their flexible delivery.

- The **needs of SMEs differ across local areas**. For example, rural areas tend to have higher concentrations of SMEs in their industrial structures and may have specific training challenges such as transportation and remote access to education and support facilities. Meanwhile, SMEs based in areas with clusters may need support in building training networks with other local businesses to meet training regulations. This requires flexibility at the local level, not only in designing programmes, but also in delivering training.
  - Smaller companies usually **do not have dedicated training arrangements** and thus have a rather weak training capacity in terms of availability and quality of trainers, training and skills anticipation methods and training equipment. For example, many in-company trainers, especially in SMEs, not only train apprentices, but also work as regular employees in their company. In many SMEs, workers who could act as company trainers do not have time for this extra activity due to their high workload, especially in times of high demand for construction activities.
  - Companies (esp. SMEs) are often **unsure of the payback time of the trainings**. The recession created a very competitive environment for construction companies to be awarded contracts and most companies feel reluctant to invest their time and financial resources into education and training. Furthermore, in Western Europe (e.g. Belgium) due to the inflow of workers from other EU Member States, local companies often face higher costs and a higher demand to be more productive. Consequently, they cannot afford to take time to train apprentices on site. As SMEs have more to lose (i.e. alternative costs are high) they are **less likely to take risks than larger companies**.
  - SMEs, compared to large companies, are **less likely to realise long-term benefits from apprenticeships** as they usually have lower retention rates that reflect the preferences of graduates. The latter see large companies as more attractive to work for in terms of salary, benefits packages and long-term career opportunities. Furthermore, SMEs often tend to focus on specific short-term operational issues in their continuing training rather than on medium- to long-term topics crucial to improving productivity, quality, and an overall market position.
- **Content and quality of apprenticeship programmes may be not fully satisfactory for employers**. Companies may not fully trust the content and quality of apprenticeship training and therefore limit their skills development investments (quality is extensively discussed in Section 1.2.1 on attracting apprentices). For example, in the United Kingdom a high degree of public support for apprenticeships in 2005-2012 has resulted in a fragmented training landscape with an increasing number of training providers offering low quality apprenticeship programmes (OECD/ ILO 2017). Various measures to ensure quality apprenticeships in companies (e.g. a mandatory assessment of programmes, fixed ratios of skilled workers to apprentices or minimum training qualifications for in-company trainers) are still gaining momentum in apprenticeship schemes.
  - **Apprenticeship programmes are not always aligned with the business objectives of employers**. In order to engage employers, it is not sufficient to provide them with an opportunity to show social responsibility, but take a close look at costs and benefits experienced by companies offering apprenticeships and design these programmes (and incentives) in a way that brings companies positive balance (OECD 2016).
  - **Government efforts to engage employers focus solely on financial incentives while ignoring the importance of non-financial support**. Research (e.g. Kuczera 2017) shows that the effect of direct financial subsidies

for apprenticeships is probably modest. Meanwhile, non-financial support is often considered by employers as more important than funding (see e.g. CEDEFOP 2015). The engagement of employers partly depends on the existence of strong intermediaries who can, for example, help employers navigate the apprenticeship system (see also below).

- **Overall, employers in the sector have limited incentives for long-term investment in their workforce.** The sector is experiencing a 'chronic lack of vocational and on-the-job training'. The evidence for this is the fact that the construction sector takes last place in Europe (together with real estate activities) in terms of sector provision of continuous vocational training hours, at five hours per thousand worked (McKinsey Global Institute 2017). Low predictability of the sector (as business cycles closely relate to the state of the economy) leading to a higher than usual scale of short-term employment, significant subcontracting (and thus a higher focus on costs as opposed to value), a sizeable informal economy, high levels of migration (resulting in a large share of foreign construction workers in some countries) and a turnover of staff are all detrimental towards a longer-term investment in training (European Commission 2014; ECSO 2017). Companies are often not interested in investing in the professional training of young people as long as they can attract (even if it means paying more) highly qualified candidates from the market.

Examples of measures aimed at engaging companies into apprenticeships in Box 1.4 suggest that the efforts of separate companies are not enough to create a business environment that would be favourable for apprenticeships. Employer representatives have an important role to play in motivating, informing and supporting companies in relation to construction apprenticeships. Furthermore, similar to attracting apprentices, apprenticeships need to be sold to companies like any other service by stressing the usefulness to business of these programmes (e.g. integration of energy-efficiency and/or cross-craft understanding in training – see Box 1.4 below or pre-requisites for cost-effective apprenticeships – see end of section).

Quality is of critical importance in gaining the trust of companies in apprenticeship training. Companies (and apprentices) should be able to trust the system i.e. that they will get what was initially promised. Quality apprenticeships are not possible without well-functioning links between key players in the so-called 'apprenticeship triangle' (i.e. interactions between apprentices, employers and training providers). A key measure for providing support for each player and ensuring that links between key players are established and function well is an **institutional intermediary or single point of contact** (see Box 1.4 for an example). The latter can be an employer organisation, trade union, chamber, government agency and/or any other, depending on local context. However, it should always function at the centre of the 'apprenticeship triangle'. It may provide different types of services based on local demand:

- Reduce information asymmetry among stakeholders (e.g. by developing a non-formal feedback system for sharing apprenticeship experiences, by drafting, clarifying and further improving information sources for implementing apprenticeships, by creating websites matching the supply and demand of apprenticeships, by mediating conflicts between stakeholders).
- Assist small companies with access to apprenticeships and related funding. The intermediary may also be an institution that assists employers in managing apprentices or provides them with collective training possibilities (see Box 1.4 for examples). A personal line of communication is crucial here – employers often prefer being able to get hold of someone instead of interacting with an impersonal website.
- Build the capacity of training providers by, for example, helping them to start implementing apprenticeships or, if they are more experienced, experiment

with new types of apprenticeships such as higher apprenticeship or part-time apprenticeship programmes.

- Facilitate communication between VET teachers and in-company trainers.
- Provide training for in-company trainers or offer related support materials to firms.
- Help employers contribute towards redesigning existing or creating new apprenticeship programmes.
- Monitor the quality of apprenticeship placements (e.g. check the ratio of apprentices to employees in companies, check the qualification of in-company trainers).
- Facilitate networking within and between groups of key players to share knowledge and experience on how best to support, develop and make use of apprentices.

This type of intermediary is needed not only at the national, regional or local level. It is also needed at the European level to address issues stretching across national borders, to disseminate foreign good practices and address knowledge gaps. In this context, the European Commission intends to launch an **Apprenticeship Support Service** in mid-2018 (European Commission 2017b and 2017c). It is likely to consist of three types of services:

- Learn or 'knowledge hub' that will bring together key toolkits, guidelines, studies, best practices, etc. that will serve for knowledge clustering at the European level.
- Connect or 'networking hub' that will facilitate networking and develop communities of practice between stakeholders with similar interests, challenges and actions.
- Act or 'bench-learning' that will provide demand driven support through expert advice and enhanced mutual learning.

Apprenticeship Support Services may further expand non-financial support for construction and other apprenticeships at the European level.

#### **Box 1.4: Examples of measures aimed at getting employer buy-in**

- Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, is developing supporting materials to attract construction sector SMEs to participate in VET programs that include apprenticeships. For example, during their ERASMUS+ project [Co.Tutor. Systematic approach to enhance the participation of construction industry SMEs in apprenticeship programs](http://www.fundacionlaboral.org/en/projects/training/training-tools/cotutor-2016-2018)<sup>30</sup> a series of guidelines will be prepared. Project will include an analysis and proposals for **strategic solutions that may help to overcome difficulties in receiving apprentices** that an SME may encounter, **and to promote the figure of the in-company tutor** – a key player for successful learning of the apprentice. Besides this specific project, FLC also (Case study 'Innovative training tools'):
- Deems that **innovative training materials** developed by them can be used not only to make the learning process more attractive to apprentices, but also to attract more construction companies to offer apprenticeship placements.
- Carries out **sociological and market research** to know and understand what kind of training and skills companies and trainees really need.
- The Greek Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE) has provided **support to its member companies in order to adapt and establish apprenticeship programmes** by, e.g.: (a) defining the scope of the apprenticeship, (b) determining the content and time outline of the scheme,

<sup>30</sup> <http://www.fundacionlaboral.org/en/projects/training/training-tools/cotutor-2016-2018> [accessed 12-10-2017]

(c) evaluating the results, and (d) determining the lessons learned at the end of the activity. PEDMEDE was also persistent in its attempts **to reach out to companies through personal contacts** (incl. telephone calls, on-site visits and numerous negotiations with the heads of enterprises). They have used different **communication tools** (e.g. newsletter, media, press releases and position papers) in order to increase the attractiveness of apprenticeship programmes and to enhance the participation of members irrespective of the company's size or region of business. (Case study 'Establishing new training programmes').

- Confédération Construction Bruxelles-Capitale (CCBC), a regional professional body under a national confederation in Belgium, pledged to establish **a single point of contact** between enterprises, education providers and young people to facilitate links among them. A single point of contact offers various support activities before, during and after apprenticeship. It reduces the administrative burden on companies, clarifies any doubts regarding processes and procedures. Thus, it encourages companies to take more apprentices and/or improve the quality of school-to-work transitions. A single point of contact builds on two key elements. (Case study 'Strengthening cooperation between VET schools and companies'):
  - A **personal approach towards all relevant parties** helps to ensure the high quality of all apprenticeship placements. For example, providing individual assistance to all apprentices ensures that their needs and professional capacities are taken into account and, as a consequence, the training programmes are well developed to match their interests.
  - Receiving **continuous feedback from all three groups** was very important to CCBC in order to effectively address any unresolved issues and build a relationship based on trust. VET teachers were willing to call upon apprentices and assess whether the level of their training matched the level of their capabilities and theoretical background. Company tutors were willing to share and discuss any and all aspects concerning the ongoing on-the-job training of the apprentice. Apprentices were clear in communicating their needs. CCBC was persistent in making sure that each party received personal support and that most of their needs were met by engaging in dialogue and apprehending their concerns.
- Another example of an intermediary assisting employers with the implementation of apprenticeships can be found in the UK under the term '**Apprenticeship Training Agency (ATA)**'. ATAs are private agencies that help employers (esp. SMEs) by taking on the administration associated with the employment of apprentices where companies are not able to do so (e.g. they could not offer the required length of contract). ATAs act as 'proxy-employers' that release the business from the day-to-day employment of an apprentice. ATAs can be particularly helpful in sectors that are based on more short-term project contracts, such as construction, where apprentices can be moved around according to a project's needs. For example, in Bradford, ATA enabled apprentices to be involved in the construction of a new shopping centre. They also help young apprentices with any personal problems they experience so that an employer does not need to be engaged in this aspect. The aim was for ATAs to be commercially sustainable by 2016 and thereafter charge a management fee to employers (OECD/ ILO 2017).
- The Berufsförderungswerk (BFW) des Bauindustrieverbandes Berlin-Brandenburg e.V. (Vocational Training Institute of the Construction Industry Association of Berlin and Brandenburg), a German non-profit training provider operating two vocational training centres and one competence centre Cottbus, develops and delivers **training modules related to sustainable and energy-efficient construction** for trainers in construction companies and in inter-company vocational training centres. The modules focus on a more integrated view of the construction site, looking at the building as a unified system rather than an assembly of different trades and techniques. They help trainers improve skills not only in relation to energy efficiency and sustainability, but also regarding **cross-**

**craft understanding** and the increasing role of advanced complex technology in buildings. The modules **may give** firms that send trainers to these courses a **competitive advantage in the market** (e.g. an ability to offer higher quality apprenticeships). (Case study 'Integrated training modules for sustainable construction').

- **Pooling of resources for training** may be particularly useful for SMEs due to multiple benefits including: removal of some administrative burdens, support in the management of apprentices, freeing SMEs from the need to fully employ apprentices, addressing the requirement to ensure all learning outcomes for each apprentice, etc. Examples of pooling of resources are numerous:
  - In Germany, '**apprenticeship sharing**' includes the following models: (1) Lead enterprise with partner enterprise model when the lead enterprise bears the overall responsibility for training, but parts of the training are conducted in various partner enterprises, (2) 'Training to order' model when some periods of training take place outside the regular enterprise, perhaps in a nearby large enterprise with a training workshop, on the basis of an order and against reimbursement of costs, (3) 'Training consortium' model when several small enterprises work together and take on apprentices, (4) 'Training association' model when the individual enterprises establish an organisation for the purpose of training that takes over organisational tasks (contracts, etc.), while master enterprises offer the training. The organs of the association are the general meeting and the honorary committee. A statute regulates the rights and obligations of the members (Poulsen and Eberhardt, 2016).
  - In Norway, **collective training offices** sign apprenticeship contracts with the government on behalf of SMEs that offer training places (OECD/ILO 2017). The collective training offices use economies of scale to provide a full-range of off-the-job training services to apprentices. This enables SMEs to meet the national minimum standards for training apprentices and maintain the quality of the apprenticeship programme.
  - In Austria, companies that cannot fulfil certain standards (e.g. because they are too small or too specialised to provide their apprentices with the required training) may form **training alliances** (*Ausbildungsverbünde*) to share apprentices. Alliances of training firms are supervised at the state level by the Apprenticeship Offices (*Lehrlingsstellen*) appointed by Economic Chambers. Economic Chambers help to find partners for firms willing to create new training alliances. In 2008, at least 5,000 training firms, or 15,000 apprentices, were organised in training alliances (Kuczera 2017).
  - The Irish Construction Industry Federation and Irish Further Education and Training Authority (SOLAS) have developed the '**Apprenticeship sharing initiative**'<sup>31</sup>. It aims to develop a co-operative scheme whereby contractors can form a working group by means of a Memorandum of Understanding to register an apprentice and work collaboratively to train this apprentice in a chosen trade, in accordance with the Rules of Apprenticeship. The initiative was set up due to the reluctance of firms to hire apprentices, as they could not ensure a continuous pipeline of work and, thus, could not guarantee the employment of apprentices throughout the programme. The initiative brings a number of benefits for the sector including: (1) Increased registrations in seriously lagging trades (e.g. plastering), (2) provision of a broad range of experiences and certainty for apprentices – members of the co-operative are established companies with strong project portfolios, (3) it addresses the lack of confidence firms have in employing apprentices and their apprehension at being able to offer continuous employment (presentation by Carol Daly, representative of Anthony Neville Homes at a workshop on construction apprenticeships for this study).

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<sup>31</sup> <https://cif.ie/2016/08/29/innovative-scheme-aimed-at-increasing-apprenticeships-in-construction-industry-launched/> [accessed 12-10-2017]

- Outside of Europe, in Australia some apprentices are directly contracted by employers, but others are contracted by **Group Training Organisations** (GTOs) and then hired out to a number of different host employers during their training programme. In this way, GTOs provide apprentices with access to multiple worksites to develop their work experience through on-the-job training. Off-the-job training is delivered by organisations known as Registered Training Organisations that can be government bodies or privately owned organisations (OECD/ ILO 2017).
- Companies that offer apprenticeships can enhance their reputation as companies investing in people. This may indirectly increase profits, since companies perceived to be socially responsible are more likely to sell their products and services. In a recent campaign in Norway, training companies could brand themselves with the **label of an 'approved learning enterprise'**. The purpose of this initiative has been to encourage more enterprises to join the apprenticeship scheme. If consumers make it clear that they prefer to buy goods and services from approved learning enterprises, firms that offer apprenticeships will have a competitive advantage. The government has launched a public relations campaign to encourage people to look for the brand, with advertisements in a national newspaper and on online marketplaces, as well as a Facebook page (Kuczera 2017).
- The Greek Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE) and the National Technical University of Athens (NTUA) introduced an apprenticeship scheme for civil engineering students in their final year of studies. PEDMEDE **supports its member companies in receiving and thoroughly reviewing student applications for apprenticeship programmes**. Organisation members then conduct multiple interviews with applicants in order to clearly determine their needs, interests and capabilities. This ensures that the apprentices' skills and motivation are matched in accordance with the particular needs of various companies. Case study 'Establishing new training programmes'.
- An inspiration on how to engage more companies into apprenticeships can be taken from the Finnish project [BEEP](#)<sup>32</sup> that was part of the [BUILD UP Skills Initiative](#)<sup>33</sup>. In this project, energy efficient construction training was promoted to workers and companies by **an on-site training ambassador** – a face of the newly developed training scheme who was easily approachable both by the workers and the management team, spoke their language and knew the product. He visited construction sites, was involved in the training of trainers and workers, gave presentations during meetings/fairs/seminars and contributed to the preparation of several articles in the media.
- The Manpower Employment Organisation (OAED) in Greece has just completed the Erasmus+ project '[Network of Vocational Schools and Very Small Enterprises in the Metal Construction Sector](#) (INNO-APPRE-NET)' <sup>34</sup>. One of the key results of this project was the design and establishment of **an apprenticeship intermediate body network** of very small enterprises and training schools in the metal construction sector.
- in 2014-2016, the German company k.o.s GmbH implemented the Erasmus+ project '[Sustainable strategies for recruiting young people interested in in-company training](#) (StartApp)' <sup>35</sup>. One of the project outputs was a [catalogue of good examples](#)<sup>36</sup> from four countries describing **innovative ways of recruiting**

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<sup>32</sup> <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep> [accessed 12-10-2017]

<sup>33</sup> <http://www.buildup.eu/en/skills> [accessed 12-10-2017]

<sup>34</sup> <http://ian.oaed.gr/apprenet/> [accessed 12-10-2017]

<sup>35</sup> <http://startapp-project.eu> [accessed 12-10-2017]

<sup>36</sup> [http://startapp-project.eu/startappfiles/products/good\\_practice\\_manual\\_EN.pdf](http://startapp-project.eu/startappfiles/products/good_practice_manual_EN.pdf) [accessed 12-10-2017]



**apprentices.** In addition, the project developed a [recruitment handbook for small and medium enterprises](#)<sup>37</sup>. Both results are helpful for new companies to engage in apprenticeship training.

- The Norwegian government has introduced new rules for **apprenticeship requirements in public procurement**. For contracts worth a minimum of NOK 1.5 million (approx. €160,650), the government must buy goods and services from companies that are an approved apprenticeship provider. These regulations will mainly apply to the building, construction and ICT sectors. These stricter rules are part of the follow-up to the new Social Contract to ensure that every VET learner in search of an apprenticeship will find one. Lack of apprenticeship places is a serious challenge in Norway: in 2015, 9,000 would-be apprentices could not find an apprenticeship place (Kuczera 2017).
- **Enterprise-embedded apprenticeship** in Australia can be an interesting practice for large construction employers thinking of starting apprenticeship training. The ABN Group, a diversified construction company, pioneered an enterprise-embedded model of apprenticeship training in Western Australia. They integrated 'group training organisation' into the company's holding structure that enabled the company to manage both on-the-job training and off-the-job training internally. In Australia, group training organisations are not-for-profit organisations that receive government funding to directly employ apprentices, manage their training and support needs and hire them out to employers. The benefits of the model for the company include increased flexibility, reduced hiring and training provider costs and increased alignment of on-the-job and off-the-job training (OECD/ ILO 2017).

Sources: Visionary Analytics consortium based on case studies and other sources identified next to each example.

Last, but not least, to engage companies in apprenticeships, policy-makers should first ensure their cost-effectiveness (incl. the ability of companies to obtain net benefits during the duration of apprenticeships). Recent research by OECD (Kuczera 2017) shows that apprenticeships are cost effective when:

- Apprenticeship **wages** are low enough to encourage companies to offer apprenticeships, but high enough to attract motivated and talented apprentices. Apprenticeship wages should consider the wages of employees in the company, the characteristics of the apprentice population (e.g. age, relevant work experience) and the increase in an apprentice's productivity during apprenticeship.
- Apprentices are allocated **skilled tasks to produce** (and become more productive). For example, in Switzerland and Germany, apprentices spend, on average, around 80% of their time in the company on productive tasks. In construction, apprentices may be given more unproductive tasks during slow periods (e.g. winter) when alternative costs of their own and their trainer's time are both lower.
- **Duration of apprenticeship programmes** is not too short (so that employers can get higher net benefits).
- **Share of on-the-job training** is balanced. More time spent in vocational school can reduce company benefits from apprenticeships by decreasing the time spent at the company for productive work and the development of job-specific skills. However, more time in vocational schools may actually reduce company costs if apprentices develop job-relevant skills that would otherwise need to be provided by the company.
- Apprentices are able to **excel fast** (e.g. have strong basic skills and are provided with opportunities to develop complex skills during work placements).

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<sup>37</sup> <http://startapp-project.eu/products> [accessed 12-10-2017]



### 1.2.3. Expanding vocational guidance

Vocational guidance is key to ensuring a higher inflow of potential apprentices into the sector and, more importantly, safeguarding a better skills match. Expanding vocational guidance is still a challenge:

- **Guidance provided in secondary schools is often biased towards higher education.** For example, research (OECD/ILO 2017) shows that current career guidance systems at the secondary level across OECD pay little attention to vocational pathways in comparison to tertiary education. This indicates that young people may lack information about the potential benefits of pursuing apprenticeship pathways.
- Apprenticeship systems often lack a **systematic implementation of vocational guidance** activities across all construction sector trades. 'Systematic' means embedding vocational guidance throughout the education system to provide coherent and relevant information to enable young people to make the best careers choices (OECD/ILO 2017). It should be integrated within the education system. For example, in Germany, local secondary schools have found success with incorporating skills assessments within career guidance two years before the final compulsory year of education. A focus on assessing hard and soft skills and relating those skills to potential career paths was found to be helpful in directing learners towards the most appropriate vocational or general educational pathways (OECD/ILO 2017).
- Vocational guidance is **not always sufficiently comprehensive** covering all stages of apprenticeship including careers advice and information on programme requirements and on opportunities in the industry before taking an apprenticeship, help and coaching/mentorship during apprenticeship and follow-up after graduation (e.g. support in finding jobs or progressing further in education). Guidance during apprenticeship is particularly important. Recent research (OECD/ILO 2017) shows that embedding guidance and mentorship into apprenticeship programme help to increase participation and completion rates. In addition, many apprentices do not stay within the occupation for which they are trained. Thus, it becomes increasingly important for companies to retain apprentices and adopt measures to prevent or decrease the high dropout rate of new entrants in the sector (e.g. see German initiative 'VerA' in Box 1.5 below).
- Stakeholders often stress that vocational guidance starts **too late** in the education and training process when career decisions have already been made. Vocational guidance should be provided much earlier, targeted at children at a time when they are still building with sand or Legos (i.e. when they are interested in and open to construction).
- It is essential that vocational guidance **personalise communication on construction**. Various campaigns demonstrating unrealistic situations in the sector may be a waste of money. Rather, vocational guidance should reveal authentic experiences of working in the sector (e.g. include visits to construction sites) so that pupils better understand the specifics.
- Vocational guidance needs to be **differentiated for different target groups**. For example, migrants may require different approaches.

Box 1.5 below illustrates different strategies for apprenticeships that key actors – companies, training providers and social partners – adopt to expand vocational guidance services. All measures aimed at expanding guidance are useful as long as they reduce the skills mismatches in the labour market. In this regard, career coaching (last measure in Box 1.5) is of particular importance due to its effectiveness.

### Box 1.5: Examples of measures aimed at expanding vocational guidance

- The Berufsförderungswerk (BFW) der Bauindustrie NRW (Vocational Training Institute of the Construction Industry in North Rhine-Westphalia), a German non-profit training provider operating inter-company training centres operating three inter-company training centres, **hosted an exhibition** in one of its training centres (ABZ Hamm) for a period of one month in November-December 2016. It focused on construction apprenticeships in the area of energy efficient building and modernisation. The exhibition was displayed as different parts of a house in order to show the different trades and techniques relevant in construction. The exhibition was created as a roadshow to be hosted at different inter-company training centres and other learning institutions. It could be visited by groups of young persons or individually. Target groups consisted of learners of secondary schools in their last or penultimate year, as well as learners from the ÜBS. The aim of the exhibition was to attract pupils who potentially, after graduating from school, might enter the apprenticeship pathway in the construction sector. The exhibition also targeted **migrants**. However, for migrants, vocational guidance must be offered jointly with other support measures such as language training, competence assessment and social assistance. (Case study 'Attracting young people to sustainable construction').
- A number of countries (e.g. Ireland, Austria, Finland, Denmark) have developed **websites aimed at informing potential apprentices** of available training programmes, training providers and construction careers (see Box 1.1 on examples of measures aimed at attracting apprentices).
- Karl Heinz Stevens Bedachungen GmbH & Co. KG, a German company, adopted a strategy to promote the roofer occupation locally, informally and particularly to children at the beginning of their career orientation process. For that aim, it implements a number of measures (Case study 'Promotion of roofing to young people'):
  - Participates in a **school fair** where occupational groups present themselves to school-children one year before they become eligible to start an apprenticeship. This fair is visited by groups of schoolchildren from several local schools. The company presents the training occupation of roofing together with a local brick company due to their close personnel and business relations.
  - **Invites kindergarteners to their company.** A group of 10 to 15 children visits their company every year. The children can participate in various activities, for example, try their manual dexterity by processing slate. There was also an attempt to guide such a group through a construction site, but the activity had to be cancelled due to safety concerns.
  - Regularly provides **one-day internships to children aged 14 to 18** (earlier than standard school internships).
  - The **company is supported by industry associations:** the Regional Roofers' Association (*Dachdecker Verband Nordrhein*) and a local roofers' guild (*Dachdeckerinnung*). Both institutions support the company's activities, for example, provide illustrative materials for the school fair and kindergarteners (e.g. the company uses a children's painting book and a children's story book related to the roofers' trade during the kindergarteners' visits). The company's activities may increase interest in construction occupations, but they will usually only be beneficial in the long-term since these activities do not translate directly into new apprentices. Hence, external support (in this case by industry associations) is particularly useful to sharing in the investment.
- A number of German stakeholders contribute to the improvement of vocational guidance by participating in vocational skills competitions. Stakeholders include Bildungszentren des Baugewerbes e.V. (BZB) Krefeld (a non-profit education institute for the German construction industry), Berufsförderungswerk (BFW) des Hamburger Baugewerbes (a non-profit organisation) and Josef Prell GmbH (a company). Together, these stakeholders organise **young construction talent skill competitions** including: hosting German championships (BZB), assisting

German competitors in their preparation for national and foreign (EuroSkills and WorldSkills) competitions (BZB and Joseph Prell GmbH), providing a travel allowance (up to €200) for participants in national contests (BFW), participation in an advisory board for the national team (Joseph Prell GmbH). A couple of factors are particularly important in relation to vocational skill competitions (case study „Vocational skills competitions in Germany“):

- Positive effects of skill competitions (e.g. increased motivation of apprentices, benefits for companies) depend on the **positive image of the competitions**. There is a need for further research demonstrating the concrete benefits to the image of the companies, training centres and associations in construction gained as a result of the skills competitions.
- **European and worldwide competitions** have a particularly positive impact on the **image of the sector** and meet the promotional interests of companies, training centres and associations in construction with talented apprentices. This is, of course, the result of well-trained and well-selected German apprentices who participate in the international competitions and frequently perform very well in competitions for specific trades. Good preparation at the national and state levels is therefore a prerequisite for positive effects from international competitions to occur.
- The Vakgroep Opleidingsbedrijven (*Department of Training Companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, has developed a four-pillar structure to improve apprenticeships in the Netherlands that will be fully implemented starting September 2018 (currently the structure is being piloted by part of training companies). One of the four pillars is called '**Talent Development and Career Coaching**'. Under this pillar, the training companies are committed to offering continuous coaching services throughout the whole period of training. Given the limited time of initial VET tracks offered at the upper secondary school level (usually of three to four years duration), VO tries to orient apprentices towards a long-term, possibly a ten-year career perspective, and ideally, a life-long learning pathway. Each apprentice is supervised by a mentor, who continuously monitors his/her progress and provides valuable advice. The apprentices undertake career tests throughout their training and their supervisors observe their progress. It is expected that the implementation of this pillar will make training cheaper and more efficient because apprentices will be encouraged to train in skills from which they really benefit without wasting time and resources on superfluous training. (Case study 'Initiating structural change to apprenticeships').
- A good example of support during apprenticeship is the German initiative 'VerA'. It was introduced by the foundation 'Senior Experten Service' (SES), in cooperation with the umbrella organisations of the industrial and craft sectors and liberal professions. The aim was to address the trend of discontinued or terminated vocational education. 'VerA' organises about 1,000 **retired volunteer professionals who guide young people in vocational education in times of crisis**. Based upon trainees' demands, SES appoints experts as training companions to offer support on issues ranging from technical questions about exam preparation to strengthening personal qualities such as motivation and self-confidence. VerA is also responsible for smoothing the transition from school to work as well as promoting the initiative to other partners (OECD/ILO 2017).
- Norway has a **twofold counselling service that includes both career guidance as well as guidance in social or personal matters**. The Education Act (*Opplæringsloven*) states that all pupils have an individual right to both types of guidance according to their needs (OECD/ILO 2017).
- An example of **vocational guidance for young people with special needs** who are likely to drop out of school without a certificate is the 'Bildungsketten' (education chains) programme in Germany. The programme, founded by the Ministry of Education (BMBF) in 2010, has three elements: analysis, career

orientation and support for starting careers. Qualified teachers conduct interviews with children in seventh grade and analyse their strengths and weaknesses with respect to technical competences (e.g. problem solving), personal motivation and social skills (e.g. communicative ability). In the following year, personal guidance counsellors help participants to orient career goals through personal advice and assistance with finding apprenticeships. Guidance counsellors continue to assist participants until the completion of their first year of vocational training (OECD/ILO 2017).

- The project '[Construye 2020](http://construye2020.eu/)'<sup>38</sup>, funded by the BUILD UP Skills Initiative and carried out by the Spanish Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), included a campaign called '[Ruta Construye 2020](http://microsites.fundacionlaboral.org/ruta-construye-2020?pag=6&idioma=0)'<sup>39</sup>. This campaign for dissemination and awareness-raising of training supply in the area of energy-efficient construction was implemented in June-July 2017. It included **visits to almost 15 Spanish cities with a mobile unit (training bus)**. The campaign aimed to (1) inform users about the different solutions available in energy efficiency and renewable energy sources applied to building and (2) inform about the different training opportunities that have been created under this project, as well as the available ways to obtain a qualification. Throughout the journey, the campaign was endorsed by more than 100 institutions and attended by more than 2,000 people.

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

#### **1.2.4. Making training more flexible and innovative**

Apprenticeships are often seen as an insufficiently flexible education pathway, not fully individualized and suitable for construction companies, especially micro enterprises and SMEs. Flexibility and innovativeness of training are often mentioned as key factors limiting the engagement of young people and companies in apprenticeships. Construction stakeholders have emphasised the following issues in relation to flexibility and innovativeness in training:

- Training innovations have the potential to make construction apprenticeships more attractive and effective. However, training innovations may need significant time to become daily practices. It requires continuous effort to integrate them into the apprenticeship curricula. However, **updates of apprenticeship programmes do not always keep up with recent developments**. For example, VET curricula often do not sufficiently take into account the shift in skills needed for new methods of construction, such as off-site manufacturing (ECSO 2017). Thus, it is crucial to further explore the potential of training innovations by increasing the number of training experiments. Another example – the inclusion on **entrepreneurial** content in apprenticeship programmes is still a challenge. A few EU Member States (e.g. France) are trying to implement targeted solutions, but proper consideration for entrepreneurship is still lacking across the EU. An entrepreneurial spirit is crucial to undertaking new or innovative activities, but it is also fundamental to the generational transfer of thousands of businesses over the coming years.
- The key actors for adopting training innovations are **VET teachers and in-company trainers**. If they do not introduce new methods and/or tools during their teaching practices, trainees will not have a chance to use them. However, although teachers and trainers usually receive good quality innovative training resources, paradoxically, they do not use them intensively. This is due to the fact that most of the teachers and trainers are reluctant to change their ways of teaching.

<sup>38</sup> <http://construye2020.eu/> [accessed 12-10-2017]

<sup>39</sup> <http://microsites.fundacionlaboral.org/ruta-construye-2020?pag=6&idioma=0> [accessed 12-10-2017]

- **Insufficient quality of in-company training or insufficient interest of a company towards apprentices.** Companies sometimes offer training only to comply with the regulatory framework, to obtain additional funding and/or because they want to improve their image. A focus on quality apprenticeships is often missing in such cases.
- **Flexibility needs to be ensured not only in terms of programme design, but also training delivery options.** For example, in the Netherlands the standard training path requires the apprentice to spend a total of 30 hours per week learning and training. However, this may not be sufficiently intensive (e.g. compared to 40 hours per week) and, thus, may not fully enable apprentices to reach their maximum potential and achieve not only a branch-relevant diploma from the training company, but also a general education diploma that is valued outside the construction sector. It is also said that the duration of apprenticeships is too fixed with a pre-determined length of programme, rigid start and end dates and not taking into account the actual progress of apprentices in obtaining the required competences (OECD 2014b). Furthermore, alternance between learning venues is not always adapted to geography – frequent (within the same week) alternance can be foreseen when the employer and the school are relatively close to each other, while rare alternance may be provided in the opposite case where a population is thinly spread out (Kuczera 2017). Flexible delivery options may be numerous and include VET boarding schools, programmes for part-time employees, accelerated completion options for mature age apprentices, training outside working hours, intensified training during the winter period when business is slow (due to seasonality) and apprenticeships for existing workers who wish to expand their skillsets or for young persons who wish to combine apprenticeships with other education opportunities (OECD/ILO 2017. European Commission 2010 and 2009).
- **VET offer is not always adapted to different target groups.** For example, from a young person's point of view, more off-the-job training is beneficial if it develops a wide range of basic and transferable skills. However, in cases when an apprenticeship is provided to individuals with learning difficulties, teaching basic skills can be problematic, as long periods of classroom training may discourage less academically oriented apprentices and trigger their drop out (Kuczera 2017).
- **VET systems in Eastern European countries are often considered to be outdated** (since they are often based on an inherited central-planning style of vocational education). Challenges include a limited engagement of employers in skills development, poor governance, a limited integration of apprenticeship into the formal VET system and weak links between training providers and employers. Many countries in the region are reforming their VET systems to become more flexible and innovative. For example, Romania reformed its VET system to give vocational tracks 'parity of esteem' with more academic tracks. At the secondary school level, recent reforms focused on making the choice of VET more attractive for young persons (they now receive a monthly scholarship, encouraging them to pursue two-year programmes in these schools) and more relevant (VET schools have to establish partnerships with local employers to be able to offer training places, and work placement represents 75% of the second year)(OECD 2014a). Better cooperation between educational institutions and the construction industry is crucial in order to ensure the continuity of vocational training in this country.
- **Apprenticeship is still gaining momentum in VET systems.** It is natural that many training providers fear to change their usual training practices. For example, in some countries (e.g. Belgium) education providers sometimes refuse to introduce dual-training practices. Furthermore, the potential of suppliers has not yet been fully exploited. For example, suppliers of equipment could help address some particular training needs (e.g. certain equipment handling skills).

The experiences of construction stakeholders (see Box 1.6) show that it is not only important to create flexible and innovative apprenticeship programmes, but also to ensure their favourable environment including the support of key actors (esp. government) in adopting these changes, continuous work with teachers and apprentices so that they change their old habits of training/learning and make all changes look attractive and simple (e.g. user friendly design) to ensure their acceptance.

**Box 1.6: Examples of measures aimed at making training more flexible and innovative**

- The Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, has carried out a number of projects focusing on innovative training tools. Their key favourable factors and solutions addressing a lack of innovation in training include (Case study 'Innovative training tools' and web sources identified below):
  - **Interest of the participants in experimenting with new technologies:** both trainers and trainees were keen on experimenting with new technologies for training and received all innovative products very enthusiastically.
  - Although new systems awake the interest of its users, it is important to **keep the design attractive and useful** for the learner. Such a balance is reflected in, for example, [serious health and safety games](#)<sup>40</sup> or a mobile application for learning energy-efficient construction skills<sup>41</sup> recently developed by the foundation (these apps were not designed specifically for apprenticeship programmes, but focus on broader VET).
  - FLC has the **full support of their board to undertake projects** that deal with the creation of innovative training resources. In addition, FLC has the **strong support of the national government** for their projects.
  - VET schools always collaborate on projects by testing the materials produced with real trainers and trainees. FLC carries out **pilot testing** for all of their new training resources.
- The Greek Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE) and the National Technical University of Athens (NTUA) introduced an apprenticeship scheme for civil engineering students in their final year of studies. PEDMEDE also provides an **ongoing evaluation of an apprentice's progress** that permits it to monitor the quality and effectiveness of this type of training as well as enables further improvement of these programmes. According to PEDMEDE, **student motivation** is the key for quality training as only motivated students demonstrate a mature commitment to working in the sector. Their motivation also encourages companies to take students seriously and offer quality training as well as trust students' theoretical knowledge and potential. (Case study 'Establishing new training programmes').
- The Vakgroep Opleidingsbedrijven (*Department of Training Companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, offers **more intensive apprenticeship training pathways** that require apprentices to spend 40 hours per week learning and training. This is done in close collaboration with general education schools. Case study 'Initiating structural change to apprenticeships').
- An interesting example of increasing flexibility in VET can be found outside of Europe. As part of Australia's reform of its apprenticeship system, more emphasis was placed on flexibility, particularly by supporting competency-based progression through the Accelerated Australian Apprenticeships Program. **Competency-based progression** is defined as progression through an apprenticeship that is dependent on a satisfactory demonstration of occupational competencies prescribed as part of the qualification and is not solely tied to a specific duration.

<sup>40</sup> <http://microsites.fundacionlaboral.org/hs-games?pag=10&idioma=1> [accessed 12-10-2017]

<sup>41</sup> <https://play.google.com/store/apps/details?id=com.esampetro.simuladorApp&hl=en> [12-10-2017]



The programme is expected to encourage participation in apprenticeships by employers who have been shown to favour shorter schemes or schemes that allow apprentices to graduate early if they have acquired the key competences required by their trade (OECD 2014b). Meanwhile, there are [hybrid apprenticeship programmes](#)<sup>42</sup> in the United States that combine time-based (fixed duration) and competency-based elements.

- The Italian [BUILD UP Skills](#)<sup>43</sup> project [I-TOWN](#)<sup>44</sup> focused on, among other things, the training of trainers in the area of energy-efficient construction (however, it does not specifically focus on apprenticeships). In addition to traditional training via lectures and seminars, training included discussions of case studies in working groups. The training included a number of elements in relation to flexibility and innovativeness of training (Visionary Analytics 2017):
  - Training was based on a well-developed **strategy** for trainers that was **based on training needs**.
  - **Field experts** provided trainers with knowledge based on actual working situations.
  - Training was highly **individualised** and very flexible: trainers could choose between different pathways, different modules and also the number of hours they wished to study. For example, trainers who already had previous knowledge on certain themes could choose to take a test and subsequently, attend fewer courses.
  - Looking at various **case studies** allowed trainers to learn about very specific elements of sustainable construction and gain a more in-depth understanding of relevant issues.
  - **Group work** allowed the participants to discuss and discover common problems in training for sustainable construction.
  - Having all the materials in an **on-line database**<sup>45</sup> encouraged self-learning and allowed for a better dissemination of training materials.
- Cyprus has adopted an [accelerated initial training scheme](#)<sup>46</sup>. It is a training scheme operated by the Human Resources Development Authority (HRDA) aimed at remedying labour shortages by providing theoretical and practical training in occupations that are currently in demand (e.g. welding, air conditioning, plumbing, electrical installations). The HRDA covers all the costs for the institutional training. In addition, trainees receive a weekly allowance.
- The Dutch BUILD UP Skills project [BUSToB](#)<sup>47</sup> is foreseen to use only ICT-based training techniques as its main training method. Courses target diverse professions that include craftsmen such as bricklayers, or carpenters, mechanics, engineers and other service providers. Courses are provided via a **mobile application** (although with no specific focus on apprenticeship training). The application offers tracks for construction, installation and construction finishing work. These tracks are then further divided by occupations, which are then subdivided into courses on various topics, e.g. airtightness construction, façade insulation etc. Courses are interactive and contain exercises with evaluations. Trainees can also complete 'MemoTrainings' and extra practices. This type of training is flexible and innovative as it: enables distant and self-learning, makes training available for large numbers of people, is based on interactive exercises that enable active learning, contains exercise evaluation providing immediate feedback, contains MemoTraining sessions allowing trainees to re-assess their knowledge, entails extra practices that are a handy tool for trainees who feel standard exercises to be insufficient, may be used

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<sup>42</sup> [www.doleta.gov/oa/apprentices.cfm](http://www.doleta.gov/oa/apprentices.cfm) [accessed 12-10-2017]

<sup>43</sup> <http://www.buildup.eu/en/skills> [accessed 12-10-107]

<sup>44</sup> <http://www.bus-itown.eu/> [accessed 12-10-2017]

<sup>45</sup> <http://i-town.labelacademy.com/> [accessed 12-10-2017]

<sup>46</sup> [https://www.refernet.de/images\\_content/2014\\_CR\\_CY.pdf](https://www.refernet.de/images_content/2014_CR_CY.pdf) [12-10-2017]

<sup>47</sup> <http://www.buildup.eu/en/explore/links/bustob-project-0> [accessed 12-10-2017]

in various locations, including on-site, is user-friendly, and contains much detailed information that may be updated given the need (Visionary Analytics 2017).

- The Vakgroep Opleidingsbedrijven (*The Department of Training Companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, has developed a four-pillar structure to improve apprenticeships in the Netherlands that will be fully implemented starting September 2018 (currently the structure is being piloted by part of training companies). One of the four pillars is called 'Contextual Environment'. In the construction sector, it takes around one to two years for new technologies to become widespread. However, at the VET schools and training centres, apprentices are still being taught to use old machines and carry out manual tasks that are, in fact, no longer necessary. VO tries to provide schools with a chance to **rent out updated training facilities** at their training companies by looking at it as a business case that benefits from training in the construction sector. Creating a contextual learning environment is in line with the wishes and expectations of the companies in the construction sector, as these companies are more willing to accept apprentices or actual workers who have more relevant hands-on experience. (Case study 'Initiating structural change to apprenticeships').
- A case study from Bouwunie, a Flemish (Belgium) federation for construction sector SMEs, demonstrated that Flanders suffers from issues related to worker mobility, as young persons are used to the small size of Flanders and they are not used to covering great distances to reach their workplace, industrial areas or bigger cities. Thus, the apprentices were often unwilling to commute to construction sites that are further away from their homes. This is an unresolved issue in Belgium while other countries such as France, Germany and the Netherlands have solved this issue with **VET boarding schools**. In the latter cases, apprentices move to VET boarding schools with apprenticeship places nearby and on this way they avoid covering much greater distances than they were covering when living at home. (Case study of 'Monitoring the reforms of dual vocational education and training').
- The French project 'Increasing apprentices' awareness of the Spirit of Enterprise (Entrepreneurial Spirit) (*SENSibilisation des Apprentis à leSprit d'entreprendre, SENSAS*<sup>48</sup>)' led by the French Chamber of Trades and Craft for Vaucluse (also representing building crafts) fostered **entrepreneurship among young people**. Among other things, the project aimed at developing an entrepreneurial spirit among young people (in particular, among apprentices) and promoting awareness of the entrepreneurial spirit among teachers. The project, carried out in 2009-2010, developed two train-the-trainers courses designed to familiarize the trainers with the tools that are suitable for apprentices, tools to increase the awareness of an entrepreneurial spirit suitable for apprentices and a tool-kit containing teaching tools to support the development of an entrepreneurial spirit in apprentices and a training and teaching training manual.

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

#### **1.2.5. Professionalising VET teachers and in-company trainers**

Case studies demonstrated that key missing ingredients often included an inadequate qualification and/or a lack of experience of VET teachers and in-company trainers. Construction stakeholders often face the following challenge in relation to the need to professionalise teachers and trainers:

- **Insufficiently developed competences** of trainers such as technical know-how, management skills and pedagogical capabilities (incl. management of dual training, organising training courses, ability to design and carry out a project with apprentices).

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<sup>48</sup> <http://www.sensas-project.eu> [accessed 12-10-2017]



- **Insufficiently effective training** of teachers and trainers as courses often do not allow for deep self-reflection of own training performance. Courses are often too narrow in terms of training content and methods.
- **Recent technological advancements** are creating a more individualised society. As a consequence, training needs to become more flexible and trainers ought to be better equipped to handle the challenges that these developments entail without fear of being substituted by technology. This is especially true for new digital technologies (e.g. use of mobile applications) that are usually not very attractive for senior teachers and trainers.
- Teaching similar pedagogical methods irrespective of a trainer's background does not benefit the trainers because they are **not encouraged to use their particular strengths and learn from their particular weaknesses**.
- **Difficulty in changing attitudes** of training centre managers and convincing them to invest in the training of their trainers.
- Training providers often **cannot easily replace the trainers** who are in training. In general, it is difficult to find suitable people who can train apprentices.

The French experience (Box 1.7) suggests that not only the apprenticeship training of apprentices, but also the training of trainers needs to be improved taking into consideration the changing teaching environment (e.g. technological developments, more individualised learning) including peer grouping, continuous guidance that does not end with the completion of a training course and individualised learning pathways.

**Box 1.7: Examples of measures aimed at professionalising VET teachers and in-company trainers**

- To address the insufficiently well-developed competences of trainers, the French National Committee of Apprenticeships in the Construction Industry (*Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics, CCCA-BTP*), a professional organisation, has implemented **the programme for dual VET trainer admission and training** (*Dispositif d'accueil et de formation de formateurs en alternance, DAFFA*). The case study (i.e. 'Training of trainers') demonstrates that a number of favourable factors could overcome the unwillingness of some trainers and training centre managers to participate in this programme:
  - CCCA-BTP receives **significant financing** (around €600,000 per year) from sectoral partners. This allows DAFFA and other VET initiatives to be carried out each year.
  - **Good cooperation** between training centres and enterprises is important insofar as it ensures that all stakeholders cooperate and work together to develop training strategies.
  - Graduating trainers receive a **formal qualification certificate at the national level**. This has improved the general attitude towards the significance of VET trainer competences.
  - **More (detailed) impact assessment studies** could be carried out in order to demonstrate the benefits of such programmes to convince stakeholders to invest time and resources into them.
- The programme for dual VET trainer admission and training (*Dispositif d'accueil et de formation de formateurs en alternance, DAFFA*), carried out by CCCA-BTP, a French professional organisation that involves both employer and employee organisations, adopted a number of strategies to make the training of trainers more effective, flexible and individualised (case study 'Training of trainers'):
  - Much depends on the availability, expertise and experience of **trainers who train other trainers**. They also **have to be fully committed to training**.
  - Training centres' management teams provide **guidance** for the trainers (who

are being trained) **during the implementation of the programme**. Currently, there is also no provision of guidance for trainers **after the programme ends**. Such guidance may include (according to one of the trainers responsible for training other trainers): **additional follow-up activities** to ensure and reflect upon their own personal development as trainers; and **returning to construction companies** and repeating their professional activity periods after their initial training in DAFFA.

- **Peer grouping** – trainers who train in the same professions and within the same problematic areas as trainers who are being trained facilitate cooperative exchange. Trainers share their problems that are often very similar. Such peer communication helps trainers who are being trained to feel less alone in facing the problems they encounter and encourages them to find collective solutions to common problems.
  - Adopting **active learning methods and a problem-solving approach**. Trainers are more engaged and work on the implementation of their own ideas, becoming better leaders in training activities for apprentices. Furthermore, trainers become capable of evaluating their own performance in apprentice training.
  - Providing **highly individualised training pathways** that are attractive to trainers and beneficial for apprenticeship development: trainers work on themes that they find interesting and relevant, but they are also encouraged to use their personal strengths to advance apprentice training.
  - **Involving all levels, namely local, regional and national, during the training process**. Trainers become acquainted with different contexts and widen their perspective on issues in construction and training.
  - The **content of training is regularly adapted to training needs**. Each year, a small group that works on the organisation of DAFFA re-evaluates its numerous activities and ensures that all content, including content material, is relevant.
- The Vakgroep Opleidingsbedrijven (*Department of Training Companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, has developed a four-pillar structure to improve apprenticeships in the Netherlands that will be fully implemented starting September 2018 (currently the structure is being piloted by part of training companies). One of the four pillars is called '**Professionalization**'. Under this pillar, VO invests in the training of its instructors. Trainers are trained to work with new equipment, they are introduced to new training methods and introduced to the new four-pillar structure that aims at providing apprentices not only with technical, but also soft skills (the other pillars being talent development and career coaching, craftsmanship including cross-craft and project-oriented training and ensuring a technologically updated training environment). Professionalization of the training staff is also related to the image of the sector as a whole given that only high-quality instructors will be able to deliver what the training companies promise. In other words, VO considers principle-based quality, or the impact their instructors have on the capabilities of apprentices, to be more important than offering training that merely relies on rules and standards. (Case study 'Initiating structural change to apprenticeships').
  - A number of organisations seek to integrate **digital skills** in their programmes (e.g. see activities of the Spanish Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit labour foundation, in the case study 'Innovative training tools'). Training of trainers may benefit from digitalisation (e.g. a digital application that functions as a training manual; digital tools to monitor the performance of apprentices) as they could allow trainers to become more flexible (i.e. choose when and how they train) and effective (e.g. focus on facilitation and not on checking for errors in the performance of learners).
  - The Construction Labour Foundation is also leading a project '[Co.Tutor. Systematic](#)

[approach to enhance the participation of construction industry SMEs in apprenticeship programs](#)<sup>49</sup>. Among other issues, it aims to design a new sectorial qualification in Europe, called the 'In-company tutor in the construction industry', and a description of the associated training contents. This qualification will include general skills (didactic communication, leadership, team working, etc.), skills for integral management (safety, quality, and environment) and skills related to the promotion of energy efficiency in buildings.

- [BUILD UP Skills Initiative](#)<sup>50</sup> is a good example of a Europe-wide application of the 'train the trainer' concept. A number of national projects under this initiative (e.g. the [BEEP](#) project in Finland<sup>51</sup> or the [EnerPro](#) project in Bulgaria<sup>52</sup>) have addressed the skills gap among trainers due to a lack of training opportunities in energy efficiency and well-developed courses for training the trainers. Furthermore, some BUILD UP Skills projects such as [PROF-TRAC](#)<sup>53</sup> have taken an extra step by encouraging the trainers trained to become 'ambassadors' who can then initiate and organise national training programs to train trainers on a national scale, creating a snowball effect in the long-run. The BEEP project has developed another innovation – the concept of 'change agents' who are construction workers selected to act as multipliers of the training concept on construction sites. Fifty-eight change agents trained in the project will essentially act as trainers and further train their peers on issues in relation to energy efficiency in buildings. This may have a significant 'snowball' effect.

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

### **1.2.6. Integrating a multidisciplinary and holistic approach in training**

Construction enterprises (esp. SMEs) often require highly specialised candidates and request highly specialised VET programmes that would suit their narrow specialisations. However, the occupation-centred VET system and the focus of many construction companies on a specific trade is both an advantage and a problem. On the one hand, such VET supports the development of specialised knowledge and high quality professionals able to work in environments demanding increasingly technology-specific complex knowledge and skills. At the same time, however, such specificity sometimes leads to the lack of a holistic view of the building among workers. **An ability to understand the building as a single system** is very important for successful construction work.

Training providers are often tempted to introduce their own logic when training construction workers. Separate subjects (e.g. based on modules) are often taught separately, in a synthetic environment, with limited or no links to other functions, occupations and issues not directly related to the subject/occupation in question, training is often theoretical (e.g. 'how to do things right') and does not provide an understanding of complex real-life situations (e.g. 'how my mistakes affect the work of others and how to prevent them'). As a result, training in the construction sector is often subject and theory-based (e.g. learning an ideal plastering technique) versus project and practice-based (e.g. building a single house). Meanwhile, **project-based training** has multiple benefits as it extends a multidisciplinary and holistic approach in training and provides cross-craft knowledge to learners. Project-based training is not yet widespread. Even in countries where training providers offer project-based work, the crisis has cut the number of available projects significantly. Therefore, many pupils

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<sup>49</sup> <http://www.cotutorproject.eu> [accessed 12-10-2017]

<sup>50</sup> <http://www.buildup.eu/en/skills> [accessed 12-10-2017]

<sup>51</sup> <https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep> [accessed 12-10-2017]

<sup>52</sup> <http://www.buildup.eu/en/news/build-skills-enerpro-project-12-new-training-programmes-and-other-best-practice-results> [accessed 12-10-2017]

<sup>53</sup> <http://profrac.eu/open-training-platform-for-nzeb-professionals.html> [accessed 12-10-2017]

are not able to get sufficient experience working under standard conditions within the sector.

A strong **cross-craft understanding** built via problem-centred and project-based training approaches will certainly result in a higher-qualified construction workforce making less mistakes, working faster and reaching higher quality results. More and more employers notice, understand and start requesting these competences from workers. As a result, the better integration of a multidisciplinary and holistic approach in training may help to better integrate apprentice graduates in the labour market and engage more young persons and employers in apprenticeships.

**Digitalisation** further stimulates the need for a greater multidisciplinary and holistic approach in training future construction workers. The construction sector has significant potential for digitalisation (McKinsey & Company 2016). A good example of digitalisation is **Building Information Modelling (BIM)**. The introduction of BIM is seen and widely recognised as a solution to the management of information during the design, construction and operational phases of the asset lifecycle of a building. BIM allows any aspect of a design's performance to be simulated and assessed before it is built, making the understanding of the design easier and more complete. It is not simply the use of 3D software, but it is a **process** that facilitates the sharing of information among all of the professionals involved throughout the whole construction project. The sector is thus moving towards digitalisation. For example, the UK government in its UK Construction Strategy 2016-2020 seeks to create 20,000 new apprenticeships integrating and increasing the use of digital construction processes (e.g. BIM) by a skilled workforce (ECSO 2017). European associations (e.g. European Builders Confederation<sup>54</sup>) thus argue for the integration of BIM into current and new training programmes. However, updated or new training content should not rely on one specific approach, software or unique tool, but instead should have a broader focus (where a particular approach, software or tool serves only as an example) and aim to guide apprentices towards the digital transition of the construction sector.

Finally, the construction sector is characterised by increasing **standardisation and industrial scaling**. A key consequence of these processes is offsite construction that is increasingly technology-driven, relying on approaches and tools such as BIM, Lean production or Design for Manufacture and Assembly (DFMA)(ECSO 2017). Standardisation, industrialisation of the building process and offsite modular construction will rather require professionals working in related occupations to adopt a more efficient, strategic and collaborative method of working, as opposed to developing completely new technical skills. For example, offsite construction is likely to boost demand for cross-craft knowledge by onsite workers – as onsite assembly will require them to assemble components manufactured offsite with a high level of situational awareness (incl. awareness and comprehension of other job roles and their interaction)(ECSO 2017).

Box 1.8 below indicates a few measures on how to expand cross-craft understanding in training.

**Box 1.8: Examples of measures aimed at integrating a multidisciplinary and holistic approach in training**

- The Berufsförderungswerk (BFW) des Bauindustrieverbandes Berlin-Brandenburg e.V. (Vocational Training Institute of the Construction Industry Association of Berlin and Brandenburg), a German non-profit training provider operating two vocational training centres and one competence centre Cottbus, develops and delivers training modules related to sustainable and energy-efficient construction for trainers in construction companies and in inter-company vocational training

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<sup>54</sup> See EBC position on BIM: [http://www.ebc-construction.eu/fileadmin/Policies/Economic\\_and\\_internal\\_market/BIM/EBC\\_Position\\_Paper\\_on\\_BIM\\_EN.pdf](http://www.ebc-construction.eu/fileadmin/Policies/Economic_and_internal_market/BIM/EBC_Position_Paper_on_BIM_EN.pdf) [accessed 12-10-2017]

centres. Their intention is to provide an additional element of **holism** to the formalised and occupation/trade-centred learning approach in traditional construction apprenticeships. Trainers and, as a second-order effect, apprentices, are supposed to increase their awareness of the numerous actors present on the construction site and the relationships between them. The BFW applies an **innovative training approach focusing on frequent errors using a problem-centred approach** instead of idealistic performance descriptions. The standard training of apprentices focuses on 'how to do things right', while the approach of the extra modules concentrates on 'what happens as a result of possible deficiencies', especially during cooperation between different trades (**a cross-craft perspective**). In the experience of the pledger, apprentices are often unaware of long-term consequences resulting from small errors in performance. For example, shortcomings at building envelopes are often related to insulation problems and often result in mould formation. Awareness of these correlations should be mediated in the training modules. (Case study 'Integrated training modules for sustainable construction').

- The Vakgroep Opleidingsbedrijven (*Department of Training Companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, has developed a four-pillar structure to improve apprenticeships in the Netherlands that will be fully implemented starting September 2018 (currently the structure is being piloted by part of training companies). One of the four pillars is called 'craftsmanship'. With new technological advancements, technical knowledge is becoming less important, while the relevance of collaboration with other professionals is increasing. As a result, a wider range of skills such as social skills or group working skills, are necessary. In the vision of VO, apprentices will work in mixed teams: the apprentices must organise the whole project by themselves, buy the necessary materials, determine the tasks to be carried out and follow through with all the activities. In other words, this **project-oriented training** will be based on a step-by-step approach where the apprentices learn what constructing something means from a holistic perspective. (Case study 'Initiating structural change to apprenticeships').
- In the United Kingdom, Gateshead College together with Ryder Architecture developed the unique, flexible higher apprenticeship programme **PlanBEE**<sup>55</sup>. It was designed to attract and retain the brightest new talent in the region, plug skills gaps, and create a more flexible workforce capable of working across various construction disciplines. Rather than follow a traditional training model where students complete their qualifications while working in one company, PlanBEE gives trainees the chance to work across several companies and therefore gain a more rounded understanding of construction. The first tranche of students enrolled onto the programme in September 2016 and all have been retained. In fact, the project is sponsored by the BIM Academy, because part of the apprenticeship scheme is **dedicated to learning new digital technologies in construction**, including BIM.
- Since 2014, new apprenticeship standards for Building Information Modelling-centric apprenticeships have been backed by the British government. In particular, the UK is backing a new '**Digital Engineer**' apprenticeship<sup>56</sup> that would become a passport to a career in BIM. The Construction Trailblazer group has recently been given approval to develop new apprenticeship standards for the roles of construction plant hire desk controller, piling and digital engineer (building information modelling, or BIM).
- There are a number of new EU funded projects in the area of BIM training. For example, **BIMEET**<sup>57</sup>, a project led by the Luxembourg Institute of Science and Technology, aims to leverage the take-up of ICT and BIM through a significant

<sup>55</sup> <http://www.joinplanbee.com/> [accessed 12-10-2017]

<sup>56</sup> <http://www.theconstructionindex.co.uk/news/view/bim-hire-desks-and-piling-to-join-constructions-apprenticeship-offer> [accessed 12-10-2017]

<sup>57</sup> [http://cordis.europa.eu/project/rcn/210091\\_en.html](http://cordis.europa.eu/project/rcn/210091_en.html) [accessed 12-10-2017]



upgrade of the skills and capacities of the EU construction workforce. The principal outputs of the project are (1) a skills matrix related to BIM and energy efficiency, harmonized thanks to the EQF standard, and (2) a training platform contributing towards widely disseminating the BIMEET qualifications framework. The project will also include apprenticeships.

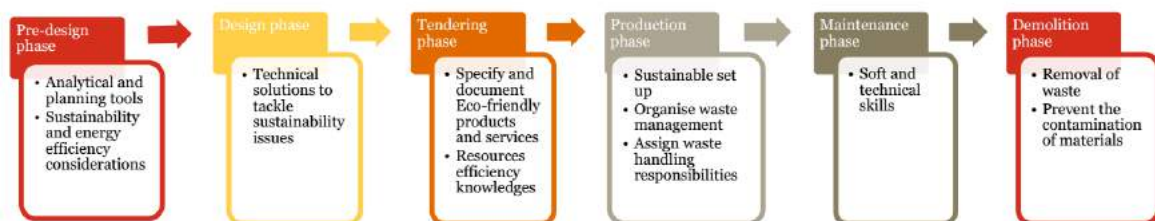
- The Austrian [BUILD UP Skills](#)<sup>58</sup> project [BUILD UP Skills CrossCraft](#)<sup>59</sup> aimed to develop **a qualification scheme for across-the-crafts training of professionals in the construction industry** (e.g. general foremen, foremen, skilled workers, craftsmen and helpers in building construction and building services). The project identified that further qualification for professionals in the construction sector is needed primarily in the field of cross-craft understanding (understanding the interplay of trades to avoid the most common frequently made mistakes to guarantee the optimal construction of nearly zero energy buildings). The following new course modules were developed, implemented and evaluated: (1) CrossCraft training on construction site (duration: 3 to 4 hours) (2) Basic CrossCraft module off-site training (duration: 16 hours/two days) (3) Advanced training modules off-site trainings (duration: 8 hours/one day) (4) Compact CrossCraft module off-site training (duration: 32 hours/four days) and (5) On-site quality coach module off-site training (duration: 24 hours/ three days).

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

### 1.2.7. Providing skills in energy efficient building construction

Europe is intensively moving toward energy efficient building stock that is heavily reliant on renewable energy sources. Innovation in the sector and EU regulations have made energy efficiency a new factor and one of the main drivers for the development of the sector and desired skills of its workers. The recent [European Construction Sector Observatory \(ECSO\) report](#) (2017)<sup>60</sup> identified the following transformations of skills in relation to energy efficiency during all stages of the construction process (see Figure 1.2 below).

**Figure 1.2: Emerging skills needs in energy efficiency across the construction process**



Source: ECSO 2017.

The demand for energy efficient building construction is huge and still growing. However, the construction workforce has not yet been able to catch up and construction stakeholders often complain about prominent skills shortages in the energy performance of buildings. Many countries struggle with insufficient training in energy efficient building construction and renovation: there are few new high-quality training programmes that have been created and energy efficiency topics are not yet fully integrated in the existing curricula. Construction stakeholders mention a number of challenges in relation to the provision of skills in energy efficient building construction:

<sup>58</sup> <http://www.buildup.eu/en/skills> [accessed 12-10-2017]

<sup>59</sup> <http://buildupskills-crosscraft.at/moodle/> [accessed 12-10-2017]

<sup>60</sup> <https://ec.europa.eu/docsroom/documents/24261> [accessed 12-10-2017]

- In general, **non-existent or insufficient level of skills related to energy performance**.
- Very **few workers are aware of energy efficient construction**. Even if some are aware, they have been relatively uninformed about the benefits of energy efficient construction as well as the overall environmental impact of energy efficient buildings. Apprenticeships on energy efficient construction do not grab the attention of young people despite the multiple benefits for them.
- **VET schools are not ready to integrate energy efficient construction topics**. A centralised management of VET schools (e.g. in Romania) impedes separate schools from introducing innovative practices, VET schools often lack the space and funds needed for workshops and equipment, VET providers lack the necessary training materials, and many VET teachers are not aware of energy efficient construction or are reluctant to change their habits.
- **Difficulty in negotiating and convincing some professional organisations of the need for introducing training in sustainable construction**. This is reinforced by the fact that for construction companies, the training of their workforce is not a priority. Despite the constant need for new knowledge (e.g. in the area of energy efficiency), only 45% of construction workers have been involved in some form of training at their workplace, relying mostly on their knowledge obtained in a training institution (ECSO 2017).
- **Some countries are more significantly affected by the shift towards sustainable construction** compared to other EU Member States (i.e. countries where there is a significantly larger proportion of older buildings, as in Belgium). However, in some countries, improving the **energy performance of buildings is still regarded as a luxury** rather than a necessity, with energy efficient construction techniques proving to be more expensive than traditional ones (ECSO 2017). The [BUILD UP Skills Initiative](http://www.buildup.eu/en/skills)<sup>61</sup>, supporting continuing VET in energy efficient construction in all of the Member States, is often the only action taken by them, particularly in the newer Member States.
- The heated political debate around energy efficiency has led to new rules at the European and national level on how to achieve a better energy performance of buildings (e.g. revision of the Energy Performance of Buildings Directive). This means that it is often **difficult to keep up with the changing regulatory framework** for all - including teachers/trainers and apprentices.

The measures in Box 1.9 illustrate two very different practices of construction stakeholders. They range from taking the first steps towards integrating energy performance topics into current curricula to full-scale national programmes for developing energy efficient skills including not only massive investments into the training infrastructure, but also, in parallel, developing training material, methods and professionalising teachers for an adequate VET supply. However, the key is to start, even if it means starting small.

**Box 1.9: Examples of measures aimed at providing skills in energy efficient building construction**

- The Passive House Association of Romania (*Asociatia Casa Passiva, ACP*) focused on the integration of energy efficient construction topics into VET curricula. Its current and future activities include the following (Case study 'Introducing innovative training techniques in construction'):
- Development of **the Passive House Craftsmen Course (PHCC)** for new buildings. This course was designed to inform workers about the theoretical principles of energy efficient buildings and to train them to apply these principles through practical tasks.
- Development of a **training module for the thermal renovation of existing**

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<sup>61</sup> <http://www.buildup.eu/en/skills> [accessed 12-10-2017]

**buildings.** This course had a special focus on building refurbishment and was oriented towards renovation rather than new construction. ACP had installed a **temporary workshop** to carry out all the activities.

- Preparation of a public 300-page **learning manual** from the training modules on passive house construction and thermal renovation of existing buildings. ACP received the original learning manual for PHCC from Austrian and Hungarian project partners in the German and Hungarian languages, as the partners were the first to organise this course. ACP translated the manual into Romanian and extended its content to include the best as well as flawed practice examples of locally built passive houses. The training manual developed by ACP presents a systematic tool for training both company workers and VET pupils.
- In the future, ACP aims to set up **permanent workshops** that will include all of the training equipment. Permanent workshops would greatly benefit both construction companies and VET providers as it would allow workers and VET pupils to acquire the necessary skills and become familiar with novel construction methods on a routine basis. This would set up continuity in introducing innovative training practices, currently lacking in the Romanian construction sector.
- To address the insufficient level of or non-existent skills of workers related to energy performance, the French Environment and Energy Management Agency (*Agence de l'Environnement et de la Maitrise de l'Energie, ADEME*) set up 166 **PRAXIBAT® technical and educational platforms** in order to train craftsmen, in-company tutors, apprentices, VET pupils, architects, job seekers and trainers in energy-efficient building construction. The PRAXIBAT® training platform is a technical workshop that was one of the earliest systematic stakeholder initiatives within the French construction sector to introduce energy performance construction to multiple target groups. This training platform allows one to: develop best practices on construction and renovation sites, initiate meetings and dialogue between construction professionals on 'neutral' grounds, understand the operational capacity of construction materials and techniques, and discover their limitations in a hands-on, direct working context, and learn about the operational and pragmatic aspects of multiple elements in sustainable construction. The setting up of PRAXIBAT® technical and educational platforms included the following actions (Case study 'Innovative training platform'):
  - Development and delivery of **courses in energy efficiency** for IVET and CVET learners.
  - Clear **identification of problem areas** in sustainable construction. ADEME developed PRAXIBAT® training platforms as a straightforward response to the problem areas it found most in need of addressing.
  - **Training the trainers** in energy efficient building construction.
  - **Revision of pedagogical tools** and a constant review and update of professional practices.
  - The **willingness and support received from local, regional and national actors**. For example, regional divisions of ADEME engaged with regional councils, local communities, professional organisations and local vocational training institutions while coordinating the setting up of PRAXIBAT® training platforms.
  - **Sufficient financial resources** enabled ADEME to provide the platforms with the necessary materials and equipment, while **adequate human resources** were important for organising the setting up of these platforms on a local level. The platform was funded from governmental funds, but since 2017 it should also receive company (EDF) support.
  - More **extensive communication** about the issues in sustainable construction training and the PRAXIBAT® training platform.

Sources: Visionary Analytics consortium based on the case studies identified next to each example.



### 1.2.8. Securing sufficient resources for apprenticeships

Inadequate support for apprenticeships is probably the challenge that is most often mentioned by construction stakeholders in relevant discussions. Evidence suggests that there are a number of concrete challenges that lie behind that:

- **High costs of participation in apprenticeships**, including apprentice training costs for companies, especially SMEs, costs for mobile apprentices to train in another country, costs for apprentices participating in national and especially international skills competitions.
- **Complex systems of remuneration** of costs lacking sufficient guidance for users. Remuneration systems often perform based on a certain path dependency (e.g. traditions, operational logic). Furthermore, remuneration systems are, as a rule, weakly monitored and evaluated – there is a significant lack of well-documented evidence on the effects of apprenticeship funding (Kuczera 2017). Therefore, they are not sufficiently effective in terms of their costs and benefits for participating stakeholders.
- **Lack of human resources** (e.g. in-company trainers, especially the ones working in SMEs, often have little or no time for apprentices).
- **Inadequate funding** of apprenticeship projects. For example, mobility projects often cannot sufficiently cover the internal staff and administrative costs incurred by sending and receiving apprentices and that discourages organisations from their participation in such projects.
- **Lack of time resources**. For example, participation in skills competitions may clash with a talent's work duties and employers of young talents are not always willing to provide time-off for them for the duration of the competitions and the preparation time before, as this results in organisational and financial burdens for the company due to a temporarily reduced workforce. This is especially significant considering that, according to Eurostat, in 2014, 94% of the construction sector was composed of SMEs that have less than 10 employees.

Some of the above outlined challenges in relation to supporting apprenticeships are addressed via inspirational measures described in Box 1.10 below. They illustrate that favourable apprenticeship support systems are not only characterised by sufficient funding, but also by rich **non-financial support** for apprenticeships participants. The latter may include broad and smooth cooperation between key actors, a pooling of resources for training, active lobbying at national or regional levels and plentiful information and guidance opportunities for users.

#### Box 1.10: Examples of measures aimed at securing sufficient resources

- A key focus of the pledge of the Fédération National des Travaux Publics (FNTF), a French professional body representing companies of public works, is to support apprenticeship financing. FNTF does this via various measures including (Case study 'Supporting financing of apprenticeships'):
  - **Establishing good relations** between authorities (incl. regional councils), enterprises and professional bodies is key, as they, for example, allow for monitoring of relevant trends and, subsequently, promote apprenticeships in the most needed professions. FNTF persistently tries to strengthen its relations with stakeholders and, by doing so, also expands its zone of influence.
  - **Forming broad networks**. For example, VET campuses introduced in France (five of these campuses are oriented towards professions in the construction sector) both extend the networks of stakeholders (used by FNTF) and strengthen relations between them within these networks. Strong relations between stakeholders are crucial in order to, among other things, ensure smooth cooperation with regional councils in matters regarding financial support.
  - FNTF organises **promotional information campaigns** targeting enterprises.

Each year, FNTF organises a series of events to convince enterprises to allocate the remaining share of their apprenticeship tax to public works apprenticeship programmes.

- FNTF has published an [online guide](#)<sup>62</sup> for all companies that provides details on apprenticeship tax arrangements, including step-by-step instructions on how to pay the tax, tax calculating guidelines and official tax forms.
- **Lobbying** for financial support for apprenticeships on a regional level and cooperating with regional councils. Since 2014 in France, 51% of the entire collected tax is allocated to regional councils, which are responsible for the effective distribution of these funds towards the development of apprenticeship schemes.
- **The role of governmental agencies in ensuring sufficient funding for mobility projects** is crucial, as it may enable projects to be realized through adequate funding for all of the project's activities, or it might encourage other stakeholders to more eagerly participate in the projects. For example, companies would participate in apprenticeships more if they had financial support covering the apprenticeship salaries that they pay. **EU funds** could be more intensively exploited for the financial support of mobility projects. For example, the majority of mobility projects run by the Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, were funded by EU funds (Case study 'Increasing mobility of apprentices').
- **Pooling of resources for training** (see section 1.2.2 on getting employer buy-in).
- Financial support by the government for on-the-job training part of apprenticeship programmes is usually provided via the following three types of **co-funding instruments**: grants (incl. for individuals and grants for companies), tax incentives (also for companies and for individuals) and training funds (national or sectoral). Most of the mentioned co-funding instruments cover at least part of the wages of apprentices. A few instruments also cover the wages of in-company trainers.

Sources: Visionary Analytics consortium based on the case studies, identified next to each example, and own insights.

### 1.2.9. Fostering mobility of apprentices, teachers and trainers

Mobility is an opportunity to excel, including bringing forth innovations in training, addressing skills shortages and mismatches, enriching personal competences and widening professional horizons. The more apprentices and their trainers are mobile, the more innovative and flexible VET systems will become. It is thus the key for construction sector that spans across national borders. However, a number of factors discourage mobility of apprentices and trainers:

- **Mobility is not a priority for construction companies**, especially for SMEs usually operating at the local/regional level and struggling to keep a profitable business activity.
- **Many national VET systems still need to be improved** (e.g. in the form of stable, up-to-date and efficient apprenticeship programmes in the construction sector) before countries enter into higher scale cross-country mobility projects.
- Mobility projects often are a **financial dilemma for young people**: people enter projects to get a better paying job, but participation in these projects is often costly (incl. accommodation, subsistence) and learners are not able to sustain themselves. Consequently, mobile learners may **lack motivation** to adapt to the more rigorous VET systems of other countries (e.g. German dual VET system).

<sup>62</sup> [http://www.fntp.fr/upload/docs/application/pdf/2017-01/la\\_taxe\\_d'apprentissage\\_2017\\_-\\_guide\\_d'utilisation.pdf](http://www.fntp.fr/upload/docs/application/pdf/2017-01/la_taxe_d'apprentissage_2017_-_guide_d'utilisation.pdf) [accessed 12-10-2017]

- **Current mobility experiences are short** – the average duration of VET learner mobility in 2014-2016 Erasmus+ projects focusing on the mobility of individuals (i.e. VET Key Action 1 projects) was 32 days (compared to 139 days in higher education)<sup>63</sup>.
- It is problematic to ensure the training of foreigners with **insufficient local language skills**. Young people who are genuinely interested in the construction sector often find language courses less appealing and they are not willing to spend time on this theoretical training.
- **Targeting the right group of learners** for mobility projects is often a challenging task that, in case of failure, results in a high dropout rates of participants.
- Full **recognition of skills and qualifications** developed in mobility projects is still to be ensured. Despite the new favourable developments at the European level (e.g. the [Professional Qualifications directive](#) (2013/55/EU<sup>64</sup>) enabling free movement for some construction occupations or the Services directive (2006/123/EC)<sup>65</sup>, removing barriers to trade for construction services and crafts) worker mobility is still limited. This is partly due to the great variation between actual requirements set out by Member States regarding, for example, required training or exams. Member States still often fail to implement a common approach towards the recognition of qualifications (ECSC 2017).
- Mobility may also be limited by a **frequent lack of information** on the conditions that persons have to comply with in order to participate in mobility projects, as well as difficulties in accessing whatever information is available.
- **Teachers and trainers** often have fewer opportunities to participate in mobility projects due to the lack of staff in their institutions and/or the unfavourable views of their managers. It is thus essential to boost their numbers in future projects.
- Mobility is not only geographical, but can also be career-related or functional. For example, transition into/out of VET represents mobility from an academic path to a professional career, or vice-versa. **The career-related aspect of mobility (e.g. mobility across education and training paths) is still very challenging in the construction sector**. Few EU Member States (e.g. Germany) recognise the transfer of practical experience achieved through apprenticeships into academic careers (e.g. reduction of university exams considering professional experience).

Examples of measures to foster mobility (Box 1.11) signal that the first key step of these projects that cannot be missed by organisers is a careful matching of mobility participants and human-centred communication to remove any doubts, misunderstandings, or uncertainties that are inevitable among participants at the beginning of such endeavours.

**Box 1.11: Examples of measures aimed at fostering the mobility of apprentices and trainers**

- The Bulgarian Construction Chamber (BCC) supported mobility apprentices by providing them with **cheaper accommodation** in Sofia during their language courses. To ensure that the language courses prior to the mobility experiences were comprehensive and successful, **BCC were also supported by their partner organisation**, the International Centre for Education and Communication (IZBK) that carried out German language courses in Bulgaria. BCC facilitated the language courses by **providing facilities** for the courses at their headquarters. (Case study 'Increasing mobility of apprentices').
- MobiPro is a mobility project funded by the German government that supports the

<sup>63</sup> <https://circabc.europa.eu/sd/a/51b2b538-3634-4359-b6d0-72b6abe53a3b/LF-20170403-pres-VET%20update.pdf> [accessed 12-10-2017]

<sup>64</sup> <http://eur-lex.europa.eu/legal-content/LT/ALL/?uri=CELEX%3A32013L0055> [accessed 12-10-2017]

<sup>65</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32006L0123> [accessed 12-10-2017]

training of Bulgarian unemployed youth in Germany. During this project, organisers held **a face-to-face meeting with all selected participants and their families** in Bulgaria to provide them with all the necessary information about the process of the training in Germany, the facilities and answered all of the questions from the selected participants and their parents. The meeting was organised before participants started their time abroad and it was perceived as a major factor of the project's success. It provided an opportunity for the learners and their parents to voice all of their uncertainties about the future and to get answers to all of their questions. (Case study 'Increasing mobility of apprentices').

- The Spanish Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, organises mobility projects for trainers and training staff in order to encourage mutual learning between professionals from various countries. Similarly, it is also engaged in mobility projects for apprentices with the aim of providing them with new skills related to various construction types, materials and building techniques, etc. Some Spanish regional authorities **accredited the mobility of learners** sent to foreign countries by the Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, **as a part of their national training curricula**. This has likely increased the motivation of mobility learners to participate in the project. In addition, the foundation has developed the **mobile application SOMEX**<sup>66</sup> to improve the quality of preparation, operation and post-processing of exchanges of trainees and staff. (Case studies 'Innovative training tools' and 'Increasing mobility of apprentices').
- Some mobility projects are not successful due to an insufficiently accurate targeting of participants. For example, most of the learners selected by a German training provider for their project had a university degree and were not motivated to work in the construction sector or could not afford the training. As a result, most of the mobility apprentices dropped out from the project. To avoid this, the **participant selection process has to be very rigorous** and it helps to have national and regional authorities involved in this process. For example, the Bulgarian Construction Chamber also had support from the National Employment Agency, as its regional offices facilitated the recruitment process by carrying out the search for candidates eligible for participation. (Case study 'Increasing mobility of apprentices').
- To prolong the mobility experiences of VET learners, the Commission is beginning a new initiative – **Erasmus PRO** (European Commission 2017a). Based on a presentation delivered by the Commission's representative during the workshop of this study, it will not be a new programme, but will be implemented within the current Erasmus+ VET Key Action 1 (i.e. projects focusing on the mobility of individuals). Its distinct feature is a long duration VET mobility of 3 to 12 months with work-placements abroad. Publication of a call for these projects is expected in October 2017.

Sources: Visionary Analytics consortium based on the case studies and other sources identified next to each example.

#### **1.2.10. Ensuring occupational health and safety during and outside training**

The construction sector is often considered a more dangerous sector to work in compared to other sectors. **Construction sites are often considered dangerous in terms of occupational health and safety (OHS), especially for minor apprentices** (aged 18 and below). However, the integration of OHS in the sector still faces problems. Firstly, **OHS training content still needs to be integrated in apprenticeship programmes**. Secondly, **compliance with OHS regulations** is often a headache for their managers as it is usually characterised by bureaucratic

<sup>66</sup> <http://www.somexproject.eu/results-results/results-app/> [accessed 12-10-2017]

procedures, a high administrative burden for enterprises and/or unrealistic targets on-the-ground.

OHS must be emphasised in the sector and ensured in apprenticeships. The lack of integration of OHS into apprenticeships may result in more accidents at work (and lower labour productivity), while overcomplicated compliance with OHS regulations may reduce employer engagement in apprenticeships and thus the supply of apprenticeship places. Box 1.12 illustrates how both challenges in relation to ensuring the integration of OHS in curricula and compliance with OHS requirements can be solved.

**Box 1.12: Examples of measures aimed at ensuring occupational health and safety during and outside training**

- The Fédération Nationale des Travaux Publics (FNTP), a French professional body representing companies of public works, initiated a **legal reform** that permits enterprises to hire minor apprentices without undergoing complex official authorisation procedures in relation to OHS. Instead, enterprises need to sign a legally binding declaration, which specifies the type of work an apprentice will be doing and includes enterprise commitment to ensure occupational health and safety for a minor apprentice. According to FNTP, enforcing legal change should be a priority, especially as financial support and legal requirements are largely dependent upon one another. (Case study 'Supporting financing of apprenticeships').
- Providing **measures for organisations to distinguish themselves in the market**. For example, in Germany companies (and other organisations such as training providers) can opt for **voluntary certification via the Health & Safety at Work System (AMS)**. The latter is a form of worker protection system within an organisation. It confirms the organisation's commitment to maintaining a safe and healthy working environment in the same way as quality management systems do. Voluntary certification via AMS could motivate organisations to make that extra effort and be seen as leading employers setting high OHS standards for the industry. For example, with the help of voluntary certification via AMS, dual VET training centre in Essen took the extra mile to ensure that young learners finished their training with a high level of knowledge of safety and health at the workplace. It is now a nationwide leader with regard to occupational safety. (Case study 'Addressing occupational health and safety issues in apprenticeships').
- The Spanish Construction Labour Foundation (*Fundación Laboral de la Construcción, FLC*), a non-profit Spanish labour foundation, has developed **a mobile application Health & Safety Games**<sup>67</sup>. It uses mini-games scenarios in order to facilitate users' mobile learning. The app is envisioned to facilitate not only health and safety training, but also migrant integration. The app is available in six different languages (English, Spanish, German, Italian, Romanian and Finnish). (Case study 'Innovative training tools').
- Dual VET centre in Essen (ABZ Essen), managed by Berufsförderungswerk der Bauindustrie NRW gGmbH (BFW), a non-profit German organisation, advocates for a **more rigorous introduction of OHS training very early on in vocational training**. OHS is an important part of the programme *Berufsstart Bau* that engages young people who have graduated secondary school, but are not yet ready for dual training for various reasons, and therefore do not yet have a place in the dual training system. The young learners enrolled in programmes to prepare for an apprenticeship are probably the most vulnerable of all new workers. Extra attention to OHS in early training would help to ensure their safety. In addition, this is probably the most effective way to provide OHS training, as it is far more difficult to change the entrenched incorrect habits of old workers with respect to OHS. (Case study 'Addressing occupational health and safety issues in

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<sup>67</sup> <https://play.google.com/store/apps/details?id=nl.welten.arlearn.hands> [accessed 12-10-2017]



apprenticeships').

Sources: Visionary Analytics consortium based on the case studies identified next to each example.

### **1.2.11. Integrating migrants into the labour market**

Integration of migrants (including refugees, asylum seekers and any other citizens traveling to EU from other countries) has recently become the largest European migration challenge since the Second World War. VET systems have a crucial and strategically important role to play for the smooth integration of migrants into the EU labour market. The construction sector is probably the sector where most incoming migrants will be working, as it is open to low, medium and high-skilled profiles. Furthermore, attracting young talents from third countries may become more and more important, as all EU Member States are likely to experience a shortage of young employees in the long term. However, evidence collected in this study shows that the attraction and integration of migrants is often challenging for construction sector stakeholders:

- The majority of migrants enter the sector out of need and come from different backgrounds **without prior sector-specific training**. Thus, they need to spend more time learning theory off-the-job and a facilitated recognition of on-the-job training.
- Migrants **may lack language skills and transferable job qualifications** (e.g. problem-solving, management skills)(IMF 2016). Meanwhile, for example, the language requirements for apprenticeship training are often very high (e.g. in Germany).
- **Dual VET systems are not fully appropriate for migrant integration**. For example, language barriers and their limited flexibility do not allow migrants to start working earlier than typical arrangements for such programmes.
- **Legal constraints** on work during the asylum application process impede upon the job-finding process and, in turn, slow down the migrants' integration into the labour market.
- **Limited willingness of companies to integrate migrants** into the labour market. This is noticed in countries that have no history of migrant integration and have little or no social obligation to offer training places for migrants. Moreover, companies can be led to give preferential treatment to local workers in their local communities for reputational reasons.

A wide array of measures to facilitate migrant integration into the labour market is available including specific measures in relation to apprenticeships (Box 1.13). The identified examples demonstrate that not only the efforts of construction stakeholders determine success, as migrants themselves, like all apprentices, can often have a decisive influence. Motivation to work was identified by employers (see last example in Box 1.13) as probably the most important factor in accepting particular migrants as apprentices in the company.

#### **Box 1.13: Examples of measures aimed at integrating migrants into the labour market**

- The employer representative Danish Construction Association (DCA), carries out a number of measures to facilitate migrants integration into the labour market (Case study 'Integration of migrants into the labour market'):
- **Facilitates communication** between companies, VET schools and apprenticeships with regard to migrant integration. For example, DCA signed a tripartite agreement on labour market integration with the trade unions and the State authorities in April 2016 that introduced a **specific apprenticeship-type scheme** called Integration basic training (IGU) designed specifically to facilitate integration of social groups, including migrants. Due to this agreement, the companies can employ a migrant for two years and pay them the rate of an adult apprentice. Migrant integration into Denmark's labour

market can be considered as a good practice as the country **distributes migrants among different municipalities**, while taking into account the geographical distribution of job vacancies and matching them with the skills and employment interests of migrants to the extent possible.

- Engages in **lobbying and communication with politicians and national authorities**, but there needs to be the active participation of all sides, including companies, young people and VET schools.
- The case study 'Integration of migrants into the labour market' reveals a number of factors that could facilitate the integration of migrants into the labour market:
  - **Access to language training.** Language courses can help migrants obtain one of the most important skills that will significantly facilitate their integration into both social and work life. However, new solutions, such as online language learning, are necessary to be able to cope with the fluctuating levels of demand for the language courses (and the lack of language lessons).
  - **Well-developed infrastructure to integrate migrants.** For example, in Germany the agencies play a key role in matching migrants with a set of specific skills to companies that could make use of the skills they possess. In addition, it is easy for the companies themselves to initiate similar processes of finding interested migrants, as it only requires a bit of research to be done online about the possibilities of working with local employment agencies to employ a migrant.
  - Strong **sense of social obligation** by companies in the sector to integrate those migrants willing to work and learn regardless of their country of origin. For example, in Germany this sense of social obligation is partly stimulated by the persistent significant skill shortages in the labour market and partly by the German history of immigrant integration in the job market (large inflows of foreign workers in the 60s and 70s).
- The strong **motivation** of migrants is often a decisive factor for their integration into the labour market. For example, the experience of German company Schleiff Bauflächentechnik GmbH & Co. KG demonstrated that the main factor that determined the choice between the candidates was motivation, as the employers instantly recognised one candidate's eagerness to work and learn on the job, which they deem to be a very attractive quality in an employee. They first employed a migrant (refugee) for a temporary internship (*Praktika*) that lasted for one month. This internship allowed the company to test the motivation and suitability of the candidate for the company that could subsequently turn into employment after its end in July 2016 (Case study 'Integration of migrants into the labour market').

Sources: Visionary Analytics consortium based on the case studies identified next to each example.

### **1.2.12. Initiating structural reforms of apprenticeship systems**

Last, but not least, a crucial challenge for construction sector stakeholders is how to integrate their challenges into the political agenda and move education policy in the right direction. The need to reform VET systems is often obvious due to the decreasing number of learners entering VET, the systemic problems of VET supply (incl. lack of flexibility, old-fashioned ways of teaching and outdated content, etc.) and the prevailing bad image of VET. Striving for a more cost-effective provision is an additional motivation for VET policy reforms where apprenticeships may prove to be a more effective solution.<sup>68</sup> A number of EU Member States are reforming their apprenticeship systems. For example, the UK government is developing a Construction

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<sup>68</sup> For example, a Swiss study comparing public costs on upper-secondary education revealed that the public cost of the provision of apprenticeships is significantly lower than the cost of entirely school-based vocational programmes (Swiss Coordination Centre for Research in Education 2011).

Strategy 2016-2020 with the major goal of supporting the creation of 20,000 apprenticeship positions by 2020. Ireland is reviewing its construction apprenticeship schemes. Hungary is making efforts to increase the number of apprentices from its current 50,000 to 70,000 by 2018 by partnering with enterprises to offset the negative effects of migration and to improve the retention of workers (ECSO 2017). However, reforming apprenticeship systems raises a number of challenges, including the following:

- **Accommodating multiple interests** in relation to apprenticeships: Too many parties are involved in the redesign of the apprenticeship system, which makes it hard to introduce necessary fundamental changes.
- **Ensuring a broad representation** of all key actors (esp. SMEs) in apprenticeship reforms/initiatives. However, given the large presence of actors, the representation should be **organised in a structural manner** with clear procedures and objectives.
- Challenges due to the **characteristics of the construction sector**. For example, the fact that construction apprentices are often trained on construction sites rather than in protected environments.
- **Ensuring flexibility in the performance management processes** (OECD/ILO 2017). A sufficient degree of flexibility could help to ensure that a good performance of some local authorities or vocational schools compensates for the poorer performance of others. A performance-oriented culture may also gain from a requirement that at least some funding be allocated based on results.

Successful apprenticeship reforms are often based on broad partnerships between key stakeholders (a source of sufficient political influence, expertise and resources), a well thought out strategy and focused efforts. This is illustrated in Box 1.14 below.

**Box 1.14: Examples of measures aimed at initiating structural reforms of apprenticeship systems**

- Bouwunie, a Flemish (Belgium) federation for construction sector SMEs, employs a number of measures to engage with stakeholders in apprenticeship reform (Case study of 'Monitoring the reforms of dual vocational education and training'):
- **Cooperates with the service organisation for the construction sector Constructiv** (wherein Bouwunie is represented as one of the social partners) to get access to relevant decision-makers and also to encourage their members to provide more high-quality apprenticeship places.
- **Acquires and builds on expertise of other organisations** (not only Constructiv, but also SYNTRA, the Flemish Agency for Entrepreneurial Training).
- **Participating (with the right to vote) in a new sectoral partnership for construction apprenticeships** focused on the screening of companies to determine whether they are qualified to take on an apprentice.
- The Federation of Master Builders (FMB), the largest trade association in the UK's construction industry, ensured that bricklaying and plastering standards are created as part of a collaborative process **involving SMEs in construction**, training providers and awarding bodies. SMEs' involvement was said to be particularly important, as two thirds of the apprentices entering the construction sector are estimated to be trained by SMEs. This has helped to ensure that standards reflect the needs of the industry well (Case study 'Creating new construction apprenticeship standards').
- To improve apprenticeships, the Vakgroep Opleidingsbedrijven (*Department of training companies, VO*), a branch of Bouwend Nederlands representing training companies in the Netherlands, has developed **a four-pillar structure**: (1) talent development and career coaching, (2) craftsmanship (integrating project-based training to emphasise a holistic approach), (3) contextual environment (updating



training equipment), and (4) professionalization of teachers. Formulation of structural changes takes time and effort. VO has begun initiating structural changes to apprenticeships in 2012. Currently, 22 training companies (out of 44 that are members of VO) have decided to implement the proposed four pillars. Changes initiated by VO are expected to be fully implemented starting in September 2018. VO underlines the following success factors that are crucial in transforming the apprenticeship system (Case study 'Initiating structural change to apprenticeships'):

- **Balanced stakeholder involvement.** A top-down approach is not feasible because schools and companies are autonomous: if they disagree with the changes to be implemented, they will simply not follow through. A completely bottom-up approach may result in average quality. Constant communication between the experts (proposing solutions), the leaders (implementing them) and everyone else involved is crucial in finding the right balance between top and down approaches.
- **Leaving room for regional differences.** Each company may find its own method of approaching similar problems as long as they find what works best for them.
- **Clear and focused goals.** Identify problem areas and focus solely on these areas without trying to fix everything else that falls outside the identified range.
- One way to ensure that construction specifics are duly considered in apprenticeship reform is to advocate for inclusion of the construction sector programme(s) in early attempts of apprenticeship reform (e.g. pilots). For example, due to the significant efforts of Bouwunie, a Flemish (Belgium) federation for construction sector SMEs, the bricklayer programme was **chosen as one of the seven pilot programmes** in the new 'dual learning system' reforming the Flemish apprenticeship system. Since 2016, Bouwunie is following-up on the experimental bricklayer programme. The final results of this programme will be evaluated after the programme has run for a year. Based on these results, Bouwunie plans to draft their recommendations for improving the new apprenticeship system. The piloting of this programme will provide Bouwunie with occupation-specific insights of the reform implementation and, thus, may result in a reform that is more favourable for the construction sector (Case study of 'Monitoring the reforms of dual vocational education and training').

Sources: Visionary Analytics consortium based on the case studies identified next to each example.

Often the weakest link in the chain of apprenticeship reform is government. Construction stakeholders mention a number of government-related challenges in reforming apprenticeship systems:

- **Political stability** (e.g. legal and financial). For example, recently the UK has reformed apprenticeship funding by introducing an apprenticeship levy that companies have to pay on top of the existing Construction Industry Training Board's levy (a key financial source for the construction sector training fund in the country). Changes in, for example, tax regulation may also have profound effects on the economy including the number of apprenticeship places available on the market.
- **Changing and/or insufficiently adequate priorities and apprenticeship reform strategies.** For example, the British government reform on apprenticeships has been criticised by construction stakeholders for being too focused at changing the structure of apprenticeships (by switching to employer-led standards) and less on the overall quality of apprenticeships. Overall, the UK and other country experiences show that 'drip by drip' policy reforms of apprenticeship should be avoided as they create a confusing policy

landscape at the local level and reduce the possibility for sensible long-term planning (OECD/ILO 2017).

- **A lack of comprehensive and rigorous analyses and evaluations of the outcomes of current apprenticeship schemes** to support policy reforms. For example, a good understanding of the costs and benefits of apprenticeships may enable governments to define an effective method of offering, for instance, a financial incentive to engage more companies in apprenticeships. Such analyses and evaluations are crucial to ensure a balanced distribution of costs and benefits from apprenticeships, so that a sufficient number of companies offer apprenticeship placements and enough young persons start apprenticeship programmes (Kuczera 2017). Analyses and evaluations are also vital to ensure that apprenticeship programmes offer a good balance between occupation-specific and basic skills.
- **Institutional complexity** (esp. in federal countries). For example, Belgium is divided into three regions and three cultural communities. Neither of these communities can make any political decisions without addressing the other communities as they are obliged to coordinate their actions in all domains. This complicates and prolongs any policy decisions, let alone policy reforms.
- Institutional complexity often leads to another challenge – a **decentralisation of the vocational training provision**. Increased flexibility in the VET provision may drastically improve the VET system, including apprenticeships. However, decentralisation should always be accompanied by strong national quality assurance frameworks.

Examples in Box 1.15 demonstrate that successful apprenticeship reforms may need to be quick to avoid national policy disturbances, based on active lobbying to draw the sufficient attention of policy makers to the issues at stake, rely on key reform prerequisites (such as the timing of a reform) and the support of external actors (e.g. the German Office for International Cooperation in Vocational Education and Training (GOVET)) as well as intermediaries (e.g. single contact points reducing institutional complexity for companies and other practitioners).

#### **Box 1.15: Examples of measures aimed at addressing government-related challenges in reforming apprenticeship systems**

- Considering the forthcoming changes in apprenticeship funding in the UK, the Federation of Master Builders (FMB), the largest trade association in the UK's construction industry, emphasised a **quick approval** of the bricklaying and plastering **apprenticeship standards** so that they could qualify for higher levels of funding as soon as autumn of 2017. **Contributions of the staff of 10 construction companies** have also helped to **speed up the development of these standards** (Case study 'Creating new construction apprenticeship standards').
- Young Women's Trust (YWT), a UK-based charity organisation representing young women (Case study 'Promoting construction apprenticeships to women'):
  - Actively **engages with the government** and provides their input to apprenticeship reform focusing on the quality of training, the target groups of the apprenticeships and their needs in the future. The large amount of attention given to apprenticeships by the government in the UK is a favourable condition leading to positive changes in this area.
  - Carries out **political lobbying** to make government guidance related to the possibilities in promoting gender diversity in apprenticeships clearer to employers. Clear guidance is much needed. For example, there is interpretation of the equal qualification clause as potentially discriminatory against young men. In this case, clear guidance from the government, disproving such interpretation, would help encourage more active actions regarding apprenticeship promotion to young women.
- The experience of the German Office for International Cooperation in Vocational

Education and Training (GOVET) under the Federal Institute for Vocational Education and Training (de. BIBB), in contributing to apprenticeship reforms in Latvia, Slovakia and Slovenia suggest a number of prerequisites for successful apprenticeship reforms (Case study 'German initiatives to support dual VET reforms in other Countries'):

- **Commitment** of governmental and implementing stakeholders. Reforms in VET should be initiated only if stakeholders from the foreign state are convinced of their value.
  - Governmental **financial support** of structural reforms can increase the willingness for adjustments in dual VET on the side of the companies.
  - **Timing** of reforms (not to be launched in times of difficult economic situations).
  - **Willingness of companies** to participate actively in dual VET systems. The willingness of companies to participate increases if they have serious difficulties in recruiting qualified personnel. This can be exploited when establishing or reforming a country's apprenticeship system.
  - The **economy** of a country must be capable of integrating qualified employees.
  - **Central governmental structures** facilitate the implementation of changes in dual VET systems.
- National governments can ask for the support of foreign organisations. For example, GOVET has supported national governments in many different ways (Case study 'German initiatives to support dual VET reforms in other countries'):
    - In Latvia, GOVET organised two **conferences** on work-based VET (2013, 2014), supported a **fact-finding mission** (2014) and, in 2013, a Latvian delegation participated in a **study visit** in Bonn at the invitation of BMBF (the German Federal Ministry of Education and Research). In addition, it supported a **pilot project** to introduce company-based apprenticeships in eleven vocational schools implemented in 2014-2016.
    - Carried out a **feasibility study** in Slovakia.
    - Supported the Slovenian government in **working on a new legislation** base for apprenticeships. In March 2017, an **expert meeting** was organised in Slovenia, where advisory partners from Germany, Switzerland and Austria met to finalise the new legislation framework.
  - **A single point of contact** between schools, enterprises and young people, established by the Confédération Construction Bruxelles-Capitale (CCBC), a regional professional body under a national confederation in Belgium, helps to reduce the institutional complexity of the Belgian apprenticeship system (Case study 'Strengthening cooperation between VET schools and companies').

Sources: Visionary Analytics consortium based on the case studies identified next to each example.

### **1.3. Effects of implementing construction sector apprenticeships**

There are a number of reasons why formulating and monitoring the effects of implementing construction sector apprenticeships is highly important.

Firstly, clearly formulated targets (in terms of effects to be reached) of any initiative aimed at improving construction sector apprenticeships may lead to better results. One of the reasons for this is that people working on these initiatives better understand what they are aiming for and better imagine the place a particular initiative has within the wider context of, for example, education policy reform.

Secondly, a carefully designed monitoring of construction apprenticeships (in terms of effects) may serve to better steer the initiative (e.g. slightly change the focus of the initiative if it does not provide the expected effects).

Thirdly, construction stakeholders might use the results for the further expansion of their activities (e.g. a viable return on investment reached by a pilot programme, if effectively advertised among construction companies, may increase the number of companies that wish to experiment with apprenticeships). Thus, effects (or targets reached) are not a simple measure of reporting (e.g. to institutions that allocated the funds), but can also act as a very powerful tool to further promote different measures addressing the challenges of construction apprenticeships.

Since formulating and monitoring the effects of implementing construction sector apprenticeships is highly important, construction sector stakeholders should allocate significant time for this. Evidence shows that construction stakeholders rarely do so. Setting clear targets and carefully monitoring them during the initiatives and measuring the effects (e.g. in terms of impact assessments or cost-benefit analyses) are not yet widespread activities in projects.

Twenty-two case studies carried out as part of this project could be a source of inspiration for construction stakeholders in order to better formulate and monitor the effects of implementing construction sector apprenticeships. They include a variety of effects that construction stakeholders set as targets for their initiatives, sometimes monitor and even less often use for the further promotion of their initiatives. Some effects were implicit and were reformulated to be explicit by the authors of this study. Effects can be grouped into two groups: qualitative effects (a 'gut feeling' or an estimation based on experience of what is likely to happen partly due to the implementation of specific initiatives) and quantitative effects (or indicators). Box 1.16 includes multiple examples of the effects of both groups.

**Box 1.16: Examples of qualitative and quantitative effects of measures aimed at construction sector apprenticeships**

***Qualitative effects ('gut feelings' or an estimate based on experience)***

- Transfer of sector-specific needs to the government
- Reaching out to schools by offering construction apprenticeships
- Better match between skills supply and demand (e.g. enabling employers to contribute to the design and delivery of apprenticeships standards)
- Changes in perception (e.g. of employers regarding women apprentices; of teachers in applying innovative training solutions or in integrating cross-craft understanding into the curricula)
- Increased opportunities for employers to advertise their good practice examples to a wider public and get recognition for their actions
- Increased awareness (e.g. amongst companies regarding apprenticeship costs and benefits)
- Improved effectiveness of training (e.g. innovative training tools improve the effectiveness of training by facilitating teaching, learning and encouraging self-studying)
- Establishment of personal links between, for example, apprentices and companies that may lead to employment in later years
- Improvement in certain skills (e.g. capability of apprentices in applying theoretical skills to practical tasks, increased cross-craft understanding; specialised professional development)
- Helping companies to build trust in apprenticeships and therefore hire apprentices more willingly
- Improvement of training (e.g. in-company training and training in inter-company training centres)
- Raising awareness (e.g. for sustainability aspects in construction; of a particular occupation in the country or region)

- Receipt of regular regional press coverage boosting the positive image of apprenticeships and helping to attract future apprentices
- Building an informal and experience-oriented approach to vocational orientation profitable for, for example, kindergartens or secondary schools
- Improved characteristics of training programmes (e.g. attractiveness, applicability of the training content to real-life work situations in the construction sector; inclusion of certain topics)
- Increased ability of companies to offer a wider range of services (e.g. via improved VET supply in energy performance)
- Enabling workers to train their peers, thereby disseminating their newly-gained knowledge and skills
- Professionalization or increase of the qualification and experience of trainers
- Better collaboration e.g. between training providers and construction companies
- Improving the image (e.g. of VET teachers, training programmes, specific occupations, the construction sector and manual trades in general)

### ***Quantitative effects (indicators)***

- Number of apprentices – both absolute and relative (e.g. per 1,000 employed persons)
- Number of in-company trainers – both absolute and relative (e.g. per 1,000 employed persons)
- Number of VET teachers delivering apprenticeship programmes – both absolute and relative (as a share of all VET teachers)
- Number of apprenticeship placements in the (sub-)sector
- Number of applicants (for available apprenticeship placements)
- Number of young people who enrol to apprenticeships (or specific education and training programmes)
- Number of apprentices who drop out
- Number of apprenticeship graduates
- Number of apprenticeship graduates who were employed in their area of training within six months of graduation
- Number of apprenticeship graduates who left the country
- Retention rate of apprentices (at the firm or sectoral level)
- Number of apprentices from underrepresented groups (e.g. migrants, disabled, women)
- Quota of apprentices in construction enterprises (apprentices/employees ratio)
- Number of trainers trained
- Number of organisations that have joined, for example, an informal campaign dedicated to some issue (e.g. attracting women to construction sector)
- Number of project proposals for specific topics
- Use of tools, e.g. number of unique visitors to a particular website, share of teachers who report use of that internet platform for career guidance, number of downloads of a mobile application, etc.
- Number of employers and young persons matched (e.g. in case some intermediary is recruiting apprentices on the companies' behalf)
- Number of partnerships created between training providers and companies
- School-to-work transitions in the construction sector (as a share of all school-to-work transitions)
- User satisfaction (e.g. share of satisfied apprenticeship graduates)
- Return on investment for employers (e.g. net loss or profit) and apprentices (e.g. wages)
- Number of articles on apprenticeships (or selected keywords) in the press
- Number of partners in the relevant network
- Share of training programme duration devoted to, for example, project-based work, problem-solving in groups or off-the-job training
- Share of apprenticeship graduates who act as coaches/tutors/trainers for their peers (e.g. who attended apprenticeship and then train others)



- Share of apprentices (and young persons in general) holding a university entrance qualification
- Share of apprentices with higher education diplomas

Source: Visionary Analytics consortium based on case studies.

Box 1.17 illustrates how a comprehensive formulation of effects could justify the measures construction stakeholders take to improve construction apprenticeships. In this case, the comprehensive formulation of effects and proofs collected next to each effect may convince, for example, new companies or apprentices to take part in vocational skills competitions.

**Box 1.17: Illustration of qualitative effects – vocational skills competitions**

- Competitions are considered to be an effective way to improve motivation among young talents by recognising and rewarding their good performance - talented apprentices benefit by a special appreciation of their qualification and also have a chance to learn more about their business
- As a result, the increased motivation of young talents positively affects companies that benefit from improved competences and performance among their apprentices who are trained and prepared for the competitions
- Skills competitions (especially international ones) have a positive image effect due to increased media exposure. Key actors benefit from the improved image of the sector
- Talented apprentices benefit from special training before international competitions as they learn stress-resilience and a wider context of their profession in other countries
- The best talents are a *de facto* pool/network of ambassadors for the construction sector towards younger generations that may be promoted at different levels
- Vocational skills competitions can be seen as a guidance tool: if a young person is already interested in construction-related occupations, the media coverage of skills competitions or national teams might ease the process of deciding between specific occupations

Source: Visionary Analytics consortium based on the case study 'Vocational skills competitions in Germany'.

Another source of inspiration to better formulate and monitor the effects of implementing construction sector apprenticeships is already existing research and guidance. For example, the ultimate target of many initiatives implemented by construction stakeholders is high quality apprenticeships. Stakeholders often struggle to arrive at a comprehensive and clear definition of 'quality and effective apprenticeships'. They could, however, rely on available evidence in the area such as the earlier efforts of the Commission to define the guiding principles of high-performing apprenticeships (European Commission 2015) and more recent efforts by the European Trade Union Confederation to operationalise quality apprenticeships at the European level (ETUC, 2016) and the employer association Business Europe to describe the cost-effectiveness of apprenticeships (Business Europe 2016). In October 2017, the Commission also made a [proposal](http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2873&furtherNews=yes)<sup>69</sup> for a Council recommendation on a European framework for quality and effective apprenticeships that is likely to boost apprenticeships in Europe. In addition, the Commission is planning to launch a set of support services to assist Member States and stakeholders who wish to introduce, improve or reform their apprenticeship systems (European Commission 2017b and 2017c). Similarly, many construction stakeholders often argue about the costs and benefits of apprenticeships systems, but rarely measure them due to a lack of information, knowledge and/or resources. However, a number of cost-benefit analyses are available including repeated analyses performed in Germany and Switzerland, Austria and, to some extent, [Spain](#) (Bertelsmann Foundation 2015) where it is estimated under which conditions employers would offer apprenticeships (Kuczera

<sup>69</sup> <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2873&furtherNews=yes> [accessed 12-10-2017]

2017). There are also new initiatives on track – for example, the Education Policy Institute (EPI) in the UK has partnered with the J.P. Morgan Chase Foundation, the Bertelsmann Foundation, and Professor Stefan Wolter of the University of Bern, in a study to assess the costs and benefits of apprenticeships in England.<sup>70</sup> At the EU level, [the European overview of effectiveness and cost-benefits of apprenticeships](#) (European Commission 2013a) has provided some overarching insights into the issue.

To be successful and to reach better results, initiatives aimed at improving construction apprenticeships need to have very clear targets and be monitored. Their monitoring should be systemic rather than a one-off exercise, drawing not only on short-term, but also on medium- and longer-term indicators/effects. For example, the work of trainers implementing some pilot training modules should be monitored not once, but regularly and over time to duly consider all possible effects and their magnitude. Longer-term monitoring of apprenticeships is particularly important considering that evidence on the long-term effects of apprenticeships is still inconclusive (Kuczera 2017). Furthermore, monitoring should also draw on all available international research (e.g. on methodologies of cost-benefit analyses developed in other countries), so as to avoid reinventing the wheel and to reach better results.

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<sup>70</sup> <https://epi.org.uk/apprenticeship-project/> [accessed 12-10-2017]

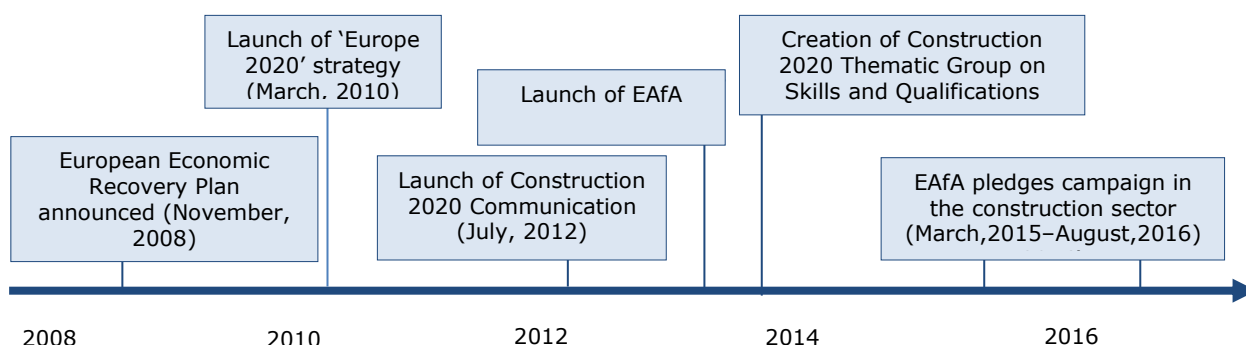
## 2. MONITORING THE CAMPAIGN OF THE EUROPEAN ALLIANCE FOR APPRENTICESHIPS FOR PLEDGES IN THE CONSTRUCTION SECTOR

### 2.1. Background of the campaign

The European Alliance for Apprenticeships (EAfA) unites different stakeholders through a common goal: to strengthen the quality, supply and image of apprenticeships in Europe. This platform is managed by the Commission and provides a forum for EU institutions and governments to engage with other key stakeholders, such as businesses, social partners, chambers, vocational education and training (VET) providers, regions, youth representatives or think tanks.

EAfA was launched in July 2013 in the context of the WorldSkills competition in Leipzig (Germany). The Council of the EU has welcomed the establishment of EAfA as a tool for implementing the Youth Guarantee and contributing to the Council's strong commitment to combating youth unemployment and inactivity, as well as other EU-level policies with regard to the construction sector (Figure 2.1). High quality apprenticeships and other work-based learning schemes (apprenticeship-type) were deemed to be effective instruments for improving sustainable transitions from school to work, harnessing skills and improving skill matches.

**Figure 2.1: Overview of main EU-level events 2008 - 2016 in the construction sector**



Source: Visionary Analytics consortium based on the Commission's [information sources](#)<sup>71</sup> on the construction sector.

EAfA covers three fields of action:

- 1) Reform of apprenticeship systems
- 2) Promotion of the benefits of apprenticeships
- 3) Smart use of funding and resources. Since 2013, there have been two main activities by EAfA – oversight of the implementation of:
  - a. National commitments by governments (outside of the scope of this study)
  - b. Commitments of other stakeholders through so called 'pledges'

Pledges are voluntary commitments by various stakeholders to strengthen the supply, quality and image or attractiveness of apprenticeships, and to support mobility in apprenticeship schemes. Organisations that want to submit a pledge fill in a template that provides background information on the initiative and guidelines for completing the template. The pledge requires providing details about the organisation, a short description of the pledge, the focus and added value of the action, and a list of partners involved.

<sup>71</sup> <http://ec.europa.eu/growth/sectors/construction/> [accessed 12-10-2017]



DG GROW launched an apprenticeship pledge campaign in the construction sector in 2015, as there were no pledges submitted from this sector since the establishment of EAfA. Active campaigning lasted for 1.5 years – from March 2015 until August 2016. The original estimate of receiving 50-60 pledges from stakeholders of the construction sector was met. The number of published construction pledges is 56 at the moment.

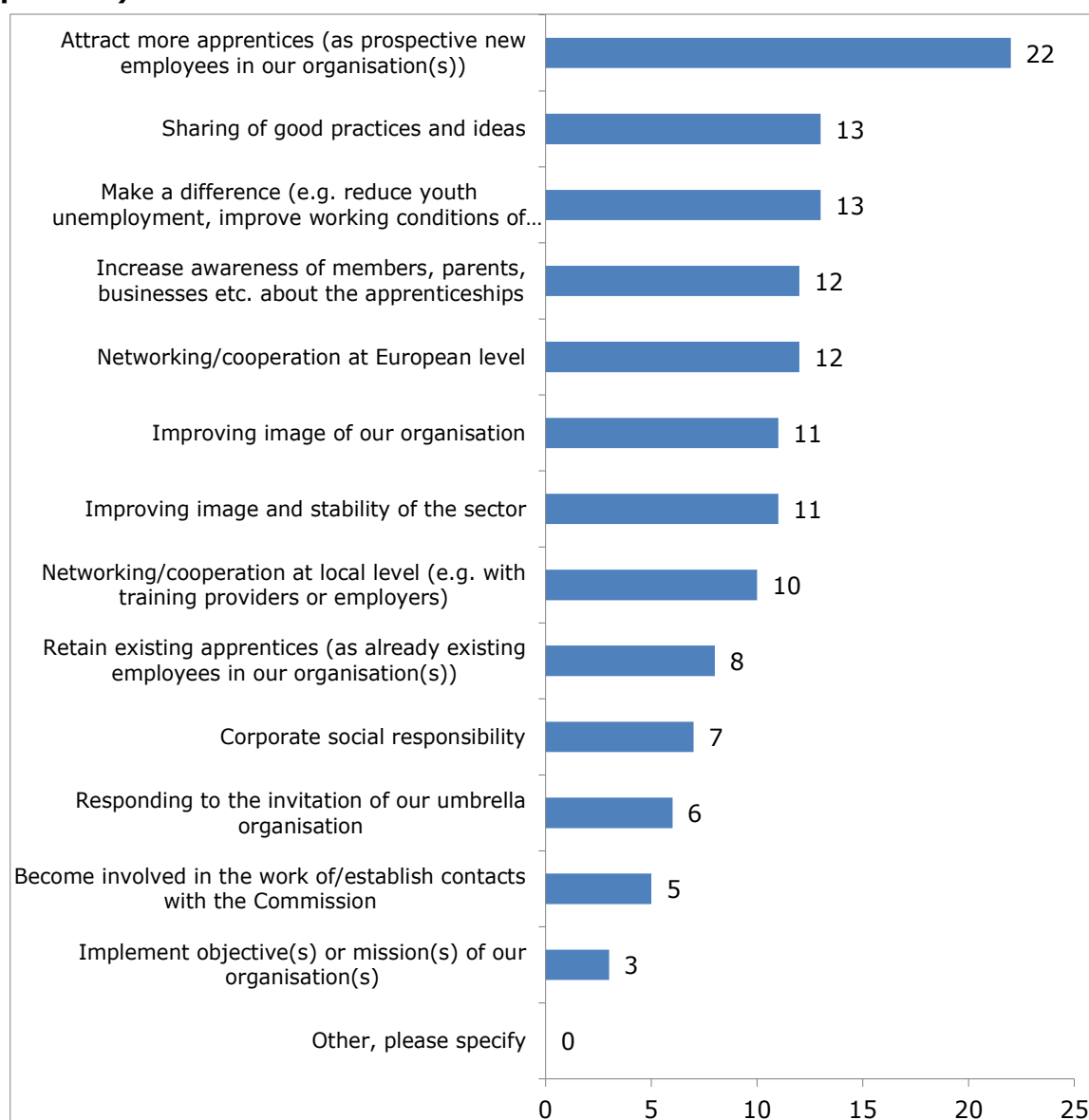
The establishment of EAfA is a step towards the promotion of quality apprenticeships, based on the voluntary commitments of stakeholders. The current campaign in the construction sector is a concrete initiative in promoting apprenticeship placements. Whereas there are many important sectoral organisations involved in this campaign at the moment (i.e. FIEC, EFBWW, EBC and UNIEP), the overall participation rate could be higher. This may be due to the fact that SMEs compared to large enterprises typically face a higher administrative burden and lower benefits from participation in similar initiatives. Therefore, the EAfA campaign in the construction sector may need more narrowly tailored measures so as to engage with SMEs and micro-companies. In order to do so, EAfA could show SMEs concrete examples of the added value of joining the campaign (e.g. reputational labels, opportunities for exchanging best practices, etc.). Hence the need for recommendations to improve the EAfA campaign in the construction sector.

## **2.2. Participation in the campaign**

### **2.2.1. Motivation to participate in the campaign**

The majority of the 28 pledgers who responded to the relevant online survey question indicated that the wish to *attract more apprentices as prospective new employees* was one of the key factors that motivated them to participate in the pledge campaign. Besides that, the motivation for participating in the campaign covered a wide array of factors (Figure 2.2).

**Figure 2.2: Motivation to participate in the campaign (multiple answers possible)**



Source: Visionary Analytics consortium based on the online survey of pledge coordinators (28 respondents)<sup>72</sup>, May – June 2017.

Evidence from the case studies also showed that *widespread skills mismatches in the construction trades* was one of the key motivations for participating in the campaign. Pledgers were concerned by either a shortage of companies participating in apprenticeships (as exemplified by case studies including **Fundación Laboral de la Construcción (FLC, Spain)**, or a lack of young people interested in apprenticeships (as exemplified by case studies on the **Fédération Nationale des Travaux Publics (FNTP, France)** and the **Berufsförderungswerk der Bauindustrie NRW gGmbH Ausbildungszentrum Hamm (ABZ Hamm, Germany)**). Another main motivation of pledgers was an *improvement of apprentices' training and working conditions*, as exemplified by case studies of activities by **FNTP, ABZ Hamm** and **ABZ Essen (Germany)**. Improving cooperation at the local level was also an important motivation of activities that often turned out to be a success factor for implementation of the pledges (see section 2.3.4).

<sup>72</sup> The online survey was distributed to one contact person per pledge (pledge coordinator) rather than to representatives of all of the organisations involved in the implementation of the pledge (some pledges were made jointly with more than one organisation).

### **2.2.2. Added-value of the campaign: novelty of actions**

The added-value of the EAfA campaign in the construction sector is reflected in the extent to which the pledges made by stakeholders include new actions due to EAfA and/or to what extent the campaign has contributed to expanding or reinforcing the stakeholders' current actions.

**Twenty out of twenty-six of the pledge-holders who answered the relevant survey question indicated that they were already doing pledged activities regardless of the apprenticeship pledge campaign or EAfA's actions.** Four pledge-holders claimed that they pledged new activities that were specifically created in relation to the apprenticeship pledge campaign and/or EAfA's actions. One pledge-holder from Belgium specified that even though they had already been involved in raising awareness of the added value of apprenticeship before they joined EAfA, they planned on innovating their actions by staying connected to EAfA. A pledge-holder from France indicated that their engagement with EAfA has helped their main partner introduce new activities. In addition to the 26 pledge-holders that responded to the relevant survey question, another six pledge-holders from the case studies also did not pledge new activities specifically created for the EAfA campaign.

In general, it is expected that EAfA will add value in terms of expanding the scope or the scale of the stakeholders and governmental activities, and/or by encouraging new and additional activities that would not have otherwise been developed, pursued or delivered. However, the answers provided by stakeholders of the construction sector point to the fact that most of the commitments included activities that the pledge-holders were already doing regardless of the campaign in the construction sector.

### **2.2.3. Partnerships between pledges**

The survey results revealed limited partnerships between pledge-holders:

- Three out of 28 pledge-holders that answered the relevant survey question specified that they cooperated in their pledged activities with other organisations (i.e. companies, associations, etc.) that implement other pledges under EAfA.
- One German pledger indicated that they were involved in convincing other construction companies to participate in EAfA by making pledges.
- Another German pledger indicated cooperation with other German pledge-holders.
- One pledger specifically indicated links to the European Federation to which they belong.
- Half (14) of the respondents claimed not to know whether they cooperated in their pledged activities with other pledge-holders.
- Another 11 respondents indicated that they did not cooperate with other pledging organisations. However, there are more pledge-holders that cooperate with corresponding European federations. Scoping interviews revealed that the two most prominent construction sector organisations for employers – FIEC and EBC – have actively encouraged their member organisations to join the campaign.

Feedback by the pledge-holders clarifies the purpose of the EAfA campaign from the point of view of the construction sector stakeholders. The results point to the fact that the EAfA campaign is acting as a platform for stakeholders to communicate their existing initiatives, rather than working as an incentive to create partnerships to develop new initiatives. These results should be taken into account by the managers of the EAfA campaign in the construction sector in order to better adapt it to the needs of the stakeholders.

#### **2.2.4. Intention to work further on pledges**

The intentions of the pledge-holders to work further on their pledges are an indication of their overall commitment to enhancing the quality, supply, image and mobility of apprenticeships. The campaign could reach higher impact if more pledgers would continue working on their pledges beyond the end date foreseen in their original pledges.

Twenty-three out of twenty six of the responders of the relevant survey question indicated that they wished to continue implementing the activities foreseen in their original pledge (extend their work beyond original deadlines). One pledge-holder indicated that it wished to update its existing pledge with activities not foreseen in the original pledge. One pledge-holder indicated that it wished to close its pledge but did not explain the reason(s) why. Another pledge-holder further specified its future plans and indicated that they plan to continue their activities and expand their network independently of their commitments to EAfA.

One way that the campaign could add value to apprenticeships in the construction sector is if it could persuade participating stakeholders that work on apprenticeships should be a continuous activity and an indispensable part of their daily business. However, this still remains an aspiration that is nonetheless relevant to the future development of the campaign.

Moreover, EAfA could make an assessment of concrete steps taken by the pledge-holders as a result of joining the campaign. However, this assessment should not be based on a 'blame/shame' principle. It should rather be conceived as a positive exchange of good practices amongst pledge-holders to guide the implementation of their initiatives.

### **2.3. Overview of pledges**

#### **2.3.1. Distribution of pledges by main characteristics**

This section presents an overview of the distribution of pledges by the following characteristics:

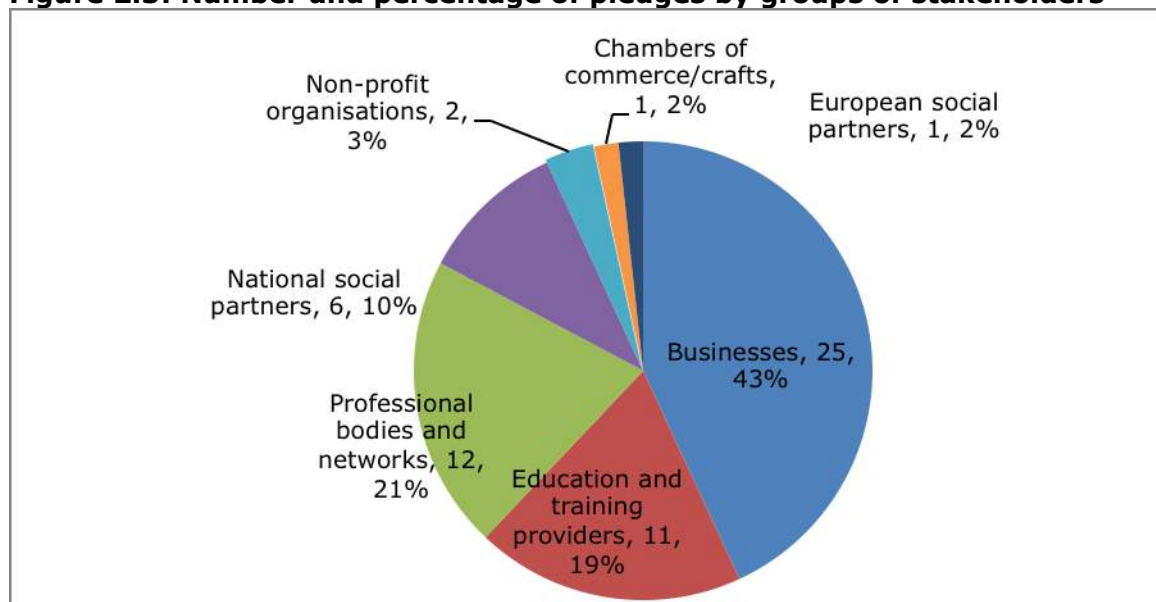
- Country
- Start year
- Language used
- Type of organisation
- Number of partners involved
- Sub-sectors represented
- Area of action (supply, image, quality and mobility)
- Stage of apprenticeship life-cycle

So far, 56 pledges from nine EU countries (covering Western, Southern Europe and Bulgaria) were submitted since the launch of the European Commission's apprenticeship pledge campaign for the construction sector in 2015 (see Figure 1.1 in Chapter 1). Ten pledges were published in 2015, 44 pledges were published in 2016, and two pledges were published in 2017. The most prevalent pledgers have been from German organisations; out of the 44 pledges that were submitted in 2016, 39 pledges were made by German organisations (see also Figure 1.1). 75% of the pledges (41) were formulated in German (all but one German pledger stated their commitments in German), about a fourth (12) in English and three in French (Brussels region, Belgium, France and Switzerland).

Types of pledge contact persons can be divided into seven different categories (Figure 2.3). Different types of stakeholders from different countries were attracted to make pledges:

- All pledging businesses and education and training providers were German. Two German non-profit organisations and chambers of crafts from Germany also made pledges.
- The second largest type of stakeholders – professional bodies and networks – represented a larger variety of countries, namely Germany, Bulgaria, France, Greece, Italy, UK, Spain, and two pledges were made by European organisations.
- Social partners were either from Western European countries (Belgium, France, Switzerland and Denmark) or European social partners.

**Figure 2.3: Number and percentage of pledges by groups of stakeholders\***



\* Note: Two organisations have dual status – one is a non-profit organisation and one is a professional organisation, both of which also provide education services. Thus, the total number of pledges is 58 and not 56.

Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>73</sup> and [database of pledges in the construction sector](#)<sup>74</sup>.

The pledges also vary in terms of number of partners involved and the degree of specificity in defining the scope of the intended partnership (see Table 2.1 below).

**Table 2.1: Pledges by number of partners involved**

No. of partners involved	No. of pledges
1-5 clearly identified partner organisations	23
10 -15 partners	4
50-5000 partners	6
Abstract indications of intentions to cooperate (no concrete number of partners)	22
No partners specified	1

Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>75</sup> and [database of pledges in the construction sector](#)<sup>76</sup>.

Out of the total number of construction sector pledges, 18 have made sector-wide commitments. A specific sub-sector of their commitments can be identified in 42 pledges (see Table 2.2).

<sup>73</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>74</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mx=50> [accessed 12-10-2017]

<sup>75</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>76</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mx=50> [accessed 12-10-2017]

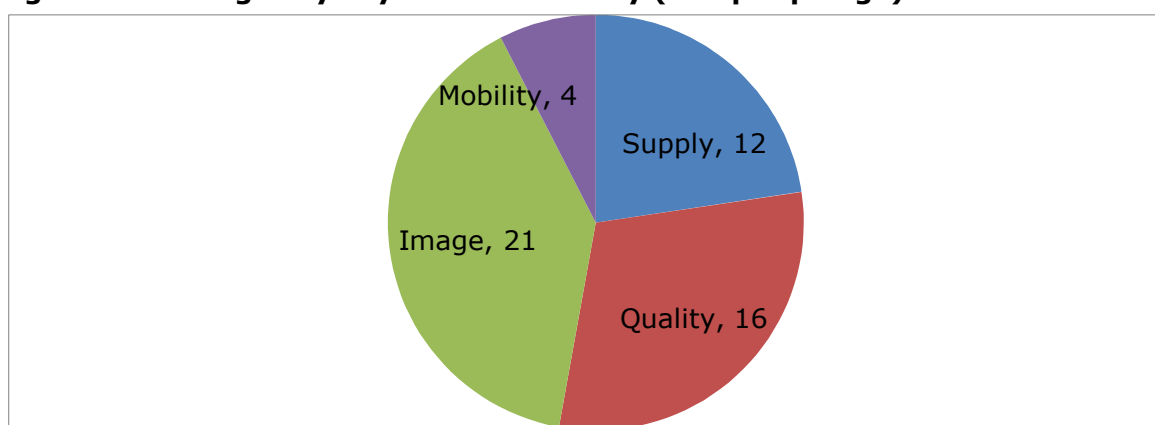
**Table 2.2: Pledges by construction sub-sectors (NACE Rev.2 classification)\***

SECTION F – CONSTRUCTION			
Division	Group		No. of pledges
41		Construction of buildings	20
42		Civil engineering	10
43		Specialised construction activities	17
	43.1	Demolition and site preparation	4
	43.2	Electrical, plumbing and other construction installation activities	7
	43.3	Building completion and finishing	12
	43.9	Other specialised construction activities	5

\* Pledges often cover more than one sub-sector. A specific sub-sector of their commitments can be identified in 42 pledges

Source: Visionary Analytics consortium based on: an online survey of the members of European construction sector associations, Dec 2016 – Jan 2017, number of respondents: 28; the publicly available Commission's [database of EAfA all pledges](#)<sup>77</sup> and [database of pledges in the construction sector](#)<sup>78</sup>; and the [NACE Rev.2 classification of economic activities](#)<sup>79</sup>.

The majority of pledges (44) indicated that they target more than one out of four areas of improvement of apprenticeships formulated by the European Alliance for Apprenticeships (EAfA) (quality, supply, image, and mobility): 18 pledges targeted two areas, 19 pledges targeted three areas, and seven pledges targeted all four areas. However, the main area of activities can be identified in the majority of pledges (Figure 2.4).

**Figure 2.4: Pledges by key areas of activity (one per pledge)\***

\*A main area could not be identified for three pledges (one from the Brussels region (Belgium), one from Germany and one from the UK). They allocated equal attention to three areas – supply, quality and image of apprenticeships.

Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>80</sup> and [database of pledges in the construction sector](#)<sup>81</sup>.

The pledges differ in terms of the four stages of the life cycle of apprenticeships that they aim at improving (recruitment and selection, training and assessment, support during the apprenticeship, completion and follow-up (Figure 2.5). About two-thirds of

<sup>77</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>78</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mxi=50> [accessed 12-10-2017]

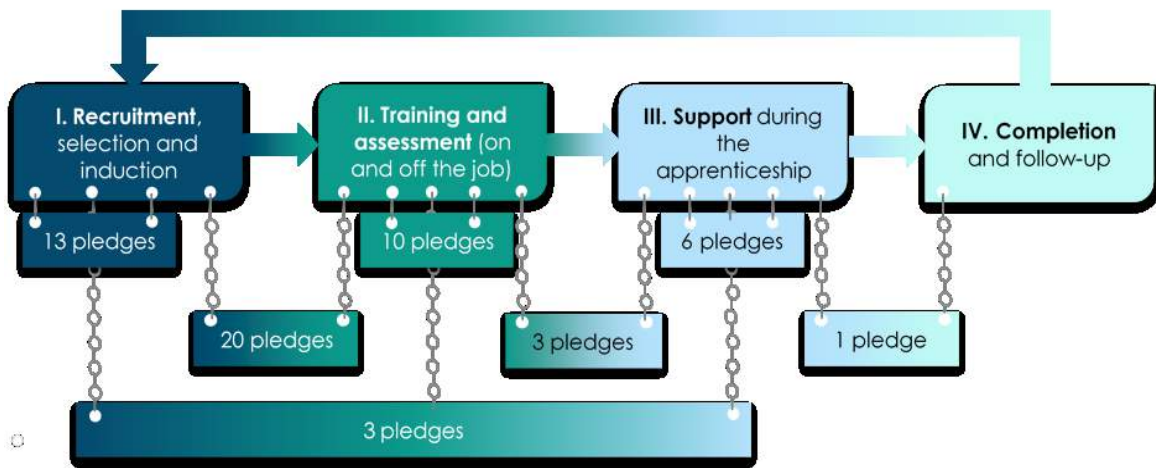
<sup>79</sup> Eurostat, *NACE Rev. 2. Statistical classification of economic activities in the European Community. Methodologies and Working Papers*, Luxembourg: Office for Official Publications of the European Communities, 2008.

<sup>80</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>81</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mxi=50> [accessed 12-10-2017]

the pledges (42) are oriented towards the first two stages of the life cycle (13 towards recruitment, 10 towards training, and 20 towards both recruitment and training). Six pledges are focused on support during the apprenticeship, three pledges pay attention both to the training and support stages, and three pledges cover the three first stages (recruitment, training, support). Only one pledge has targeted both the support and completion stages (see Figure 2.5).

**Figure 2.5: Number of pledges by targeted stages of life cycle of apprenticeship**



Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>82</sup> and [database of pledges in the construction sector](#)<sup>83</sup>.

### 2.3.2. General qualitative analysis of pledged activities

This section presents the contents of all 56 pledges – the issues addressed, activities (to be) carried out, and the quantitative targets of the commitments.

The issues that pledges seek to address correspond to the pledge-holders' motivation to participate in the campaign. The most common issue of pledges was the need to address the mismatch between the supply and demand of skilled workers and/or the shortage of apprentices (18 pledges). This corresponds to the main motivation indicated by stakeholders that participated in the online survey – to *attract more apprentices*. Changing the negative perception of the construction industry as a low-tech industry is the second most common issue addressed by the pledges (eight pledges). This issue is best tackled by *sharing good practices and ideas* and working to *make a difference*. A high priority for vocational education and training (VET) and apprenticeships on national and/or European level agendas is also a common issue stated in pledges (seven pledges). These pledges indicated ambitions to undertake the following *agenda-setting activities* in order to promote apprenticeships: persuading others to make pledges, promoting the exchange of good practices, keeping discussions focused on apprenticeships, lobbying for the effectiveness of the apprenticeship system, expanding apprenticeships as an innovative initiative, contributing to the implementation of European strategies and so on.

There were also some other observable trends with regard to more specific issues addressed by the pledges (Table 2.3. Most often the pledges focused on the system-level challenges of the construction sector, whereas some pledges addressed more

<sup>82</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>83</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mx=50> [accessed 12-10-2017]



apprenticeship-specific issues, e.g. inclusiveness, image of apprenticeships, quality of training, or the mobility of apprentices.

**Table 2.3: Issues addressed by the pledges\***

Issues addressed	No. of pledges	Country(-ies) covered
Addressing the mismatch between the supply and demand of skilled workers and/or the shortage of apprentices	18	Europe, BE, DE, ES, IT, DK
Changing the negative perception of the construction industry as a low-tech industry	10	DE, ES
Agenda-setting to promote apprenticeships	7	Europe, BE, DE, EL, FR
Enhancing an overall positive image of professions in the construction sector		DE, CH
Integrating migrants into the labour market	5	DE, DK
Tackling system-level challenges (e.g. aftermath of the 2008 financial crisis, climate change, demographic and mobility challenges)	4	FR, DE
Increasing the mobility of apprentices	4	BG, ES, DE
Training skilled workers	4	DE
Promoting women in construction apprenticeships	3	Europe, DE, UK
Improving occupational health and safety of apprentices in the construction sector	2	DE, IT
Greening of the construction industry	2	DE
Promoting early vocational guidance	2	DE
Professionalising the construction sector by promoting high-quality training	1	FR
Facilitating administrative tasks for contracting apprenticeships	1	BE
Preventing a high number of dropouts	1	DE
Enhancing the quality of training provided by the employer	1	DE
Enhancing the quality of the whole apprenticeship cycle	1	DE

\* Pledges might have addressed multiple issues (especially in cases when a clear priority issue could not be identified).

Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>84</sup> and [database of pledges in the construction sector](#)<sup>85</sup>.

The 56 pledges also foresaw more or less concrete **activities** to be carried out<sup>86</sup>. The typology of the most common activities is provided in Table 2.4. Pledges usually included the provision of additional apprenticeship placements, activities related to training and/or PR activities and involvement in various events. Less common activities concerned research, the establishment of new pilot projects or networks related to the promotion of apprenticeships.

The results of the online survey of pledge-holders somewhat correspond to the main trends of the pledged activities. The majority of pledges (10 out of 26 responses) indicated that they are working on activities promoting apprenticeships or that they are carrying out public awareness campaigns (12 out of 26 responses). However, only a small number of pledges (five out of 15) that responded to the relevant survey question indicated that they had created new apprenticeship places. However, an

<sup>84</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>85</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mxi=50> [accessed 12-10-2017]

<sup>86</sup> Four German pledges from different organisations were almost identical in content – they noted vague indications of efforts to improve the quality of training and organise modern and targeted information and advertising campaigns in collaboration with partner organisations.

additional four respondents indicated that they planned to create new apprenticeship places. A sixth of all respondents (eight out of 26) indicated that they were carrying out activities to improve training programmes, which somewhat corresponds to a fifth of all pledges that pledge similar activities.

**Table 2.4: Typology of activities to be carried out\***

Activities to be carried out	Present in a no. of pledges
Provision of additional apprenticeship placements	25
Communication (PR) activities to promote apprenticeships	22
Organisation of or participation in various events (e.g., competitions, open day visits, training events, awards, etc.)	15
Improvement of training activities (e.g., introduction of new programmes or learning resources, provision of or participation in additional training, etc.)	13
Research on the needs of the construction industry in the area of apprenticeships	4
Establishment or monitoring of pilot projects in the area of apprenticeships	2
Establishment of new networks related to the promotion of apprenticeships	2
Getting involved in state-run programmes related to apprenticeship provision	1
Monitoring effects induced by the pledged actions	1
Establishing new facilities/support structures for implementing apprenticeships	1
Reinforcing cost-sharing mechanisms	1
Facilitating the mobility of apprenticeships	1

\* Pledges might have included multiple activities.

Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>87</sup> and [database of pledges in the construction sector](#)<sup>88</sup>.

Activities can also be grouped by their **target audiences** (Table 2.5). The majority of activities targeted (potential) apprentices, while a significantly smaller number of pledges targeted their member organisations or actors outside of their organisations (17 and 6 pledges respectively). A handful of pledges (five) targeted stakeholders at the decision-making level (both at national and European levels).

**Table 2.5: Typology of activities by target audience\***

Activities by target audience	Present in a no. of pledges
Activities targeted at (potential) apprentices (e.g., providing new apprenticeship places, improving the conditions of apprentices, etc.)	47
Activities targeted at actors outside of their organisations (e.g., companies, schools, the broader public, etc.)	17
Aims to influence their member organisations	6
Discussions about VET and/or apprenticeship issues with stakeholders at the decision-making level (e.g., with social partners, national governments, European institutions)	5

\* Pledges might have included multiple activities that target more than one audience. Source: Visionary Analytics consortium based on the publicly available Commission's [database of EAfA all pledges](#)<sup>89</sup> and [database of pledges in the construction sector](#)<sup>90</sup>.

<sup>87</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

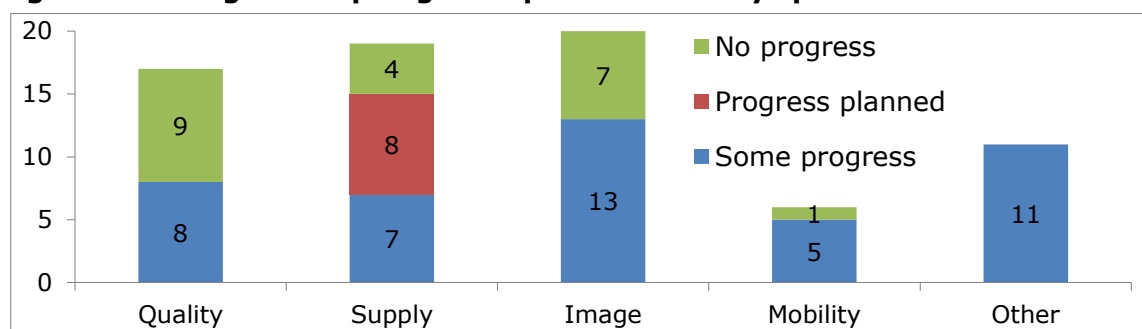
<sup>88</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mx=50> [accessed 12-10-2017]

More than half of all pledges (32) had concrete **quantitative targets** – usually, they committed to increasing or maintaining their current number of apprentices (28). Three pledges committed to place a number of apprentices in another country or host apprentices from other countries, one pledge to train a number of migrants as apprentices and another to encourage a high number of members of their association to submit a pledge. The remaining pledges had qualitative targets without concrete indicators to measure their success. A more detailed overview of pledged activities with both qualitative and quantitative targets is presented in section 2.3.3 below.

### 2.3.3. Area specific qualitative analysis of implemented construction pledges

This section presents the analysis of 32 pledges that reported on their implementation progress via the online survey or telephone interviews for conducting selected case studies. All organisations indicated the area(s) of action they were working on in their pledges. However, the activities actually implemented differed from the pledges – some pledge-holders indicated that they had achieved no progress in one or more areas that their pledge had targeted (Figure 2.6).

**Figure 2.6: Progress of pledges' implementation by specific area**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (26 respondents), May – June 2017.

The sections below present an overview of the implemented activities of pledges by pledged activity<sup>91</sup>:

- 22 pledges focusing on quality of apprenticeships (analysis based on 17 survey answers and five case studies)
- 22 pledges focusing on supply of apprenticeships (analysis based on 19 survey answers and three case studies)
- 25 pledges focusing on image/attractiveness of apprenticeships (analysis based on 20 survey answers and five case studies)
- Six pledges focusing on the mobility of apprenticeships (analysis based on six survey answers and one case study)
- 14 pledges focusing on other areas of apprenticeships (analysis based on 11 survey answers and three case studies).

### Quality of apprenticeships

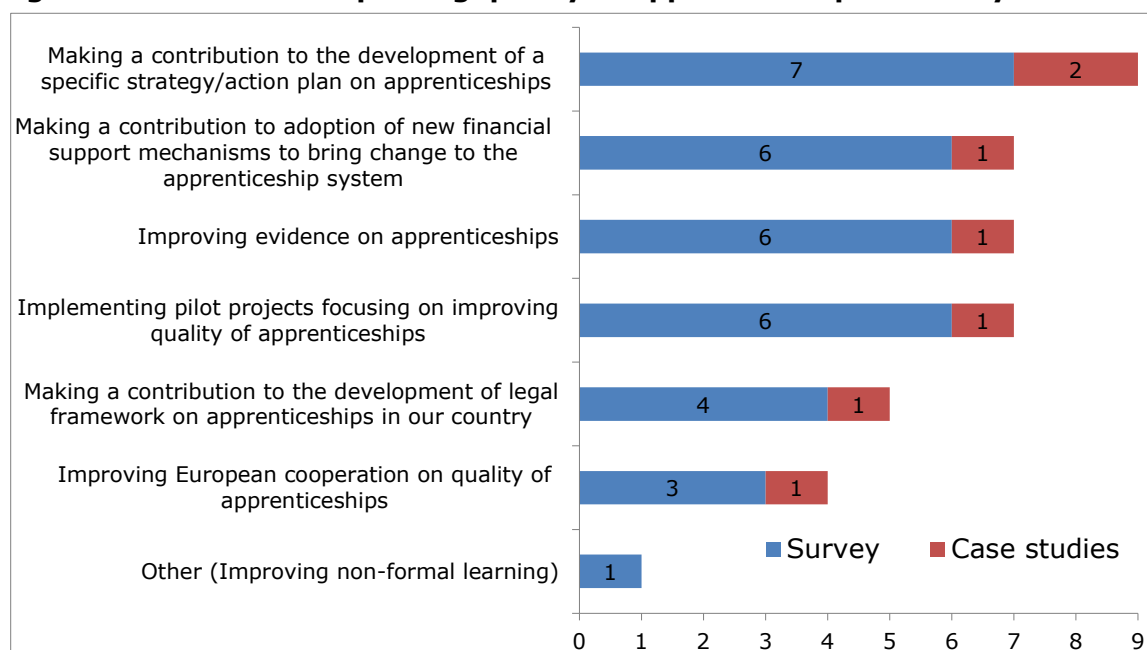
Seven types of activities improving the **quality of apprenticeships** were identified **at the system level**, i.e. activities that mostly concern governance and the financing of apprenticeships at a national policy level (Figure 2.7).

<sup>89</sup> <http://ec.europa.eu/social/main.jsp?catId=1149&langId=en> [accessed 12-10-2017]

<sup>90</sup> <http://ec.europa.eu/growth/sectors/construction/apprenticeships/?page=1&mxi=50> [accessed 12-10-2017]

<sup>91</sup> Note: Not all pledges focused on all four areas of apprenticeship. Different pledges were included in different case studies. That is why the number of case studies that were used for the analysis differs.

**Figure 2.7: Activities improving quality of apprenticeships at the system level**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (13 respondents). May – June 2017; case studies.

These activities can take various forms of practical implementation. *Making a contribution to the development of a specific strategy/action plan on apprenticeships* can be accomplished by advocacy and lobbying and is materialised in the form of:

- Monitoring pilot projects and providing recommendations for decision-makers about the needs of the construction sector
- Adapting national and EU frameworks (esp. for sustainable construction) for practical use
- Developing new apprenticeship standards

*Improving evidence on apprenticeships* can take the form of carrying out evaluation studies or developing apprenticeship monitoring systems. *Establishing new training programmes/schemes or monitoring pilot projects* can help to implement pilot projects focusing on improving the quality of apprenticeships. *European cooperation on the quality of apprenticeships* can be improved by discussing issues of the quality of apprenticeships in multi-national stakeholder environments (e.g. European social dialogue committee for construction, European Parliament, etc.).

The activities of **Bouwunie (Flanders, Belgium)** are exemplary of the construction sector stakeholders' efforts to contribute towards improving the quality of apprenticeships at the system level. They have successfully implemented five out of six of the above-mentioned types of activities, including the *development of a specific strategy/action plan on apprenticeships* and *implementing pilot projects focusing on improving the quality of apprenticeships*. These two activities are presented in Box 2.1.

**Box 2.1: Activities by Bouwunie focusing on the quality of apprenticeships at a strategic level**

**Social partnership for quality apprenticeships**

As a new contract replaced old apprenticeship contracts, Bouwunie (a national social partner – employers' association in Belgium) is currently working on a new sectoral partnership that would follow-up on all of the new requirements for taking on apprentices (e.g. revised



working hours, wages, holidays, screening procedures for companies, etc.). This partnership would include a wide variety of parties, including representatives of employees and employers, as well as all types of VET providers. The bylaws of the sectoral partnership have been recently completed. The official start of the partnership was foreseen for the end of 2016. The main focus of this partnership will be the screening of companies to determine whether they are qualified to take on an apprentice.

### ***Implementing pilot projects focused on improving the quality of apprenticeships***

Bouwunie is monitoring the implementation of the experimental bricklayer training programme in the construction sector that started in September 2016. The final results of this programme should be evaluated after the programme has run for a year. Based on these results, Bouwunie plans to draft its recommendations for improving the new apprenticeship system.

Source: Visionary Analytics consortium based on the case study 'Monitoring reforms of dual VET'

*Contributions to the adoption of new financial support mechanisms, improving evidence on apprenticeships, and implementing pilot projects focusing on improving the quality of apprenticeships* were all common activities at the system level. Activities by the **Fédération Nationale des Travaux Publics (FNTP, France)** illustrate activities related to supporting apprenticeship financing (Box 2.2).

### **Box 2.2: Making a contribution to the adoption of new financial support mechanisms to bring change to the apprenticeship system**

#### ***Supporting apprenticeship financing***

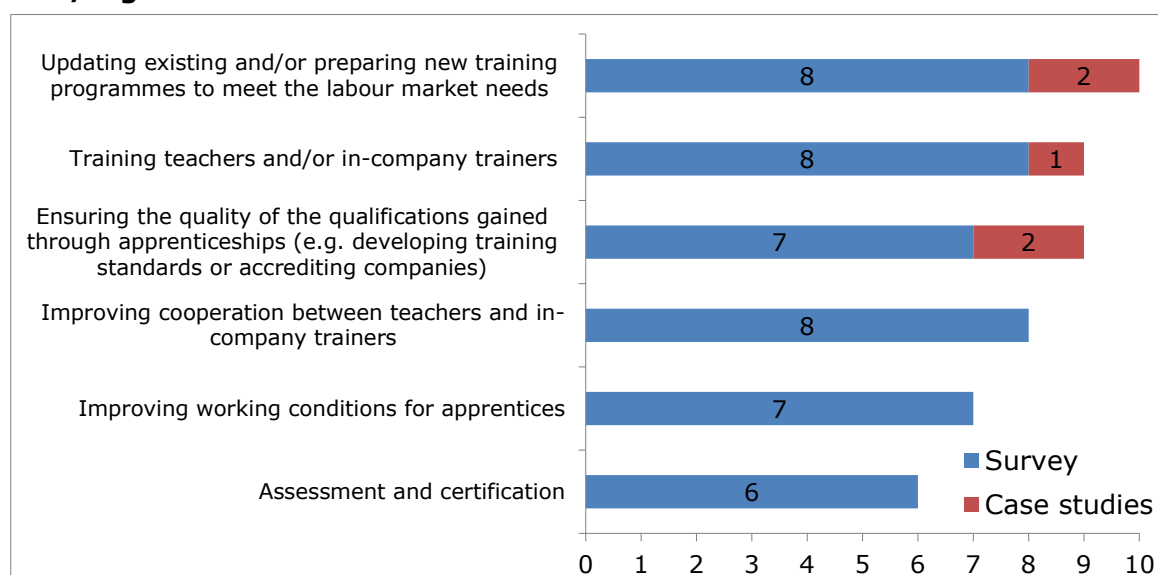
Even though FNTP (a French professional organisation) did not have any control over the budget income from this tax and could not influence tax distribution ratios (the VET system in France is financed through national training funds. The funds are collected and distributed by nationally approved institutions in order to finance various vocational training needs), it was able to encourage enterprises to allocate part of their apprenticeship tax to institutions that provide training for professions in public works. Based on active advocacy, FNTP contributed to increasing financial support for apprenticeships in public works. In addition, there are many minor regulations that affect the distribution of financial resources that can in fact be modified. FNTP negotiated with regional authorities over such regulations and, by doing so, also affected how the apprenticeship tax is distributed.



Source: Visionary Analytics consortium based on the case study 'Supporting financing of apprenticeships'.

Six types of activities improving the **quality of apprenticeships at the local/organisational level** were emphasised by pledge-holders (see Figure 2.8 below).

**Figure 2.8: Activities improving the quality of apprenticeships at the local/organisational level**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (eight respondents), May – June 2017; case studies.

One of the most popular activities among pledgers regarding *updating existing and/or preparing new training programmes to meet labour market needs* is developing and delivering additional training modules/courses, often related to sustainable and energy-efficient construction, for trainers in construction companies and in inter-company vocational training centres. *Training teachers and/or in-company trainers* is possible by accomplishing many different activities, for example:

- Developing new training content (e.g. holistic sustainable training, renewable energy, energy efficiency)
- Developing new training materials (e.g. mobile applications)
- Peer grouping (i.e. facilitating cooperative exchanges by grouping trainers who train in the same professions and within the same problematic areas during training)

*The quality of the qualifications gained through apprenticeships* (e.g. developing training standards or accrediting companies) can be ensured, for example, with the help of sectoral partnerships for observing requirements for companies or new training sites (e.g. building simulation sites). *Cooperation between teachers and in-company trainers* can be improved by facilitating continuous feedback from all groups involved in apprenticeship (i.e. VET schools, companies, apprentices). The most common activities for *improving working conditions for apprentices* focus on improving occupational health and safety. Lastly, *assessment and certification* can improve the quality of apprenticeships by, for example, accrediting training centres with new standards of occupational health and safety.

Pledge-holders most frequently *updated existing and/or prepared new training programmes to meet labour market needs*. Activities by **Πανελλήνια Ένωση Διπλωματούχων Μηχανικών Εργοληπτών Δημοσίων Έργων (PEDMEDE, Greece)** (at the local/organisational level, Box 2.3 below) illustrate these activities.



**Box 2.3: Updating existing and/or preparing new training programmes**  
***Establish training programmes targeted at SMEs***

PEDMEDE (a Greek professional organisation) receives and thoroughly reviews applications from students studying at the National Technical University of Athens (NTUA) and evaluates their submissions. Organisation members conduct multiple interviews with applicants in order to clearly determine their needs, interests and capabilities. This leads to a better match between companies and students. The students then begin working at a particular company, most often an SME with no more than 10-50 employees, which constitutes a highly personalised environment. The companies are required to assign a tutor responsible for supervising the apprentice and keeping a log of all of the apprentice's activities on the construction site. PEDMEDE provides guidance in choosing a tutor and instructions on how to keep track of all of the apprentice's activities. Such consistent tracking of an apprentice's activities allows the relevant persons to monitor and evaluate the progress of the apprentice and to use their experience to assess what works and what does not work within the scheme. This feedback may then be used to improve the scheme.



Source: Visionary Analytics consortium based on the case study 'Establishing new training programmes'.

Other common activities include *training teachers and or in-company trainers* and *ensuring the quality of the qualifications gained through apprenticeships*. These are illustrated by the work done by three pledge-holders – **Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V (BFW, Germany)**, **Fundación Laboral de la Construcción (FLC, Spain)** and the **Federation of Master Builders (FMB, United Kingdom)** respectively (Boxes 2.4 and 2.5 below).

**Box 2.4: Training teachers and/or in-company trainers**

***Developing and delivering training modules for trainers related to sustainable and energy-efficient construction***

BFW (an education and training provider in Germany) operates a competence centre for sustainable construction in the competence centre Cottbus that implemented the pledge. Cottbus is responsible for the development and delivery of three out of 13 training modules on sustainable construction for trainers: 1) technical and legal foundations associated with German energy-saving principles and regulations, 2) thermal bridges and methods for detecting them, 3) measuring air tightness. A special feature of the training modules is their problem-centred approach. The standard training of apprentices focuses on 'how to do things right', while the approach of the extra modules concentrates on 'what happens as a result of possible deficiencies', especially during cooperation between different trades. In the experience of the pledger, apprentices are often unaware of the long-term consequences resulting from small errors in their performance. The project's main starting point is to see the building as a unified system rather than as an assembly of different trades and techniques. Thus, it not only reflects the increasing requirements in terms of energy efficiency and sustainability, but also the increasing role of a technology stimulated cross-craft understanding in buildings.



Three training modules are delivered in Cottbus. Each module can be completed in one day by the trainers. Up to three more days per module are necessary for the trainers to put the obtained skills into practice in the companies. Since August 2016, 56 trainers had participated as of February 2017 in at least one of the three modules implemented by the pledge-holder.



### ***Innovative training materials to facilitate the learning and teaching process***

FLC (a Spanish professional organisation) is developing supporting materials to attract construction sector SMEs to participate in training programmes that include vocational training. For example, during their ERASMUS+ project *Co.Tutor*, a series of guidelines will be prepared, i.e. analysis and proposals for strategic solutions that may help to overcome difficulties to receiving apprentices that an SME may encounter, and to promote the figure of the in-company tutor – a key player for successful learning by the apprentice.



Source: Visionary Analytics consortium based on the case studies 'Integrated training modules for sustainable construction' and 'Innovative training tools'.

### **Box 2.5: Ensuring the quality of qualifications gained through apprenticeships (e.g. developing training standards or accrediting companies)**

#### ***Developing two new apprenticeship standards in bricklaying and plastering***

In line with apprenticeship reform in the United Kingdom, all apprenticeship standards must be converted into so-called 'trailblazers' by 2020. 'Trailblazers' are new apprenticeship standards and end-point assessment plans in a range of sectors that are developed by employer groups. FMB (a professional organisation), concerned that too many of these standards are being developed by large contractors, took the initiative and applied for permission to develop the two standards in bricklaying and plastering. FMB submitted the standards and the corresponding end-point assessment plans to the government by July 2016. FMB received feedback in November, 2016 and has been working on some amendments. It aimed to resubmit a revised version of the standards at the end of January 2017. In the case of success, the standards developed by FMB should be approved by February or March 2017. The next step concerns the communication of the new standards and assessment plans to training providers and colleges so that they can start working on the delivery of these programmes. As part of this communications campaign, FMB will be trying to promote construction apprenticeships to young people as well. FMB hoped that these standards will be ready for delivery by September 2017.



These actions have had a major impact in terms of ensuring the high quality of apprenticeships. By giving employers the power to design and deliver high-quality apprenticeships, employers are free to design apprenticeships based on skills that the industry needs. In addition, FMB's activities further the government's efforts to create three million apprenticeships by 2020 because more apprenticeships mean larger benefits to employers, apprentices and the economy.

Source: Visionary Analytics consortium based on the case study 'Contributing to the conversion of apprenticeship standards'.

Case studies also explore how education and training providers can help to *improve working conditions for apprentices and develop assessment and certification systems*. Activities by **ABZ Essen (Germany)** provide a concrete example of this (Box 2.6).

### **Box 2.6: Implementing a system of health and safety at work**

#### ***Setting new standards in the implementation of occupational health and safety***

ABZ Essen (an education and training provider in Germany) has opted for a certified Health and Safety at Work System (AMS). It is a form of worker protection system within an organisation that confirms the organisation's commitment to maintaining a safe and healthy working



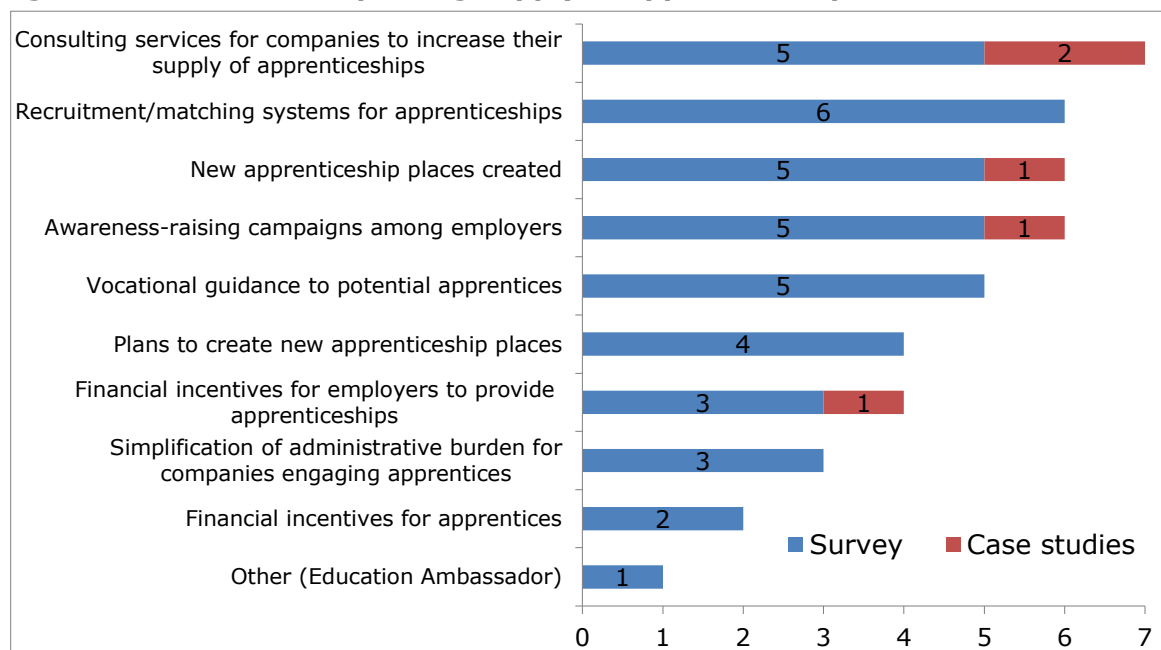
environment in the same way as quality management systems do. ABZ Essen succeeded in getting their occupational health and safety (OHS) system certified in 2007. This system is subject to continuous improvement and organisations must be re-certified every three years. The aim is to have OHS as a firmer component of a company's philosophy. ABZ Essen is still the only training institution in Germany with an AMS certification. All of the safety instructions, including the instructions on how to use every device and the responsibilities of each employee related to OHS, are outlined in a safety manual. This manual is reviewed during re-certification and assessed based on whether it has been updated in accordance to present day conditions. This review lasts one day at the end of which the inspector issues a decision whether the AMS certificate can be re-issued or not. The centre has been re-certified three times already and their current AMS certificate is valid until 2019.

Source: Visionary Analytics consortium based on the case study 'Addressing occupational health and safety issues in apprenticeships'.

### **Supply of apprenticeships**

Ten main types of activities improving the supply of apprentices were identified by pledge-holders during the online survey (Figure 2.9).

**Figure 2.9: Activities improving supply of apprenticeships**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (15 respondents), May – June 2017; case studies.

*Consulting services for companies to increase their supply of apprenticeships* can provide guidance to companies by:

- Defining the scope of the apprenticeship
- Determining the content and time outline of the scheme
- Evaluating the results of apprenticeship
- Determining the lessons learned at the end of the activity
- Informing companies of the benefits and opportunities of taking on various groups of apprentices (e.g. migrants, women)

*Recruitment/matching systems for apprenticeships* can also take different forms, for example:

- A website for publicising both apprenticeship vacancies and persons (their profiles) looking for apprenticeships.

- A cooperation mechanism between VET schools, companies and local authorities to find the best matching placement for an apprentice by distributing apprentices' profiles all over the country/region.

*New apprenticeship places* can be created by rolling out new training programmes, cooperating with universities to establish tertiary level dual study placements, or by taking advantage of various other national and European programmes that fund work-based learning initiatives. *Awareness-raising campaigns among employers* can vary from informational campaigns providing very general information about the existence and conditions of apprenticeship, to targeted campaigns, for example, aimed at encouraging employees to take on female apprentices. *Vocational guidance for potential apprentices* can also range from activities targeted from the very young (e.g. school fairs, company visits) to the older and more ready for some hands-on experience (e.g. voluntary social year placements to try out a new profession). *Financial incentives for employers to provide apprenticeships* can result not only in the achievement of the distribution of financial incentives for employers, but can also turn into activities of less direct impact to the finances of companies, such as carrying out promotional campaigns to lobby for a redistribution of apprenticeship tax more favourable to construction companies. *Simplification of administrative burden for companies engaging apprentices* can be achieved by building strong relationships between schools and enterprises through the support of a trusted third party (a single point of contact).

**The Danish Construction Association (DCA, Denmark)** is an exemplary pledge focused on the supply of apprenticeships. They have successfully implemented three out of 10 of the above-mentioned types of activities, including the most common one of *consulting for companies*. Their activities are presented in Box 2.7 below.

#### **Box 2.7: Activities by DCA focusing on the supply of apprenticeships**

##### ***Consulting services for companies to increase their supply of apprenticeships***

DCA (a Danish national social partner – employers' association) communicates the challenges migrants may face to construction companies in order to support migrant integration into the apprenticeship system. DCA also informs companies of the possibilities that are available to them if they hire a migrant, as well as different bonuses attached to hiring a migrant.



##### ***Recruitment/matching systems for apprenticeships***

DCA works with municipalities in order to match the profiles of young persons who are looking for apprenticeships with companies that are looking for apprentices. DCA emails the apprentices' profiles prepared by the apprentices and VET schools to companies. After that, a match is finalized when the young person visits the company with which he/she is matched. This system of distribution of apprentices' profiles in each municipality helps to address area-specific issues - while in some parts of the country companies are experiencing shortages of learners interested in their trade, in other parts of the country the supply of apprenticeship placements is not enough to match the high demand of apprenticeships in some construction trades.

##### ***Financial incentives for employers to provide apprenticeships***

DCA has been working with the government and social partners to make the hiring of apprentices as simple as possible. The association managed to achieve a substantial agreement in August 2016 that reduced the costs of hiring apprentices by imposing an increased fee for companies that do not have apprentices and, respectively, an increased reimbursement for companies who do take on apprentices.

Source: Visionary Analytics consortium based on the case study 'Integration of migrants into the labour market', Case study from EAfA evaluation 'The Danish Construction Association' (European Commission 2017c).

The other most common activities include *setting up/implementing recruitment/matching systems for apprenticeships, awareness-raising campaigns among employers* and the *creation of new apprenticeship places* (e.g. Box 2.8). Pledge-holders report having created (or having plans to create) a small number of apprenticeship placements (approx. 1-3), while a couple of pledge-holders reported having created 15-20 placements.

### **Box 2.8: Awareness-raising campaign among employers**

#### ***Informing members about the state-of-play of apprenticeship reform***

Bouwunie (a Belgian national social partner – employers' association) has been thoroughly communicating new information regarding changes on the conditions and provision of apprenticeships (incl. new regulations, requirements for apprenticeships, financial benefits, etc.) to its members. For example, in August 2016, all members were informed about the new contract for dual learning launched by the government at the beginning of September 2016.



Source: Visionary Analytics consortium based on the case study 'Monitoring reforms of dual VET'.

*Vocational guidance* is an established practice in Germany that yields positive results for apprentices deciding on their future training path. **Karl Heinz Stevens Bedachungen GmbH & Co. KG (Germany)** and **Stuck Belz Inh. Michael Christmann (Germany)** are both great examples of small businesses that offer vocational guidance to young people in different forms (Box 2.9).

### **Box 2.9: Providing vocational guidance to potential apprentices**

#### ***Voluntary social service placements***

The German company Stuck Belz (specialising in stucco and plastering works) often carries out conservation works in buildings that are protected as historical monuments and participates in the provision of social year placements that are organised by large social institutions, charities and NGOs in cooperation with companies. Young persons interested in conservation activities have the opportunity to learn the relevant techniques in the company during a period of up to one year. The training happens both at real construction sites and at the company, using mock-ups. Work in the company also alternates with seminars provided by the youth masons' guilds of North Rhine-Westphalia (*Jugendbauhütten NRW*). The volunteers get the opportunity to see whether work in plastering and building conservation is the right occupational choice for them.



Through this activity, Stuck Belz attracted a new apprentice in late 2016 – the apprentice intends to continue working with the company after completing his training. For him, the voluntary social year was an important step in the process of vocational orientation and in finding the right training occupation among a wide array of crafts occupations. In 2017, two more young people started a voluntary social year in monument protection in cooperation with Stuck Belz.

#### ***Local school fairs for occupational orientation***

Karl Heinz Stevens Bedachungen (a German roofing company) participates in a local school fair for VET orientation, where occupational groups present themselves to schoolchildren one year before they become eligible to start an apprenticeship. The company presents the training occupation of roofing



together with a local brick company due to their close personnel and business relations. The activities at the school fair are supported by the Regional Roofers Association (*Dachdecker Verband Nordrhein*), which provides some exhibition material for the school fair. This activity is considered to be a success because of the substantial interest that schoolchildren show during the fair.

Source: Visionary Analytics consortium based on the case studies 'Vocational guidance via voluntary social work placements' and 'Promotion of roofing to young people'.

A less commonly implemented, yet very important activity of *simplifying administrative burden related to apprenticeships* is exemplified by the **Confédération Construction Bruxelles-Capitale (CCBC, Brussels, Belgium)** that has undertaken an intermediary role between companies, apprentices, general education and VET schools to facilitate the implementation of apprenticeships (Box 2.10).

#### **Box 2.10: Simplification of administrative burden**

##### ***Single contact point for schools and businesses on the implementation of dual VET***

CCBC (a social partner – employers' association in Belgium) has appointed a single person within the organisation to assist SMEs in various management tasks in relation to apprenticeships, such as finding financial support or filling out application forms. CCBC emphasises the importance of establishing trust between stakeholders involved in dual training and therefore seeks to ensure that entrepreneurs can always contact the same person for help. Furthermore, this person attends construction sites in order to resolve any communication problems between companies and VET schools as well as to follow-up on individual apprentices.

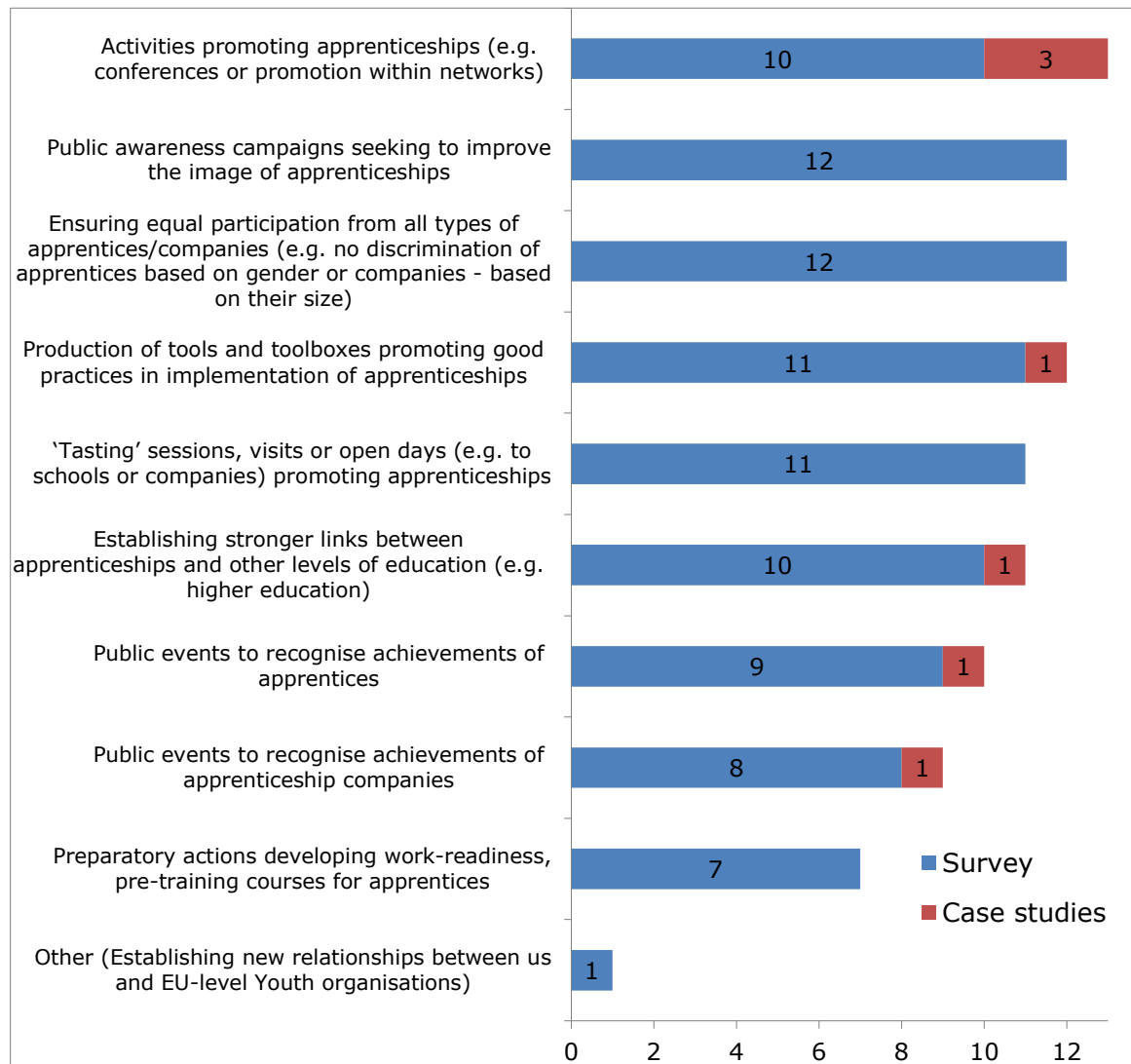


Source: Visionary Analytics consortium based on the case study 'Single point of contact'.

#### ***Image/attractiveness of apprenticeships***

Eight main types of activities improving the image/attractiveness of apprentices were identified during an online survey of construction pledge-holders (Figure 2.10).

**Figure 2.10: Activities improving the image/attractiveness of apprenticeships**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (13 respondents), May – June 2017; case studies.

*Activities promoting apprenticeships* can take the form of various events, such as conferences, exhibitions, dinner-debates, or may be implemented with the help of communication tools, for example, newsletters, media, press releases, position papers etc. *Public awareness campaigns seeking to improve the image of apprenticeships* could centre on communication activities with the general public, schools and businesses (e.g. site visits, website, brochures, briefings). Activities dedicated to *ensuring equal participation from all types of apprentices/companies* (e.g. *no discrimination of apprentices based on gender, no discrimination of companies based on their size*) can vary from the public promotion of equality in apprenticeships to very concrete tools to promote equality, for example, access to language training for migrants, online training suited to meet the fluctuating demand of some courses, implementing more flexible training arrangements (e.g. for working parents) and so on. *Production of tools and toolboxes promoting good practices in the implementation of apprenticeships* could be presented as step-by-step guides, for example, to encourage companies to support apprenticeships.

*'Tasting' sessions, visits or open days (e.g. to schools or companies) promoting apprenticeships* can take various forms, for example:

- An exhibition about construction apprenticeships with a focus on energy efficient building and modernisation



- A programme where experienced apprentices visit schools and inform soon-to-be school leavers or future graduates about their training occupations and their companies
- A company visit for kindergarteners, where children can participate in various activities, for example, try their manual dexterity by processing slate
- A school fair for VET orientation where occupational groups present themselves to schoolchildren before they become eligible to start an apprenticeship

Dual study programmes are a very popular measure aimed at *establishing stronger links between apprenticeships and other levels of education*. *Public events to recognise the achievements of apprentices* often take the form of international or national skills competitions or awards that include categories for honouring the apprentices of the year. Similarly, *public events to recognise the achievements of apprenticeship companies* often take the form of awards including categories for honouring the apprentices' companies of the year. Lastly, *preparatory actions developing work-readiness, pre-training courses for apprentices* may be short-term internships for children aimed at early vocational orientation.

Most common activities in the area of image/attractiveness of apprenticeships were those directed at *promoting apprenticeships* to interested parties, including conferences or other types of promotional activities. The pledge by **Berufsförderungswerk der Bauindustrie NRW gGmbH Ausbildungszentrum Hamm (ABZ Hamm, Germany)** included an innovative way to use exhibitions to present construction professions to interested persons in an attractive way (see Box 2.13 below).

*Public awareness campaigns* that focus on the broader public (not only those interested in construction apprenticeships) are also a common type of activity implemented by pledges working on bettering the image of apprenticeships. A photo exhibition by the **European Builders Confederation (EBC, Europe)**, hosted at several European Union institutions, is a good example of such an activity. (Box 2.11).

**Box 2.11: Public awareness campaign to improve the image of apprenticeships**

***Exhibition and a dinner-debate on equal opportunities for young people and women in construction***

The events were organised on the occasion of EBC's 25th anniversary. EBC (a professional organisation) set up a single day exhibition of 22-24 photographs with stories from young people and women on their experiences from working in the construction sector: what challenges they encountered, what prospects they saw for the future and so on. The exhibition was organised as part of a dinner on the 13<sup>th</sup> of October, 2015 at the European Parliament. The event was attended by about 120 people including members of the European Parliament (MEPs) and their assistants. The presentation was sponsored by four MEPs from the UK, Portugal, France and Italy, who represented two different political groups and multiple committees of the EP.



Source: Visionary Analytics consortium based on the case study 'Promoting construction apprenticeships to women'.

*Ensuring equal participation from all types of apprentices/companies* in apprenticeships is also a popular issue that the pledges tackle. EBC also works on spreading awareness on the lack of women in construction trades and the need to attract more youth to these professions. The confederation dedicated their annual conference to shedding some light on these issues (Box 2.12).



## **Box 2.12: Ensuring equal participation from all types of apprentices/companies**

### ***EBC Annual Conference***

The EBC Annual Conference took place in Geneva, 19 June 2015. Approximately 60 to 70 people attended the conference, including Swiss entrepreneurs and representatives of the Swiss government, as well as journalists. The conference was devoted to the topic of the inclusion of women and young people in the construction trades. The conference explored different ways to achieve this goal, such as apprenticeship and the role of social partners. The conference resulted in a consensus between the EBC's members to make the sector more inclusive for both women and young people. This is an important development, as the issue of gender inclusiveness in construction apprenticeships has had somewhat little priority among construction professional organisations. The conference helped put more emphasis on and draw attention to these issues, as more and more associations across Europe are now encouraged to think about these issues.



Source: Visionary Analytics consortium based on the case study 'Promoting construction apprenticeships to women'.

*Production of tools and toolboxes promoting good practices in the implementation of apprenticeships* were widely implemented by the pledge-holders. So were *'tasting' sessions, visits or open days* – such events are popular where the tradition of vocational guidance is more established. Both **Karl Heinz Stevens Bedachungen** and **Stuck Belz** are good examples of such activities (see Box 2.13).

## **Box 2.13: Activities to promote apprenticeships**

### ***An exhibition-roadshow about construction apprenticeships***

ABZ Hamm (an education and training provider in Germany) hosted an exhibition that was displayed as different parts of a house in order to show the different trades and techniques relevant in construction. The exhibition was created as a roadshow to be hosted at different inter-company centres (ÜBS) and other learning institutions. There it could be visited by groups of young persons or individually. ABZ Hamm hosted the exhibition for a period of one month in November-December 2016. During this time, it allocated personnel for the exhibition and provided guided tours for groups. These groups consisted of learners of secondary schools in their last or penultimate year, as well as learners from the ÜBS. The aim of the exhibition was to attract pupils who potentially, after graduating from school, might enter the apprenticeship pathway in the construction sector. The exhibition was also used to give apprentices in the ÜBS an overview of sustainability aspects in their respective training occupations.



### ***'Ambassadors for Vocational Education'***

Stuck Belz (a German company specialising in stucco and plastering works) participates in the programme 'Ambassadors for Vocational Education' carried out by the association of business chambers in North Rhine-Westphalia. In this programme, experienced apprentices (usually in their last training year) visit schools and inform soon-to-be school leavers or future graduates about their training occupations and their companies. The company has developed an individual leaflet with information about available training opportunities (apprenticeships, internships, voluntary work placements) for the purposes of this programme.



### **Company visits for kindergarteners**

Karl Heinz Stevens Bedachungen (a German roofing company) invites kindergarteners to get in touch with their company. A group of 10 to 15 children visits their company every year. The children can participate in various activities, for example try their manual dexterity by processing slate. There has also been an attempt to guide such groups through a construction site, but the activity had to be cancelled due to safety concerns related to the presence of young children at a relatively dangerous construction site. The company expects that this activity will increase the fascination of young children with the construction sector (and for roofing in particular) early on in the process of vocational orientation.



Source: Visionary Analytics consortium based on the case studies 'Vocational guidance via voluntary social work placements', 'Promotion of roofing to young people' and 'Attracting young people to sustainable construction'.

Pledged activities aiming at *establishing stronger links between apprenticeships and other levels of education* contribute to increasing the permeability of training pathways. This is crucial in order to present apprenticeships as a well-integrated training pathway with flexible prospects for future education. **Handwerkskammer Aachen - Bildungszentrum BGZ Simmerath (BZG Simmerath, Germany), Heinrich Weber, Straßen- und Tiefbau GmbH & Co. KG (Germany) and Franz Trippe GmbH (Germany)** have all responded to the trend of young people leaning towards academic (tertiary level) qualifications instead of opting for apprenticeships by providing dual study programmes at the tertiary level (Box 2.14).

### **Box 2.14: Strengthening links between apprenticeships and other levels of education**

#### **Dual study programmes**

Dual study programmes provide opportunities for soon-to-be school leavers or future graduates interested in construction and possessing a qualification to gain access to university level education (*Abitur or Fachabitur*). Students can combine a Bachelor's degree in construction engineering (with a specialisation in network engineering) with various training occupations offered by regional companies.

BGZ Simmerath (a German inter-company vocational training centre of the Aachen chamber of crafts (*Handwerkskammer Aachen*)) provides a programme for a degree in Network Engineering that consists of managing the provision of buildings or other facilities with water, heating, electricity, telecommunication facilities and other basic services. Possible training occupations that can be combined with the programme are street builder, mason and concrete construction. The programme lasts 4.5 years. It is still small in size: in 2014, there were 12 students enrolled in this programme. BGZ Simmerath plans to expand the set of available dual study programmes by offering more specialisations and cooperating with other universities of applied sciences in order to attract more students. Currently, five students are combining studies at the university with an apprenticeship at a company and inter-company training at BGZ Simmerath.



Heinrich Weber GmbH & Co. KG (a German company focusing on street building and underground construction) has pledged to offer places for dual students in the company and is open to repeating this activity. The first dual student recently completed his studies (he gained a university-level qualification in construction engineering and the vocational training occupation of a street builder). He was hired by the company after completion of his education and is now working in a management position. Despite the fact that the apprentice did not visit a vocational school, his



performance in both his university studies and his apprenticeship were good.

Similarly, Franz Trippe GmbH (a German company focusing on street building, underground construction and landscaping) has offered a place for a dual student for the first time. This student is now in the middle of the process and is expected to have both degrees (a combination of construction engineering and street builder) by the end of 2018. The company has been satisfied so far, but criticises the high administrative burden created by dual study programmes (that change the status of participants from apprentice to student in the middle of the process). According to both companies, the main impact of dual study programmes is the possibility to attract apprentices with career ambitions and higher qualification levels.



Source: Visionary Analytics consortium based on the case study 'Dual study programmes in Germany'.

*Public events to recognise the achievements of apprentices or companies* are also widely used by companies, associations and training providers as a means to increase the attractiveness of apprenticeships. Vocational skills competitions and 'Apprentices/Companies of the year' awards are examples of such events. **Bildungszentren des Baugewerbes e.V. Krefeld (BZB Krefeld, Germany)** and **FMB** have hosted such events (Box 2.15).

#### **Box 2.15: Public events to recognise achievements of apprentices/companies** **Supporting training for contestants**

BZB Krefeld (education and training provider in Germany) has been supporting participants in competitions in construction for many years. It provides intensive training assistance in the run-up to international vocational skills contests. Training for the German construction national team includes a period of intensive, mostly practical training. BZB Krefeld had to make appropriate training venues available and implement the WorldSkills Germany training concept in order to be certified as a WorldSkills Germany training centre. The training centre of BZB Krefeld hosted the German Championships in Construction in 2015, where 70 young construction professionals from eight occupations participated.



#### **Hosting 'Master Builder Awards'**

FMB (a British professional organisation) holds the Master Builder Awards every two years. Nominations for the categories of 'Apprentice of the Year' and the 'Apprentice Employer of the Year' were launched in September 2016. Generally, they receive about 30-40 nominations every time. FMB encourages as many applications as possible. As this is a members-only award scheme, FMB can actively encourage their members to participate in submitting nominations. The nomination process was closed in January 2017 and the process moved to judging the nominations in a regional/devolved countries judges' panel that shortlisted the best entries. A national winner was then chosen from the nominations that won at the regional level. An award logo was provided to all regional and national winners with guidelines regarding its use. The Master Builder Awards Winner 2017 (builder category) won a Vauxhall Vivaro van worth up to £20,000 (approx. €23,690). The Master Builder Awards Winner 2017 (client) received a cheque for £1,000 (approx. €1,184), and the Master Builder Apprentice Winner 2017 – a cheque for £500 (approx. €592). The winners were announced on the 15<sup>th</sup> of September 2017. The awards are a good opportunity to get some publicity – FMB normally gets good press coverage for the event.

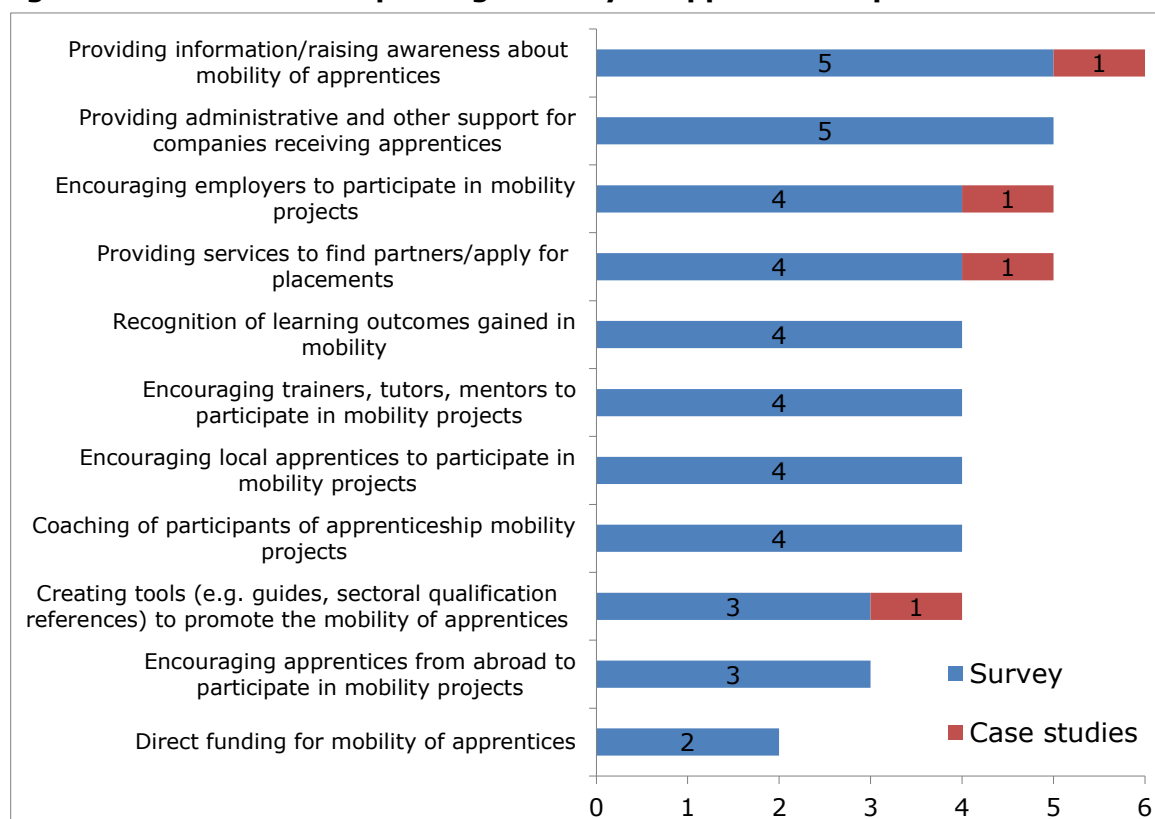


Source: Visionary Analytics consortium based on the case studies 'Vocational skills competitions in Germany' and 'Contributing to the conversion of apprenticeship standards'.

## Mobility of apprenticeships

The surveyed pledge-holders identified 11 main types of activities to improve the mobility of apprentices (Figure 2.11).

**Figure 2.11: Activities improving mobility of apprenticeships**



Source: Visionary Analytics consortium based on an online survey of pledge coordinators (five respondents), May – June 2017; case studies.

*Information/raising awareness about the mobility of apprentices* is a prerequisite for the success of any mobility scheme and should be included in every step of the mobility period, for example, starting with face-to-face meetings between the project coordinators and the learners and their parents.

*Administrative and other support for companies receiving apprentices* may, for example, include facilitating the process of selecting candidates for the scheme or organising cheaper accommodation for learners.

*Encouraging employers to participate in mobility projects* and *providing services to find partners/apply for placements abroad* can be implemented by national authorities and/or social partners by providing information about the possibilities and procedures of organising mobility placements.

National and regional authorities can get involved to facilitate the *recognition of learning outcomes gained in mobility*.

*Trainers, tutors, mentors*, as well as *local apprentices* or *apprentices from abroad* can be encouraged to participate in mobility projects by directly targeting a specific group in such projects and offering new training programmes (e.g. new building techniques) or materials (e.g. digitalisation of training).

*Coaching of participants of apprenticeship mobility projects* can also take innovative forms, for example, via mobile apps or with the help of augmented reality. *Tools to*

*promote the mobility of apprentices* can take the form of guides, sectoral qualification references, etc.

Lastly, *direct funding for mobility of apprentices* can be obtained from governments from all of the partner organisations, as well as via European calls for proposals.

**The Fundación Laboral de la Construcción (FLC, Spain)** is an exemplary pledge focused on increasing the mobility dimension of apprenticeships. They have successfully implemented three out of 11 of the above-mentioned types of activities (Box 2.16).

**Box 2.16: Activities by FLC focusing on the mobility of apprenticeships**

***Encouraging trainers, tutors, mentors to participate in mobility projects***

FLC (a Spanish professional organisation) has been involved in two mobility projects dedicated to training the trainers in the past couple of years. The Leonardo da Vinci project DUALCON sent a group of 18 training staff from FLC to Germany in May 2014 with the aim of learning from the German dual system and bringing the good practices of this system to Spain. The ERASMUS+ project DUALMOB was recently launched. In April 2017, a group of 20 training staff members from FLC should go to France to learn from the French training system with the aim of benchmarking strategies concerning the recruitment of companies for apprenticeship programmes.



***Encouraging apprentices from abroad to participate in mobility projects***

FLC aims to increase the mobility of apprenticeships both by sending and hosting trainees. As a sending organisation, FLC participated in a K1 ERASMUS+ mobility project approved by the Spanish National Agency. They sent eight trainees to Bari and 10 to Bologna in 2016 and plan to send 15 more to Vicenza in 2017. All of the mobility activities combine training sessions at a training centre and an apprenticeship at companies. As a hosting organisation, they hosted the study visit of two groups of Italian trainees (25 each) in 2014. In 2015, they organised the apprenticeships of 10 trainees from Portugal in a Spanish company. In 2016, they hosted the study visit of a group of 20 Italian trainees. Also in 2016, FLC hosted two trainees from Finland and a group of six Portuguese learners who spent a month at a Spanish construction company.

In addition, FLC is currently working in a strategic partnership to create an Android application for mobile devices to facilitate and improve learners' and teachers' mobility processes related to the construction industry in Europe. This is being done in the framework of the ERASMUS+ project SOMEX5. The project aims to develop an extensive tool-kit for the preparation, operation and post-processing of exchanges of trainees and staff using various mediums (e.g. social media) to improve mobility experiences.

***Creating tools (e.g. guides, sectoral qualification references) to promote the mobility of apprentices***

FLC continuously implements projects that facilitate the delivery of training in the construction sector. FLC has developed multiple mobile applications, some even including elements of virtual reality that facilitate apprenticeship training, mobility experiences and even the integration of migrants.

Source: Visionary Analytics consortium based on the case studies 'Increasing mobility of apprenticeships' and 'Innovative training tools'.

**The Камарата на строителите в България (БСС, Bulgaria)**, chambers of commerce, *encouraged local apprentices to participate in a mobility project* MobiPro



that is funded by the German government (Box 2.17). The project activities were implemented with German partners HDB (German Construction Industry Federation) and BiW BAU (a German training provider in the field of construction in the regions of Hessen and Thüringen).

### Box 2.17: Encouraging local apprentices to participate in mobility projects

MobiPro is a mobility project funded by the German government that supports the training of Bulgarian unemployed youth in Germany. The project began in 2015, before the pledge was made in 2016, with 30 participants in the mobility scheme. The first step of the project entailed intensive German language courses for the participants that took place in the period between February-July 2015. The courses were carried out by their partner organisation the International Centre for Education and Communication (IZBK) in Bulgaria. BCC (chambers of commerce) facilitated the language courses by providing facilities for the courses in their headquarters. Next, all of the participants had interviews with the companies organised in Bulgaria and travelled to Germany afterwards for a preparatory two weeks to conclude a contract with companies (mainly SMEs). Then, the German project coordinator organised a meeting with all selected participants and their families in Bulgaria to provide them with any necessary information about the process of the training in Germany, answering all questions from the selected participants and their parents. Afterwards, travel and accommodation arrangements were made and selected participants travelled to Germany to start their three-year dual learning.



КАМАРА НА СТРОИТЕЛИТЕ В БЪЛГАРИЯ  
BULGARIAN CONSTRUCTION CHAMBER

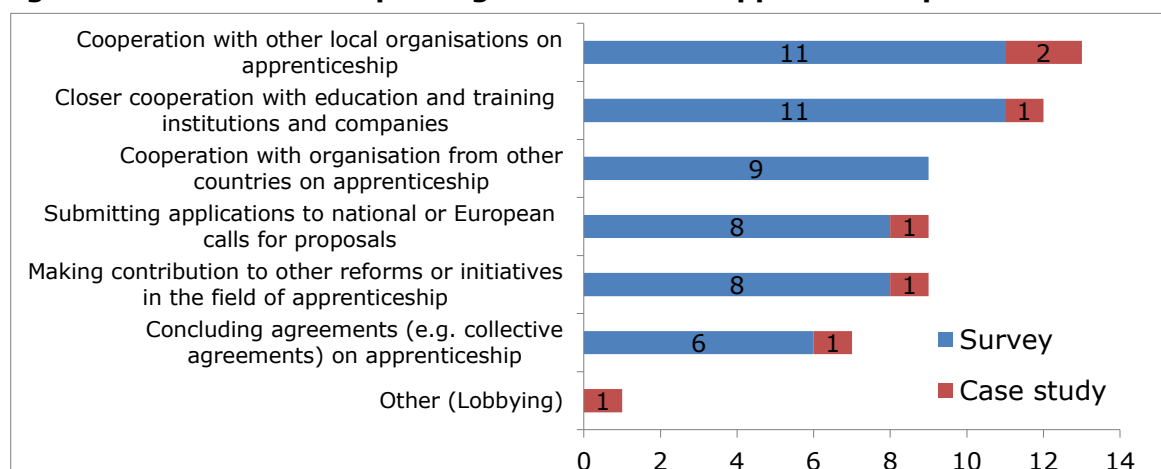
After the first year of training went by successfully, all of the project partners decided to recruit another 40 young people aged 23-27 from Bulgaria into the same mobility scheme. Currently, there are 30 learners from Bulgaria in the second year of their training and 40 learners in their first year of training. The first group is due to graduate in 2018 and the second group will graduate in 2019.

Source: Visionary Analytics consortium based on the case study 'Increasing mobility of apprenticeships'.

### Other areas of apprenticeship

Seven types of activities focusing on other areas of apprenticeship were identified in the online survey of pledge-holders (Figure 2.12).

Figure 2.12: Activities improving other areas of apprenticeship



Source: Visionary Analytics consortium based on the online survey of pledge coordinators (11 respondents), May – June 2017; case studies.

*Cooperation with other local organisations on apprenticeship* can take the form of:

- Cooperation with local training funds by encouraging their members to provide more high-quality apprenticeship places
- Cooperation between authorities (incl. regional councils), enterprises and professional bodies to monitor relevant trends and, subsequently, to promote apprenticeships in the most needed professions
- Support by industry associations and other (public) institutions by supplying materials for school fairs, company visits, etc.

*Closer cooperation with education and training institutions and companies* can also take various forms, for example:

- Broad networks initiated by VET campuses that are used to strengthen relations between stakeholders
- VET schools can collaborate in projects by testing new training resources produced during projects
- Including language centres to ensure that language courses prior to mobility experiences are comprehensive and successful.

*Cooperation with organisations from other countries on apprenticeship* can take the form of providing information for foreign and national stakeholders on national apprenticeship systems as a One-stop-Shop, roundtables to facilitate exchanges of knowledge and experiences, etc.

Lastly, *submitting applications to national or European calls for proposals* is one of the ways to ensure adequate funding for all project activities, which may also be used to encourage other stakeholders (e.g. companies) to participate in the projects more eagerly.

*Cooperation with local organisations and education and training institutions and companies* was most frequently mentioned as an additional activity that often turns into a success factor for the implementation of the pledge. The experience of **Stuck Belz** is an example of such successful cooperation (Box 2.18).

#### **Box 2.18: Cooperation with other local organisations on apprenticeship**

Mutually beneficial cooperation with the German Foundation for Monument Protection has become a success factor for Stuck Belz. The company learns from the foundation's experience in volunteer management, whereas the foundation benefits from the opportunities offered by Stuck Belz (a company specialising in stucco and plastering works) for volunteers to gain hands-on conservation work experience. A concrete success is that the first volunteer who worked at the company has already started an apprenticeship at the company.



Source: Visionary Analytics consortium based on the case study 'Vocational guidance via voluntary social work placements'.

**FLC** is an example of an organisation that implements most of their activities related to mobility projects and innovative didactical resources by *submitting applications to national or European calls for proposals*. Other ways that pledge-holders contribute to the development of apprenticeships include *cooperation with organisations from other countries, contributing to other reforms or initiatives and concluding agreements on apprenticeship*. As an example, the **Associazione Nazionale Artigiani dell'Edilizia dei decoratori, dei Pittori e Attività Affini (ANAEPA, Italy)** has furthered occupational health and safety training in Italy by concluding agreements with the National Organisation for Vocational and Professional Training in the Construction Industry (Formedil) (Box 2.19).



## Box 2.19: Concluding agreements (e.g. collective agreements) on apprenticeship

### Concluding agreements for occupational health and safety training

In 2011, ANAEPA (an Italian professional organisation) and 10 other construction sector social partners signed agreements that entrusted Formedil with the tasks of standardising and unifying vocational training in the construction sector in the area of OHS. OHS regulations are implemented with MICS (*Moduli Integrati per Costruire in Sicurezza*, Integrated Modules to Build in Safety) courses, which are integrated compulsory modules for health and safety in the construction sector mandatory for all workers and apprentices. MICS courses comply with the obligations of the Legislative Decree Law on work and safety 81/2008. MICS courses are certifiable, cover the entire national territory and include three areas: basic training for new entrants to the sector, qualification for the use of machinery and foreman and manager training.

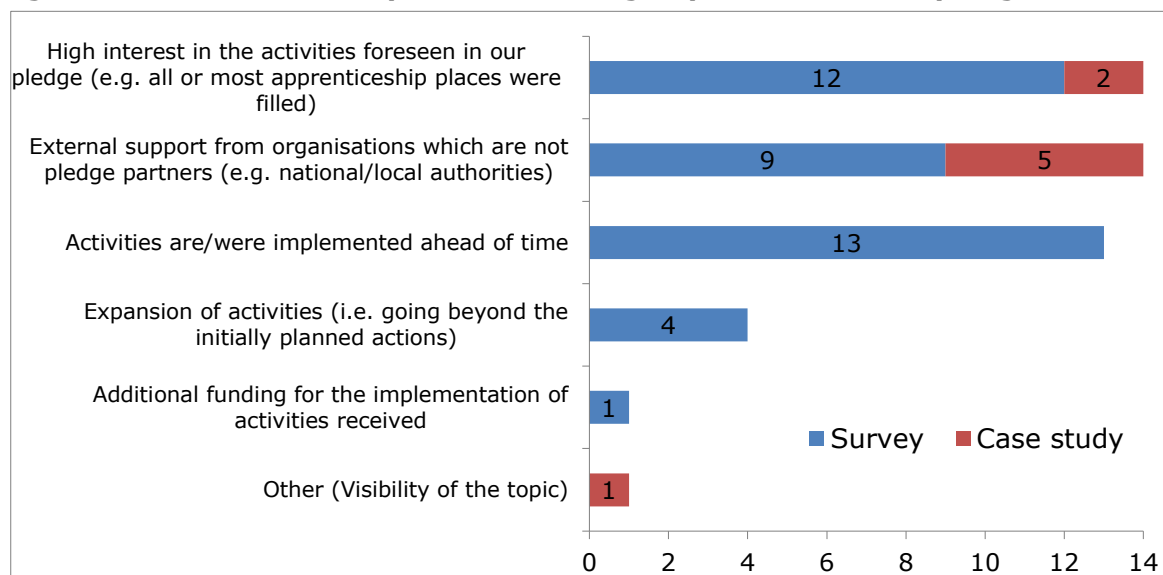


Source: Visionary Analytics consortium based on the case study 'Addressing occupational health and safety issues in apprenticeships'.

### 2.3.4. Successes experienced during the implementation of pledges

All pledge-holders enjoyed and relied on various success factors when implementing their pledges. Out of the five pre-defined success factors (Figure 2.13), the majority of pledge-holders that responded to the survey and pledge-holders that participated in interviews for case studies mentioned a *high interest in the pledged activities*, *external support from organisations which are not pledge partners*, and *activities implemented ahead of time* as successes experienced during the implementation of their pledges. A small number of pledges reported going beyond initially planned actions and *expanding their activities*. Concrete examples of how pledgers were aided by these success factors are presented in Box 2.20.

Figure 2.13: Successes experienced during implementation of pledges



Source: Visionary Analytics consortium based on the online survey of pledge coordinators (26 respondents), May – June 2017; case studies.

### **Box 2.20: Illustrating successes experienced during the implementation of pledges**

*High interest in the activities* took the form of high student motivation in the case of **PEDMEDE (Greece)** or continuous feedback from companies, schools and apprentices in the case of **CCBC (Belgium)**.

*External support from organisations that are not pledge partners* took various forms:

- **Bouwunie (Belgium)** cited as useful *external support* the wealth of information on the sector provided by *Constructiv*, a service organisation for the construction sector
- **FMB (the United Kingdom)** created new apprenticeship standards via a collaborative process involving SMEs in construction, training providers and awarding bodies. This is said to be particularly important, as two thirds of the apprentices entering the construction sector are estimated to be trained by SMEs. Given this composition of the sector, no businesses are better suited to lead the development of these apprenticeship standards than SMEs themselves
- **FLC (Spain)** had the support of regional authorities that accredited the mobility of learners sent to foreign countries by FLC as a part of their national training curricula
- **BCC (Bulgaria)** enjoyed support from the National Employment Agency, as its regional offices facilitated the recruitment process by carrying out the search for candidates eligible for participation, and the International Centre for Education and Communication (IZBK) that carried out German language courses in Bulgaria.

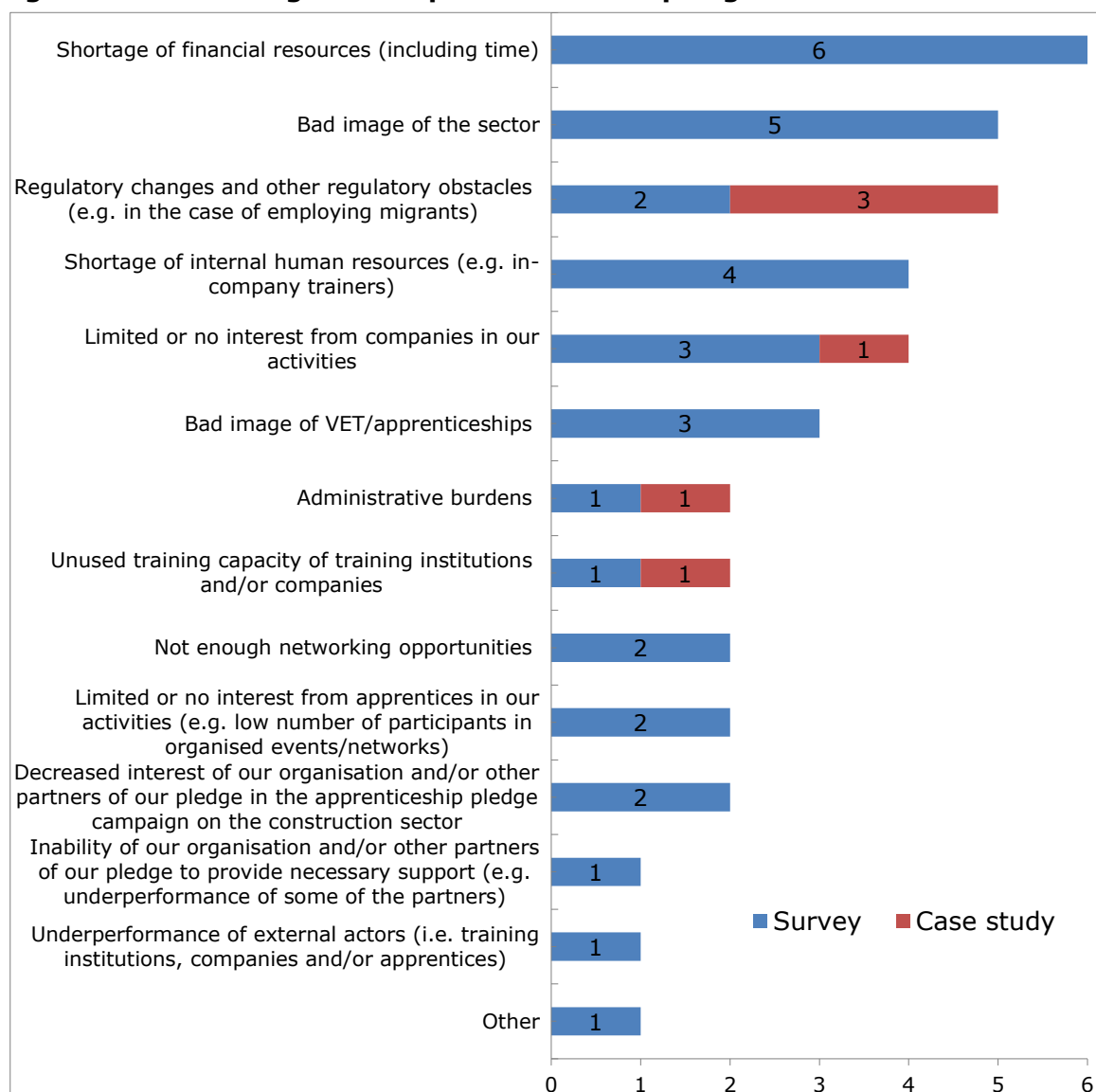
**EBC (Europe)** illustrates an *expansion of activities*, where the exhibition on involving women and young people in construction was brought to the European Economic and Social Committee (EESC) in Brussels. Based on the stories presented in the exhibition, EBC produced 150 brochures which were distributed in the EESC, and EBC still distributes them at various events. At the moment, EBC is making an effort to bring the exhibition to Spain. Talks with the tourism bureau of Spain are ongoing on how EBC can promote the exhibition in the country.

Source: Visionary Analytics consortium based on the case studies 'Monitoring of pilot projects of dual VET', 'Creating new construction apprenticeship standards', 'Increased mobility of apprentices' and 'Promoting construction apprenticeships to women'.

### **2.3.5. Challenges for implementation of pledges**

Nineteen out of twenty-six pledge-holders that responded to the relevant survey question indicated that their organisation and/or their partners did not experience any challenges during the implementation of their pledges. Insights from case studies indicate that venturing into any activity means taking on some risks or tackling difficulties for its successful implementation. The most common challenges experienced by pledge-holders were *shortages of financial resources or lack time, bad image of the sector, and regulatory changes and/or other regulatory obstacles* (Figure 2.14).

**Figure 2.14: Challenges for implementation of pledges**



Source: Visionary Analytics consortium based on the online survey of pledge coordinators (seven respondents), May – June 2017; case studies.

Concrete examples of how pledgers were affected by these challenges are presented in Box 2.21 below. There were three answer options regarding pledge implementation challenges in the survey that were not chosen by any respondent:

- The activities implemented so far have not had the desired impact
- Low level of commitment for cooperation between training institutions and businesses
- Lack of progress of other external activities relevant to the content of the pledge
- Internal implementation delays.

**Box 2.21: Illustrating challenges experienced during implementation of pledges**

- The experience of **CCBC (Belgium)** illustrates the struggle of a *shortage of both financial and internal human resources*. Currently, there is only one person coordinating 58 apprentices, 50 companies and one person coordinating 4 different schools. In order to ensure smooth operations and further following-up on site, CCBC needs twice or three times as many people to coordinate these activities.

However, as this project relies on public subsidies, at the moment CCBC operates on a tight budget and therefore cannot assign more people to this project.

- **Regulatory changes** proved to be a challenge for **FMB (the United Kingdom)**. One of the main challenges to the standard development process is related to current changes in apprenticeship funding in the UK. Therefore, it is crucial that the new standards in bricklaying and plastering are approved quickly and in time so they can qualify for higher levels of funding as soon as in autumn of 2017.
- The main challenge identified by **PEDMEDE (Greece)** was *limited or no interest from companies* to get involved in the training scheme. This is due to the current economic situation in Greece. The recession has created a very competitive environment for construction companies to be awarded contracts and most companies feel reluctant to invest time and resources into education and training.
- **Franz Trippe (Germany), BGZ Simmerath (Germany) and Heinrich Weber GmbH & Co KG (Germany)** were all confronted with *limited or no interest from apprentices* to get involved in dual study programmes, as they are challenging for participants – they have to pass exams in the university as well as examinations at the crafts chamber. The contents of these examinations differ and thus demand more effort from the apprentice. In addition, dual study programmes are only a solution for skills shortages in higher qualified personnel, as companies still have the highest need for persons with a 'standard' vocational degree most of all. Thus, such positions remain hard to fill.
- **Bad image of VET/apprenticeships** proved to be a challenge to **CCBC (Belgium)**, as there is a lot of inequality between general education and VET schools in terms of learner performance and learning resources (e.g. classroom equipment or support facilities) due to institutional complexity (see point below). Apprenticeships schemes are the ones most affected by this inequality and therefore a lot of energy must be invested into their promotion.
- The main challenge experienced by **FLC (Spain)** is *unused training capacity of training institutions and companies* – although trainers usually receive good quality innovative training resources, paradoxically, they do not use them in an intensive manner. This is due to the fact that most of the trainers are reluctant to change their ways of teaching. FLC carries out pilot testing for all of their new training resources and the results show that trainees like innovative solutions and deem them to be useful for learning. Therefore, the key actors to make the new didactical resources useful are trainers, because if they do not introduce new means within their teaching practice, trainees will not have a chance to use them. Moreover, it is still difficult to get SMEs involved in the apprenticeship system, which puts the success of apprenticeship at stake.
- **Bouwunie (Belgium)** has experienced an uncommon challenge – *underperformance of external actors*. In this instance, too many parties are involved in the redesign of the apprenticeship system that makes it hard to introduce the necessary fundamental changes in the huge structure that is education in Flanders.

Source: Visionary Analytics consortium based on the case studies 'Single point of contact', 'Creating new construction apprenticeship standards', 'Establishment of new training schemes', 'Dual study programmes in Germany', 'Innovative training tools' and 'Monitoring of pilot projects of dual VET'.

#### **2.4. Feedback of construction pledge-holders on the campaign and construction apprenticeships**

Eight respondents to the online survey provided feedback on the campaign and construction apprenticeships (Table 2.6). The main suggestions centred on providing more funding and networking possibilities and putting an even stronger emphasis on the importance of practical training. Pledge-holders also suggested a number of ways to improve communication on apprenticeships and EAfA.

**Table 2.6: Feedback of construction pledge-holders on the campaign and construction apprenticeships**

<p><b>Suggestions how to improve construction apprenticeships</b></p> <p>More funding and networking possibilities Emphasis on practical training</p>	<ul style="list-style-type: none"> <li>• Provide additional funding to SMEs involved</li> <li>• Continue to finance professional associations and VET providers through Erasmus+ call for proposals</li> <li>• Continue European projects, as they are the only way in the construction sector to engage VET institutes, professional schools and businesses in order to create apprenticeship placements in SMEs</li> <li>• Continue to encourage mobility projects for apprentices</li> <li>• Favour existing and efficient networks, valorising the outcome of on-going or completed projects</li> <li>• Provide more practical training, as it is highly desirable both in the technological and the theoretical part</li> <li>• Place an even stronger emphasis on practice and the latest technology</li> </ul>
<p><b>Suggestions how to improve communication on construction apprenticeships</b></p> <p>Link competitions at different levels More flexibility in the regulation/provision of training Platform for vacancies and good practices Focus on innovative technologies</p>	<ul style="list-style-type: none"> <li>• Competitions at different levels (chamber, country, federation, Europe, world) should be better linked and public resources for the implementation of and application for competitions should be provided</li> <li>• Rigorous procedures of associations and political institutions (ministries of culture, government presidencies) must become much more flexible and adapt to the economic situation</li> <li>• Create a unique platform for the construction sector and its branches in which good practices could be publicised and apprenticeship vacancies/placement searches could be advertised</li> <li>• Building trades should be an attractive and modern career. It must be made clear that 'physical work' is no longer the focus of construction projects – a lot of things have been simplified by modern technology and at the same time made more attractive for tech-savvy people</li> </ul>
<p><b>Suggestions on how to improve EAfA and/or its support activities</b></p>	<ul style="list-style-type: none"> <li>• The communication around EAfA would be more accessible to pledge-holders if it were available in national languages (for example, German)</li> </ul>
<p><b>Other suggestions/comments</b></p>	<ul style="list-style-type: none"> <li>• Training migrants without a school leaving certificate</li> </ul>

Source: Visionary Analytics consortium based on the online survey of pledge coordinators (eight respondents), May – June 2017.

## CONCLUSIONS AND RECOMMENDATIONS

This study focuses on [the campaign targeted to stakeholders of the construction sector<sup>92</sup>](#), supported by the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) of the European Commission and carried out within the framework of the European Alliance for apprenticeships (EAfA). The study had two main aims: (1) to overview the implementation of stakeholder commitments (pledges) in the area of construction sector apprenticeships and (2) to provide insight into construction sector apprenticeships and compile an inventory of novel, specific and/or effective solutions to key challenges in this respect. Its key conclusions and recommendations are summarised below.

### *Improving construction sector apprenticeships*

Construction stakeholders, apprentices, companies, training providers and social partners, face a number of challenges while implementing construction apprenticeships initiatives. This study has accumulated evidence to identify and analyse the most important challenges. It also matched the identified challenges with the available solutions stemming from a wide array of inspirational experiences of construction stakeholders. A number of key points can be taken from this mapping and analytical exercise with respect to each identified challenge:

- **Attracting and motivating apprentices:** These, together with employer buy-in, are probably the most crucial challenges construction stakeholders experience while implementing construction apprenticeships. For example, many pledge-holders cited the goal of attracting more apprentices as their primary motivation to participate in the EAfA pledges campaign. A decreasing number of potential apprentices and skills shortages prevalent in the sector encourage training innovations such as efforts to make training content more attractive and flexible (for example, digitalisation of the training curriculum in the form of mobile applications, web-based manuals, etc.). The key element to consider while trying to attract more apprentices (as well as employers) in apprenticeships is thinking of construction **apprenticeships as a service** that needs to be sold to its customers – as equally an adequate opportunity as university studies. There may be different offerings acting as effective selling points including merging volunteering and apprenticeships, integration of energy efficiency and digitalisation topics in the curricula, vocational skills competitions, dual study programmes allowing young persons to obtain higher education degree and vocational qualification, etc. Furthermore, it will not be possible to attract and maintain higher numbers of apprentices without **quality apprenticeships**. In particular, significant attention should be paid to such issues as the quality of jobs of apprentices, an emphasis on basic skills to ensure the better adaptability of workers, the integration of assessments and monitoring into apprenticeships programmes, the strengthening of the ‘purchasing power’ of apprentices (so they have more influence on how the money is spent for apprenticeships) and intensifying cooperation between VET teachers and in-company trainers. Finally, the **negative image** of the construction sector and construction apprenticeship is still vital in society. To attract more apprentices, stakeholders should focus on changing the perceptions of young people, their parents and employers and address social myths prevalent in society (e.g. construction work is just for men, apprenticeships are not for SMEs). Apprenticeships need to be developed with close consideration of the **broader education system** including well-balanced education alternatives for learners and progression within and between education pathways.
- **Getting employer buy-in.** The engagement of employers firstly depends on a supply of talented and motivated apprentices. For apprenticeships to be

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<sup>92</sup> [http://ec.europa.eu/growth/sectors/construction/apprenticeships\\_en](http://ec.europa.eu/growth/sectors/construction/apprenticeships_en) [accessed 12-10-2017]

attractive to employers, they also need to be attractive to learners – if they are attractive to learners, then motivated young people will compete to be apprentices, and employers will be able to get benefits from apprenticeships. Business can also have an influence on the supply of apprentices. However, evidence shows that the efforts of separate companies are not enough to create a favourable environment for apprenticeships. Employers, especially micro enterprises and small and medium-sized companies (SMEs) that are key players in construction apprenticeships need stronger support to engage in apprenticeships. A key measure to provide support for each player and to ensure well-functioning links between key players in the so-called ‘apprenticeship triangle’ (i.e. interactions between apprentices, employers and training providers) is an **institutional intermediary or a single point of contact**. The latter, represented by an employer organisation, trade union, chamber or other stakeholder depending on local context, is decisive in ensuring quality and cost-effective apprenticeships and thus building the trust of companies in apprenticeship training. An effective intermediary may help to overcome structural barriers for employers to engage, including information-asymmetry (for example, clarifying apprenticeship requirements or developing apprenticeship guides), the unfavourable position of SMEs in the market to access apprenticeships (through, for example, the pooling of resources for training, facilitating networking among enterprises or training in-company trainers) and the low quality and lack of cost-effectiveness of apprenticeship programmes (by, for example, involving employers in the design of apprenticeship programmes or monitoring the quality of off-the-job training). Increasing the evidence base (for example, by providing more cost-benefit analyses) may also act as a significant motivator for non-training companies as employers most often think in numbers, especially those with limited or no experience with apprenticeships. Finally, similarly as with attracting apprentices, apprenticeships need to be sold to companies as any other service stressing their **business case** (e.g. the integration of highly demand topics such as energy-efficiency and/or cross-craft understanding in training, well-balanced wages for apprentices, programmes designed in a way that allow apprentices to be more productive and learn effectively).

- **Expanding vocational guidance.** All measures aimed at expanding guidance (for example, visits of kindergarteners to companies, visits to schools, skills competitions, career coaching) are useful as long as they serve in reducing the skills mismatches in the labour market. Quality career coaching could make training more effective (by, for example, reducing the number of dropouts and helping companies retain new entrants to the sector) and efficient because apprentices will be encouraged to train in skills from which they really benefit without wasting time and resources on superfluous training. To reach the best results, vocational guidance should also be: unbiased (e.g. towards higher education), embedded in the education system (e.g. including repetitive inquiries to find out what career or occupation may best suit a person), comprehensive (i.e. provided before, during and after the apprenticeship programme), personal (i.e. revealing authentic experiences of working in the sector), adapted to the needs of the target group and applied early in a young person’s life.
- **Making training more flexible and innovative.** It is important to ensure that the curriculum is relevant to its users (e.g. reflects recent technological developments and integrates entrepreneurship education) and that it is delivered in such duration, form, way and style that lead to the most effective training. The latter may cover various measures including moving apprentices closer to construction sites (for example, boarding schools), renting out the latest technological equipment for training, mainstreaming competency-based progression, adapting frequency of alternance between learning venues based on geography, accelerated completion options, training outside of working hours, intensified training during the winter period when business is slow (due



to seasonality), apprenticeships for existing workers who wish to expand their skillsets or for young persons who wish to combine apprenticeships with other education opportunities. However, this is just the tip of the iceberg. Truly flexible and innovative training is the result of personal transformations. That is why it is essential to continuously work with apprentices and their VET teachers and in-company trainers so that they are not afraid to change their old **habits of learning and training**. Government support in ensuring the continuation of these efforts is key to making training truly flexible and innovative.

- **Professionalising VET teachers and in-company trainers:** Teachers are the backbone of quality apprenticeships. The changing environment (incl. digitalisation, energy efficiency) no longer tolerates purely traditional training approaches. **New approaches to teacher and trainer training** are needed to ensure workforce skills that are sufficient for ensuring the competitiveness of apprentices and their employers and that match the real needs of the market. Such approaches may include peer grouping (when teachers and trainers of the same occupation or from the same region train in groups), continuous guidance that does not end with the completion of a training course and individualised learning pathways to build on the strengths of each individual. The potential of the 'train the trainer' concept should be better exploited to create a 'snowball effect' in both teacher and apprentice training (e.g. through the use of training ambassadors or change agents training their peers).
- **Integrating a multidisciplinary and holistic approach in training:** A strong cross-craft understanding built via **integrated** (in terms of disciplines), **problem-centred and project-based training approaches** will certainly result in a better construction workforce making less mistakes, working faster and better. More and more employers notice, understand and have started demanding these competences from workers. Recent trends including digitalisation, standardisation and industrial scaling (incl. Building Information Modelling and modular construction), further stimulate the need for a broader multidisciplinary and holistic approach in training future construction workers. Better integration of a multidisciplinary and holistic approach in apprenticeships is useful for all as it may not only help to boost the competitiveness of training companies, but also to strengthen the long-term adaptability of apprenticeship graduates to structural changes in the labour market.
- **Providing skills in energy efficient building construction:** Countries are in very different start positions in the race for energy efficient construction training. Some are taking their first steps by integrating energy efficiency topics into the current apprenticeship curricula (for example, Romania). Meanwhile, others have launched full-scale national apprenticeship programmes for developing skills on energy efficiency backed with a specifically created training infrastructure, materials, methods and sufficient human resources (for example, France). However, the key is to start, even if it means starting small. One of the most salient issues in VET regarding energy efficient building construction is the lack of **understanding the building as a system**.
- **Securing sufficient resources:** Too often, adequate resources are narrowly understood as sufficient funding for apprenticeships. Evidence shows that well-developed apprenticeship support systems are not only characterised by sufficient funding, but also by **wide non-financial support** that may include the following: careful targeting (for example, co-funding instruments are designed in a way that no target group in need of support is left out); broad and smooth cooperation between key actors (for example, in monitoring to which skills shortages the funds need to be focused), active lobbying at national or regional levels (by, for example, providing detailed justifications as to why the available funds need to be channelled to the apprenticeships), pooling of resources for training and plentiful information and guidance opportunities for users (by, for example, drafting user guides on how to navigate complex remuneration systems or providing opportunities to simulate costs and benefits). When funding apprenticeships, it is essential to **maintain a balance between urgent skills demands** that help to address current

skills challenges experienced by companies (e.g. new skills such as green skills or skills in relation to Building Information Modelling) **and transferable skills** that help to ensure the adaptability of apprenticeship graduates to structural changes in the labour market over the long-term perspective (e.g. problem-solving, team work, cross-craft understanding, management, occupational health and safety).

- **Fostering mobility of apprentices and trainers.** Mobility, both **between countries and careers**, is an opportunity to excel, including bringing innovations in training, addressing cross-border skills shortages and mismatches, enriching personal competences and widening professional horizons. The more apprentices and their trainers are mobile, the more innovative and flexible VET systems will become. Mobility is thus the key for the construction sector that spans across national borders. However, successful mobile projects need solid national VET systems enabling them to include, among other things: a careful matching of participants and personal communication to dissipate doubts, misunderstandings and uncertainties that participants and their parents experience at the beginning of such endeavours, longer-term mobility experiences (as currently most are less than one month) and well-developed systems for a recognition of skills and qualifications acquired during mobility.
- **Ensuring occupational health and safety (OHS) during and outside of training.** OHS must be ensured in quality construction apprenticeships. The lack of integration of OHS in apprenticeships may result in more accidents at work and less productive workers, while overcomplicated compliance with OHS regulation may reduce employer engagement in apprenticeships and thus the supply of apprenticeship places. To avoid this, employers' representatives play a key role in ensuring that legal OHS requirements are realistic enough for companies to comply with, while training providers – in introducing OHS early in their curricula. Trade unions have a very important role to play in ensuring OHS and other working conditions for apprentices.
- **Integrating migrants** (including refugees, asylum seekers and any other citizens traveling to EU from other countries into the labour market). VET systems are essential for helping to smooth the integration of migrants into the EU labour market. The construction sector is probably the sector where most incoming migrants will be working, as it is open to low, medium and high-skilled workers. However, the identified real-life examples demonstrate that a number of systemic measures need to be taken for the smooth integration of migrants into the labour market including: specifically designed courses to strengthen language skills, transferable skills (e.g. problem-solving, management skills) and facilitated recognition of on-the-job training, adapting VET programmes for the specific needs of migrants (by, for example, allowing migrants to start working earlier than typical arrangements for such programmes), and addressing legal constraints (for example, legal constraints on work during the asylum application process).

Success in addressing the above challenges usually depends on the timing, pace and direction of structural **apprenticeship reforms**. Apprenticeship reforms are challenging in a number of ways, including accommodating multiple interests, ensuring a broad representation of all key actors, duly considering the specifics of the construction sector and ensuring flexibility in performance management processes. Evidence demonstrates that successful apprenticeship reforms often are based on broad partnerships between key stakeholders (a source of sufficient political influence, expertise and resources), a well thought-out strategy and focused efforts. Successful apprenticeship reforms may also need to be quick to avoid national policy disturbances, based on active lobbying to draw the sufficient attention of policy-makers to issues at stake, rely on key reform prerequisites (such as the timing of a reform, the state of the economy and the decentralisation of vocational training provisions) and the support of external actors (such as international organisations or

dedicated national entities such as the German Office for International Cooperation in Vocational Education and Training (GOVET)) as well as intermediaries (for example, single contact points reducing institutional complexity for companies and other practitioners). The involvement of construction SMEs is key as they are the pivotal actors of the sector, training most of the apprentices and are most aware of the needs of the market.

Apprenticeship policy reforms need to be supported by comprehensive and rigorous analyses, monitoring and evaluations of the outcomes of current apprenticeship initiatives. However, evidence shows that construction stakeholders rarely set benchmarks for their apprenticeship initiatives and monitor them. However, this is crucial and provides multiple benefits: clearly formulated targets mobilise effort, motivate and contextualise and thus often lead to better results. A close monitoring of carefully defined targets helps to better steer initiatives and avoid failures and finally, construction stakeholders might use the determined effects for the further expansion of their activities or improving the overall apprenticeship system (for example, a good cost-benefit ratio may engage more employers into the training programme). Thus, the formulation and monitoring of the effects of initiatives is not a simple measure of reporting, but a powerful tool to reach better results. For that, monitoring should be continuous, draw also on medium and long-term indicators and available research (for example, on the methodologies of cost-benefit analyses developed in other countries).

### ***Improving the campaign on construction sector apprenticeships***

The monitoring of construction sector pledges demonstrated that the EAfA campaign helps construction pledge-holders publicise activities that they were already doing before joining the campaign. In addition, the EAfA campaign creates some discipline for construction stakeholders to continue working on their pledge activities. Some stakeholders even expanded the scope and/or the scale of their activities.

However, few construction stakeholders plan to introduce, introduced new activities or innovated as a result of the EAfA campaign. The surveyed construction stakeholders also rarely referred to partnerships with other pledge holders. Findings suggest that to bring even higher value added to participating stakeholders, the EAfA campaign could particularly promote concrete examples of the added value of joining the campaign (e.g. reputational labels) and strengthen its networking element. The EAfA campaign could provide participating stakeholders with better opportunities to share and discuss their pains and gains in relation to implementing construction apprenticeships. This could be done in a web-based forum or similar ICT solution. In the words of one construction pledge holder, EAfA could 'build networks, exploiting the outcomes of on-going or completed projects'. The particular strength of such a network could be its self-help element realised via, for example, coaching in peer groups.

Yet another possible option for more networking within EAfA is to stimulate the emergence of local EAfA networks that could act based on clearly described principles. The example of a campaign developed by the Young Women's Trust (YWT), a UK-based charity organisation representing young women demonstrates how similar employer engagement networks can function at a national or lower scale. Measures used by the YWT campaign include research-based campaigning, focus groups, employer pledges, networking events and political lobbying that could help to engage stakeholders, especially SMEs, more actively at the local level.

The monitoring of construction pledges showed that most pledge holders wish to continue implementing the activities foreseen in their original pledges. The EAfA campaign could build on this by exploiting opportunities to form a habit for construction stakeholders to continuously work on apprenticeships. All EAfA activities could be considered in terms of whether they make apprenticeships an indispensable part of the daily business of participating stakeholders.

Evidence suggests that most often construction pledges focused on the image and quality of apprenticeships. The supply and mobility of apprenticeships were less often addressed. Furthermore, most pledges focused on the recruitment and training stages of the apprenticeship life cycle. Significantly less pledges carried out activities in the support and completion follow-up stages of the apprenticeship life cycle. It will not be possible to recruit many more apprentices and engage more companies without highly effective and user-friendly apprenticeships systems. The EAfA campaign should play a key role in disseminating evidence, ensuring comprehensive and easily accessible guidance for all participating stakeholders to make this happen.

This report has outlined a significant number of types of measures that construction stakeholders implement in the quality, image, supply and mobility areas of apprenticeships including concrete examples of possible activities within each type. Hopefully, the information collected will serve as an inspiration for stakeholders contributing to apprenticeships. Particularly useful in this regard could be the inventory of 'pains and gains' (i.e. challenges and solutions) in construction apprenticeships (Annex 5).

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## ANNEXES

### ANNEX 1: OVERVIEW OF THE APPROACH

#### 1. OBJECTIVE AND SCOPE

The main aim of this study is twofold:

1. To overview the implementation of stakeholder commitments (pledges) in the area of construction sector apprenticeships.
2. To provide insight into construction sector apprenticeships and compile an inventory of novel, specific and/or effective solutions to key challenges in this respect.

The study focuses on the following elements:

- Construction sector. The study focuses on a 'narrow' understanding of the construction sector without considering the real estate, architectural and engineering or construction-related manufacturing sectors.
- Commitments (pledges) of construction stakeholders to strengthen the quality, supply, mobility and/or image of apprenticeships in Europe under the EAfA campaign (a total of 56 pledges).
- Apprenticeships in the construction sector (broad definition also including dual vocational education and training, see definition below). Importantly, traineeships or internships are outside of the scope of this study.
- Initial vocational education and training (VET).
- Young people (as EAfA aims, in particular, to combat youth unemployment).
- SMEs and their needs, since they employ an absolute majority of the sector's workforce.

This study is based on the following definition of apprenticeships adopted by the Commission in its recent [proposal](#)<sup>93</sup> for a Council Recommendation on a European Framework for Quality and Effective Apprenticeships:

*Apprenticeships are formal vocational education and training schemes that combine substantial work-based learning in companies and other workplaces with learning based in education or training institutions, and that lead to nationally recognised qualifications. There should be a contractual relationship between the apprentice, the employer and/or the vocational education and training institution, and the apprentice should be paid and/or compensated for her/his work.*

#### 2. TASKS

The study is composed of four tasks: (1) Monitoring and analysis of pledges, (2) Case studies, (3) Workshop on construction apprenticeships, and (4) Conclusions and recommendations.

Each task has a specific focus and relies on a separate group of methods (see Table 1).

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<sup>93</sup> <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2873&furtherNews=yes>

**Table 1: Use of methods in tasks of the study and their use**

Task	Desk research	Online surveys	Interviews	Group discussions
<b>Monitoring and analysis of pledges</b>	Collect insights; draft survey questionnaires	Observe progress; collect insights	Clarify any unclear answers; obtain more information	
<b>Case studies</b>	Take stock of what exists; formulate hypotheses	Identify cases	Gain in-depth understanding of situations/ issues	
<b>Workshop on apprenticeship in IVET in the construction sector</b>				Validate findings; discuss/ network
<b>Conclusions and recommendations</b>	Triangulation of different sources of information			

Source: Visionary Analytics consortium.

## 2.1. TASK 1: MONITORING AND ANALYSIS OF PLEDGES

This task is aimed at producing a comparative analysis of the existing construction sector stakeholders' commitments (pledges) and their implementation. Monitoring tasks consisted of the following activities:

- Data collection for the monitoring chapter. Firstly, a few scoping interviews with relevant stakeholders were carried out. Scoping interviews aimed to identify recent developments relevant to the study, to collect sector-specific information, to identify insights in relation to the campaign on the construction sector and to coordinate with the DG EMPL study 'European Alliance for Apprenticeships - Assessment of progress and planning the future'<sup>94</sup>. Secondly, the contractor reviewed relevant initiatives and literature on sector-specifics. Finally, between May and June 2017, the contractor carried out an online survey of the pledge-holders to observe the progress of pledges and to collect insights from pledge-holders. The survey resulted in 28 complete responses (52% response rate). The survey questionnaire is provided in Annex 2.
- Development of the monitoring template (i.e. a form specifically designed for reporting the results of the monitoring task).
- Analysis of pledges for the monitoring chapter including both quantitative and qualitative parts. The quantitative part describes the distribution of pledges according to a number of characteristics. Meanwhile, the qualitative part examines issues addressed by pledges, their activities and targets.

## 2.2. TASK 2: CASE STUDIES

All of the case studies of the project aimed to obtain insights on construction sector apprenticeships by considering different elements (e.g. trainers, funding, etc.) as emphasised by the organisation(s) and addressed in each case study. Key activities were as follows:

- Finalisation of case study methodology incl. guidelines and case study and interview templates.
- Selection of case studies. To identify potential case studies, the contractor relied on a literature review and two surveys – the afore-mentioned online

<sup>94</sup> <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8033&furtherPubs=yes> [accessed 05-10-2017]

survey of the pledge-holders (questionnaire provided in Annex 2) and an online survey of members of European construction sector associations. The latter not only helped to identify potential case studies, but also identified specific issues in relation to construction sector apprenticeships. It was carried out from December 2016 to January 2017 and resulted in 28 complete responses. The survey questionnaire is provided in Annex 3.

- Piloting case study incl. feedback and finalisation of methodology.
- Developing case studies including their internal quality control (by project team members) and external quality control (by interviewees and the Steering Group).
- Comparative analysis of findings from case studies (see Chapter 1 of this report).

In total, the contractor carried out 22 case studies (see Annex 4). The case studies:

- Included 25 out of 56 pledges made by construction stakeholders
- Covered 12 countries (i.e. BE, BG, DK, FR, DE, EL, IE, IT, NL, RO, ES and the UK)
- Were vertical (16 of them focused on one organisation) and horizontal (i.e. six focused on two or more organisations)
- Focused on construction pledge-holders (seventeen case studies) and also non-pledgers (five additional case studies aimed at expanding the geographical and thematic coverage of cases)
- Were mostly direct in terms of engagement with their target groups (2/3 of cases)
- Covered all stages of the apprenticeship life cycle: around 1/3 of them focused on recruitment, 1/3 – on training and assessment and 1/3 on support and follow-up stages.

### **2.3. TASK 3: WORKSHOP ON APPRENTICESHIP IN IVET IN THE CONSTRUCTION SECTOR**

The main aim of the workshop was to validate the draft findings and recommendations of the study and to discuss in-depth the key points in relation to construction apprenticeships (incl. those emerging from the study). Organisation of the workshop included four types of activities:

- Selection of speakers and their logistics
- Planning of the workshop including save-the-date communication, agenda and invitation
- Implementation of the workshop including plenaries and small group discussions
- Follow-up of the event including a collection of comments to the draft final report, drafting and distributing the minutes of the event.

The workshop was held on 27<sup>th</sup> September 2017 in Brussels and was attended by 26 stakeholders.

### **2.4. TASK 4: CONCLUSIONS AND RECOMMENDATIONS**

The main aim of this task was to summarise the findings and to propose solutions on how to improve construction apprenticeships as well as the EAfA and construction campaigns.

The task had to address two methodological challenges in relation to the validity of the findings. The first challenge refers to internal validity: the extent to which collected empirical data corresponds to the concepts we seek to represent, i.e. whether we are measuring what we claim to measure. Examples of this challenge include: whether we

capture all aspects important for the implementation of apprenticeship in the sector, whether the collected information represents experience and the situation of construction companies, etc. The second challenge refers to external validity – to what extent can we generalise our findings across all countries and stakeholders?

### **3. RESULTS**

Besides the final report examining key challenges and solutions in relation to construction apprenticeships and 22 case studies, the contractor also compiled an inventory of good practices in construction apprenticeships (see Annex 5). The latter summarised novel, specific and/or effective solutions to key challenges faced by stakeholders when initiating and implementing construction apprenticeships.

## **ANNEX 2: QUESTIONNAIRES FOR THE ONLINE SURVEY OF CONSTRUCTION PLEDGE HOLDERS**

### ***Questionnaire for the online survey of construction pledge holders***

Dear Stakeholder,

#### **Re: Survey on the implementation of your pledge for the European Alliance for Apprenticeships (EAfA) in the construction sector**

We are asking for your help in providing information about the implementation of your EAfA pledge.

This web-based survey is being conducted for the European Commission and its project 'Monitoring of learning commitment in the campaign on the construction sector'. Its main aim is to analyse the implementation of apprenticeships in the construction sector across Europe and, in particular, commitments (pledges) made by stakeholders (see <http://ec.europa.eu/growth/sectors/construction/apprenticeships/>). Your answers will be used to monitor the activities and results of the pledges submitted and to identify interesting practices and ideas on how to improve apprenticeships in the construction sector. It will take you approximately 15-20 minutes to complete the survey.

Relevant terms include the following:

- **Apprenticeships/Dual vocational education and training** are understood to be a formal part of vocational education and training that combine and alternate company-based training (periods of practical work experience at a workplace) with school-based education (periods of theoretical/practical education in a school or training centre), and lead to a nationally recognised qualification. Quite a number of apprenticeships also foresee a contractual relationship between the employer and the apprentice, with the apprentice being paid for his/her work.
- **Initial vocational education and training** is understood as 'general or vocational education and training carried out in the initial education system, usually before entering working life' (CEDEFOP, *Terminology of European education and training policy*, 2014).
- The **construction sector** is comprised of the construction of buildings, civil engineering and specialised construction activities (such as demolition and site preparation, electrical, plumbing and other construction installation activities and building completion and finishing).

The questionnaire is available in English, French and German. You may withdraw from the survey at any time and come back later. Should you wish to provide any additional remark(s), there is some space allocated for this at the end of the questionnaire. The information given is both confidential and to be used only by DG GROW/Visionary Analytics within the limits of this project.

This survey seeks to gather one response per pledge. Therefore, we would like your responses to cover not only the information of your organisation, but also that of all your pledge partners. You are free to consult with your pledge partners in case you need any further information to complete this questionnaire.

If you have any questions about this survey please send an email to [PLEDGEsurvey@visionary.it](mailto:PLEDGEsurvey@visionary.it) or contact us either via Skype (VisionaryAnalytics) or via landline (+370 52 730101).

**The deadline for providing your responses is DD MM 2017 - thank you in advance for your co-operation!**

Yours sincerely,

Roman Horvath  
Policy Officer  
Clean Technologies and Products  
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

Simonas Gausas  
Team Leader of the Project  
Visionary Analytics

### ***Introduction***

- 1. Please select the country of your pledge (if you are a European level organisation, please select 'Europe'). After you select your country, you will be asked to select the name of the organisation that is leading your pledge: [Single choice]**

- a. Drop-down list of all the organisations that have submitted relevant pledges  
[The corresponding name of the organisation/pledge will automatically show up by country and in alphabetical order. In the survey, the names of pledges will already be linked to the stakeholder that submitted them, country and area(s) of action i.e. the EAfA objective(s)]

**You selected [country]. Please select the name of the organisation leading your pledge.**

### ***Participation in the apprenticeship pledge campaign on the construction sector:***

- 2. What were the key factors or considerations that motivated you (and your partners, if any) (i.e. dominating motivation for your organisation and your pledge partners) to participate in the apprenticeship pledge campaign on the construction sector? [Multiple answers possible]**

- a. Attract more apprentices (as prospective new employees in our organisation(s))  
b. Retain existing apprentices (as already existing employees in our organisation(s))  
c. Make a difference (e.g. reduce youth unemployment, improve working conditions of apprentices and/or teachers)  
d. Networking/Cooperation at European level  
e. Networking/Cooperation at local level (e.g. with training providers or employers)  
f. Share good practices and ideas  
g. Implement objective(s) or mission(s) of our organisation(s)  
h. Become involved in the work of/Establish contacts with the Commission  
i. Increase awareness of members, parents, businesses etc. about the apprenticeships  
j. Improve image and stability of the sector  
k. Respond to the invitation of our umbrella organisation  
l. Corporate social responsibility  
m. Improve image of our organisation  
n. Other, please specify: [Open text box]

- 3. Has your organisation and/or your pledge partners cooperated in your pledge activities with organisations (i.e. companies, associations, etc.) that implement other pledges under the European Alliance for Apprenticeships (not limited to the construction sector)? [Single choice]**

- a. Yes. Please specify with which pledges you cooperate(d): [Open text box]  
b. No  
c. I do not know

**Characteristics of your pledge:****4. Please indicate the nature of your pledge: [Single choice]**

- a. We have pledged NEW activities that were specifically created in relation to the European Commission's apprenticeship pledge campaign on the construction sector and/or the European Alliance for Apprenticeships actions
- b. We have pledged activities that we were already doing regardless of the European Commission's apprenticeship pledge campaign on the construction sector and/or the European Alliance for Apprenticeships actions
- c. Other, please specify: [Open text box]

**5. What sub-sector(s) is covered by the activities of your pledge? [Multiple answers possible]**

- a. Construction of buildings
  - b. Civil engineering
  - c. Specialised construction activities (e.g. demolition of buildings, building finishing, electrical, plumbing and other construction installation activities).
- If you wish, please specify your sub-sector further:

- i. Demolition and site preparation
- ii. Electrical, plumbing and other construction installation activities
- iii. Building completion and finishing
- iv. Other specialised construction activities (construction of foundations, steel bending or renting of building equipment)

- d. Other sub-sector, please indicate: [Open text box]

**Implementation of your pledge:****6. [If the pledge indicated working on this area of action] One of the areas of action in your pledge is the QUALITY of apprenticeships. Did you make any progress in your activities within the area of quality SINCE THE SUBMISSION of your pledge? It is likely that your pledge does not include all of the activities below. Therefore, please indicate the progress made only in those activities that are relevant to your pledge. [Single choice]**

- a. Yes. Please indicate the progress made up to now in the implementation of relevant types of activities [Table with activities pops-up below]
- b. No [Directed to the next question]

[Multiple answers possible. Only one indication of progress is allowed for each type of activity. The respondent should tick a box except for cancellations/modifications where she/he has to provide an explanation]

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
<i>System level</i>								
a) Making a contribution to the development of the legal framework on apprenticeships in our country								
b) Making a contribution to the development of a specific strategy/action plan on apprenticeships								
c) Implementing pilot projects focusing on improving the quality of apprenticeships								
d) Making a contribution to the adoption of new financial support mechanisms to bring change to the apprenticeship system								
e) Improving evidence on apprenticeships (e.g. carrying out evaluation								



Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
studies or developing the monitoring system)								
f) Improving European cooperation on the quality of apprenticeships								
g) Other, please describe: (open text box)								
Local/ organisational level								
h) Updating existing and/or preparing new training programmes to meet labour market needs								
i) Ensuring the quality of qualifications gained through apprenticeships (e.g. developing training standards or accrediting companies)								
j) Training teachers and/or in-company trainers								
k) Improving cooperation between teachers and in-company trainers								
l) Improving working conditions for apprentices								
m) Assessment and certification								
n) Other, please describe: (open text box)								

If any of your planned activities have been cancelled/significantly modified, please provide an explanation below (Optional):

If you consider any of the above-indicated activities of your pledge to be a GOOD PRACTICE that could be shared with other organisations participating in EAfA, please describe it below and/or share a relevant document:

- Please describe your activity (-ies): [Open text box]
- Please attach document: [Link to attach document]

**7. [If the pledge indicated working on this area of action] One of the areas of action in your pledge is the SUPPLY of apprenticeships. Did you make any progress on your activities within the area of supply SINCE THE SUBMISSION of your pledge? It is likely that your pledge does not include all of the activities below. Therefore, please indicate the progress made only in those activities that are relevant to your pledge. [Single choice]**

- Yes, please indicate whether you: [Multiple answers possible]
  - Created new apprenticeship places since the submission of our pledge. Please specify the number: [Open text box]
  - Carried out related activity (-ies). Please indicate the progress made up to now in the implementation of relevant types of activities [Table with activities pops-up below]
- No, but we plan to make some progress within this area. Please indicate whether you:
  - Plan to create new apprenticeship places in the future. If possible, please indicate the number: [Open text box]
  - Plan to carry out related activity (-ies). Please indicate what relevant types of activities you are planning to carry out in the future [Table with activities pops-up below]

- c. No, and we do not plan any progress within this area [Directed to the next question]

[Multiple answers possible. Only one indication of progress is allowed for each type of activity. Respondent should tick a box except for cancellations/modifications where she/he has to provide an explanation]

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
a) Awareness-raising campaigns among employers								
b) Vocational guidance for potential apprentices								
c) Consulting services for companies to increase their supply of apprenticeships								
d) Recruitment/matching systems for apprenticeships								
e) Financial incentives for employers to provide apprenticeships								
f) Financial incentives for apprentices								
g) Simplification of the administrative burden for companies engaging apprentices								
h) Other, please describe: (Open text box)								

If any of your planned activities have been cancelled/significantly modified, please provide an explanation below (Optional):

If you consider any of the above-indicated activity (-ies) of your pledge to be a good practice that could be shared with other organisations participating in EAfA, please describe it below and/or share a relevant document:

- Please describe your activity (-ies): [Open text box]
- Please attach document: [Link to attach document]

**8. [If the pledge indicated working on this area of action] One of the areas of action in your pledge is the IMAGE/ATTRACTIVENESS of apprenticeships. Did you make any progress in your activities within the area of image/attractiveness SINCE THE SUBMISSION of your pledge? It is likely that your pledge does not include all of the activities below. Therefore, please indicate the progress made only in those activities that are relevant to your pledge. [Single choice]**

- Yes. Please indicate the progress made up to now in the implementation of relevant types of activities [Table with activities pops-up below]
- No [Directed to the next question]

[Multiple answers possible. Only one indication of progress is allowed for each type of activity. Respondent should tick a box except for cancellations/modifications where she/he has to provide an explanation]

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
a) Public awareness campaigns that seek to improve the image of apprenticeships								
b) Activities promoting apprenticeships (e.g. conferences or promotion within our network)								
c) Public events to recognise achievements of apprentices								
d) Public events to recognise achievements of apprenticeship companies								
e) Preparatory actions developing work-readiness, pre-training courses for apprentices								
f) 'Tasting' sessions, visits or open days (e.g. to schools or companies) promoting apprenticeships								
g) Production of tools and toolboxes promoting good practices in the implementation of apprenticeships								
h) Ensuring equal participation from all types of apprentices/companies (e.g. non-discrimination of apprentices based on gender, non-discrimination of companies based on their size)								
i) Establishing stronger links between apprenticeships and other levels of education (e.g. higher education)								
j) Other, please describe: (Open text box)								

If any of your planned activities have been cancelled/significantly modified, please provide an explanation below (Optional):

If you consider any of the above-indicated activity (-ies) of your pledge to be a good practice that could be shared with other organisations participating in EAfA, please describe it below and/or share a relevant document:

- Please describe your activity (-ies): [Open text box]

- Please attach document: [Link to attach document]

**9. [If the pledge indicated working on this area of action] One of the areas of action in your pledge is the MOBILITY of apprenticeships. Did you make any progress in your activities within the area of mobility SINCE THE SUBMISSION of your pledge? It is likely that your pledge does not include all of the activities below. Therefore, please indicate the progress made only in those activities that are relevant to your pledge. [Single choice]**

- Yes. Please indicate the progress made up to now in the implementation of relevant types of activities [Table with activities pops-up below]
- No [Directed to the next question]

[Multiple answers possible. Only one indication of progress is allowed for each type of activity. Respondent should tick a box except for cancellations/modifications where she/he has to provide an explanation]

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
a) Encouraging apprentices from abroad to participate in mobility projects								
b) Encouraging local apprentices to participate in mobility projects								
c) Encouraging trainers, tutors, mentors to participate in mobility projects								
d) Encouraging employers to participate in mobility projects								
e) Providing information/raising awareness about the mobility of apprentices								
f) Providing services to find partners/apply for placements abroad								
g) Creating tools (e.g. guides, sectoral qualification references) to promote the mobility of apprentices								
h) Coaching the participants of apprenticeship mobility projects								
i) Providing administrative and other support for companies receiving apprentices								
j) Direct funding for the mobility of apprentices								
k) Recognition of learning outcomes gained from mobility								

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
l) Other, please describe: (Open text box)								

If any of your planned activities have been cancelled/significantly modified, please provide an explanation below (Optional):

If you consider any of the above-indicated activity (-ies) of your pledge to be a good practice that could be shared with other organisations participating in EAfA, please describe it below and/or share a relevant document:

- Please describe your activity (-ies): [Open text box]
- Please attach document: [Link to attach document]

**10. Did you make any progress in your activities within OTHER AREAS of apprenticeships (i.e. areas other than quality, supply, image/attractiveness and mobility of apprenticeships) SINCE THE SUBMISSION of your pledge? It is likely that your pledge does not include all of the activities below. Therefore, please indicate the progress made only in those activities that are relevant to your pledge. [Single choice]**

- Yes. Please indicate the progress made up to now in the implementation of relevant types of activities [Table with activities pops-up below]
- No [Directed to the next question]

[Multiple answers possible. Only one indication of progress is allowed for each type of activity. Respondent should tick a box except for cancellations/modifications where she/he has to provide an explanation]

Types of activities	Not yet started	Just started	Well on the way	Half way through	Nearly completed	Fully completed	Cancelled/ significantly modified	Not relevant
a) Making a contribution to other reforms or initiatives in the field of apprenticeship								
b) Cooperation with other local organisations on apprenticeship								
c) Cooperation with organisations from other countries on apprenticeship								
d) Closer cooperation with education and training institutions and companies								
e) Concluding agreements (e.g. collective agreements) on apprenticeship								
f) Submitting applications to national or European calls for proposals								
g) Other, please describe: (Open text box)								

If any of your planned activities have been cancelled/significantly modified, please provide an explanation below (Optional):

If you consider any of the above-indicated activity (-ies) of your pledge to be a good practice that could be shared with other organisations participating in EAfA, please describe it below and/or share a relevant document:

- Please describe your activity (-ies): [Open text box]
- Please attach document: [Link to attach document]

**11. Which SUCCESSES has your organisation and/or the other partners of your pledge experienced during the implementation of your pledge so far? [Multiple answers possible]**

- Activities are/were implemented ahead of time
- Additional funding received for the implementation of activities
- High interest in the activities foreseen in our pledge (e.g. all or most apprenticeship places were filled)
- External support from organisations that are not pledge partners (e.g. national/local authorities)
- Expansion of activities (i.e. going beyond the initially planned actions)
- Achieved additional benefits to those initially indicated in our pledge. Please specify: [Multiple answers possible]
  - New employees (as a result of apprenticeship)
  - Financial benefits (return on investments)
  - Visibility at national /regional/local level
  - Visibility at European/international level
  - Practical tools or resources
  - Networking
  - Learning (e.g. peer learning, exchange of good practices)
  - Increased understanding of what is an apprenticeship
  - Increased human resources capacity within our organisation
  - All of the above
  - Other, please specify: [Open text box]
- Other, please specify: [Open text box]

If necessary, please further comment on your answer:

**12. Has your organisation and/or other partners of your pledge experienced any CHALLENGES or DIFFICULTIES during the implementation of your pledge so far? [Single choice]**

- Yes [Multiple answers possible]
  - Shortage of financial resources (including time)
  - Shortage of internal human resources (e.g. in-company trainers)
  - Limited or no interest from apprentices in our activities (e.g. low number of participants at organised events/networks)
  - Internal implementation delays
  - Decreased interest of our organisation and/or other partners of our pledge in the apprenticeship pledge campaign on the construction sector
  - Inability of our organisation and/or other partners of our pledge to provide necessary support (e.g. underperformance of some of the partners)
  - Not enough networking opportunities

- viii. Underperformance of external actors (i.e. training institutions, companies and/or apprentices)
  - ix. Underused training capacity of training institutions and/or companies
  - x. Low level of commitment to cooperation between training institutions and businesses
  - xi. Limited or no interest from companies in our activities
  - xii. Administrative burdens
  - xiii. Activities implemented so far have not had the desired impact
  - xiv. Regulatory changes and other regulatory obstacles (e.g. employing migrants)
  - xv. Lack of progress in other external activities relevant to the content of our pledge at the national/regional /local level (if your pledge is linked to any such activities)
  - xvi. Bad image of the sector
  - xvii. Bad image of VET / apprenticeships
  - xviii. Other, please specify: [Open text box]
- b. No

If necessary, please further comment on your answer:

**13. Do you intend to further work on your pledge? [Single choice]**

- a. Yes, we will continue to implement the activities foreseen in our original pledge
- b. Yes, but we wish to update our existing pledge with activity (-ies) that were not foreseen in our original pledge. Please let us know what new activity (-ies) you wish to implement: [Open text box]
- c. No, we wish to close our pledge. Explanation: [Open text box]
- d. Other, please specify: [Open text box]

***Closing questions:***

**14. Do you have any suggestions or comments? [Multiple answers possible]**

- a. Yes, I have suggestions on how to improve construction apprenticeships. Please specify: [Open text box]
- b. Yes, I have suggestions on how to improve communication on construction apprenticeships. Please specify: [Open text box]
- c. Yes, I have suggestions on how to improve the European Alliance for Apprenticeships and/or its support activities. Please specify: [Open text box]
- d. Yes, I have other suggestions/comments. Please specify: [Open text box]
- e. No.

**15. Upon completion of this survey, we may need to clarify your answers and/or obtain more information from you on some select aspects of interest. Please indicate whether you agree for us to contact you to clarify answers and/or provide additional information:**

- a. Yes
- b. No



## **ANNEX 3: QUESTIONNAIRES FOR THE ONLINE SURVEY OF MEMBERS OF EUROPEAN CONSTRUCTION SECTOR ASSOCIATIONS**

### ***Survey on features of apprenticeships in the construction sector and related sectorial initiatives in your country***

Dear Member,

We are asking for your help in providing information about features of apprenticeships that are specific to the construction sector in your country, as well as related inspiring initiatives.

The short, web-based survey (approximately 15 minutes to complete) is being conducted for the European Commission for the project 'Monitoring of the learning commitment in the campaign on the construction sector'. The main aim of this study is to analyse the overall situation of apprenticeships in the construction sector across Europe and, in particular, commitments (pledges) made by sector stakeholders<sup>95</sup>.

Relevant terms include the following:

- **Initial vocational education and training** is understood to be 'general or vocational education and training carried out in the initial education system, usually before entering working life' (CEDEFOP, *Terminology of European education and training policy*, 2014).
- **Apprenticeships** in this study are understood to be a form of vocational education and training that formally combine and alternate company-based training (periods of practical work experience at a workplace) with school-based education (periods of theoretical/practical education in a school or training centre), and lead to a nationally recognised qualification. Most often, there is a contractual relationship between the employer and the apprentice, with the apprentice being paid for his/her work.
- **Construction sector** consists of the construction of buildings, civil engineering and specialised construction activities (such as demolition and site preparation, electrical, plumbing and other construction installation activities and building completion and finishing).

The questionnaire is available in English and French, but you may provide answers in your own language. You may withdraw from the survey at any time and come back later to provide the remaining answers. The information given is both confidential and to be used only within the limits of the above-mentioned project. Contact details will be stored securely and will only be used to clarify existing or obtain additional information. If you have any questions, please contact us by:

- E-mail: [GROWsurvey@visionary.lt](mailto:GROWsurvey@visionary.lt)
- Skype: VisionaryAnalytics
- Telephone: +370 52 730101

**The deadline for providing your responses is DD MM 2016.** Thank you in advance for your co-operation!

Yours sincerely,

Roman Horvath  
Policy Officer  
Clean Technologies and Products  
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

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<sup>95</sup> See <http://ec.europa.eu/growth/sectors/construction/apprenticeships/>.

***Construction sector-specific features of the apprenticeship system:***

- 1. Does your country's apprenticeship system in initial vocational education and training have any SPECIFIC FEATURES FOR THE CONSTRUCTION SECTOR compared to the average/standard/usual practice in your country? Specific features may include different target groups, duration of the programme, alternation between training places, administrative/organisational/implementation structure, etc. [single choice]**
  - a. No. Apprenticeships in the construction sector are implemented in the same way as the average/standard/usual practice in our country [Move to Q3]
  - b. Yes. Apprenticeships in the construction sector have at least some specific features compared to the average/standard/usual practice in our country [Move to Q2]
  - c. There are no apprenticeships in the construction sector in initial vocational education and training in my country [Move to Q4]
  - d. Do not know
- 2. What are the features of the apprenticeship system in initial vocational education and training that are SPECIFIC TO THE CONSTRUCTION SECTOR compared to the average/standard/usual practice in your country? [multiple answers possible]**
  - a. Target group, please specify:**
  - b. Age of learners**
    - i. Older
    - ii. Younger
  - c. Duration of (apprenticeship) programme:**
    - i. Shorter
    - ii. Longer
  - d. The share of time spent in in-company training:**
    - i. Bigger
    - ii. Smaller
  - e. Alternation of training between company and school:**
    - i. More frequent
    - ii. Less frequent
  - f. Involvement of learning venues:**
    - i. Higher number of learning venues involved (e.g. in addition to school and company, involves third partner (e.g. inter-company centre) ensuring learning outcomes for apprentices that single companies cannot ensure)
    - ii. Lower number of learning venues (e.g. school or company takes on most of tasks)
  - g. Contract between employer and learner (e.g. employment contract, formal agreement covered/not covered by the Labour Code):**
    - i. More often a formal contract is concluded (i.e. based on Labour code or similar)
    - ii. Less often a formal contract is concluded
  - h. Formal educational/occupational qualification provided:**
    - i. Education and training programme more often results in a qualification
    - ii. Education and training programme less often results in a qualification
  - i. Requirements for companies providing apprenticeships:**
    - i. More strict requirements
    - ii. Less strict requirements
  - j. Engagement of social partners in the implementation of apprenticeship programmes:**

- i. More limited/consultative role
- ii. Stronger/leading role

**k. Arrangements regarding apprentices' remuneration:**

- i. Higher remuneration of apprentices
- ii. Lower remuneration of apprentices
- iii. Regulated/fixed remuneration (wages)
- iv. Non-regulated remuneration (wages) agreed on a case-by-case basis
- v. Remuneration more often declared (transparent)
- vi. Remuneration less often declared (transparent)

**l. Sector-specific financial incentives are applied for financing apprenticeships:**

- i. Specific subsidy programme (e.g. grants, scholarships, subsidies for specific target groups)
- ii. Tax incentives (e.g. reductions in income tax, social security contributions)
- iii. Sectoral training fund
- iv. Loan scheme for apprentices
- v. Training leave
- vi. Payback clause
- vii. Saving scheme

**m. Other, please specify: \_\_\_\_\_**

Please comment, if necessary: \_\_\_\_\_

***Construction sector-specific initiatives in the area of apprenticeships:***

**3. Do you know of any CONSTRUCTION SECTOR-SPECIFIC initiatives or projects – successful or less successful ones – in your country in relation to apprenticeships in initial vocational education and training addressing the issues specified below? [multiple answers possible]**

*If selected, please indicate: (1) the name of the initiative and (2) the organisation/person coordinating the initiative.*

**a. Recruitment of apprentices:**

- i. Mobility (e.g. attracting talents from EU/third countries, training migrants)
- ii. Engagement of particular (new) target groups in apprenticeship training (e.g. young workers, women, former drop-outs, skilled and/or unskilled workers)
- iii. Vocational guidance (e.g. cooperation between companies and schools to inform pupils about apprenticeship opportunities in the sector)
- iv. Improving the reputation/professional status of construction occupations (e.g. skills competitions)
- v. Achieving a balance between the number of apprenticeship places offered by companies and the number of places demanded by potential apprentices
- vi. Improving the application process to apprenticeship programmes
- vii. Mediation/brokerage services to match apprentices with employers
- viii. Reducing the number of dropouts (e.g. mentoring of apprentices against dropping out)
- ix. *Other, please specify: \_\_\_\_\_*

**b. Quality and image of apprenticeships:**

- i. Ensuring comparable quality standards of competences and qualifications of learners across different regions
- ii. Assessing apprenticeship programmes
- iii. Improving skills and competencies required from school teachers and company trainers (e.g. development of guidelines or specific training programmes)
- iv. *Other, please specify: \_\_\_\_\_*

**c. Flexibility of apprenticeships:**

- i. Increasing the flexibility of alternance of periods at the workplace and at an education and training institution
- ii. Innovations in training infrastructure/venues (places where training is delivered, e.g. construction site, training bus)
- iii. Innovations in training materials (resources that are used in training, e.g. small-scale building systems for smoke or pressure tests)
- iv. Innovations in training methods (how training is delivered, e.g. e-learning or mentoring)
- v. Updating/adapting the curriculum
- vi. Modularisation of education and training programmes
- vii. Permeability between VET and higher education
- viii. *Other, please specify:* \_\_\_\_\_

**d. Apprenticeship follow-up:**

- i. Monitoring career paths (e.g. statistics on current apprentices and graduates)
- ii. Supporting careers via, for example, career advice services
- iii. Ensuring utilisation of skills i.e. determining who is under- or over-qualified for their jobs
- iv. *Other, please specify:* \_\_\_\_\_

**e. Particular needs of the sector:**

- i. Cross-craft understanding (e.g. the ability to grasp one's own work as part of an overall project, the ability to know the needs of other areas and other professionals)
- ii. Catering to the need for specific skills (e.g. in relation to energy efficiency, retrofitting, working at extreme heights, health and safety, etc.)
- iii. Facilitating the integration of migrants (e.g. improving foreign language, harmonising labour rights)
- iv. Involving suppliers in the delivery of training
- v. Providing apprenticeships tailored to the needs of small and medium-sized enterprises or SMEs (e.g. two companies sharing an apprentice, sector-specific training centres, administrative day-to-day support or tutor support services)
- vi. *Other, please specify:* \_\_\_\_\_

**f. Additional topic/issue not outlined above. Please specify:** \_\_\_\_\_

**4. What other sector-specific challenges or problems do you or people whom you represent face in relation to apprenticeships/work-based learning APART FROM problems in recruiting apprentices? [Please use your own words]**

**General**

**5. Upon completion of this survey, we may need to clarify your answers and/or obtain more information from you on some select aspects of interest. Please indicate whether you agree to clarify answers and/or provide more information:**

- Yes. Please provide your contact details:
  - Name surname:
  - Organisation:
  - Telephone:
  - E-mail:
  - Skype account name (if any):
- No

Thank you for completing this survey!

## ANNEX 4: LIST OF CASE STUDIES

Note: Case studies will be provided in the final report.

**Table 1: List of case studies prepared within the framework of the DG GROW study**

No.	Type	Title	Construction stakeholders involved	Country
<b>PLEDGE-HOLDER CASE STUDIES</b>				
1.	Horizontal (pilot)	<a href="#">Promoting construction apprenticeships to women</a>	1. EBC (Professional organisation, Europe) 2. Young Women's Trust (Non-pledger, UK)	EU, UK
2.	Horizontal	<a href="#">Addressing occupational health and safety issues in apprenticeships</a>	1. ANAEP 2. Berufsförderungswerk der Bauindustrie NRW gGmbH Ausbildungszentrum Essen	IT, DE
3.	Horizontal	<a href="#">Integration of migrants into the labour market</a>	1. The Danish Construction Association (DCA) 2. Schleiff Bauflächentechnik GmbH & Co. KG	DK, DE
4.	Horizontal	<a href="#">Vocational skills competitions in Germany</a>	1. Berufsförderungswerk des Hamburger Baugewerbes 2. Josef Prell GmbH 3. Bildungszentren des Baugewerbes e. V. (BZB)	DE
5.	Horizontal	<a href="#">Increasing mobility of apprentices</a>	1. Fundación Laboral de la Construcción 2. Education and training provider, Germany 3. BiW BAU, HDB and the Bulgarian Construction Chamber (BCC)	ES, BG, DE
6.	Horizontal	<a href="#">Dual study programmes in Germany</a>	1. Handwerkskammer Aachen - Bildungszentrum BGZ Simmerath 2. Franz Trippe GmbH 3. Heinrich Weber, Straßen- und Tiefbau GmbH & Co. KG	DE
7.	Vertical (pilot)	<a href="#">Monitoring of pilot projects of dual VET</a>	Bouwunie, Unie van het KMO-bouwbedrijf vzw	BE
8.	Vertical	<a href="#">Creating new construction apprenticeship standards</a>	Federation of Master Builders (FMB)	UK
9.	Vertical	<a href="#">Establishing new training programmes</a>	Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE)	EL
10.	Vertical	<a href="#">Strengthening cooperation between VET schools and companies</a>	Confédération Construction Bruxelles-Capitale (CCBC)	BE
11.	Vertical	<a href="#">Supporting financing of apprenticeships</a>	Fédération Nationale des Travaux Publics (FNTP)	FR
12.	Vertical	<a href="#">Integrated training modules for sustainable construction</a>	Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V	DE
13.	Vertical	<a href="#">Attracting young people to sustainable</a>	Berufsförderungswerk der Bauindustrie NRW gGmbH Ausbildungszentrum	DE

No.	Type	Title	Construction stakeholders involved	Country
		<a href="#">construction</a>	Hamm	
14.	Vertical	<a href="#">Vocational guidance via voluntary social work placements</a>	Stuck Belz Inh. Michael Christmann	DE
15.	Vertical	<a href="#">Promotion of roofing to young people</a>	Karl Heinz Stevens Bedachungen GmbH & Co. KG	DE
16.	Vertical	<a href="#">Innovative training tools</a>	Fundación Laboral de la Construcción (FLC)	ES
17.	Vertical	<a href="#">Training of trainers</a>	Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics (CCCA-BTP)	FR
<b>NON-PLEDGER CASE STUDIES</b>				
18.	Vertical	<a href="#">Online platforms attracting potential apprentices</a>	Construction Industry Federation (CIF)	IE
19.	Vertical	<a href="#">Technological innovation in training</a>	Passive House Association of Romania	RO
20.	Vertical	<a href="#">Innovative training platform</a>	L'Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)	FR
21.	Vertical	<a href="#">Initiating structural change to apprenticeships</a>	Bouwend Nederland, Vakgroep Opleidingsbedrijven	NL
22.	Vertical	<a href="#">Sharing German dual VET practice with other EU Member States</a>	German Office for International Cooperation in Vocational Education and Training (GOVET)	DE

Source: Visionary Analytics consortium

## PROMOTING CONSTRUCTION APPRENTICESHIPS TO WOMEN

### Introduction

The aim of this case study is to explore the current status quo of the promotion of construction apprenticeships to young women. This case study highlights the situation regarding gender equality in the construction sector and apprenticeships in Europe. It also explores the actions that two stakeholders are taking to promote construction apprenticeships to women in Europe. One organisation is working under the umbrella of the European Alliance for Apprenticeships (EAfA) and the other organisation runs a national level initiative similar to that of the Alliance.

The case study includes the activities of the two organisations:

- The European Builders Confederation<sup>96</sup> (EBC) is a Brussels-based European non-profit professional organisation representing SMEs in the construction sector. A pledge by EBC started in June 2015 was an attempt to bridge the gap between their members (national associations) and European level initiatives. EBC had been actively following developments related to EAfA since its inception and took advantage of an opportunity to invite its member organisations to contribute towards improving the situation in construction sector apprenticeships.
- The Young Women's Trust<sup>97</sup> (YWT) is a UK-based charity organisation representing young women aged 16-30 who are at risk of low or no income and a life in poverty. YWT formally launched its campaign *Making Apprenticeships Work for Young Women* in March 2016 with the view of addressing the skills gaps and imbalances in apprenticeships by expanding apprenticeship opportunities for young women and ensuring that the government is able to make progress on its plans to make 3 million new apprenticeships available by 2020.

The pledge by EBC outlines seven activities, four of which touch upon the issue of equal opportunities for young women in construction apprenticeships (see Table 1 below).

**Table 2: Targets and corresponding activities of the pledge by EBC**

Pledged targets and deadlines	Corresponding pledged activities
<b>Target 1:</b> Prepare a document collecting recommendations by EBC members for decision-makers to increase the participation of apprentices in the construction sector by 2016.	<b>Activity 1:</b> Organising the EBC Annual Conference 2015 on how to provide equal opportunities for young people and women in the construction sector. <b>Activity 2:</b> Addressing the issue of providing equal opportunities for young people and women in the construction sector at an exhibition and dinner-debate in the European Parliament on 13th October 2015. <b>Activity 3:</b> Discussing the issue at the European Social Dialogue Committee for Construction and in the EBC.
<b>Target 2:</b> 2/3 of EBC member associations to sign an apprenticeship	<b>Activity 4:</b> Using all of EBC's communications tools (newsletters, press releases, social media, circulars to its members, EBC website, meetings) to promote mobility,

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<sup>96</sup> The EBC's mission is to ensure the inclusion of SMEs' needs in the European legislative process by putting forward construction SMEs' contributions in the areas of sustainability, health and safety at work, entrepreneurship, SMEs' access to markets, standardisation, fair competition in the internal market and so on, as well as promoting SMEs' role for employment and sustainable development. See more at <http://www.ebc-construction.eu/index.php?id=13>.

<sup>97</sup> For more information on the YWT's aims and mission, please see <http://www.youngwomenstrust.org/about>.



Pledged targets and deadlines	Corresponding pledged activities
pledge by the end of 2015.	quality, image and supply of apprenticeships, as well as the benefit of work-based apprenticeship schemes among EBC's members.

Source: EBC Pledge, 2015a.

YWT conducts various activities to build confidence in young women and advocates for their fair financial futures, such as free coaching and personalised advice on job applications, campaigns and research. Their campaign *Making Apprenticeships Work for Young Women* is solely dedicated to promoting gender diversity within apprenticeship schemes in the UK (See Table 2 below).

**Table 3: Young Women's Trust Campaign *Making Apprenticeships Work for Young Women***

Targets and deadlines	Corresponding activities
<b>Target 1:</b> Promote gender diversity within apprenticeship schemes.	<p><b>Activity 1:</b> Encouraging companies to join the campaign by making 'Employer Pledges', that are commitments to promoting gender diversity in apprenticeships.</p> <p><b>Activity 2:</b> Political lobbying to make government guidance related to the possibilities of promoting gender diversity in apprenticeships clearer to employers.</p>

Source: Interview, Gale, 2017.

### ***Women in the construction sector in Europe***

In 2015, the construction sector employed 15 million workers in the EU. 90% of these workers were male (Eurostat, 2016). 92% of the sector's working population was over 25 years old (EBC, 2016). Young women accounted for only 1% of those young people working in the sector (Liébus, 2016). The construction sector is traditionally seen as male-dominant, however, there are multiple other barriers that prevent women from actively participating in the sector besides its traditional image: (1) lack of skills necessary to enter the sector, (2) women rarely participate in training for relevant construction trades, (3) lack of political will to pursue a higher level of action for ensuring women's equal access to the sector, and (4) lack of openness of the sector to female workers (EBC, 2015b).

There are interesting national examples in terms of the number of women participating in the construction sector (see Table 3 below). Yet, even though in some countries the number of female workers is above the EU-28 average (i.e. France, Luxembourg and the United Kingdom), the overall numbers of women (esp. young women) in construction are extremely low.

**Table 4: National examples of women and young worker participation in the construction sector in 2016**

Country	Workers 15 y/o or over (Total, m)	Female workers (%)	Young workers 15-4 y/o (%)	Young female workers 15-24 y/o (%)
<b>EU28 Average</b>	<b>15.19</b>	<b>9.87</b>	<b>7.83</b>	<b>0.67</b>
Belgium	0.34	8.53	8.82	n/a
Spain	1.11	8.18	2.86	n/a
France	1.7	10.49	8.48	n/a
Croatia	0.11	5.91	4.18	n/a
Italy	1.39	6	4.55	n/a
Latvia	0.065	3.54	7.08	n/a
Luxembourg	0.016	14.38	n/a	n/a
Hungary	0.28	6.96	7.75	n/a
Netherlands	0.4	7.53	5.85	n/a

Country	Workers 15 y/o or over (Total, m)	Female workers (%)	Young workers 15-4 y/o (%)	Young female workers 15-24 y/o (%)
Poland	1.24	7.53	6.72	n/a
Romania	0.723	6.46	7.4	n/a
Slovenia	0.05	7	5	n/a
United Kingdom	2.29	12.4	9.68	1.09

Source: Eurostat, Labour Force Survey 2016 (data for the 3<sup>rd</sup> quarter).

Note: Numbers above the EU average are marked in green, numbers below the EU average are marked in yellow, and numbers that are less than 0.5 percent above or below the EU average are marked in grey. 'N/a' – data not available.

However, there are multiple opportunities for women to participate in the sector that can counteract the barriers to entering the sector (EBC, 2015b):

- Starting salaries are higher than many people expect.
- A lack of skills necessary to work in the sector can be compensated through workplace-based training.
- The construction sector is moving towards more mechanical tasks and away from the necessity of using strong physical force.
- The sector has the potential for the adoption of innovative solutions that respond to today's global challenges, i.e. conversion towards a green economy and sustainable development.

### ***Women in construction trade training in Europe***

Evidence shows that young women as apprentices are under-represented in many key UK sectors such as construction and ICT and female apprentices are more likely to be aged over 25 than their male counterparts (YWT, 2015). Even though, overall, there is a fairly equal amount of males and females starting apprenticeships in the UK (52.8% females and 47.2% males in the school year 2015/2016), the proportion of females starting apprenticeships in construction ranges from a mere 1.6% to 1.9% in the period 2008-2014 (Skills Funding Agency, 2015). A study by Young Women's Trust (2016) found that there were multiple barriers for women trying to enter or complete construction apprenticeships, for example:

- Traditionally male-dominated construction sites often make women feel uncomfortable and outnumbered.
- Advertising and descriptions in apprenticeships use language that attracts male candidates.
- Very few organisations offer apprenticeships on a part-time basis.

The situation is similar in other EU Member States and EBC member organisation countries, for example:

- In the Netherlands, women are highly underrepresented in apprenticeships in engineering, manufacturing and construction. Of the total number of apprentices in the three sectors that graduated in the school year 2014/2015, only 3.3% were women (5% and 3.9% in school years 2012/2013 and 2013/2014 respectively) (Centraal Bureau voor de Statistiek, 2016).
- In Poland, Vocational Education and Training (VET) in construction is even more male-dominated. In 2015/2016, there were only 58 female learners enrolled in basic vocational schools in architecture and construction, which accounts for 0.2% of all learners. Even less women graduated that year – there were only five young women among the graduates (Główny Urząd Statystyczny, 2016).
- In Slovenia, the number of women enrolled in vocational or technical education in engineering, manufacturing and construction ranged from 7.3% in 2008 to

an increase of up to 9% in 2014 (Statistical Office of the Republic of Slovenia, 2014).

Vocational education is one of the ways in which to promote opportunities that the construction sector has to offer women. Apprenticeship schemes offer a balance of technical skills and workplace experience so that learners get hands-on experience and a head-start in their careers. In addition, many people who start their training as apprentices move on to start their own businesses (EBC, 2015b).

### ***EBC: Promoting construction apprenticeships to women in Europe***

Overall, EBC is satisfied with the progress of their pledge. They are halfway through with the pledge in terms of quantitative targets and they have implemented extra actions that were not initially foreseen in the pledge. Their actions related to promoting construction apprenticeships to women have had significant **progress and results**.

#### **Activity 1: Organising the EBC Annual Conference 2015 on how to provide equal opportunities for young people and women in the construction sector.**

The EBC Annual Conference took place in Geneva, 19 June 2015. Approximately 60 to 70 people attended the conference, including Swiss entrepreneurs and representatives of the Swiss government, as well as journalists and EBC members. The conference was devoted to the topic of inclusion of women and young people in the construction trades. The conference explored different ways of achieving this goal, such as through apprenticeships and, also, the role of social partners. The conference resulted in a consensus between the EBC's members to make the sector more inclusive for both women and young people. This is an important development, as the issue of gender inclusiveness in construction apprenticeships has had limited priority among construction professional organisations. The conference helped to focus more emphasis and attention on these issues, as more and more associations across Europe are now encouraged to think about these issues.

#### **Activity 2: Addressing the issue of providing equal opportunities for young people and women in the construction sector at an exhibition and a dinner-debate in the European Parliament on 13th October 2015.**

The events were organised on the occasion of EBC's 25<sup>th</sup> anniversary. EBC set up a 1-day exhibition of 22-24 photographs with stories from young people and women about their experiences working in the construction sector: what challenges they encounter, what prospects they see for the future and so on. The exhibition was organised as a part of the dinner. The event was attended by approximately 120 people including Members of the European Parliament (MEPs) and their assistants. The presentation was sponsored by four MEPs from the UK, Portugal, France and Italy, who represented two different political groups and multiple committees of the EP.

#### **Extra activity: An exhibition on involving women and young people in the construction trades at the European Economic and Social Committee in February and March 2016**

After the success of the exhibition, additional activities were organised. The exhibition was brought to the European Economic and Social Committee (EESC) in Brussels where it was displayed for a month during February-March 2016. Based on the stories presented in the exhibition, EBC produced 150 brochures that were distributed in the EESC, and EBC continues to distribute them at various events. At the moment, EBC is making an effort to bring the exhibition to Spain. Talks with the Tourism Bureau of Spain are ongoing as to how EBC can promote the exhibition in that country.

### **Activity 3: Discussing the issue at the European Social Dialogue Committee for Construction and in the EBC.**

EBC was planning on bringing the discussion of the issue of inclusion of women in construction apprenticeships to the European Social Dialogue Committee for Construction. However, so far, no meetings have been held on this topic.

### **Activity 4: Using all of EBC's communications tools (newsletters, press releases, social media, circulars to its members, EBC website, meetings) to promote mobility, quality, image and supply of apprenticeships, as well as the benefit of work-based apprenticeship schemes among EBC's members.**

EBC actively shares news and opinions on the topic of gender equality in the sector on their website<sup>98</sup>. They also have an active social media campaign on Twitter<sup>99</sup> and LinkedIn<sup>100</sup>. One of the more recent examples of EBC's use of communications tools is a March 2016 opinion piece by EBC president Patrick Liébus for EurActiv.com on promoting gender equality in the construction sector<sup>101</sup>.

The main **target groups** of these actions are member organisations that are encouraged to speak up on issues of gender equality in the construction trades. Young people also benefit from EBC and its members' actions to make apprenticeships more open and available to all. The **resources** that are required by the pledge are mainly human resources, as the member organisations have to be consulted on the pledge-making process. EBC currently has two people working on matters related to EAfA.

Actions that are expected to have or have already had a tangible **impact** on target groups:

- Since EBC started talking on the topic of inclusion in 2015, many more organisations have joined the conversation. EBC's French members have taken up the issue, as well as the UK-based organisation Federation of Master Builders, that actively speaks up on the issue of equal opportunity in the media.
- There are more and more project proposals on the inclusion of women in the sector being submitted under the Social Dialogue budget line.
- Young people also indirectly benefit from these actions as apprenticeship is presented to them as an additional possibility in terms of education and employment paths.

The pledge was underpinned by the following **success factors**:

- EBC feels very welcomed to the EAfA pledges' campaign by the European Commission. This adds extra motivation for EBC to strive for the success of their pledge.
- There is great interest from EBC's national members to discuss issues related to apprenticeships.

The fact that there are no policies for the inclusion of women in the construction sector at the EU level poses a **challenge** for the implementation of the pledge. As the legislative process is out of EBC's reach, they focus on 'soft' actions (e.g. publishing articles, setting up exhibitions, discussions) that are aimed at a cultural shift.

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<sup>98</sup> See 'News and press releases', <http://www.ebc-construction.eu/index.php?id=25>

<sup>99</sup> See [https://twitter.com/EBC\\_SMEs](https://twitter.com/EBC_SMEs)

<sup>100</sup> See <https://www.linkedin.com/company/european-builders-confederation-ebc>

<sup>101</sup> See <https://www.euractiv.com/section/social-europe-jobs/opinion/diversify-the-construction-sector-for-jobs-and-growth/>

## **YWT: Promoting gender equality in apprenticeships in the UK**

The YWT campaign *Making Apprenticeships Work for Young Women* started in July 2015 with research on the inclusion of young women in apprenticeships. Focus groups with young women, employers, and government officials were organised during the research. This led to a formal launch of the campaign in March 2016 as part of the UK's National Apprenticeship Week. The campaign is currently ongoing and is foreseen to run at least until 2020 in line with the government's objective to make 3 million new apprenticeships available by that time. YWT will be releasing a mid-term review in the autumn of 2017 to follow up on how the government has included gender considerations in apprenticeship reform.

### **Activity 1: Encouraging companies to make employer pledges**

Employer pledges are the key focus of the campaign. At the moment, eight companies have signed pledges<sup>102</sup>, with discussions ongoing with six more potential pledgers. These activities are beneficial for the companies:

- With these pledges, YWT is building a network for sharing good practices. Currently, an annual networking event for all pledgers is being organised.
- In addition, a newsletter dedicated to pledgers is being developed that will also allow for the sharing of ideas between pledgers.
- YWT is developing a guide of good practices from the pledging companies that is to be launched in 2017.
- YWT representatives go to speak to young women at pledging companies' recruiting events.
- The pledging companies gain access to the young women's' advisory board of YWT where they can get the advice of young women and adjust their work accordingly (e.g. test the messages in their advertisements targeted at attracting young women to apprenticeships).

YWT expects to have 20 employer pledges by the end of 2017.

### **Activity 2: Political lobbying to make government guidance related to apprenticeships clearer to employers.**

YWT is working on providing recommendations to the government regarding the guidance it is giving to employers on how to organise apprenticeships. One of the most salient issues is the confusion about current legislation (principally Sections 158 and 159 of the Equality Act 2009) of positive action in recruitment. The legislation allows for employers to use gender as a tie-breaker for equally qualified candidates in order to advance equality. However, employers are confused about the extent to which the legislation gives them freedom to proactively make recruitment decisions along gender lines. Legal advice is generally conservative in interpreting the legislation and, therefore, many companies say that they have been deterred from taking any other active actions promoting apprenticeships to young women beyond recruitment. YWT is looking for the government to acknowledge the need for guidance and possible refinement to the equality legislation that encourages positive action more effectively.

YWT would also like to encourage companies to implement part-time apprenticeships and is currently developing a model for this. Part-time apprenticeships also benefit young women, as they are then more able to balance caring responsibilities with training and employment. This would also benefit men who are carers, but it is still the

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<sup>102</sup> Some employer pledges (incl. the Builders Merchants Federation representing merchants and suppliers in the construction industry) are available via the following link: <http://www.youngwomenstrust.org/employerpledge/signatories>

case that young women are much more likely than young men to be caregivers - either for their own children or other family members. YWT has anecdotal evidence from women who prefer to take up low-skilled, minimum wage jobs that provide an appropriate balance in preference to taking up apprenticeships that offer development and progress opportunities, but do not provide a balance with their other responsibilities. There are also other reasons why companies do not offer part-time apprenticeships, for example (Interview, Gale, 2017):

- They believe that supervising a part-time apprenticeship will be costly or time consuming.
- They believe that they need a full time member of staff to cover the required workload.
- They believe that apprentices must be employed full time by law.

YWT wants to understand what needs to happen to challenge the first two beliefs and to improve the level of governmental guidance to change perceptions about the latter. Currently, the regulations allow for apprentices to work part time (at a minimum of 16 hours per week), but many employers are not aware of this.

YWT recently met with the Secretary of State for Education to discuss the issues regarding gender equality in apprenticeships. YWT also has an advisory panel comprised of 10 young women who help to ensure that the campaign is moving in the right direction. These discussions allow them to lobby their local organisations and Members of Parliament from their constituencies. In addition, all of YWT's activities related to the campaign are supported by press releases and media coverage to publicise the successes and aims of the campaign.

The **target groups** of these actions are young women and companies. Young women are given a louder voice on issues of gender segregation in male- and female-dominated sectors and companies are informed about the benefits of taking on women apprentices. The government also benefits from YWT input into policy around apprenticeships. So far, most of the pledging employers have been large companies that had more time to give to this campaign and provide a lot of publicity around their pledges. YWT wishes to include more SMEs in the future, as the construction industry is dominated by SMEs and they are the drivers of training in the sector. The **resources** necessary to work on the campaign come from a team at YWT, where one person works on the employer pledges and political lobbying full time, and the media and digital offices support the publicity and promotional activities surrounding the campaign.

YWT's actions generally bring about a positive **impact** on their target groups:

- All parties benefit from changes in perception. Industry employers become more welcoming for women apprentices and more young women change their perception of the industry which encourages them to apply for apprenticeships more proactively.
- Employers are able to advertise their good practice examples to the wider public as well as government and to receive recognition for their actions.
- Government goals are supported and advice offered via the Apprenticeship Advisory Group to which YWT has been invited.

One of the main **success factors** of this campaign was the large amount of attention given to apprenticeships by the government. The intense activity to make apprenticeships work provided a good opportunity for YWT to engage with the government and to provide input on apprenticeship-related policies. However, the campaign has also encountered three main **challenges**:

- Government reform on apprenticeships is at a fairly early stage. The reform is mainly focused on changing the structure of apprenticeships (with switching to employer-led standards) and puts less focus on the quality of apprenticeships. It is important to place a stronger focus on the quality of training and the target groups of the apprenticeships and their needs in the future, rather than only focusing on reforming the structure of apprenticeships.
- Getting a buy-in from employers is quite difficult, as many companies, even if interested in the campaign, usually still have a long process to go through internally before they are prepared for apprenticeships (e.g. they are not well acquainted with the possibilities for apprenticeships provided by law, they lack staff and/ or resources to supervise an apprenticeship).
- It is difficult to maintain a well-rounded focus on gender equality in apprenticeships. In promoting a move by young women into traditionally male-dominated sectors (e.g. the construction sector), it is important not to lose sight of the low quality (that has been evidenced in the polling of young women, in terms of job progression, pay and training opportunities) and inequalities in apprenticeships in traditionally female-dominated sectors such as business administration, childcare as well as health and social care.

### ***Conclusions and recommendations***

EBC and YTW are both satisfied with the progress that they have achieved with their actions. EBC is halfway through with its pledge and strives to continue with its activities. YWT is currently enjoying a successful start to their campaign and will continue to work on issues of gender equality in apprenticeships until at least year 2020. Both of these commitments to the inclusion of women in construction apprenticeships provide interesting insights on the challenges as well as possibilities of working on such an issue:

- The construction sector is male-dominated. Moreover, the population of active workers is starting to grow older and young people are struggling to take their places. The inclusion of women would help to tackle the demographic challenge in this sector.
- The topic of integration of women into the sector is still gaining in popularity and there are many more untapped areas for potential cooperation and discussion to further the cause, e.g. more active EU guidance, awareness-raising among employers and young people about the possibilities that construction apprenticeships present.
- Many companies are still internally unprepared for apprenticeships in order to join such initiatives. The inclusion of SMEs as drivers of gender diversity in apprenticeships is a must if any major breakthroughs in the construction sector are to be achieved.
- The promotion of apprenticeships to young women in the UK is impeded by a possible interpretation of the equal qualification clause as being potentially discriminatory against young men. Clear guidance from the government would help encourage more active actions regarding apprenticeship promotion to young women.
- A unified European strategy on the inclusion of women in construction is still pending. In the meantime, soft actions such as exhibitions, discussions and other promotional events are the most accessible ways to contribute towards cultural change with regard to male gender bias in the sector.
- The YWT campaign is a national example of how networks similar to EAfA function on a more local scale. The EAfA could adopt methods and measures similar to those used in the YWT campaign (e.g. research-based campaigning, focus groups and target group panels, networking events, political lobbying and negotiations with national authorities, etc.) that would help to more actively engage stakeholders in the Alliance's activities by providing more incentives to join.



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## ADDRESSING OCCUPATIONAL HEALTH AND SAFETY ISSUES IN APPRENTICESHIPS

### Introduction

This case study focuses on occupational health and safety (OHS) issues relevant to apprenticeships in the construction sector. The case study is comprised of actions by two construction sector stakeholders that made pledges to the EAfA construction sector campaign in 2016:

- Berufsförderungswerk der Bauindustrie NRW gGmbH<sup>103</sup> (BFW) is a German non-profit organisation providing support to construction companies by providing practical training to VET learners. BFW manages three dual VET training centres (de. Ausbildungszentrum), providing on-the-job training in the building trades in Essen, Hamm and Kerpen, Germany. This pledge by the training centre in Essen (ABZ Essen) addresses the issue of the high number of accidents in construction work. The pledge-holder believes that a major share of attention for OHS should be given early on in vocational training.
- Associazione Nazionale Artigiani dell'Edilizia dei decoratori, dei Pittori e Attività Affini (ANAEPA)<sup>104</sup> is an Italian national association of artisans, decorators, house painters and similar professionals. It represents craftsmen whose work entails the more complex activities of construction and renovation, maintenance and repair, as well as the completion and finishing tasks (e.g. paving and painting). ANAEPA is one of the representative organisations of the National Organisation for Vocational and Professional Training in the Construction Industry (Formedil) that is a very important partner of the pledge. ANAEPA provides guidelines regarding the design and implementation of training and employment services to Formedil, which, in turn, promotes, implements and coordinates these activities at the national level in accordance with ANAEPA's guidelines through its 102 Building Schools.

The pledge by ABZ Essen is focused almost exclusively on OHS issues. ANAEPA pledged to promote OHS along with a commitment to enhance the partnership approach towards all actors included in apprenticeships by encouraging contacts between companies and enterprises, holding training events for apprentices and so on.

**Table 5: Targets and relevant corresponding activities of the pledges**

Pledged targets	Relevant corresponding pledged activities
	<b>ABZ Essen</b>
<b>Target 1:</b> Increasing the number of internships and apprenticeships in 2016.	<b>Activity 1:</b> For the year 2016/2017 it is striving to enrol at least five young people (per year) through the programme of a career start in the construction sector ( <i>Berufsstart Bau</i> ), which also entails OHS training from the very beginning.
<b>Target 2:</b> Improving the quality of education by introducing occupational safety from the start of the training.	<b>Activity 2:</b> With a certification of their Health and Safety at Work System (AMS), the Centre continues to set new standards in the implementation of OHS.
	<b>ANAEPA</b>
<b>Target 1:</b> Improve the quality elements of apprenticeship by	<b>Activity 1:</b> Promoting the safety and professionalism of construction workers

<sup>103</sup> See more at <http://www.abz-essen.de/>

<sup>104</sup> In general, ANAEPA focuses on: (1) promoting the effective organisation of artisans working in the construction field, (2) representing artisans when signing collective national work contracts for employees in the construction sector, (3) protecting and assisting crafts enterprises and strengthening their organisation in terms of economic, technical and professional capacity and especially through undertaking training initiatives. See more at: <http://www.anaepa.it/>.

Pledged targets	Relevant corresponding pledged activities
cooperating with the companies of the construction sector and the training centres.	through courses organised by Formedil, a national institution for education and professional training in the construction sector established by labour unions.

Source: Pledges by ABZ Essen and ANAEPA.

The aims of this case study are to:

- Overview both general and country-specific trends in occupational health and safety in the construction sector
- Present the above identified activities of the selected construction stakeholders.

### ***Occupational health and safety in the construction sector***

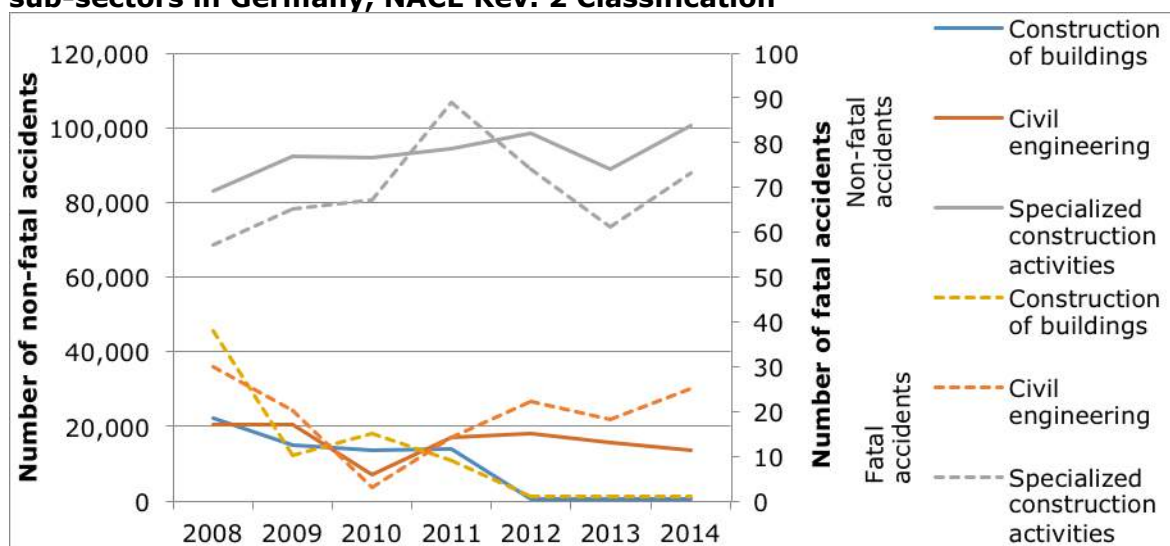
The construction sector presents one of the most dangerous challenges for workers because the work may include operating heavy machinery, working at heights, exposure to a variety of dangerous substances, having a mobile working place, etc. More than one in five fatal accidents at work in the EU-28 in 2014 took place within the construction sector (Eurostat, 2017). In addition, the construction sector has the highest number of young worker fatalities (EU-OSHA, 2007). This presents a major issue for apprenticeship training, as hiring apprentices, who are usually under 18, is more complicated than adults:

- Young people are subject to higher OHS risks
- Their work is more expensive to insure and monitor than that of adult workers
- They need to be more intensely supervised as stated in European and national legislation.

In 2008-2014, 18.7% to 22% of all fatal accidents and 12% to 14.8% of all non-fatal accidents at work in Germany took place within the construction sector. The construction sector accounts for the highest number of fatal accidents in the country, comparable only to transportation and storage, manufacturing, and, most recently (since 2013), agriculture, forestry and fishing. In terms of non-fatal accidents, the construction sector is second to the manufacturing sector, which annually accounts for 24% to 27% of all non-fatal accidents. There are a number of interesting national trends regarding these numbers:

- The absolute numbers of fatal and non-fatal accidents have fluctuated over the years without a steady trend of increase or decline. However, the number of reported accidents in the construction of the buildings sub-sector declined substantially from 38 in 2008 to only one fatal accident in 2014, and from 22,426 in 2008 to only 431 non-fatal ones in 2014, accounting for a respective 97% and 98% decline in accidents. Both the number of fatal and non-fatal accidents in the civil engineering sub-sector declined slightly (by 16.7% and 34% respectively).
- Most accidents in the construction sector took place in the sub-sector of specialised construction activities. The absolute number of accidents in this sub-sector also grew by 16% and 21% for fatal and non-fatal accidents in the past six years.

**Graph 1 : 2008-2014 Trends of fatal and non-fatal accidents in construction sub-sectors in Germany, NACE Rev. 2 Classification**

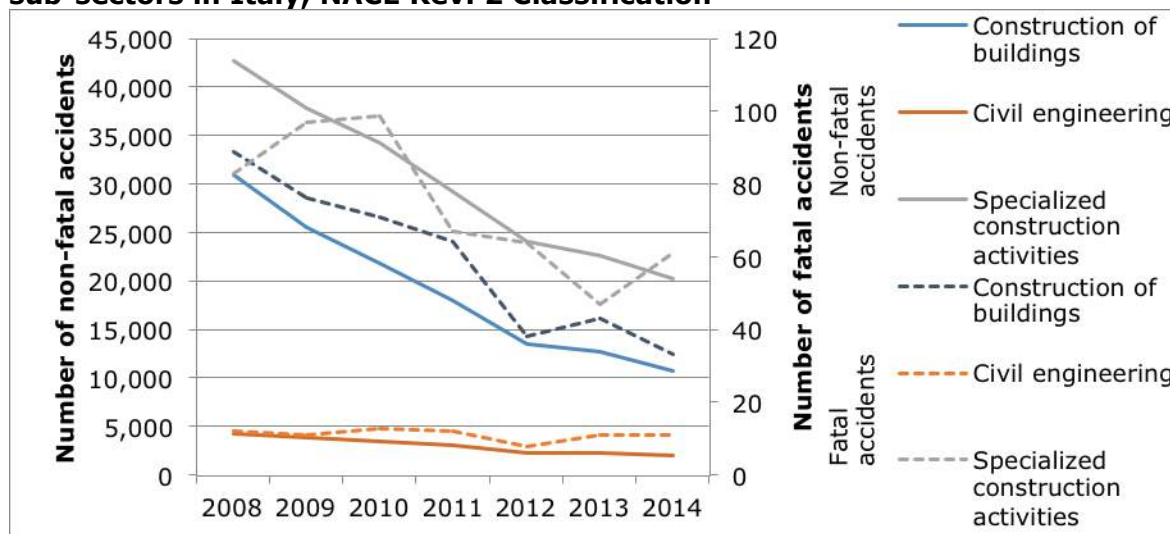


Source: Eurostat, 2017.

In 2018-2014, the percentage of all fatal accidents at work in the construction sector in Italy remained relatively stable at around 20%, as the percentage of all non-fatal accidents decreased from 15.5% to 10.5%. As in Germany, the construction sector in Italy also accounts for the highest number of fatal accidents, comparable only to the manufacturing and agriculture, forestry and fishing sectors. As in Germany, the manufacturing sector in Italy also accounts for the highest number of non-fatal accidents. Differences exist within the construction sub-sectors as well:

- The absolute number of accidents has gradually decreased. The construction of buildings sub-sector saw a 62% decline in fatal accidents, while the specialised construction activities sub-sector saw a 26.5% decline. The number of accidents in the civil engineering sub-sector did not change substantially. All three construction sub-sectors displayed a substantial decline in non-fatal accidents – the numbers were at least halved over the past six years.
- In 2014, there were many more accidents in the construction of buildings in Italy than in Germany. We can compare 33 fatal accidents in Italy to only one in Germany and 10,671 non-fatal accidents in Italy to only 431 in Germany.

**Graph 2: 2008-2014 Trends of fatal and non-fatal accidents in construction sub-sectors in Italy, NACE Rev. 2 Classification**



Source: Eurostat, 2017.

In Europe, there are four models for organising OHS representation. Employee OHS can be provided through (Fulton, 2013):

- A combination of elected employee OHS representatives and a joint employee/ employer committee (in larger workplaces) – the most common type in the EU.
- A joint employee/ employer OHS committee.
- Employee OHS representatives – Italy fits into this type.
- Works council or a works council sub-committee – Germany fits into this type.

In addition to national legislation, most of the OHS measures are in fact organised at the company level, as it is the employer's responsibility to protect the safety and health of workers. Young workers are one of the vulnerable groups that must be given extra attention for various reasons (EU-OSHA, 2007, 2012):

- *Increased susceptibility to dangerous substances.* Data indicate that the prevalence of allergic reactions (such as asthma) and work-related skin disorders are higher among young workers.
- *Employment in high-risk sectors.* Young workers are often employed in agriculture, manufacturing or the construction sectors, where there is a higher potential for exposure to a wide range of dangerous substances.
- *Lack of awareness of health and safety issues.* In general, young people often lack practical experience and take greater risks than older people. This is exacerbated in situations where employers fail to provide adequate information and training to young workers.

### ***Italian and German OHS systems in apprenticeships***

In general, construction apprentices enjoy the benefits of the general OHS systems that operate in construction companies, as they receive training on the company's premises. In Germany, OHS clauses are embedded in regulations for every profession taught in VET. OHS topics are included in the curriculum throughout the entire three-year learning process. There are two main elements of OHS in Germany: 1) health care, which includes abilities such as recognising the source of health hazards, safe usage of work instruments and devices, giving first aid, safe lifting of heavy objects, etc., and 2) work safety, which includes regulations such as wearing appropriate work clothing, e.g. when working with dangerous chemical substances, wearing a helmet at construction sites, etc. Both of these elements are developed throughout the whole period of training in all venues – the VET school, the training centre (which is specific to the construction sector) and the company. It is important to note that the federal regulations on OHS are developed with the participation of all relevant stakeholders, including companies, training centres, trade unions and employer associations. They all seek a consensus on regulations for all professions (Interview, Schelonka, 2017).

Security at work has recently gained a very important place in German society. As a result, the OHS systems in Germany are more strict and comprehensive than in other European countries. However, on many smaller construction sites, there is still an urgent need for action, as too little observation concerning compliance with regulations takes place there. The importance of work safety must be communicated from day one and start early on in a professional career. OHS knowledge must also be refreshed regularly and further developed through training. It is difficult to teach unskilled workers an awareness of work safety. Thus, it is easier to already start imparting OHS knowledge earlier on during training (Interview, Waldoch, 2017).

In Italy, OHS is regulated by Legislative Decree Law 81/2008 (it. *Testo Unico Sicurezza Lavoro*). This decree is a single piece of legislation coordinating mandatory OHS measures that provides for specific sanctions against non-complying parties. The main provisions of the decree include the following:

- Requirement for employers to organise protection and prevention within the enterprise in order to identify risk factors and eliminate or reduce them to a minimum.
- Provisions for the election or appointment of a workforce representative on matters of OHS who has access to specific information and consultation rights.
- Obligation to provide employees with all general information on the risks present in the workplace and specific information on the risks associated with the performance of tasks assigned to them.
- Obligation to all employees to receive adequate health and safety training specific to their own particular job at the time of their recruitment, in the event of a transfer or change of job, and in the event of the introduction of new work equipment or any new technology. There is also a provision for special and appropriate training for safety representatives.

OHS training for the on-the-job part of apprenticeships in Italy is a part of their compulsory basic training for integrating a young worker into the work processes. OHS training is not limited to a single course, but rather is provided for in both the 1<sup>st</sup> and the 3<sup>rd</sup> years of apprenticeships. Obviously, OHS training depends very much on the type of work that the apprentice will be performing. The training has different durations depending on the profession for which the apprentice is being trained (Interviews, Bastianoni, Carapella, 2017).

The two pledges reflect the differences in the OHS systems. The next sections present the activities of both pledges: ABZ Essen provides OHS training in-house, while ANAEPa provides for guidance in designing a nation-wide system of OHS courses mandatory for all new entrants into the sector, including construction apprentices.

### ***ABZ Essen pledge: incorporating OHS early in training***

ABZ Essen has fully implemented their OHS aims and continues to adhere to them in their everyday work. These aims are a firm component of all of their activities as their importance is fully acknowledged by the entire workforce in Germany.

**Activity 1: For the year 2016/2017 ABZ Essen is striving to enrol at least five young people through their programme of Career Start in the construction sector (de. *Berufsstart Bau*) that follows the principle of introducing OHS training from early on.**

The programme *Berufsstart Bau* engages young people who graduated secondary school, but who are not yet ready for dual training for various reasons, and, therefore, have not yet gotten a place in the dual training system. With this measure, these young people with limited skills, who cannot find employment after completing school, are offered courses for 6 to 12 months in partnership with businesses and training centres. At least 50% of the total duration of the action must be carried out at the company and a corresponding contractual agreement between the company and the participant is required. The training is financed by labour agencies (de. *Agenturen für Arbeit*) that bear the financial costs of employing these young people. After the completion of the course, the learner may continue dual training with the same employer and also start attending classes at a VET school (Interview, Waldoch, 2017). This measure is intended to increase the interest of young people in careers in the construction sector and to simplify their training through tasks that are less demanding. ABZ Essen enrolled 16 people via this programme in 2013, nine people in 2014, another nine in 2015 and two in 2016 (Interview, Waldoch, 2017).

OHS is one of the areas covered during the programme. It focuses on the ability to observe and apply general safety and accident prevention regulations as well as knowledge of and ability to apply protective equipment to prevent injuries and occupational diseases. OHS is extremely important in *Berufsstart Bau* due to its target group – young people with learning disabilities or restricted placement perspectives, not yet fully trained young people and socially disadvantaged young people. As a

vulnerable group of young people is introduced to the construction industry through *Berufsstart Bau*, occupational safety is of great importance from the outset. By introducing young persons to the topic of OHS from the very beginning of their careers, the programme helps these future specialists build up a basic understanding of the topic before they start their jobs.

ABZ Essen also carries out other measures to introduce OHS training for apprentices. For example, *Berufsförderungswerk der Bauindustrie* organises mandatory training on the topics of safe heavy lifting, first aid, skin protection, etc. These courses are mandatory for all construction apprentices and have been running for approximately 10 years (Interview, Schelonka, 2017).

**Activity 2: With the certification of their Health and Safety at Work System (AMS), the Centre continues to set new standards for the implementation of OHS.**

The Health and Safety at Work System (AMS) is a form of a worker protection system within an organisation. It confirms the organisation's commitment to maintaining a safe and healthy working environment in the same way as Quality Management systems do. This OHS system has to be organised systematically, validated regularly, and is subject to continuous improvement. The effectiveness of the AMS can be certified by the award of an AMS certificate following an independent inspection (Theramax, 2013).

The AMS certification can be mandatory or voluntary. ABZ Essen opted for a voluntary certification. ABZ Essen succeeded in getting their OHS system certified in 2007. This aim, however, has been further developed, as there is a re-certification every three years. The aim is thus for OHS to become a firmer component of a company's philosophy. ABZ Essen is still the only educational institution in Germany with an AMS certification. All safety instructions, including instructions on how to use every device and the responsibilities of each employee related to OHS, are outlined in a safety manual. This manual is reviewed during re-certification and is assessed based on whether it has been updated in accordance to present day conditions. This review lasts one day at the end of which the inspector makes a decision whether the AMS certificate can be re-issued or not. The centre has been re-certified three times already and their current AMS certificate is valid until 2019 (Interview, Waldoch, 2017).

The main **target groups** for the above-outlined actions of the pledge are apprentices, companies, the education centre itself and the economy in general. Fewer accidents mean more productivity and fewer failures in terms of performance. More trainees in the construction industry also mean better-trained personnel in the future. Most of the **resources** necessary for implementing these activities are provided by the training centre. In order to get the certificate, they had to implement a new management system. However, they did it without hiring new staff. One representative of the training centre attended a two-day seminar to get acquainted with the system and to gain the ability to transfer it to the centre. There are two people responsible for OHS, one of whom is always present in the training centre, and another who is not stationed at the centre, but can be summoned upon need. Management has to define the OHS goals and respective managers are responsible for monitoring their implementation and compliance with the goals. The annual and ongoing maintenance of the OHS management system and related documentation requires few personnel resources. However, one of the main **challenges** to the implementation of the pledge is that the management that sets the OHS goals is subject to a high workload. In addition, there is no one clear reason why they did not succeed in achieving their target of at least five young people enrolled through the *Berufsstart Bau* programme, through it is most likely that this was due to the fact that the construction sector is an unattractive sector for young people to work in Germany (Interview, Waldoch, 2017).



The fact that ABZ Essen has deployed themselves beyond the necessary level of OHS is one of the **success factors** that render the centre entitled to again receive certification. (Bau Aktuell, 2010). In 2014, ABZ Essen was awarded a medal for their engagement with work safety, which was a tribute to their renewed AMS certification. These actions have had a significant **impact** upon the work safety of apprentices (Interview, Waldoch, 2017):

- With their certification, ABZ Essen provides an apprentice with the right health and safety training at the centre. The supra-company training centre of the construction industry is a nationwide leader with regard to occupational safety. In the first re-certification in 2010, 1,400 devices were carefully examined and their perfect condition ascertained. At ABZ Essen, every trainee is aware that they only work with certified work equipment, such as ladders or electrical appliances. There are manuals with instructions on the operation and the dangers of each device. All trainees are instructed to take up work-related activities and sign the instruction.
- The implementation of OHS is an ongoing process in the training centre as new trainees come onto the market each year. Thus, continuity and the further development of OHS training are required. The result should be significantly fewer accidents at work.

### ***ANAEPA pledge: implementing mandatory OHS training***

The pledged activities of ANAEPA are continuous and have no end-date. All of the OHS activities are dedicated to supporting the implementation of national labour contract requirements and related OHS regulations.

### **Activity 1: Promoting the safety and professionalism of construction workers through courses organised by Formedil, a national institution for education and professional training in the construction sector established by Labour Unions.**

ANAEPA's areas of competence regarding apprenticeships are based on the regulatory, contractual and operational aspects of apprenticeships. ANAEPA participates in discussions with social partners and other institutions of the construction sector to promote the need for organised action including, but not limited to, the area of apprenticeships. Generally, ANAEPA promotes OHS training via the creation of guidelines on the delivery of training and employment. Specifically, ANAEPA usually communicates sectorial priorities and the specific priorities of social partners to Formedil. In turn, Formedil plans, implements and coordinates training activities via its construction schools in accordance with these priorities (Interviews, Bastianoni, Carapella, 2017).

In 2011, ANAEPA and 10 other construction sector social partners signed agreements that entrusted Formedil with the task of standardising and unifying vocational training in the construction sector in the area of OHS (Interviews, Bastianoni, Carapella, 2017). OHS regulation is implemented with MICS (it. *Moduli Integrati per Costruire in Sicurezza*, Integrated Modules to Build in Safety) courses, which are integrated compulsory modules for health and safety in the construction sector mandatory to all workers and apprentices. MICS courses comply with the obligations of the Legislative Decree Law on Work and Safety 81/2008. MICS courses are certifiable, cover the whole national territory and include three areas (Formedil, 2011):

- Basic training for new entrants to the sector. Construction companies are required to report the hiring of each worker who enters the construction sector for the first time. This new worker must then attend 16 hours of training on basic construction sector work principles and security. The training must be completed two days before the start of work on a construction site. This training is regularly provided by all local building schools and courses are generally organised every week. This is a practical course that gives a new

worker the basic necessary knowledge to safely work at a construction site. The course focuses on the following activities:

- Electricity use: cables and plugs
- Cutting with a manual and circular saw
- Moving things by hand
- Loading and unloading motor vehicles
- Harnessing and lifting loads
- Digging by hand
- Mixing with a concrete mixer
- Mixing chemical substances
- Demolishing with a hammer drill
- Using electric tools
- Using portable ladders
- Moving on a scaffolding
- Chasing (by hand or by a machine)
- Tidying up and cleaning tools
- Gathering materials and cleaning them
- Qualification for the use of machinery. This course serves to improve the professional skills of road and building constructor workers. The modular structure of the course allows a person to take the 4-hour base module just once, and get 12 hours of certified training for the operation of the following machines: tower cranes, cranes on trucks, auto-cranes, telescopic hoists and lift trucks, mobile lifting platforms, concrete pumps, excavators, mechanical shovels and backhoe loaders.
- Foreman and manager training. The course trains supervisors and managers to organise, monitor and ensure that work safety is an integral part of the daily work of all employees. Both supervisors and managers must take the basic module, communication and training module and specific modules split into two parts: 1) building work and 2) road construction activity and infrastructure (16 hours of training in total).

According to ANAEPa, the main **target groups** of their activities are government institutions, as ANAEPa helps to create awareness about health and safety regulations and ensures that they are enforced, i.e. through the MICS courses. In addition, workers benefit from the courses as they are more aware how to stay safe at their workplace. All of the **resources** necessary for ANAEPa to engage in political lobbying and technical and administrative activities come from within the organisation. Currently, there is one person working in cooperation with Formedil on OHS matters. These resources are sufficient for their needs, however, ANAEPa could form a separate department dedicated to apprenticeship with more financial resources (Interviews, Bastianoni, Carapella, 2017).

One of the main **success factors** that enabled ANAEPa to ensure that OHS regulations were duly implemented was that FORMEDIL already had 104 Building Schools in Italy where MICS training could take place. However, the whole system of apprenticeship in Italy poses some **challenges** to the successful implementation of the pledge (Interviews, Bastianoni, Carapella, 2017):

- Improvement of safety related to environmental sustainability and energy efficiency poses a challenge, as these issues require new assessments of risk and personal protective tools.
- Awareness of issues related to OHS is more difficult to facilitate for foreigners who do not have a good level of Italian language skills.
- Legislation and certification of skills in various regions often differs, and that does not always allow for the smooth recognition of experience obtained through an apprenticeship.

- The system of management and the implementation of school-to-work initiatives is characterised by heavy bureaucracy.

MICS has had a significant **impact** on the health and safety of workers, as it is the largest initiative for mass OHS training in construction, a high-risk sector. The courses are recognised by the Ministry of Labour and the Coordination of Regions as fulfilling the legal obligations of OHS training for workers. In 2015, there were 3,166 safety courses organised with 41,193 learners trained. In 2009-2015, the following number of courses were provided and learners trained (Formedil, 2016):

- *Basic training for new entrants to the sector:* 20,766 courses, 162,683 learners trained.
- *Qualification for the use of machinery:* 9,768 courses and 97,000 learners trained.
- *Foreman and manager training:* 592 courses and 7,163 learners trained.

With the MICS courses, ANAEPa and Formedil ensure that all construction sector workers who attend training have the necessary competences to work safely. Moreover, attendance of MICS courses is reliable evidence that a company is in compliance with current OHS legal requirements.

### **Conclusions and recommendations**

The two pledges illustrate two different approaches to OHS training: ABZ Essen focuses on introducing OHS training early on in vocational training, while ANAEPa focuses on enabling compliance with the national regulations by mandating training courses for learners and workers of all ages. Both of the pledgers have been continuing with their activities on a regular basis. The experiences of both ANAEPa and ABZ Essen provide some insights as to possible ways of enhancing OHS in the construction sector and apprenticeships:

- ABZ Essen advocates for a more rigorous introduction of OHS training very early on in vocational training. This is an important lesson to take away from their actions, as young learners enrolled in programmes to prepare for an apprenticeship are probably the most vulnerable of all new workers. Extra attention to OHS in early training would help to ensure their safety. In addition, this is probably the most effective way to provide OHS training. (It is far more difficult to change entrenched incorrect habits of old workers with respect to OHS).
- ANAEPa is a great example of smooth cooperation between national authorities setting the legislative requirements for OHS and stakeholders implementing them. The guidance they provide to Formedil facilitates the compliance of many workers and companies with national regulations.
- It is worth going the extra mile to ensure that young learners finish their training with a good knowledge of safety and health in the workplace. Various certification possibilities such as the AMS in Germany motivate organisations to make that extra effort and be seen as leading employers setting high OHS standards for the industry.
- Efforts to enhance OHS should pay attention to differences in the number of accidents between construction sub-sectors. Any new OHS measures would benefit from a thorough examination of the risks specific to each sub-sector, which would help to address these risks and other issues in the most efficient manner.

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## INTEGRATION OF MIGRANTS INTO THE LABOUR MARKET

### Introduction

This case study focuses on challenges posed by the migrant (including refugees, asylum seekers and any other citizens traveling to EU from other countries) influx into Europe and the opportunities it creates for the ageing European labour market. This case study centres on the different types of activities taken by two construction sector stakeholders: it highlights the experiences of an employer that has integrated a migrant (refugee) into its team, as well as presents an example of what national social partners can do to substantially facilitate migrant integration besides providing employment to them.

This case study presents actions taken by two different stakeholders to facilitate migrant integration into the labour market:

- The Danish Construction Association (DCA) is a national social partner that provides advice to employers regarding collective agreements, organises training, which ensures that companies and their employees can develop their skills, and, in general, looks after the interests of businesses<sup>105</sup>. DCA made its pledge in February 2016 in response to the skills mismatch in the construction sector in Denmark. The pledge is focused on helping to find the best fit between apprentices and businesses, which includes opening up the labour market to migrants.
- Schleiff Bauflächentechnik GmbH & Co. KG is a medium-sized construction company in North Rhine-Westphalia, Germany. The company made a pledge to the European Alliance for Apprenticeships (EAfA) in July 2016 in order to contribute to better vocational training. The company was presented with an opportunity to employ a refugee in June 2016 and has successfully done so.

While DCA explicitly included the target of enhancing migrants' possibilities for entering the labour market in their pledge, among other targets and activities, Schleiff pursued the opportunity of employing a refugee apprentice as an additional activity outside of their pledge. Table 1 presents the pledgers' activities addressing migrant integration.

**Table 6: Targets and corresponding activities of pledges related to the integration of migrants**

Pledged targets and deadlines		Corresponding pledged activities	
<b>Danish Construction Association</b>			
<b>Target 1:</b> Only around 10% of migrants have education exceeding primary education. The initiative will enhance the remaining 90% of migrants' possibilities for entering the labour market and, in turn, construction companies will have an increased supply of skilled labour.		<b>Activity 1:</b> Inform companies of the benefits and opportunities of taking on migrants with the aim of increasing the supply of apprentices.	
<b>Schleiff Bauflächentechnik GmbH &amp; Co. KG</b>			
<b>Target 1:</b> Continue to meet the growing demands of the company's customers in terms of technical proficiency, quality and ecology within the context of demographic changes.		<b>Activity 1:</b> Provide two additional apprenticeship placements in masonry and two in the protection of wood and buildings (four placements in total); <b>Complementary activity:</b> Provide employment for a refugee.	

Sources: EAfA pledges by DCA and Schleiff; Interview, Reifgerste, 2017.

The aims of this case study are to:

- Overview challenges and opportunities with regard to migrants integration
- Present the above identified activities of the selected construction stakeholders

<sup>105</sup> See more at: [http://www.danskyggeri.dk/media/1945/2172959db-info-january-2015\\_uk\\_net.pdf](http://www.danskyggeri.dk/media/1945/2172959db-info-january-2015_uk_net.pdf)

## ***Migrant integration in Europe: challenges and opportunities***

The unprecedented influx of migrants to Europe in 2015 revealed a number of obstacles that European countries face when attempting to integrate migrants, who constitute a large prospective workforce, into the labour market (Aiyar et al., 2016):

- Due to different curricula, lack of papers and documents (e.g. school leaving credentials, diplomas) and interruptions in the learning processes, many immigrants struggle with getting their prior skills, competences and knowledge recognised in the labour market of their host countries.
- Lack of language skills and transferable job qualifications (e.g. problem-solving, management skills) also reflect the difficulties of integration.
- Legal constraints on work during the asylum application process impede job finding and, in turn, slow down migrants' integration into the labour market.

IMF (Shekar Aiyar et al, 2016) concluded that rapid labour-market integration is crucial in reducing the net fiscal cost associated with the current influx of migrants. The sooner migrants gain employment, the more they will contribute to public finances by paying income taxes and social-security contributions. Therefore, rapid access to the labour market is a crucial area for improvement in the current state of affairs.

The European Agenda on Migration outlines that without migration the EU's working age population will decline by 17.5 million in the next decade, and also reports recruitment difficulties and skills shortages facing Europe (European Commission, 2015). Thus, migration presents an opportunity for Europe. Education and training are effective tools for promoting immigrant integration into society and the labour market. Investments in training include a number of benefits for migrants (Lifelong Learning Platform, 2016):

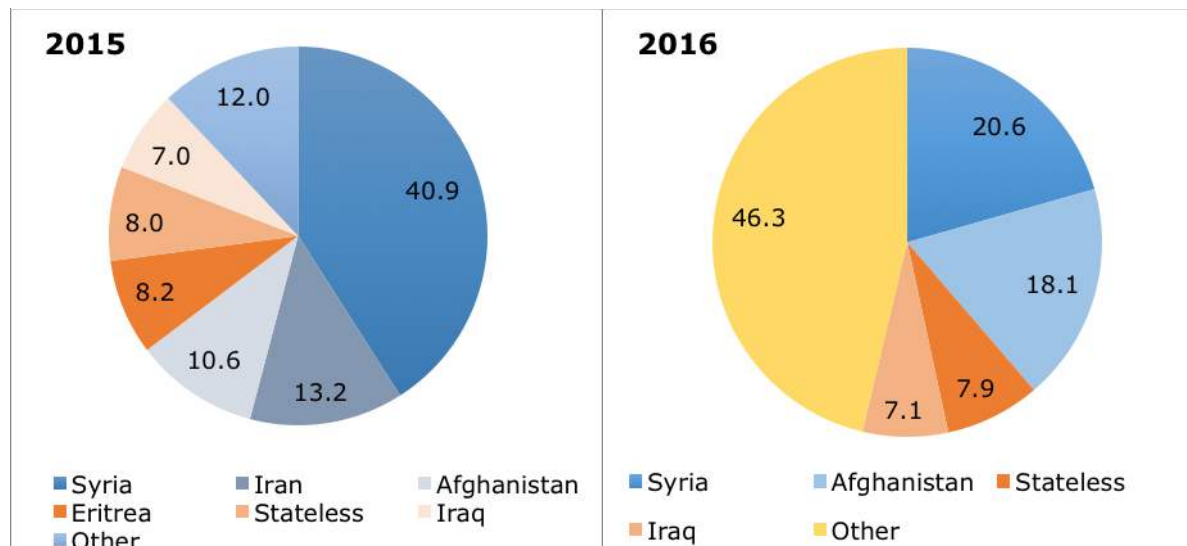
- Access to apprenticeships, vocational education and training, dual systems, lifelong learning paths and the permeability between different systems widen opportunities for migrants to gain competences and skills needed on the labour market.
- An equitable educational system can to some extent neutralise the negative effects of broader social and economic inequalities (e.g. lack of transferrable skills, such as language, social or management skills). In addition, various educational measures (e.g. citizenship education, intercultural learning, learning mobility, volunteering, peer to peer support/mentoring) can support the development of the intercultural competences of a society, which would facilitate the integration of migrants into a cohesive social fabric.
- Despite the inherent disadvantages of having a migrant background (e.g. greater risk of poverty and dropping-out), young migrants are motivated to succeed. According to PISA results, migrant learners in a third of the countries for which data was collected were more likely than non-migrant learners to aspire to be working as professionals or managers by the age of 30 (in the remaining countries, the expectations of the two groups were similar, pointing to an assumption that they are at least as motivated as non-migrant learners) (OECD, 2015).
- Language courses can help migrants to obtain one of the most important skills that would significantly facilitate their integration into both social and work life.

## ***Migrant (asylum seeker) integration in Denmark and Germany***

In 2015, approx. 20,940 asylum seekers arrived in Denmark. The number of asylum seekers significantly dropped in 2016 to approx. 6,170. The numbers continue to drop. Data from January-March 2017 show that the number of asylum seekers dropped by 55% compared to numbers in the same period in 2015 and 77% compared to numbers in the same period in 2016 (Eurostat, 2017). A significant majority of

applicants for asylum are 15-39 year-old males. Data from the first half of 2015 show that 40% of the asylum seekers had no or very low levels of education and/or were illiterate in the Latin alphabet. 50% of applicants had some schooling and the remaining 10% had middle-or long-term schooling and an educational background (Udlændinge-, Integrationsog Boligudministeriet, 2015). Figure 1 presents an overview of the citizenship of asylum seekers in Denmark.

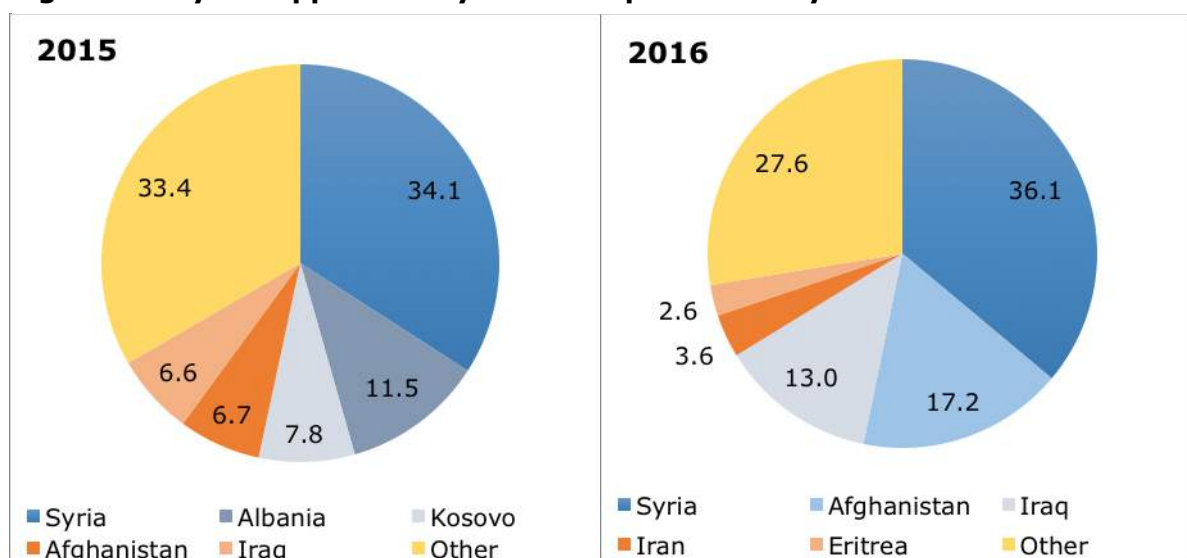
**Figure 1: Asylum applicants by citizenship in Denmark in 2015 and 2016**



Source: Eurostat, 2017

In 2015, approx. 476,510 asylum seekers arrived in Germany, and their number grew even more dramatically to approx. 745,150 in 2016 (Eurostat, 2017). However, the number of asylum seekers in 2017 has started to drop. Data from January-April 2017 show that the numbers dropped by 40% compared to numbers in the same period in 2015 and by 75% compared to numbers in the same period in 2016. Over two thirds of asylum seekers are males younger than 30 years. There are no representative data on the levels of education of the asylum seekers. However, the available data suggest that the competences and levels of education are significantly lower than what is needed for successful integration in the German labour market (Martin et al., 2016). Figure 2 presents an overview of the citizenship of asylum seekers in Germany.

**Figure 2: Asylum applicants by citizenship in Germany in 2015 and 2016**

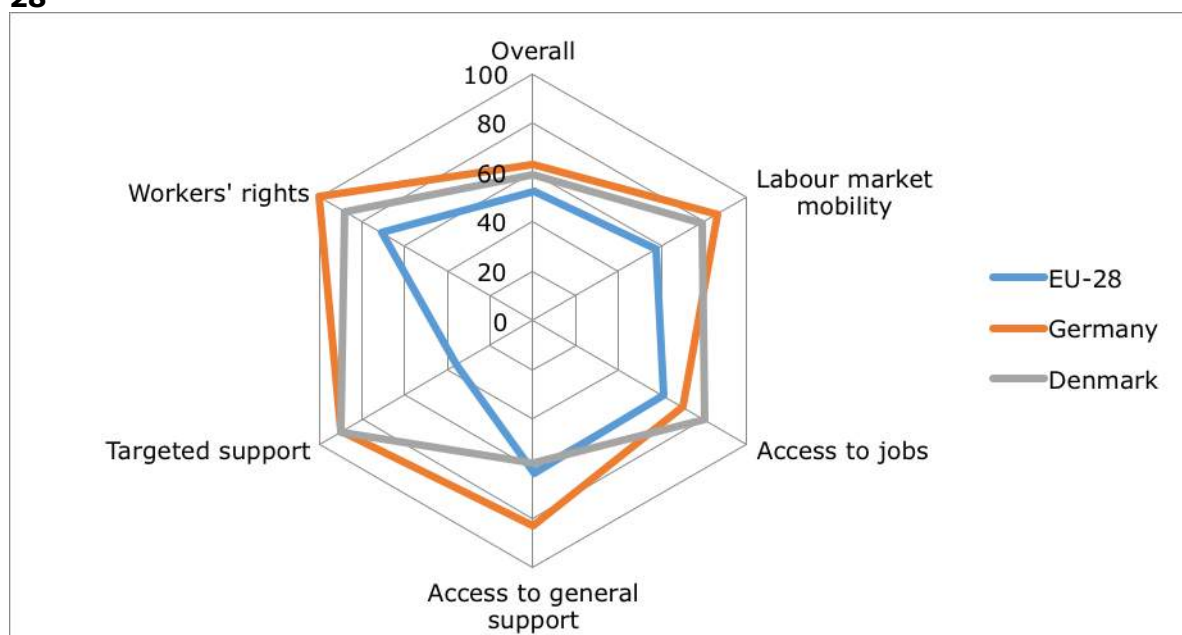


Source: Eurostat, 2017.



Both Germany and Denmark have experienced high net migration since the 1960s and have dealt with the influx of people relatively well in the European context both in the past and since the beginning of the most recent migrant crisis. According to the comprehensive Migrant Integration Policy Index 2015<sup>106</sup> (Huddleston, T. et al, 2015), Germany and Denmark both scored particularly well on the dimension of labour market mobility and targeted support in the European context (see Figure 3). However, these scores reflect the integration of legally resident foreign citizens (i.e. legal migrants). There is strong evidence that the channel of entry into the labour market determines the overall integration pattern: for example, OECD (2015) found that the employment rate of migrants is significantly lower than other migrant categories. In addition, not all migrants are motivated to move to a new country in order to find better jobs and this has an effect on attitudes towards participation in the labour market as well as on actual participation (OECD, 2014).

**Figure 3: Indicators of labour market mobility in Germany, Denmark and EU-28**



Explanations: *Access to jobs* measures whether legal migrant workers and their families can access and change jobs in all sectors like nationals (indicators cover immediate access to labour market/self-employment, access to public/private sector); *Access to general support* measures whether legal migrant workers and their families can improve their skills and qualifications like nationals (indicators cover public employment services, study grants, recognition of academic/professional qualifications, validation of skills); *Targeted support* measures whether legal migrants can have their specific needs addressed as workers born and trained abroad (indicators include various economic integration measures, state facilitation of recognition of qualifications, support to access PES, active information policy); *Workers' rights* measure whether legal migrants have the same work and social security rights as EU nationals/nationals (indicators cover membership in trade unions, access to social security/housing, working conditions, etc.).

Source: Migrant Integration Policy Index 2015.

In Denmark, asylum seekers over 18 can seek a permit to work until his or her case is decided<sup>107</sup>. This includes any ordinary work, full-time or part time, paid or unpaid. However, no self-employment is allowed. (([www.nyidanmark.dk](http://www.nyidanmark.dk): January 25, 2016). Asylum seekers who are employed have to take part in activation activities only insofar as they do not interfere with asylum seekers' work. In addition, asylum

<sup>106</sup> The index covers eight policy areas (incl. labour market mobility) and is calculated based on a total of 167 indicators. See more: <http://mipex.eu/>.

<sup>107</sup> If six months have passed from the time of application for asylum, the Danish Immigration Service decides for the asylum seeker's case to be processed in Denmark, the Danish Immigration Service approves the labour conditions, asylum seekers assist the Danish Immigration Service in the processing of their case and the work matches the normal conditions of the Danish labour market and conditions for other employees.

seekers can seek unpaid internships or voluntary work. There are two cases in which easier access to permanent residence can be obtained (Martin et al., 2016):

- An asylum seeker is offered a job on the 'positive list' (i.e. a job in a profession currently experiencing a shortage of qualified professionals).
- An asylum seeker is offered a highly-paid job and can apply for permanent residence via the 'Pay Limit scheme' (dk. Beløbsordningen; the lower threshold for applications submitted as of February 1, 2017, is DKK 34,066.67 per month (approx. EUR 4,577.64)).

Even though there are various possibilities for migrants to obtain employment, from May 2013 to November 2014, only 39 permits for employment were approved by the Danish Immigration Service. There are various obstacles to rapid labour market integration (Martin et al., 2016):

- An application for a work permit might take several weeks to be approved by the Danish Immigration Service.
- All migrants are required to participate in a three-year 'integration programme' designed to get the migrant into active employment as quickly as possible, and the majority of migrants remain in it for the full three-year period, yet finish the programme without any employment (approx. 3 out of 10 migrants become self-sufficient in terms of income at the end of this period).
- The language requirements are often too high – it takes a long time and/or a lot of effort for migrants to reach the required level of Danish before they can be declared ready to enter the workforce.

Good practices of migrant integration from Denmark include the deliberate distribution of migrants among different municipalities, while taking into account the geographical distribution of job vacancies and matching them with the skills and employment interests of migrants to the greatest extent possible. In addition, municipalities gain positive effects from integration when facilitating contact between migrants and employers, as well as following up on the success of the integration of each individual migrant (Martin et al., 2016).

In Germany, a migrant's access to the labour market is preconditioned on his or her legal status. Asylum seekers may seek employment three months after they formally applied for asylum or registered after crossing the border into Germany. After this period, they may be employed on the condition of a 'priority review' – they are entitled to get employment if the vacancy cannot be staffed with a preferential person (i.e. a German national or EU citizen). The priority review no longer applies to asylum seekers who have lived in Germany for 15 months. In addition, asylum seekers must get formal approval from the authorities that their wage does not fall below the general wage level for four years. Since October 2015, all asylum seekers who have a presumably high probability of recognition (that is determined based on their country of origin, i.e. Eritrea, Iran, Iraq, Syria) have access to integration courses consisting of 600 hours of language training and 60 hours of instruction in culture and the political system (Martin et al., 2016).

The most prominent challenges to migrant integration in Germany consist of the following:

- Formal vocational training is an important precondition of entry into the German labour market, and it presumes a high level of proficiency in German. This impedes the integration of migrants (Martin et al., 2016).
- Germany experiences capacity constraints for language training. The key bottleneck for raising the maximum number of participants per integration course is the shortage of language teachers. New solutions, such as online language learning, are necessary to be able to cope with the fluctuating levels of demand for language courses (OECD, 2017).

- Due to uncertainty about the length of stay of asylum seekers, tolerated persons (i.e. those who are denied asylum status, but cannot be returned to their home country for various reasons) and persons under subsidiary protection are more likely to have difficulties with integration. All of these groups have unstable residence permits that deter employers from hiring asylum seekers (OECD, 2017).
- Asylum seekers are allocated across the country based on a region's tax revenue and population size, without factoring in a municipality's employment conditions. The secondary migration of asylum seekers is restricted – as soon as they receive status, they are required to remain in the same region that processed their application for three years (OECD, 2017).

Despite these challenges, the German system of integrating migrants into the labour market is among the most advanced in the world in terms of their early access to the labour market and integration measures.

### ***DCA and Schleiff: (representatives of) employers facilitating migrant integration***

DCA supports businesses on a day-to-day basis. They have broken a lot of ground in Denmark in terms of better communication and cooperation among VET schools, companies and young people. Aside from their activities that contribute to facilitating migrant integration, DCA distributes potential apprentices' profiles to companies in the majority of Danish municipalities and thereby matches the labour force to local job vacancies.

### **Activity 1: Inform companies of benefits and opportunities by taking on migrants with the aim of increasing the supply of apprentices.**

DCA signed a tripartite agreement on labour market integration<sup>108</sup> with trade unions and State authorities in April 2016 that introduces an apprenticeship-type scheme called Integration Basic Training (IGU) designed specifically to facilitate the integration of social groups, including migrants. This scheme is a flexible education one mixing general education and continuing vocational education and training (CVET). The scheme is primarily designed for youth, but it is applicable for adults as well. Due to this agreement, companies can employ a migrant for two years and pay them the rate of an adult apprentice. Companies do not have to pay for the mandatory school-based learning of 20 weeks duration. These costs are covered by the State (i.e. the company does not have to pay a salary to the apprentice during this period, which is the normal practice during apprenticeships in Denmark). Migrants hired under the IGU scheme are entitled to the same pay rate as agreed in the collective agreement for people hired under basic vocational training (EGU). This is beneficial for migrants because they tend to be older than EGU-learners, therefore, they will more commonly be entitled to the adult pay rate in the IGU scheme than they would be entitled to in the EGU scheme (Interview, Krohn-Rasmussen, Høj, 2016). In addition, companies that hire migrants under the IGU scheme can qualify for a financial lump-sum bonus of up to DKK 40,000 (€5,375) if the migrants are employed for two years (Eurofound, 2016).

The agreement signed by the Association significantly reduced the barriers for migrant integration into the labour market in Denmark. This agreement provides a pathway for the integration of migrants with no skills or low qualifications. The DCA also informs companies of the advantages of hiring a migrant (e.g. migrants are a labour force that might not be otherwise available, as well as different bonuses attached to the hiring of migrants, as mentioned above).

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<sup>108</sup> See more at: <http://www.altinget.dk/misc/Trepartsaftaleomarbejdsmarkedintegration.pdf>

In May 2017, there were 574 migrants enrolled in ICU apprenticeships that were set up by the agreement that DCA signed (see Figure 4). It is estimated that the target group of migrants eligible for this scheme is around 7,000. Nevertheless, the 574 enrolled migrants are regarded as a success in the short time since the scheme was launched in July 2016. The remaining 6,500 migrants are also eligible to take advantage of other integration schemes or they can simply be in unsupported (unsubsidised) employment. 3,100 migrants entered unsupported employment in 2017, which is a 75% increase compared to 2016 (Interview, Krohn-Rasmussen, 2017). In the same period, the percentage of migrants declared ready for employment increased from 3% to 60%. The results vary greatly among different municipalities, which indicates further potential for good development (Udlændinge- og Integrationsministeriet, 2017).

**Figure 4: Trends in the total numbers of migrant learners enrolled in ICU apprenticeships in Denmark**



Source: Udlændinge- og Integrationsministeriet, 2017.

The main **success factor** of the Association was that it managed to break a lot of new ground in terms of facilitating communication between companies, VET schools and apprenticeships. In addition, DCA did not need any additional **resources** to implement these activities. All of the actions under their pledge have been part of the overall basic strategy of the activities performed by DCA. The main **challenge** stems from the fact that DCA can only go so far as to set up favourable conditions and encourage people to take advantage of them. The ultimate decision on whether to take advantage of these opportunities lies with the companies and the migrants. DCA is engaged in lobbying and communicating with politicians and national authorities, but there needs to be active participation by all sides, including companies, young people and VET schools.

Schleiff Bauflächentechnik GmbH & Co. KG illustrates a different side of the picture in Germany – that of a company filling a job vacancy with a migrant. Their experience illustrates the success story of migrant integration mechanisms that work best due to cooperation between different stakeholders.

#### **Complementary activity: Providing employment to a refugee.**

The company was approached in June 2016 by a local employment agency that was carrying out an outreach programme by opening up a one-stop-shop for refugees wishing to find employment. Schleiff Bauflächentechnik GmbH & Co. KG was approached by the agency and was introduced to three refugees from Nigeria in need of jobs. The agency chose to contact this company because the refugees had work experience in the construction sector. Due to the limited resources of this medium-sized company, it could only provide employment and training for one person at that time. The main factor that determined the choice between the candidates became the great motivation shown by one of them. The employers instantly recognised Mr. Okori's eagerness to work and learn on the job, which they deem to be a very

attractive quality in an employee. They first employed Mr. Okori for a temporary internship (de. *Praktika*) that lasted for one month. This internship allowed the company to test the motivation and suitability of the candidate for the company. The internship subsequently turned into employment after the internship ended in July 2016. As of August 2017, Mr. Okori was still successfully employed with the company.

Refugee integration into the labour market brings **opportunities** to both employers and refugees (potential employees) (Interview, Reifgerste, 2017):

- Nowadays, construction companies feel a lack of interest in dual training in the construction sector from German citizens. Since refugees often have a very strong motivation to find employment, and, subsequently, work hard to master their craft, they make good employees interested and able to fill vacancies.
- In addition, the German construction sector had previously successfully integrated large numbers of foreign workers in the 1960s and 1970s. Therefore, it is relatively well equipped with integrating foreigners. This capacity for integration is complemented by a sense of social obligation by companies in the sector to integrate those refugees willing to work and learn regardless of their country of origin.

Both the company and the employee would be happy to continue working together. However, the main **challenge** for the further integration of Mr. Okori into the labour market is the uncertainty whether he will be permitted to remain in Germany. Employers estimate that people from different countries of origin have very different chances of staying in the country, and the chance for refugees from Nigeria is estimated to be extremely low (compared with chances for e.g. refugees from Syria)(Interview, Reifgerste, 2017).

There are other obstacles that impede the integration of Mr. Okori in particular, but likely apply to other refugees with similar work arrangements (Interview, Reifgerste, 2017):

- As regards apprenticeships in the strict sense, even though such dual VET systems provide an excellent transition to the labour market, they are not fully appropriate for refugee integration. This is, first and foremost, due to the language barrier, and also due to the fact that some refugees are eager to start work as soon as possible. Thus, more flexible arrangements are needed to ensure that the lack of German language skills does not become an obstacle to employment.
- In the case of Mr. Okori, the company provides him with full employment. He could be well on his way to settling in the country, as he has found employment. However, he is not permitted to leave the refugee camp until the documentation regarding his stay is processed. Mr. Okori has to travel great distances every morning in order to get to work. Even though his salary would be enough to support him and to find permanent housing, it is not possible for him to settle just yet.

It is important to mention that most of the legal obligations (apart from the obligation to live in the refugee camp until the documentation is processed) do not create significant obstacles or administrative burdens either for the company or for the refugee himself or herself. Mr. Okori has to visit the employment agency every three months to renew his work permit and similar documents. Otherwise, the administrative and legal procedures are not burdensome and are easy to carry out. The company itself does not have to dedicate any special **resources** – they need to provide a mentor to Mr. Okori while he is learning on the job, but other than that, he is treated like any other employee in the company.

## **Conclusions and recommendations**

Even though the influx of new migrants has slowed down in 2017, the challenges posed by this migratory wave will continue to remain salient with a shifted focus from migrants' safe arrival to host countries to the successful integration of a significantly large workforce into labour markets. The systems set up in Denmark and Germany are well advanced in terms of early activation mechanisms. Recommendations drawn from this case study are thus relevant to all countries that will face increased pressure to adapt new working mechanisms for migrant integration:

- The infrastructure to integrate migrants in Germany is functioning quite well. The agencies play a key role in matching migrants with a set of specific skills to companies that could make use of the skills they possess. In addition, it is easy for the companies themselves to initiate similar processes for finding interested migrants, as it only requires a bit of research to be done online about the possibilities of working with local employment agencies to employ a refugee (Interview, Reifgerste, 2017). However, it boils down to a question of motivation of companies and whether they eventually decide to take any action.
- Even though companies in the construction sector in Western countries have had experience in integrating foreign workers in the 60s and 70s, the latest influx of migrants has been of an unprecedented scale and came as a shock to construction sector stakeholders. This implies that additional measures are needed to encourage and support companies in their efforts to integrate the huge additional volumes into the labour force, as the increased supply of workers was not driven by the demand for a workforce, as was the case in the 1960s and 1970s. These measures include (but are not limited to) access to language training and more flexible training arrangements.
- The Danish system of dispersing migrants along the country based on local vacancies is something that the German system lacks.
- The experiences of both Denmark and Germany demonstrate that migrant integration mechanisms work best when different stakeholders cooperate closely and support each other in their efforts. Employment agencies and other institutions with knowledge of local labour market needs are crucial for the identification of vacancies and the available labour force. Social partners are in the best position to bridge the gap between local institutions, such as training providers, and companies that are looking for workers. In turn, the willingness of companies to cooperate is also a key factor for the successful integration of migrants into the labour market.

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## VOCATIONAL SKILLS COMPETITIONS IN GERMANY

### Introduction

Competitions are not only common in sports but also in various vocational fields. The construction sector is a case in point. The starting point for activities related to skills competitions is that participating partners feel the need to increase awareness for excellence in vocational occupations and respective training occupations (Chankseliani et al., 2016).

This case study focuses on skills competitions relevant to apprentices in the construction sector. The case study includes measures taken by two construction sector stakeholders and a construction company that made pledges to the European Alliance for Apprenticeships (EAfA) construction sector campaign in 2016:

- Bildungszentren des Baugewerbes e.V. (BZB) Krefeld is a non-profit education institute for the German construction industry. BZB manages three dual VET centres in Krefeld, Wesel, Düsseldorf and a branch in Duisburg, Germany. They provide inter-company training to VET learners within the German multiphase VET system, continuing vocational education and vocational orientation in construction. With approximately 1,000 apprentices, Bildungszentren des Baugewerbes is one of the largest education centres for inter-company training in construction in Germany. Further, BZB is certified as a WorldSkills training centre for German competitors participating in international skills competitions (EuroSkills and WorldSkills competitions).
- Berufsförderungswerk (BFW) des Hamburger Baugewerbes is a non-profit organisation that is part of the construction guild Hamburg (de. Bau-Innung Hamburg) and, at the same time, is part of the construction association of northern Germany (de. Norddeutscher Baugewerbeverband e.V.). BFW des Hamburger Baugewerbes further supports the inter-company vocational training centre (de. Ausbildungszentrum) in Hamburg by organising regional vocational skills competitions. This centre operates the inter-company training part of the German VET system and continuing vocational education in construction in Hamburg. The BFW des Hamburger Baugewerbes hosts yearly vocational skills competitions at the State-level (de. Landesleistungswettbewerbe) in Hamburg.
- Josef Prell GmbH is a small company with 13 employees (including two apprentices) in Aldenhoven, North Rhine-Westphalia. The company specialises in stucco and plastering works. The son of the company's manager participated in the WorldSkills competition in 2015, and his father has been engaged on the advisory board of the German National Team of Stucco and Plastering since then.

Pledged activities of all three pledgers consist of organising and supporting vocational skills competitions in construction trades.

**Table 7: Targets and corresponding activities by the pledgers**

Pledged targets	Relevant corresponding pledged activities
<b>Bildungszentren des Baugewerbes (BZB) Krefeld</b>	
<b>Target 1:</b> Support national and State-level construction associations in attaining apprentices and maintain the number of about 1,000 apprentices in BZB Krefeld.	<b>Activity 1:</b> Support state-level and national competitors for the long-term. Assist German competitors in their preparation for EuroSkills and WorldSkills at their intensive training centre.
<b>Target 2:</b> Support the advancement of excellence in construction occupations to show young persons an attractive picture of working in construction.	<b>Activity 2:</b> Host German championships of eight construction occupations in 2015.
<b>Target 3:</b> Support competitors in	

Pledged targets	Relevant corresponding pledged activities
EuroSkills and WorldSkills and their successful participation.	
<b>Target 4:</b> Assist in keeping apprenticeships in construction modern and of high quality to ensure the competitiveness of the sector.	
<b>Berufsförderungswerk des Hamburger Baugewerbes</b>	
<b>Target 1:</b> Support attractiveness of image in construction works. Maintain the number of 130 apprentices in construction in Hamburg.	<b>Activity 1:</b> Support state-level competitions for the long-term, provide travel allowances for participants in national contests from Hamburg and assist in preparation of competitors from Hamburg for national competitions.
<b>Target 2:</b> Support excellent VET learners in construction and their performance as ambassadors in secondary schools.	<b>Activity 2:</b> Host yearly state-level skills competitions (de. <i>Landesleistungswettbewerbe</i> ) in Hamburg.
<b>Target 3:</b> Inspire young people to engage in construction occupations.	
<b>Josef Prell GmbH</b>	
<b>Target 1:</b> Strengthen activities to receive appropriate apprentices for the company and keep them in construction sector.	<b>Activity 1:</b> Support own apprentices' participation in vocational skills competitions, for example, in WorldSkills 2015.
<b>Target 2:</b> Provide diversified and sustainable work for apprentices in the company. Increase their number, if possible.	<b>Activity 2:</b> Participate in the advisory board of the National Team of Stucco and Plastering.
<b>Target 3:</b> Ensure competitiveness of the company's employees.	
<b>Target 4:</b> Use the title of Vice World Champion in Stucco from WorldSkills 2015 to show excellent quality of stucco and plastering in the company. Strengthen positive image of construction occupations in general.	

Source: Pledges by Josef Prell GmbH, Bildungszentren des Baugewerbes e.V. and Berufsförderungswerk des Hamburger Baugewerbes.

The aims of this case study are to:

- Describe experiences concerning vocational skills competitions at different levels in Germany from the point of view of organisers and supporters.
- Identify success factors and challenges for participation in skills competitions.

### ***Vocational skills competitions in Germany***

Young German construction talents can participate in vocational skills competitions on different levels. Regional competitions are hosted by local Chambers of Craft. Winners can directly qualify for state level competitions (de. *Landesleistungswettbewerbe*) that are organised by regional construction associations. The national competitions (de. *Bundesleistungswettbewerbe* or *Deutsche Meisterschaften*) are hosted by the central association of German construction trades (de. *Zentralverband des Deutschen Baugewerbes*, ZDB). Since Autumn 2016, there has been an opportunity to centralise the German championships of different construction occupations in one location hosted by WorldSkills Germany (WorldSkills Germany, 2017a). Participation in national and international vocational skills competitions in construction and in diverse other occupations is supported by the association WorldSkills Germany. The association was founded in 2006 (WorldSkills Germany, 2016). Currently, there are national and international competitions in 12 trades related to construction and building

technologies in Germany.<sup>109</sup> It must be noted that, so far, these occupations are only trade and crafts occupations. Industry-related occupations in construction do not participate in comparable contests at present (Interview, Murauer, 2017).

Young talents from different construction occupations also comprise the national team of German construction trades. At EuroSkills in Göteborg 2016, the national team contained German tilers, masons and stucco plasterers (ZDB, 2016). Winners of the German national competitions become members of German national teams of specialised construction occupations as well, if there is a national team for the specific occupation. Participating in vocational skills competitions has a long tradition in Germany. For example, the German national team in construction has existed since the 1970s. However, the initial idea to perform international vocational championships had already emerged in the 1940s in Spain (ZDB, 2013) and WorldSkills competitions have been organised there since 1950 (WorldSkills Germany, 2014).

Requirements for participation in the competitions are comprised of a passed apprenticeship examination (de. *Gesellenprüfung*) with good results. Apprentices who have passed their practical and theoretical examinations well are invited to join the regional and state-level competitions by SOKA-Bau. SOKA-Bau is an industry institution and a social fund, where all apprentices in construction in Germany are registered. Furthermore, young talents are only allowed to participate in the competitions until a specific age, for example 25 for EuroSkills and 23 for WorldSkills competitions (Interview, Prell, 2017). Another difference between the competitions is their duration. Preliminary state-level selection competitions have a duration of one day, while the national competitions (de. *Bundesleistungswettbewerb*) in Germany, and the international competitions last for three days (ZDB, 2017).

The competition's infrastructure is somewhat different between the German federal states. In the city-state of Hamburg, there are only about 130 apprentices in construction who can potentially participate in vocational skills competitions every year. In contrast, in North Rhine-Westphalia, where BZB Krefeld is located, there are about 2,700 apprentices who finish an apprenticeship in construction yearly and thus, are eligible for competing at the events (BIBB Database, 2017, data from 2015). As a consequence, the vocational skills competitions infrastructure is more diverse in the larger federal states of Germany such as North Rhine-Westphalia, Bavaria and Baden-Wuerttemberg (Interview, Söllner, 2017).

All pledgers have mentioned that skills competitions have the potential to increase the awareness of the range of VET qualifications available to young people and for excellence in this field. An improvement of the image of construction is rewarding both for training centres, associations and companies in construction. For apprentices and skilled workers, the possibility of being part of a national team can be an important motivator for their career (Interviews, Söllner, Prell, Murauer, 2017).

### ***Organising, supporting and participating in vocational skills competitions***

The supportive and organisational activities operated by the two training centres of the case study (BZB Krefeld and Berufsförderungswerk des Hamburger Baugewerbes) must be distinguished from the active participation in competitions by Josef Prell GmbH. However, all three pledgers have supported vocational skills competitions and their participants.

The following sections (activity 1 and activity 2) present the activities of BZB Krefeld and Berufsförderungswerk des Hamburger Baugewerbes.

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<sup>109</sup> See more at: <https://www.worldskillsgermany.com/berufswettbewerbe-national-international/wettbewerbsdiziplinen/>

### **Activity 1: Supporting state-level and national skills competitions.**

Bildungszentren des Baugewerbes e.V. (BZB) Krefeld has been supporting participants in competitions in construction for many years. It provides intensive training assistance in the run-up to the international vocational skills contests. Training for the German construction national team includes a period of intensive, mostly practical training. BZB Krefeld had to make appropriate training venues available and implement the WorldSkills Germany training concept in order to be certified as a WorldSkills Germany training centre (WorldSkills Germany, 2017b).

Berufsförderungswerk des Hamburger Baugewerbes organises the state-level competitions for Hamburg. No specific training is offered for the state-level competitions however, apprentices receive the tasks from the contest of the year before (Interview, Söllner, 2017). Extra time for preparation is not expected to be required as the young talents are well prepared for the contests after having just passed their apprenticeship examinations. In addition, the competition is not that difficult in state-level competitions. For the national competitions, however, participants from Hamburg are allowed to take part in preparatory training at a training centre (Interview, Söllner, 2017). The training centre of BZB Krefeld offers preparation blocks from a one-week duration. Up to three blocks are completed by young talents before EuroSkills and WorldSkills competitions – depending on the involvement and support of a specific trade. In the case of the stucco and plastering national team, a supported preparation time of 11 weeks before WorldSkills and EuroSkills is provided for the team. Members of the national team spend a number of weeks in each of 5 training centres altogether in Leonberg, Düsseldorf, Arnsberg, Nürnberg and Leipzig (Interview, Prell, 2017).

By providing such support activities, pledgers ensure that young talents in construction have the opportunity to prepare well for their performance in competitions, especially at national and international levels. The activities are carried out mainly due to the expected positive effects for the image of construction trades and their vocational training centres.

### **Activity 2: Hosting state-level and national skills competitions.**

The training centre of Bildungszentren des Baugewerbes e.V. (BZB) Krefeld hosted the German Championships in Construction in 2015, where 70 young construction professionals from eight occupations participated. Berufsförderungswerk des Hamburger Baugewerbes organises only yearly state-level competitions in Hamburg due to a smaller number of apprentices in construction there. Three construction trades usually participate in these competitions, namely carpenters, concrete builders, masons and sometimes road builders.

By carrying out such organisational activities, pledgers ensure that vocational skills competitions are successfully implemented. Pledgers also support these competitions because of their motivational effects on talented apprentices. These competitions also help to promote construction trades to the broader public.

The following sections (activity 1 and activity 2) summarise the activities of Josef Prell GmbH.

### **Activity 1: Support for own apprentices participating in vocational skills competitions, for example, in WorldSkills 2015.**

In the case of Josef Prell GmbH, the son of the company's manager was encouraged to join the state-level and national competitions in stucco and plastering. Due to his success in the competitions, he became member of the national team of stucco and plasterers. This team consists of 10 young professionals and was created in 2011.

Members of the national team and the German champion in stucco and plastering can participate in the European and worldwide competitions EuroSkills and WorldSkills (Nationalteam der Stuckateure, 2015). A national team for a single occupational group in construction trades is a special feature. The German National Team of Stucco and Plastering was established in the year 2012 (Interview, Prell, 2017). Other occupational groups such as painters and carpenters have only recently followed this example (Interview, Prell, 2017).

In addition, the former apprentice of Josef Prell GmbH participated in WorldSkills competitions and became the Vice World Champion in Stucco and Plastering in Sao Paulo in 2015. The manager of the company supported the activities of his son by offering him time to prepare for and participate in the skills contests. Afterwards, the successful apprentice of the company supported the promotional activities of the company that can now promote itself as having a Vice World Champion on the team and, in turn, promote the company and the construction trades (Interview, Prell, 2017). This case shows that an intensive support by companies for the competitors is a prerequisite for enabling participation in national and international competitions. Without the permission and support of the company where a potential competitor is working, competitions could not take place.

### **Activity 2: Participation in the advisory board of the National Team of Stucco and Plastering.**

Due to the successful performance of his son, the manager of Josef Prell GmbH became engaged in the work of the advisory board of the National Team of Stucco and Plastering and has so far continued his engagement. He supports several activities of the national team, for example, their presentations at construction fairs, works on finding sponsors for the team and preparation work for EuroSkills and WorldSkills events. The National Team of Stucco and Plastering recently obtained a sponsor that now provides equipment for the competitions. As a special motivation, the sponsor also provides cars for the young talents as long as they stay on the national team (Interview, Prell, 2017)<sup>110</sup>. Active and voluntary support for the national teams is required for the continued existence of the national team in specialised construction trades in general. In return, the company can see positive effects on the image of the company and can promote its work via the participation of their team members (Interview, Prell, 2017).

The primary **target groups** of these competitions are talented construction workers. But, the motivation of young talents for participating in such construction competitions also positively affects the companies that benefit from the improved competences among their apprentices who are trained and prepared for the competitions. Furthermore, the target group also includes companies, vocational training centres and construction associations that benefit from the improved image of the sector. Although the **impact** of this is difficult to measure, the pledgers confirm that competitions (especially international ones) have a positive image effect due to increased media exposure (Interviews, Söllner, Prell, 2017).

In general, **success factors** raised by all of the pledgers include the following:

- Competitions are considered to be an effective way to improve motivation among young talents by recognising and rewarding their good performance. A positive image of the competitions is a necessary prerequisite for these effects to occur (Interviews, Prell, Söllner, 2017).
- European and worldwide competitions have a particularly positive impact on the image of the sector and meet the promotional interests of companies, training centres and associations in construction with talented apprentices. This is, of course, the result of well-trained and well-selected German apprentices

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<sup>110</sup> See more at: <http://www.stuck-verband.de/ausbildung/nationalteam-stuckateure/>

who participate in the international competitions and frequently perform very well in competitions for specific trades. Good preparation at national and state-levels is therefore a prerequisite for the effects from international competitions to occur (Interview, Prell, 2017).

- Talented apprentices benefit from special training before international competitions. During that time, they learn to work under high pressure and have the opportunity of learning more about their profession in the context of other countries. (Interview, Prell, 2017). This, in turn, provides positive effects for the companies in which they work, as apprentices become more stress-resilient.
- An important success factor is the voluntary engagement of firms, vocational training centres, associations and construction workers. Without this, national teams could not be as competitive at the international level as they are now (Interview, Murauder, Söllner, 2017).

A number of **challenges** have also been raised. The most important points include the following:

- Participation in national as well as international competitions (EuroSkills and WorldSkills) requires financial support. There are different support measures in place for German participants in international competitions (WorldSkills Germany, 2017c), but in many cases, a contribution by participants is also necessary. According to pledgers, this can negatively affect a willingness to participate. On the national level, there is limited sponsorship for the competitions but participants (or their companies) usually have to bear their travel costs. But, for example in Hamburg, travel costs up to 200 EUR are provided for participants in national competitions. According to pledgers, financing and sponsorship is an important determinant of decisions whether to participate at all (Interviews, Prell, Söllner, 2017).
- Pledgers have reported that the competitions sometimes lack participation. Reasons are assumed to stem from the fact that employers of young talents are not always willing to provide time-off for their best talents for the duration of the competitions and the preparation time before, as this results in organisational and financial burdens for the company, i.e. a temporarily reduced workforce (Interviews, Murauder, Söllner, 2017).
- At present, only eight construction trade occupations participate in national competitions (ZDB, 2013). It remains a constant challenge for involved parties to include more occupations in national and international competitions, which, in turn, requires the voluntary engagement of companies in organising state-level and/or national competitions (Interviews, Murauder, Prell, 2017).

### ***Conclusions and recommendations***

Similar to dual study programmes, vocational skills competitions are an interesting approach for attracting excellent construction apprentices and encouraging stronger ties to their profession. Vocational skills competitions alone, however, will not directly increase the number of apprentices in construction as a whole, according to the pledgers. However, if a young person is already interested in construction-related occupations, the media coverage of skills competitions or national teams might ease the process of deciding between specific occupations. Pledgers also emphasise the motivational and learning effects on participating apprentices. The following recommendations can be derived from the experience of the pledgers:

- In order to improve the quality of the competitions, it would be helpful to increase the support of construction companies to engage more in regional, national and international contests and support the participation of their apprentices.

- Further research is required to show the concrete benefits to their image for companies, training centres and associations in construction gained as a result of the skills competitions. Such research could clearly show the positive effects on their image and thereby motivate more companies to support the state-level and national competitions.

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## INCREASING MOBILITY OF APPRENTICES

### Introduction

This case study focuses on one of the key objectives of the European Alliance for Apprenticeships (EAfA) – mobility of apprenticeships. This case study particularly focuses on small, project-based mobility schemes between Germany and Southern/Eastern European countries. It aims to elaborate on the learning mobility of apprentices in Europe and illustrate the efforts taken by individual pledgers in the area of apprentices' mobility, as well as the challenges they encounter.

The case study showcases the activities of three construction sector stakeholders that submitted pledges to the EAfA construction sector campaign:

- Fundación Laboral de la Construcción (FLC)<sup>111</sup> is a non-profit labour foundation. As the dual training system in Spain is currently being rolled out for implementation for the first time, FLC hoped that EAfA would help them to deploy this system in construction companies and learn from other countries that have this kind of training already running. FLC made their pledge to EAfA in October 2015.
- A German training centre<sup>112</sup> started their pledge as a response to the bad image of the sector that impedes the accession of young people into the sector. As there is a lack of young people in the sector, they decided to try and find some enthusiastic learners in countries abroad and introduce them to the German construction sector via mobility projects.
- The Bulgarian Construction Chamber (BCC), HDB (German Construction Industry Federation) and BiW BAU (a German educational provider in the field of construction in the regions of Hessen and Thüringen) agreed to collaborate in the area of apprentices in the construction industry in the long run. They were encouraged to join EAfA by FIEC (of which BCC is a member) in 2016 and have used all of the tools available to them to support vocational training. Even though BCC is not the pledging organisation, it is a very important partner to the pledging German organisations as it rallies groups of young unemployed to be trained in Germany.

The pledges by the German training centre and BCC were exclusively focused on mobility, while FLC also pledged to focus on three other areas of apprenticeships in Spain, including their quality, image and supply. All of their activities addressing learner mobility are outlined in Table 1 below.

**Table 8: Targets and corresponding activities of pledges related to the mobility of apprentices**

Pledged targets	Relevant corresponding pledged activities
<b>Fundación Laboral de la Construcción</b>	
<b>Target 1:</b> To increase the quality of VET schemes to get better trained people, both nationally and internationally.	<b>Activity 1:</b> Mobility project for trainers and training staff in order to encourage mutual learning between professionals from various countries. <b>Activity 2:</b> Mobility project for trainees with the aim of providing them with new skills related to various construction types, materials and building techniques,

<sup>111</sup> FLC is a non-profit labour foundation. FLC has worked on the progress of the construction industry with the help of prevention of occupational risks, training, innovation, sustainability and new technologies since 1992. FLC is actively involved in professional training, as they possess 45 training centres that offer more than 400 training activities. See more at <http://www.fundacionlaboral.org/>.

<sup>112</sup> The name of the pledging institution will remain anonymous at the request of the pledger.

Pledged targets	Relevant corresponding pledged activities
etc.	
<b>German training centre</b>	
<b>Target 1:</b> Increase the attractiveness of training in the construction sector.	<b>Activity 1:</b> Provide young people from all countries with training in Germany.
<b>BiW and HDB</b>	
<b>Target 1:</b> Promote mobility, improve the language skills of apprentices, support European integration, increase the attractiveness of the construction sector for young people, reduce youth unemployment rates in Bulgaria and support the German labour market through mobility projects.	<b>Activity 1:</b> Continue the successful mobility project for young unemployed Bulgarian people – MobiPro.

Source: EAfA pledges by FLC, German training centre, BiW and HDB.

The aims of this case study are to:

- Highlight apprentices' mobility trends in Europe
- Present similarities and differences of approaches of the three pledges that focus on increasing mobility of construction apprentices

### ***Apprenticeship and VET mobility trends in Europe***

Recognising the benefits that learning mobility brings to young people (such as new skills and preparation for a more mobile and international labour market), EU Member States set a benchmark for learning mobility in IVET in 2011 – by 2020, i.e. that at least 6% of VET graduates should have an IVET-related study or training period abroad (including work placements) lasting a minimum of two weeks, or less if documented by Europass (Cedefop, 2013). The first systemic pilot survey efforts at the end of 2015 documented that in 17 Member States the number was around 3.1% – far behind the benchmark (European Commission, 2016a). Nevertheless, evidence shows that the demand for learning mobility is high: in 2015 and 2016, Erasmus+ VET Mobility Action could only fund less than half of all applications received (European Commission, 2016b).

There are multiple ways by which mobility in VET can be implemented (Kristensen, 2012):

- Mobility via established EU or national mobility schemes. Participation in these mobility schemes is the easiest to capture as there are accessible data compiled on participation rates.
- 'Free movers' – individuals who go to study and work abroad and get their learning outcomes recognised as part of their formal learning curriculum. (Legal provisions for this kind of recognition in VET are applied in Germany and Denmark).
- Mobility activities organised by large, usually international enterprises at their own expense. This most often occurs within the enterprise itself, with foreign subsidiaries of the mother company acting as hosts and vice-versa.
- Mobility activities organised by VET providers for groups of VET learners and apprentices. Institutions organise these short mobility experiences (e.g. in the form of study visits or school stays) at their own expense.

General education learner mobility and VET learner mobility exhibit different trends. Whereas general education learning mobility in Europe is most often understood as European mobility programmes, such as the Lifelong Learning Programme/Erasmus+ and Youth in Action, these programmes actually facilitate mobility for only half of all mobile learners in general education. In contrast, EU action programmes account for

most of VET learners' mobility. A 2011 study on mobility developments concluded that learners in VET and apprentices were increasingly targeted by learning mobility schemes and that work placements as a specific form of learning mobility were gaining ground at the expense of other forms of mobility (Techne, 2012).

Despite VET learner mobility being high on the EU agenda, there are a number of difficulties associated with mobility developments in Europe (European Commission, 2016b):

- The period of work and study abroad is usually very short: 73.5% of VET learners pass or will pass a work placement abroad for less than a month, 26.1% for between one and six months, and 0.4% for more than six months through Erasmus+ VET mobility projects in 2015.
- Mobility of higher education students is easier due to the maturity of the students and their higher educational qualifications. In addition, universities are used to setting up contacts with foreign universities, whereas VET schools are not as familiar with such forms of transnational cooperation (European Round Table of Industrialists, 2016).
- There are persistent difficulties regarding the recognition of skills and competences acquired abroad.
- Legal requirements associated with training trainees and apprentices differ among countries, particularly when it comes to apprenticeship contracts.
- Companies hesitate to send their last-year apprentices abroad for too long, because in most cases they are employees of the company and are expected to learn and work in the company with which they are under a training/employment contract. This is a particular challenge for small and medium enterprises (SMEs) that sometimes invest heavily in their apprentices and are then reluctant to send them abroad for long periods.
- The typical age of vocational learners, 15 to 19 years old (minors in most cases) can pose liability issues for companies. Furthermore, at that age apprentices often still have difficulties in staying away from home for long periods of time. Socio-cultural factors, family ties and attachments often also act as barriers for long-term apprentice mobility.
- Cuts in national budgets for VET policies and related staff have also had an impact and limited the possibility of VET schools to develop international departments and strategic approaches to mobility.

### ***Apprenticeship mobility in Bulgaria, Germany and Spain: enablers and barriers***

In accordance with EU-wide VET learner mobility trends, the dominant mobility scheme for all of the three countries is Erasmus+ targeted at IVET learners (the schemes under Erasmus+ also target VET staff in Germany and Spain, and CVET learners in Germany). In addition, in-company mobility measures funded by corporate funds are also a main scheme in Bulgaria, which provide employees opportunities for training. A German-French mobility scheme for IVET learners funded with national funds is one of the main schemes in Germany, along with privately-funded IVET mobility schemes set up by various chambers, foundations and other stakeholders. A bilateral VET mobility programme between Spain and Germany co-funded by the EU and national governments is a main scheme in Spain. In addition, The Ministry of Education in Spain also offers some schemes for IVET learners and teachers at upper secondary and tertiary levels (Cedefop, 2016).

Cedefop's Mobility Scoreboard for IVET<sup>113</sup> provides for an overview of the strengths and weaknesses of all EU countries with respect to key areas of learning mobility. There are ten thematic indicators that evaluate the performance of countries in terms

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<sup>113</sup> See more at <http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/mobility-scoreboard/>

of meeting the requirements of the Youth on the Move Council Recommendation<sup>114</sup>. The three countries of our interest fare differently in various aspects. Below are presented the most prominent strengths of the three countries' mobility systems for IVET (Cedefop, 2016):

- All three countries take active actions in providing IVET learners with information and guidance on international learning mobility. In addition, Bulgaria and Germany have a country-wide coordinated approach to the provision of information and guidance to IVET learners for international mobility.
- All three countries have a country-wide coordinated approach to facilitate the recognition of learning outcomes and make use of five EU tools for the visibility, transfer and recognition of learning outcomes (i.e. Europass Mobility Document, Europass Certificate Supplement, ECVET, EQF/NQF and the learning outcomes approach).
- All three countries take active actions to support companies and institutions in the creation of mobility partnerships and networks, to fund the international learning mobility of IVET learners, and to provide companies and IVET institutions involved in organising mobility projects with financial and/or non-financial support.
- Germany and Spain both take active actions to raise the awareness of IVET learners and stakeholders on the added value of learning mobility and foster a mobility culture in IVET.
- Germany and Spain both take active actions to ensure the quality of mobility opportunities in terms of pre-stay linguistic preparation, stay monitoring processes, post-stay collection of feedback and provision of transport, accommodation and catering.

Germany has one of the most advanced mobility systems in Europe and it complies with the highest standards. In addition to the above-mentioned standards, others include the following:

- Efficient resolution of administrative and institutional issues, e.g. facilitating the delivery of visas and residency permits to IVET learners from third countries, reducing the administrative burdens generated by mobility arrangements and removing obstacles to the movement of minors.
- Wide scope of recognition of learning outcomes encompassing courses, credit points, units, modules, programmes and qualifications/diplomas/degrees. The recognition approach that is applied in Germany is based on the principle that the sending institution ensures that competences relevant for the qualification are acquired, so that the recognition of learning outcomes would be automatically guaranteed. Therefore, the learner is not subject to a separate recognition process after mobility is finished.
- Germany not only takes active actions in the areas of support for companies and institutions, awareness-raising, mobility culture actions and quality of mobility, but these actions are also coordinated country-wide and internally evaluated.

Presented below are the most prominent weaknesses of the three countries' mobility systems for IVET (Cedefop, 2016):

- There are *no policy targets* set in Germany and Spain for most of the mobility areas, e.g. in terms of removing institutional and administrative obstacles to mobility, partnerships and funding action, learners' motivation, long-term preparation of IVET learners for mobility or quality of mobility.

- In Germany and Spain, there are limited means for learners to *deliver feedback on preparatory actions for mobility or a quality policy of mobility*.
- In Bulgaria, not enough actions have been taken to establish, or make *more visible, contact points for the recognition of learning* acquired abroad by IVET learners. In addition, much information from Bulgaria on thematic criteria is lacking, which may point to the lack of a formal support structure for mobility VET.
- Spain lacks country-wide, systematic coordination in most mobility areas, especially in terms of solving *administrative and institutional issues*. In addition, Spain also lacks a regulatory time limit for the process of recognising learning outcomes, i.e. no maximum amount of time during which the learner's learning outcomes achieved abroad are to be recognised by the home country.

The three pledgers that worked on increasing mobility of apprentices with small-scale mobility projects also report some specific success factors and barriers relevant to their activities. For example, in Spain, some regional authorities consider mobility as an official part of the national curriculum, which facilitates the recognition of learning outcomes. In addition, FLC has strong support from 45 VET schools, trade unions and employers' associations that trust FLC's competence and successful performance in mobility projects, both as a hosting and as a sending partner. However, one of the main challenges for them is to attract construction SMEs to mobility projects.

The experience of the German training centre shows that hosting apprentices is difficult for companies and VET schools in Germany as the national government and other stakeholders promote projects that are poorly financed. The benefits are greatly outweighed by the costs. In addition, due to the strict German training schedule, it is not easy to send young people abroad for six months from Germany, nor is it easy to accommodate young people for six months. This is due to the fact that German and European framework conditions are not adapted for this purpose. Possible enablers for increasing interest in apprenticeship mobility relate to the fact that apprenticeships in construction are the second-best paid out of all sectors in Germany, as well as construction being treated as a socially responsible sector in Germany because it integrates many foreign workers into the labour market (Interview, Respondent 1, 2017).

The experience of BCC in implementing their MobiPro project highlighted some enablers for mobility from Bulgaria to Germany:

- The possibility to be fully included in the VET dual system and to work in Germany.
- The possibility for becoming a fully-fledged apprentice in Germany.
- Receiving remuneration for the work-based part of their training.

Difficulty learning the German language could become a barrier for these types of mobility projects. However, young people are motivated to study if the language course is free, intensive and rewarded with a certificate afterwards. In addition, BCC facilitated arranging for cheaper accommodations for young people while they attended language courses. BCC also actively encouraged them to make use of the opportunity to learn the language, travel to Germany, and get employment there. The participants were also motivated by all of these factors as all of them were from regions of Bulgaria with very high levels of unemployment.

### ***Project-based actions to increase mobility of apprentices***

FLC is working hard towards setting the path for a gradual implementation of the system of apprenticeship, as it is not a very common or popular training option in the construction sector in Spain. FLC has worked to promote the mobility of apprentices in Europe through European mobility projects.

### **Activity 1: Mobility project for trainers and training staff in order to encourage mutual learning of professionals from various countries**

FLC has been involved in two mobility projects dedicated to training the trainers in the past couple of years. The Leonardo da Vinci project DUALCON sent a group of 18 training staff from FLC to Germany in May 2014 with the aim of learning from the German dual system and bringing the good practices of this system to Spain. The ERASMUS+ project DUALMOB was recently launched. In April 2017, a group of 20 training staff members from FLC were to go to France to learn from the French training system, with the aim of benchmarking strategies concerning the recruitment of companies for apprenticeship programmes (Interview, González López, 2017).

### **Activity 2: Mobility project for trainees with the aim of providing them with new skills related to various construction types, materials and building techniques, etc.**

FLC aims to increase the mobility of apprenticeships by both sending and hosting trainees. As a sending organisation, FLC participated in the K1 ERASMUS+ mobility project approved by the Spanish National Agency. They sent eight trainees to Bari and ten to Bologna in 2016 and plan to send 15 more to Vicenza in 2017. All of the mobility activities combine training sessions at a training centre and an apprenticeship at companies. As the hosting organisation, they hosted a study visit of two groups of Italian trainees (25 each) in 2014. In 2015, they organised the apprenticeship of 10 trainees from Portugal at a Spanish company. In 2016, they hosted a study visit of a group of 20 Italian trainees. Also in 2016, FLC hosted two trainees from Finland and a group of six Portuguese learners who spent a month in a Spanish construction company (Interview, González López, 2017).

In addition, FLC is currently working in a strategic partnership to create an Android application for mobile devices to facilitate and improve the learners' and teachers' mobility process as related to the construction industry in Europe. This is being done in the framework of the ERASMUS+ project SOMEX<sup>115</sup>. The project aims to develop an extensive tool-kit for the preparation, operation and post-processing of exchanges between trainees and staff using various mediums (e.g. social media) to improve mobility experiences (Interview, González López, 2017).

As an education and training institution, the German pledger is primarily concerned with the lack of interest from young people in joining the construction industry. They are using mobility schemes as a means to supply more young workers from other countries to the German construction sector.

### **Activity 1: Provide young people from all countries with training in Germany**

The German training centre launched a mobility project funded by the German government in January 2016. Twenty-two young people from 18 to 27 years of age from Greece and Spain started German language courses in their home countries at the end of 2015. The training lasted for six months. The training centre matched the companies with the trainees for an on-the-job experience following the completion of their language training. However, half of the participants dropped out of the language courses, as the theoretical training was unappealing to them or, alternatively, they could not afford to attend the courses instead of having a full-time job. In June 2016, out of those people who came to Germany (about half of all who attended the courses), only two remain in training – the rest went back to Greece (Interview, Respondent 1, 2017).

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<sup>115</sup> See more at <http://www.somexproject.eu/>.



BCC is concerned with high youth unemployment in Bulgaria and the unattractiveness of the construction industry, e.g. lack of digitalisation, companies' lack of resources for training. Mobility schemes provide an opportunity for unemployed youth to get sustainable training regardless of their previous educational experience and to gain practical work experience in a well-recovered construction sector abroad.

### **Activity 1: Continue the successful mobility project for young unemployed Bulgarian people – MobiPro**

MobiPro is a mobility project funded by the German government that supports the training of Bulgarian unemployed youth in Germany. The project began in 2015, before the pledge was made in 2016, with 30 participants in the mobility scheme. The first step of the project entailed intensive German language courses for the participants that took place in February-July 2015. The courses were carried out by their partner organisation, the International Centre for Education and Communication (IZBK), in Bulgaria. BCC facilitated the language courses by providing facilities for the courses in their headquarters. Next, all of the participants had interviews with companies organised in Bulgaria and travelled to Germany afterwards for a preparatory two weeks to conclude contracts with the companies (mainly SMEs). Then, the German project coordinator organised a meeting with all selected participants and their families in Bulgaria to provide them with all of the necessary information about the process of training in Germany, facilities and answered all questions from the selected participants and their parents. Afterwards, travel and accommodation arrangements were made and selected participants travelled to Germany to start their three-year dual learning (Interview, Georgieva, 2017).

After the first year of training went by successfully, all of the project partners decided to recruit another 40 young people aged 23-27 from Bulgaria into the same mobility scheme. Currently, there are 30 learners from Bulgaria in the second year of their training and 40 learners in their first year of training. The first group is due to graduate in 2018 and the second group will graduate in 2019 (Interview, Georgieva, 2017).

All of the projects had similar **target groups**. The FLC, BCC and the German training centre targeted potential apprentices, VET schools and construction companies, while FLC also focused on VET trainers and training staff. The majority of the mobility projects run by FLC were funded by ERASMUS+ Key Action 1, whereas the two other mobility projects involving the German training centre and BCC were funded by the German government. The financial **resources** were enough for travel and subsistence costs, but they did not cover any of the human resources costs. This was a common issue for the German training centre and FLC. For example, the German training centre reported that they invested three times as much into their mobility projects as the amount of funding covered by the grant funds. The lack of coverage for administrative and coordination costs is one of the **challenges** to these types of mobility projects. However, the Bulgarian stakeholders that were also funded by the German authorities did not report any lack of resources for implementing their project as a sending institution.

All pledgers were confronted with a variety of other challenges to their success. FLC struggled with the lack of an effective strategy to convince companies, especially SMEs, that training and apprenticeships in particular should be viewed as an investment and not as a cost (as apprenticeship provides a higher level of productivity, because skilled workers work better and faster). Moreover, the Spanish government does not subsidise the salary of the apprentice, which makes it even more difficult to bring companies on board with the idea of hosting apprentices (Interview, González López, 2017). BCC was also confronted by a lack of interest from construction companies to take in apprentices and a negative perception of the construction industry in general (Interview, Georgieva, 2017). The German training centre struggled with a few difficulties to get the right target group for their projects (Interview, Respondent 1, 2017):

- One of the problems with the target group was that most of the participants from Greece were university graduates from various study fields who could not find a job. This situation was created in part by a financial dilemma for young people. Participation in mobility projects was costly, as subsistence was not provided during the language courses. Thus only young people who were relatively well-off could afford to participate. However, young people who were interested in this project did not have a satisfactory level of wages and enrolled in the project only to try to get a better paying job. Therefore, learners either dropped out before the training in the company began due to their inability to sustain themselves during the language courses, or they dropped out later during training as they were not genuinely interested in the construction sector and were only scrambling to get any work<sup>116</sup>. BCC supported learners by providing them with cheaper accommodation in Sofia during the language courses as well as providing encouragement to both the learners and their parents and this helped to avoid this issue in their project.
- The suitability of the type of training available to the target group also posed a dilemma. Young people who were genuinely interested in the construction sector did poorly in the German language courses, as they were not willing to spend several months in theoretical training.

FLC, BCC and the German training centre had very different experiences with regard to the motivation of young people. While the high motivation of the learners was a **success factor** for FLC and BCC, this was the exact opposite case for the German training centre. Most of the apprentices that FLC and BCC hosted or sent abroad had never travelled abroad, so mobility was a great experience for them. However, the German training centre struggled to retain learners in Germany due to their lack of motivation for working in the construction sector and adapting to the rigorous training schedule of the German dual training system.

Some other success factors facilitated the implementation of these pledges:

- Some Spanish regional authorities accredited the mobility of learners sent to foreign countries by FLC as a part of their national training curriculum.
- BCC also had support from the National Employment Agency, as its regional offices facilitated the recruitment process by carrying out the search of candidates eligible for participation.
- BCC were also supported by their partner organisation, the International Centre for Education and Communication (IZBK), which carried out German language courses in Bulgaria.
- The meeting between the German project coordinators and the learners and their parents in Bulgaria before the start of their time abroad was perceived as a major factor of the scheme's success. This face-to-face meeting provided an opportunity for the learners and their parents to voice all of their uncertainties about the future and to get answers to all of their questions.

The **impact** of these particular projects for the target groups was reported as positive by all pledge-holders despite the differences in success of their projects:

- All in all, since the beginning of their pledge, FLC has facilitated the mobility of almost 90 apprentices from Italy, Portugal and Spain. The questionnaires that were collected after each mobility project showed that the satisfaction of the participants was really high and they deemed the mobility experience as adding great value to their professional and personal lives. In addition, most of the learners in FLC projects started their training as a second chance, so the

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<sup>116</sup> See case study on PEDMEDE for more in-depth information on the issues that construction sector learners encounter in Greece.

mobility scheme presented another option for them to successfully finish their training (Interview, González López, 2017).

- There are currently 70 apprentices from Bulgaria carrying out their training in Germany. BCC reported that all of their participants in the mobility scheme remained in training due to very motivated participants and efforts put into informing the participants and their families on all relevant aspects of the mobility experience. In addition, feedback from the German partners points to a great satisfaction among the learners with their training and successful adaptation to a new environment in general (Interview, Georgieva, 2017).
- Despite the high drop-out rate of learners from the project, the German training centre regards each and every learner trained a success, as each young person is provided with opportunities to get a good education and obtain better career possibilities in the future (Interview, Respondent 1, 2017).

### **Conclusions and recommendations**

The importance and positive impact of learning mobility for employability, career prospects, skills and personal development has been proven by the experiences of the three selected pledges made for the European Alliance for Apprenticeships. The experiences of these three pledges provide interesting insight into the necessary elements for a successful mobility project:

- The experience of the German training centre showed how important it is to target the right group of learners for such projects. They had difficulties with their participants, as most of the selected learners had a university degree and were not motivated to work in the construction sector or could not afford the training. Thus, the selection process has to be very rigorous. It helps to have national and regional authorities involved, as the example of successful participant recruitment support from the National Employment Authority to BCC suggests.
- The high motivation of participants is an essential success factor for mobility projects.
- Participants in such mobility schemes have to be prepared to overcome language barriers. Thus, it is very important to ensure that the language courses prior to mobility experiences are comprehensive and successful. The help of other partner organisations, such as the International Centre for Education and Communication (IZBK) in the case of BCC, can greatly facilitate the language-learning experience for project participants.
- The comparison of projects between Greece and Germany, and Bulgaria and Germany reinforces the fact that it is important to remember that policy solutions that work in one context do not necessarily work in a different context. While Bulgarian young people were motivated by the opportunity to work in the construction sector in Germany where the industry was in much better shape compared to the Bulgarian one, learners from Greece were not motivated by the same prospects.
- Inadequate funding to cover internal staff and administrative costs incurred by sending and receiving learners might discourage organisations from continuing their participation in mobility projects. The role of governmental agencies is crucial here, as it might enable the projects themselves through allocating adequate funding for all project activities, or it might encourage other stakeholders to participate in the projects more eagerly. For example, companies might participate in apprenticeships more if they had financial support to help defer the costs of the apprenticeship salaries that they incur.

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## DUAL STUDY PROGRAMMES IN GERMANY

### Introduction

This case study focuses on dual study programmes as an innovative approach to combining apprenticeships with university studies. These programmes combine practical work in the company with theoretical learning and lead to a Bachelor's degree.

This case study presents the activities of three construction sector stakeholders that submitted pledges with activities related to dual study programmes:

- The inter-company vocational training centre of the crafts chamber Aachen (de. Handwerkskammer Aachen) in Simmerath (de. Berufsbildungs- und Gewerbeförderungszentrum (BGZ) Simmerath) designs and organises dual study programmes together with a university of applied sciences in Aachen (FH Aachen, University of Applied Sciences). BGZ Simmerath provides the inter-company training in this programme.
- Heinrich Weber, Straßen- und Tiefbau GmbH & Co. KG in Siegen is a company with 80 employees focusing on street building and underground construction. It has offered apprenticeship within a dual study programme at the University of Siegen to two apprentices so far and has had generally positive experiences with the dual study programmes.
- Franz Trippe GmbH is a company that focuses on street building, underground construction and landscaping. About 90 employees currently work at the company, including one apprentice who currently participates in a dual study programme.

All pledgers consider dual study programmes as a way to attract apprentices with a university entrance qualification. They also consider this approach as an opportunity to gain future leaders for their company. Positions as project leaders or managers in construction require a good knowledge of both the practical aspects of a trade and a theoretical knowledge of construction planning and the tasks of business operation.

**Table 9: Targets and activities described by the pledgers**

Pledged targets and deadlines	Corresponding pledged activities
<b>Handwerkskammer Aachen, Bildungszentrum BGZ Simmerath</b>	
<b>Target 1:</b> Keep the number of apprentices in the training centre at its current level or increase the number.	<b>Activity 1:</b> Offering dual study programmes in cooperation with a university of applied sciences.
<b>Heinrich Weber, Straßen- und Tiefbau GmbH &amp; Co. KG</b>	
<b>Target 1:</b> Attract young people with higher education and career ambitions for apprenticeships in construction companies.	<b>Activity 1:</b> Offering apprenticeships for candidates in dual study programmes.
<b>Franz Trippe GmbH</b>	
<b>Target 1:</b> Attract young people with higher education and career ambitions for apprenticeships in construction companies and satisfy the demand for managerial positions.	<b>Activity 1:</b> Offering apprenticeships for candidates in dual study programmes.

Source: Pledges by Handwerkskammer Aachen, Heinrich Weber GmbH & Co. KG and Franz Trippe GmbH.

The aims of this case study are to:

- Describe the experiences of SMEs and inter-company vocational training centres with employing apprentices in the construction trades who study for a tertiary level education.
- Identify advantages and disadvantages perceived by companies with having apprentices participate in dual study programmes.

## **Dual study programmes in Germany**

Traditionally, more young people have tended to lean towards starting an apprenticeship rather than enrolling in academic study programmes in Germany. However, the trend towards academic (tertiary level) qualifications is becoming more prominent. Since 2013, the number of university entrants has exceeded the number of persons beginning an apprenticeship. At the same time, the number of new apprentices with a qualification granting access to university level education (de. *Abitur*) is increasing (Statistisches Bundesamt, 2015). The share of persons with such a qualification among all soon-to-be school leavers (future graduates) has increased from 20.3% in 2009 to 26.2% in 2014 (BMBF, 2016).

While interest in tertiary education has been increasing, the number of persons beginning traditional apprenticeships has been decreasing. Between 2006 and 2015, that number has decreased by 12% across all training occupations, but the trend in construction-related training occupations has been even more pronounced as numbers declined by almost 18% (BIBB Database, 2017). For several years now, the number of retirees with a medium qualification exceeds the number of persons starting an apprenticeship in the construction sector (HDB, 2016). Accordingly, all pledgers in this case study (and pledgers in other case studies in Germany) consider skills shortages as an important problem and an obstacle to growth. This is particularly challenging because the demand for skilled workers is increasing with the recovery of the construction sector.

The landscape of dual study programmes is rapidly evolving in response to the above-mentioned apprenticeship trends. Dual study programmes combine tertiary qualifications with work experience or an apprenticeship in a company. There is no clear definition of a dual study programme and different types can be distinguished (BIBB, 2014a):

- Dual study programmes combining a tertiary qualification with an apprenticeship and leading to a dual degree: a vocational degree in a recognised training occupation and a tertiary degree (usually a Bachelor of Science). There are different forms of organising these dual study programmes. In the case of the pledgers of this case study, training in the company, in an inter-company vocational training centre and in a university or a university of applied science (de. *Fachhochschule*) have been combined. In none of the examples did the programmes include the training venue of vocational schools, normally a part of dual vocational education and training in Germany. Thus, the dual study programmes are a mixed format of apprenticeship that usually last four to five years until obtaining a dual degree.
- Other types (not described in this case study and less relevant for the construction sector) include work-integrating dual study programmes. These combine work in a company with studies leading to a Bachelor's degree. However, they do not provide a vocational degree in a recognised training occupation. Yet other programmes include different formats of part-time or full time work combined with studies at a university.

This case study focuses on the first type of dual study, representing 40% of dual study programmes in all sectors and representing the standard format in the construction sector (BIBB, 2014a). This type of apprenticeship is particularly used in Germany. In other countries, formats of the second type are more popular (DAAD, 2014).

In October 2014, 1,505 dual study programmes were offered in Germany, most of them related to business administration and similar fields. The number of students in dual study programmes has been rapidly increasing (from 40,982 in 2004 to 94,723 in 2014). However, this number represents all formats of dual study programmes, not only those related to construction (BIBB, 2014a). Currently, no statistical data are

available for enrolment in construction-related dual study programmes.

In construction engineering and related fields, 58 dual study programmes could be identified in 2014 (BIBB, 2014a). However, there was rapid growth compared to 2004, where only 15 dual study programmes in construction engineering were available; their number has almost quadrupled since. An overview by SOKA-BAU, an industry organisation and social fund, further shows that among dual study programmes combining tertiary qualifications with an apprenticeship (SOKA BAU, 2017):

- Bachelor of Engineering is the most frequently offered tertiary degree in these programmes.
- Most programmes can be combined with several training occupations, with the most frequently mentioned training occupations being mason and street builder.
- Almost all programmes are offered in cooperation with one or more inter-company vocational training centres.
- The complete duration of the programmes is frequently between four and five years.

The overview also shows that the landscape of dual study programmes is still limited – such programmes were identified in only 13 of the 16 German states. In some states, there are only one or two programmes, usually covering only a small selection of training occupations.

### ***Offering dual study programmes to well-qualified apprentices***

All pledgers consider the difficulty of finding well-qualified apprentices as the main reason for their commitment to offering dual study programmes. They reported problems in filling their apprenticeships with young people able and willing to complete their apprenticeships and perform well in work afterwards. The pledgers intend to increase their use of these innovative education formats and offer them to high-potential applicants. Young people who have completed dual study programmes are also considered to be a source for finding future managers for the involved pledgers, especially the SMEs.

Activities by inter-company vocational training centres must be distinguished from those of the two interviewed companies. This section begins with a presentation of the activities of the crafts chamber and its inter-company vocational training centre before summarising the activities of the two companies.

### **Activity 1: Offering dual study programmes in cooperation with a university of applied sciences.**

The crafts chamber of Aachen (to which the inter-company training centre BGZ Simmerath belongs) has joined forces with a local university of applied sciences in Aachen (FH Aachen, University of Applied Sciences). Together, they provide dual study opportunities for soon-to-be school leavers (future graduates) interested in construction and possessing a qualification granting access to university level education (de. *Abitur* or *Fachabitur*). Students can combine a Bachelor's degree in construction engineering (with a specialisation on network engineering) with various training occupations offered by regional companies.

The programme for a degree in Network Engineering consists of managing the provision of buildings or other facilities with water, heating, electricity, telecommunication facilities and other basic services<sup>117</sup>. Possible training occupations that can be combined with the programme are street builder, mason and concrete

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<sup>117</sup> See more at: <https://www.fh-aachen.de/studium/bauingenieurwesen-netzingenieur-beng/der-studiengang/>.



construction. The programme lasts 4.5 years. It is still small in size: in 2014<sup>118</sup>, there were 12 students enrolled in this programme (BIBB, 2014b). BGZ Simmerath plans to expand the set of available dual study programmes by offering more specialisations and cooperating with other universities of applied sciences in order to attract more students. Currently, five students are combining studies at the university with an apprenticeship at a company and inter-company training at BGZ Simmerath. Other students are located in other inter-company training centres in the region. The experience of the pledger has been mixed so far: BGZ Simmerath sees a problem in the fact that students do not attend vocational school. There is some debate about whether students lack the skills taught in vocational school for crafts chamber examinations. In any case, autodidactic skills are required of students (Interview, Link, 2017).

Both companies (Heinrich Weber GmbH & Co. KG and Franz Trippe GmbH) have pledged to offer apprenticeships in the framework of dual study programmes. Their activities are summarised in the following section.

### **Activity 1: Offering apprenticeships for candidates in dual study programmes.**

Heinrich Weber GmbH & Co. KG has pledged to offer places for dual students in the company and is open to repeating this activity. The first dual student has recently completed his studies (he gained a university-level qualification in construction engineering and the vocational training occupation of a street builder). He was hired by the company after completion of his education and is now working in a management position. The experience was generally described positively. Despite the fact that the apprentice did not attend vocational school, his performance in both his university studies and the apprenticeship were good (Interview, Vetter, 2017).

Similarly, Franz Trippe GmbH has offered a place for a dual student for the first time. This student is now in the middle of the process and is expected to have both degrees (a combination of construction engineering and street builder) by the end of 2018. The company has been satisfied so far, but criticises the high administrative burden created by dual study programmes (due to the fact that participants change their status from apprentice to student in the middle of the process (Interview, Trippe, 2017)).

All involved pledgers see some (manageable) administrative challenges as the legal status of dual students changes during the study process. Before reaching the vocational degree (usually after three years, depending on the programme), students are apprentices in the firm. After this date, participants are then students in the legal sense and the company does not necessarily have to employ them. However, they have the opportunity to contract them as a trainee or an employee (Bayerische Bauakademie, 2017) until completion of the Bachelor's degree (usually after another 1.5 years, depending on the chosen programme).

According to both companies, the main impact of dual study programmes is the possibility to attract apprentices with career ambitions and higher qualification levels. This **target group** is an important skills resource for companies in the construction sector who need more advanced engineering skills as well as practical skills, especially for career paths that lead to positions such as Project Manager. However, both companies have also underlined the fact that their demand for such positions is limited – their main demand is for well-qualified apprentices in a suitable training occupation (such as street builders), possibly with a CVET qualification, but without an additional tertiary qualification.

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<sup>118</sup> More recent data is not available.

**Success factors** raised by all pledgers include:

- The attractiveness of the programme for higher qualified apprentices, representing an interesting alternative to standard apprenticeships and standard university programmes (Interviews Link, Trippe, 2017).
- High quality of the training in inter-company training centres, because this training must compensate for qualifications normally obtained in vocational schools (as dual students do not attend vocational schools) (Interview, Link, 2017).
- The organisational support by inter-company training centres that often perform the role of coordinating study programmes with the universities involved (Interview, Trippe, 2017).

A number of **challenges** have also been raised. The most important points include:

- Dual study programmes are only a solution for skills shortages in higher qualified personnel, as companies still have the greatest need for persons with a 'standard' vocational degree. Such positions remain hard to fill (Interviews, Vetter, Trippe, 2017).
- Dual study programmes are challenging for participants. They have to pass exams at the university as well as examinations at the crafts chamber. The contents of these examinations differ and this demands more effort from the apprentice (Interview, Link, 2017).
- Dual study programmes are available as a path only for persons who possess a university entrance qualification and high management, organisation and learning skills as the training is more demanding than a traditional apprenticeship.
- Only companies of medium or large size offer positions for higher qualified personnel as, for example, Construction Managers (de. Bauleiter). In smaller companies, this role is often taken over by the owners (Interviews, Trippe, Vetter, 2017).
- Dual study programmes require considerable coordination efforts. In-company training, university courses and courses at the inter-company vocational training centres must all be combined usefully and within a sensible curriculum. This creates organisational challenges for all of the partners involved in its delivery. Moreover, depending on the model, students change their legal status during the programme (from apprentice to student), creating an administrative workload (Interview, Trippe, 2017).

Despite these challenges, the further growth of dual study programmes is expected by all involved pledgers. Even though the potential target group is limited, it is not considered to be fully exhausted. Furthermore, as described above, the number of dual study programmes is still increasing, creating more opportunities for companies and students. The **impact** of the expansion of dual study programmes is envisioned to increase the publicity and accessibility of these programmes. As a result, an improvement in reaching the target group can be expected.

### **Conclusions and recommendations**

Dual study programmes are a promising approach in attracting well-qualified employees to the construction sector. It may be expected that dual study programmes in the construction sector will be used more often in the future due to the increasing difficulties that companies face in attracting well-qualified apprentices. Their number has increased substantially during the last few years, making it easier for companies and inter-company vocational training centres to design programmes regionally.

However, a few limitations to their application and use are to be considered when thinking of the reach of their benefit. They do not provide a general solution to problems of skills shortages in the construction sector. Their high requirements in terms of pre-qualification, management and learning skills make them an opportunity

only for resourceful apprentices interested in management positions within construction companies.

The following recommendations can be derived:

- A further expansion of dual study programmes may be justified by the increasing share of apprentices (and young persons in general) holding a university entrance qualification.
- Organisational challenges may be expected to decrease due to increased experience by firms, inter-company vocational training centres and universities. Currently, many firms are participating in these programmes for the first time. Administrative procedures may be seen as less of a burden after some experience has been obtained.
- Companies and inter-company vocational training centres need to ensure that students attain qualifications normally taught in vocational schools if the model is to be successful. This requires additional skills among the trainers at all of the involved institutions.

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## BOUWUNIE, UNIE VAN HET KMO-BOUWBEDRIJF VZW (MONITORING THE REFORMS OF DUAL VOCATIONAL EDUCATION AND TRAINING)

### Introduction

Bouwunie is a Flemish federation for construction sector SMEs. Its activities are based on three main areas: (1) defending its members' interests, (2) advisory services to members, and (3) networking. The issues that Bouwunie is primarily concerned with are social dumping, delayed or non-payments to companies performing construction activities, increased VAT and a high administrative burden to SMEs.

The pledge by Bouwunie started in September 2015 in response to the human resources challenges experienced by construction SMEs. Most of their members have experienced difficulties in finding skilled workers. In addition, young people rarely choose vocational education and training (further – VET). It has a somewhat negative image in Flanders, although the market has a large demand for VET graduates. Parents also prefer general education (e.g. upper secondary or higher education) for their children that might not always be the best option for the child.

The pledge by Bouwunie was made in the context of a major transformation of the apprenticeship system in Flanders. As the representative of Flemish construction SMEs, Bouwunie keeps its members well informed about developments related to the reform. The pledge foresees three targets and four activities to facilitate the pre- and post-reform adjustment for SMEs (see table below).

**Table 10. Targets and corresponding activities of the pledge by Bouwunie**

Pledged targets and deadlines	Corresponding pledged activities
<p><b>Target 1:</b> Sharing and editing of articles about apprenticeship when needed (continuously).</p> <p><b>Target 2:</b> Making an agreement with all Flemish construction schools to pay extra attention to apprenticeship (by the beginning of September 2015).</p>	<p><b>Activity 1:</b> Informing their members about the existence and conditions of apprenticeship using Bouwunie communication tools.</p> <p><b>Activity 2:</b> Monitoring pilot projects, concerning a new 'dual learning system' launched by the Flemish Government and providing recommendations for decision-makers about the needs of the construction sector in order to provide more and better apprenticeships in the sector.</p>
<p><b>Target 3:</b> Transferring companies' demands and needs to projects, organisations, educational bodies and so on that can fulfil the vacancies and vice versa (continuously).</p>	<p><b>Activity 3:</b> Discussing and sharing issues with concerned parties (e.g. social partners, government) about how to improve the image, quantity and quality of apprenticeships.</p> <p><b>Activity 4:</b> Promoting the system of apprenticeship using their network's experience and encouraging their members to provide more high-quality apprenticeship places.</p>

Source: Pledge by Bouwunie.

The aims of this case study are to:

- Highlight the specific characteristics of the construction sector and its apprenticeship systems.
- Present the actions by Bouwunie that focus on monitoring the reforms of dual VET in Flanders.

### ***Country context: construction sector trends***

The construction sector in Belgium and all of Europe is facing pressure to produce nearly zero-energy buildings (so-called nZEBs). This is exacerbated by the fact that Belgian building stock is older, less compact and less well insulated compared to other EU countries. Thus, Belgian energy consumption per square meter is well above the EU average (McKinsey & Company, 2009). Due to these EU-wide trends and country-specific trends, Belgian construction companies have a significant demand for additional training to adjust to the needs for sustainable building (Idea Consult, 2010).

In 2013, about 14% of construction workers left the sector, whereas the intake of workers accounted for 10% of the total number of workers. Out of the total intake, 35% of new workers originated from a training system or temporary work. 24% of new workers were re-entrants, i.e. workers who have come back to work in the construction sector from other sectors. The remaining 41% of the total intake consisted of newcomers whose entrance to the sector cannot be traced through construction training courses. Most possibly, these newcomers are young people who have attended a training course outside of construction education (catering, engineering, etc.), or they could also be older employees who have come in to construction from another sector (Constructiv, 2016). Either these people did not have any experience within the construction sector or they did not benefit from any work-based training in the construction sector. Therefore, this group of workers lacks any construction-related qualifications.

Regarding the outflow of workers, naturally, workers aged 54-65 account for approx. 14% of the total outflow of workers in 2013-2014. However, youth (15-21 year-olds) accounts for 9% of the total outflow. This partially negates the relatively high proportion of young people who enter the sector. Twenty-two to twenty-nine year olds account for a further 27% of the total outflow (Constructiv, 2016). One of the main issues in the Flemish construction sector is the social dumping of low-cost workers coming from certain parts of the EU. The sector lost over 20,000 full-time equivalent (FTE) places due to social dumping. This was the first time in 30 years when the sector's workforce shrank (Interview, Ramaekers, 2016).

The Flemish VET in the construction sector also faces a few challenges:

- Flemish VET construction schools saw a decrease in learners by 20% in the last five years. This accounted for 8,000 young people aged 16-18. Schools lost 1,000 learners in the past two years (Interview, Moreels, 2016). At the same time, the number of tertiary students in the broader construction sector (including engineering, manufacturing and construction) increased by 6.6% between 2008 and 2012 (European Commission, 2016).
- In addition, there are some skills mismatches (i.e. mismatches between the number of learners trained in certain trades and the demand for workers in those trades). The construction sector has the most bottleneck vacancies, particularly for professions such as engineers, technicians, designers, electricians (Ramboll, 2014). For example, 50% of total youth in construction are taking courses in woodworking, however, employment in this trade only accounts for 15% of the jobs in the construction sector (Interview, Ramaekers, 2016). In general, an average of 70% of companies have difficulty filling job positions related to construction (European Commission, 2016).
- Worker mobility is also an issue in Flanders, as learners are often forced to travel to different cities to get to the construction site on which they are trained. This discourages learners from entering training in the sector as they are questioning whether it is worth it to spend so much time on travelling (Interview, Ramaekers, 2016).

This sector-specific context puts pressures on the VET system to account for labour market needs and provide skilled workers who can adapt to the changing trends of the construction sector.

### ***Flemish apprenticeship systems in the construction sector***

The Flemish apprenticeship system is relatively young (about 25 years old). In the 1980s, due to the government raising the minimum age for mandatory education, there was an increase in the supply of VET. In the follow-up to the reforms that began in 2016, there were two systems of apprenticeships in Flanders:

- Part-time vocational secondary education (nl. Deeltijds beroepssecundair onderwijs, DBSO), set up in the 1980s by the government. This work-based learning system combined two days at a vocational school and three days at the workplace. An Industrial Apprenticeship contract was available to young people in construction within this system (nl. Industrieel Leerwezen, ILW). This was a contract between an employer and an apprentice where the employer was clearly committed to helping educate the apprentice according to an established apprenticeship programme.
- Apprenticeships (nl. Leertijd), organised by SYNTRA, the Flemish Agency for Entrepreneurial Training, set up 50-60 years ago. In this system, youngsters spent the majority (60-80%) of their time in company-based training. This pathway was the most popular before it lost a large number of contracts to the part-time vocational secondary education pathway after the mandatory age to attend education was raised from 16 to 18 years old in the early 1980s. Most learners chose the part-time vocational secondary education pathway as their second-choice route as they did not want to follow education anymore and this pathway required them to go to school only two days per week, so that they could work during the remaining three days in a profession of their choice (it was not mandatory to get trained in the same profession for the reasons stated below).

Around 40% of the learners in the construction sector are still educated via these two apprenticeship pathways (Constructiv, 2016).

The reform was started with the introduction of a unified apprenticeship contract and pilot programmes:

- Since 1 September 2016, a new type of contract (nl. Overeenkomst Alternierende Opleiding OAO) entered into force and abolished the above-mentioned contracts that had varying regulations on salaries, the proportion of work spent in the workplace, etc.
- Seven pilot apprenticeship programmes were rolled out in seven sectors. The bricklayer apprenticeship programme represents the pilot for the construction sector.

It is not yet fully clear how the two above-mentioned apprenticeship systems will be merged into one. Bouwunie is getting prepared for a major restructuring of the apprenticeship system that is most likely to be introduced in September 2017 or September 2018. There are still many open provisions that need to be agreed upon. As social partners are historically very involved in the design of apprenticeship systems in Flanders, it is likely that a newly-established sectoral partnership for construction (see below, Bouwunie pledge Activity 3) will be able to shape the new system.

The system of apprenticeships in Flanders faces multiple problems (Interviews, Moreels, Ramaekers, 2016):

- The part-time vocational secondary education system does not guarantee that the workplace will be matched to the subject of their studies – very often learners end up working in workplaces unrelated to their studies and do not



obtain the necessary skills to perform the job (even though they are awarded both a school certificate and a certificate of qualification).

- Before the introduction of a single contract (OAO), the three different contracts most often applied to apprentices in the construction trades (part-time vocational secondary education, industrial apprenticeship, and a SYNTRA apprenticeship) created paradoxes when three apprentices could follow the same educational course with three different types of contracts but received different levels of wages.
- Due to the bad image of training in the sector, the whole apprenticeship system in Flanders is oriented towards underperforming learners who choose to enter the construction professions as a second-choice. Thus, the inflow of learners into construction occupations is limited.

However, there are opportunities for a more successful VET in the construction sector. There are a large number of construction sector professions and most of the vacancies are for bottleneck professions, such as bricklayer, joiner, crane operator. This greatly increases the chances that an apprentice will get a job after he or she completes training in a bottleneck construction occupation.

### ***Bouwunie pledge: Monitoring the reforms of dual VET***

Overall, Bouwunie has had great success in following-up with and shaping the reform developments in Flanders. The pledged actions have made significant **progress**.

#### **Activity 1: Informing their members about the existence and conditions of apprenticeship using Bouwunie's communications tools.**

Bouwunie has been thoroughly communicating new information regarding all changes regarding the conditions and provisions of apprenticeships (incl. new regulations, requirements for apprenticeships, financial benefits, etc.) to its members. For example, in August 2016, all members were informed about the new contract for dual learning launched by the government at the beginning of September 2016.

#### **Activity 2: Monitoring pilot projects concerning a new 'dual learning system' launched by the Flemish Government and providing recommendations for decision-makers about the needs of the construction sector in order to provide more and better apprenticeships in the sector.**

Bouwunie is following-up on the experimental bricklayer programme in the construction sector started in September 2016. The final results of this programme will be evaluated after the programme has run for a year. Based on these results, Bouwunie plans to draft its recommendations for improving the new apprenticeship system. In September 2015, the service organisation for the construction sector Constructiv (in which Bouwunie is represented as one of the social partners) made an agreement with construction schools that states that schools are willing to cooperate in the dual learning system and that they are open for sectoral pilot projects that can help shape the new dual learning system. The following activities resulted from this agreement:

- Constructiv worked out the standard principles of an apprenticeship training programme and discussed the proportions of alternation between the school and the workplace with the schools. They also further promoted the system by supporting schools with the process of selection of potential apprentices and companies to provide in-company training.
- Constructiv started experimental activities with six schools. They supported the schools by providing them with a digital tool for tracking the apprentices' training progress and achievements. They also organised specific training (e.g. safety when working in heights, VCA certification (Safety, Health and Environment Checklist for Contractors) for the schools.

**Activity 3: Discussing and sharing the issues with concerned parties (e.g. social partners, government) about how to improve the image, quantity and quality of apprenticeships.**

Since a new contract replaced old apprenticeship contracts, Bouwunie is currently working on a new sectoral partnership that would follow-up on all of the new requirements for taking on apprentices (e.g. revised working hours, wages, holidays, screening procedures for companies, etc.). This partnership would include a wide variety of parties, including representatives of employees and employers, as well as all types of VET providers.

The bylaws of the sectoral partnership were recently completed. The official start of the partnership had been foreseen for the end of 2016. The main focus of this partnership IS the screening of companies to determine whether they are qualified to take on an apprentice. The main risk of the work of the partnership is the possibility that imposing stricter regulations on workers (e.g. limiting the maximum number of apprentices per one in-company mentor, requirements for safety in the workplace, requirements for specific technical and mentoring knowledge for the in-company trainer) might make it much more difficult for companies to qualify in providing on-the-job training for apprentices.

**Activity 4: Promoting the system of apprenticeship using their network experience and encouraging their members to provide more high-quality apprenticeship places.**

Bouwunie works with local sectoral organisations and encourages their members to contact them to get assistance for starting the procedure of taking on an apprentice. For example, a company working with infrastructural projects contacted Bouwunie to consult about educational possibilities that they could offer young people. In this particular case, the son of one of the workers from the company needed additional education. Bouwunie laid out possible alternatives for training and the OAO contract seemed to be the best arrangement in their case.

The main **target groups** of all these actions are construction SMEs that need facilitation during the reform period. Schools and apprentices also indirectly benefit from the actions of Bouwunie as the companies become more informed about the changes in the apprenticeship system and thus are well aware of the new requirements and processes to take on apprentices. Most of the **resources** (i.e. expertise on the developments in the apprenticeship system) necessary for implementing the pledge are provided by Constructiv or SYNTRA. In addition, there are three people at Bouwunie who are responsible for the constant communication of changes in the VET system to their members.

The actions are expected to have or have already had a tangible **impact** on the target groups:

- Thanks to their active involvement in following the reform, Bouwunie hopes it will succeed in transferring its sector-specific needs to the government, as the latter wants to install broad educational programmes that are in contradiction with Bouwunie's needs for higher professional specialisation.
- Thanks to the agreement with VET schools, Bouwunie managed to reach almost all schools offering education in the construction trades (over 200 schools) and actively works towards ensuring an adequate outflow of skilled young people who receive quality training from VET schools.

The pledge was underpinned by several **success factors**:

- The bricklayer programme was chosen as one of seven pilot programmes, which allows Bouwunie to get sector-specific insights of the reform from its implementation.
- They are closely working with Constructiv that has a wealth of information on the sector and has access to relevant decision-makers.
- Bouwunie also takes part in the sectoral partnership with a right to vote.

The following **challenges** are impeding implementation of the pledge:

- Too many parties are involved in the redesign of the apprenticeship system that makes it hard to introduce the necessary fundamental changes in the huge structure that is education in Flanders.
- The needs of the construction sector differ from other sectors (e.g. industry) because the apprentices are trained on construction sites rather than in a closed environment. This also makes it more difficult to ensure that these needs will be taken into account when planning a horizontal educational reform.

### ***Conclusions and recommendations***

Bouwunie is halfway through with their pledge and they are determined to continue with their activities, as they are crucial to coping with the changes that are expected to occur during the upcoming reform period in 2017-2018. The Flemish reform experience provides insight on some important country- and sector-specific issues to be considered in the context of EU-wide efforts to prioritise apprenticeships and encourage modernisation of VET systems:

- Belgium, compared to other EU Member States, is a country more significantly affected by the shift towards sustainable construction, as there is a significantly bigger proportion of old buildings in Belgium.
- The majority of workers enter the construction sector without prior sector-specific training.
- Flanders suffers from issues related to worker mobility, as learners are used to the small size of Flanders and they are not used to covering great distances to reach their workplace, industrial areas or bigger cities (as almost everything is nearby). Thus, the learners are unwilling to commute to construction sites that are further away from their homes. This is an unresolved issue in Belgium. Other countries such as France, Germany and the Netherlands solve this issue with VET boarding schools.
- The limitations of the part-time vocational secondary education system in matching workplace training to the profession that the courses are training learners in highlights the need for ensuring that all work-based training provides the skills relevant to the profession for which the learner is being trained.
- The pledge by Bouwunie is an excellent example of active and constructive stakeholder involvement in a major apprenticeship reform.

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## FEDERATION OF MASTER BUILDERS (CREATING NEW CONSTRUCTION APPRENTICESHIP STANDARDS)

### Introduction

The Federation of Master Builders (FMB) is the largest trade association in the UK construction industry. The FMB was founded in 1941 with the aim to promote and protect the interests of small to medium-sized construction firms. The FMB promotes exceptional building quality and strives for a continuous improvement in building standards.

The pledge by FMB started in June 2016 in response to widespread skills mismatches in the construction trades. The pledge foresees three targets and three respective activities to boost the supply, quality and image of apprenticeships. However, FMB had to abandon the third target and activity due to an unforeseen restructure and the resulting lack of resources to implement it (see Table below).

**Table 11: Targets and corresponding activities of the pledge by FMB**

Pledged targets and deadlines	Corresponding pledged activities
<b>Target 1:</b> Apprenticeship standards and assessment plan submitted to the government by the end of March 2017. The aim is to have apprenticeships ready for delivery by training providers by September 2017.	<b>Activity 1 (Key focus of the study):</b> Developing two new apprenticeship standards (bricklaying and plastering).
<b>Target 2:</b> The FMB would launch nominations for an 'Apprentice of the Year' and an 'Apprentice Employer of the Year' in September 2016 and announce the overall winners of these two awards in September 2017.	<b>Activity 2:</b> Holding Master Builder Awards that include categories named 'Apprentice of the Year' and 'Apprentice Employer of the Year'.
<b>Target 3:</b> The FMB and NFB would hold the first event of its Women's Network in September 2016 and would encourage its female members to provide talks to primary and second schools within one year of the network starting up i.e. by September 2017.	<b>Activity 3:</b> Set up a Women's Network together with the National Federation of Builders (NFB) and encourage its female members to join the Construction Industry Training Board's (CITB) ambassador programme and provide talks about construction to school children.

Source: Pledge by FMB.

The aims of this case study are to:

- Highlight the specific characteristics of the construction sector and its apprenticeship systems in the UK.
- Present the first activity of the pledge by FMB focusing on developing new apprenticeship standards.

### Country context

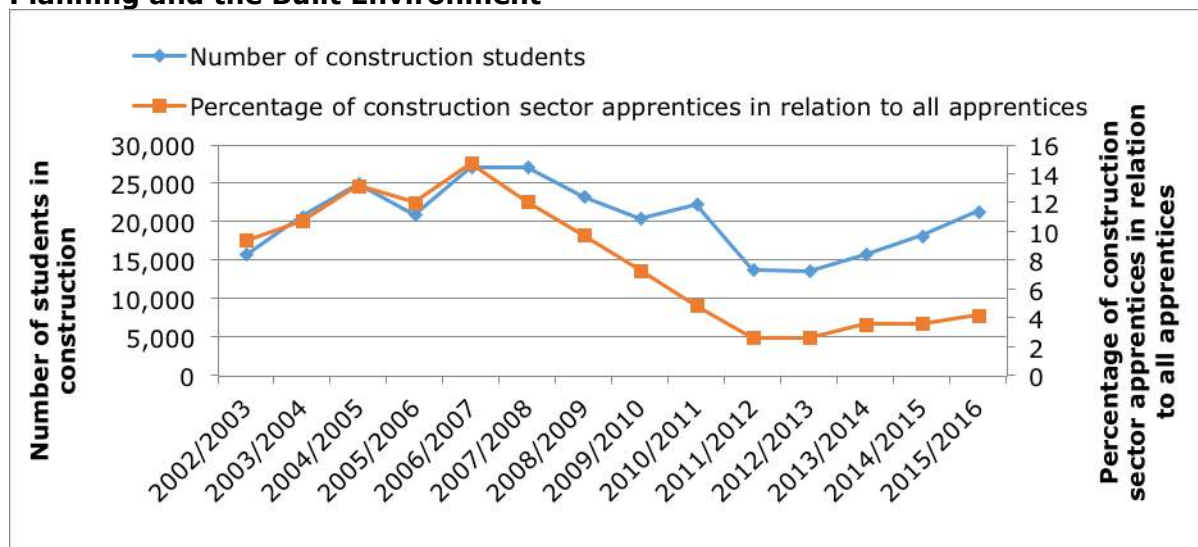
The UK's construction sector suffers from higher skills shortages than the general economy. The skills shortage is 28% among skilled trade workers and 34% among professional occupations, while it is 17% and 20% respectively in the general economy. The same issue persists with skill gaps: the gap among skilled trade workers is 29% as compared to 7% in the general economy (UCKES, 2012). The sector is also characterised by significant bottlenecks in certain professions. According to a survey of the state of construction trades carried out by FMB, 59% of SME construction firms struggled to hire bricklayers and 55% found it difficult to hire carpenters and joiners. Other professions exemplifying bottleneck tendencies are

plasterers and roofers (36% and 34% respectively), painters and decorators (27% each). Respondents found scaffolders and plant operatives easiest to hire (FMB, 2016).

Apprenticeship training is considered to be one of the most effective ways to tackle the issues posed by the skills shortages and the aging workforce in the construction sector. However, middle-aged people (35-59 years old (y/o)) still constitute the largest age group of workers in the construction sector in the UK. There is a smaller proportion of young workers (15-24 y/o) in the construction sector compared to the general economy (10.3% and 12.3% respectively in 2015) (Eurostat, 2016). Employment of workers aged 18 or under is uncommon in the construction sector largely due to stricter regulations with regard to their employment, including strict occupational health and safety requirements. Therefore, there is only moderate interest by younger people in the sector, which is said to hinder innovation in the industry and affect the employee turnover (UKCES, 2012).

The share, as well absolute numbers of young people in the construction sector have been declining – from 13.5% and 345.9 thousand in 2008 to 10.3% and 230.8 thousand in 2015. These numbers are different from trends in the general economy, where the share of young workers decreased slightly from 13.7% to 12.4%, while the absolute number of young workers remained relatively stable. Similar trends have occurred in apprenticeship enrolments. Even though the absolute volume of learners in construction sector apprenticeships has risen since the financial crisis, the proportion of construction sector apprentices has fallen significantly from 14% in the school year 2006/2007 to 4% in 2015/2016.

**Figure 1: Apprenticeship programme starts (by school year) in Construction, Planning and the Built Environment**



Source: Department for Education and Skills Funding Agency, 2017.

Even though the training infrastructure has been well developed over the years and has led to a significant increase in the level of skills of workers (the proportion of employees with a degree or qualification has almost doubled in the last decade, HM Government, 2013), skills shortages pose a long-term threat to the industry as one in every five vacancies is considered hard to fill (Department for Business, Innovation and Skills, 2013). Declining interest in apprenticeship training exacerbates the problem even more.

### ***English apprenticeship systems in the construction sector***

There are two different apprenticeship systems in the UK:

- Apprenticeships (EQF level 2-3) and Higher Apprenticeships (EQF level 4-8) apply in England, Wales and Northern Ireland.
- Modern Apprenticeships apply in Scotland and include both upper secondary and post-secondary level qualifications.

Apprenticeships in England are currently undergoing a reform. The government has set out a target to increase the quality and quantity of apprenticeships in England, reaching three million starts in 2020. The main two elements of the reform are the following (HM Government, 2015).

- New apprenticeship levy incentivising employers to take on apprentices. The levy will be collected from eligible employers from April 2017 through the Pay As You Earn System administered by HMRC (Her Majesty's Revenue and Customs). The rate for the levy will be set at 0.5% of an employer's pay bill. All firms receive an offset allowance of £15,000, equivalent to 0.5% on a payroll of £3 million. This means that an employer whose annual pay bill is less than £3 million would not pay the levy, as their levy sum would be lower than the offset allowance<sup>119</sup>. This means that fewer than 2% of UK employers will pay it. By 2019-20, the levy is expected to raise £3 billion across the UK. For now, the government will co-fund apprenticeships at 90% with the employers (responsible for funding the remaining 10%<sup>120</sup>) who do not need to pay the apprenticeship levy.
- New apprenticeship standards and end-point assessment plans in a range of sectors developed by employer groups known as 'trailblazers'. The standards should adhere to the core principles of quality for an apprenticeship: a) it is a job in a skilled occupation, b) it requires a minimum of 12 months of sustained training and involves at least 20% off-the-job training, c) it develops transferrable skills, as well as English and maths, d) it leads to full competency and capability in an occupation, demonstrated by achievement of an apprenticeship qualification outlined in the standard, and e) it trains the apprentice to the level required to apply for professional recognition where this exists. Upon completion of training, an apprentice must demonstrate their competence and capability through an end-point assessment, which could include written examinations, an interview assessment on the content of a portfolio collated throughout the apprenticeship, the production of a showpiece, observed practice in the workplace or a simulation exercise as appropriate. Once apprentices have successfully passed the end point assessment, they are eligible for a completion certificate to signal that they have met the standard set.

Apprenticeships in the UK's construction sector have some specific features and/or issues compared to the programmes of other economic sectors (Interview, Clarke, 2017).

- The duration of construction apprenticeships is not long enough. Construction apprenticeships in the 1960s and 1970s were as long as three years. Nowadays, apprenticeships in the sector last a maximum of two years. Apprenticeship experts argue that this is not long enough to learn a craft in the construction sector.

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<sup>119</sup> Example of an employer with an annual pay bill of £5 million who would pay the levy:

Levy sum:  $0.5\% \times £5,000,000 = £25,000$

Allowance:  $£25,000 - 15,000 = £10,000$  annual payment

Example of an employer with an annual pay bill of £2 million who would not pay the levy:

Levy sum:  $0.5\% \times £2,000,000 = £10,000$

Allowance:  $£10,000 - £15,000 = £0$  annual payment

<sup>120</sup> In addition, funding caps are applied – if the company negotiates a cost of training with the training provider that is above the funding cap, the government contributes 90% of the cost within the funding band limit, and the provider is responsible for topping up the remaining cost that is above the funding cap (CTIB, 2017).



- The alternation of training between company and school has changed from a block release (13 weeks at school followed by 13 weeks on the job) to a day release (one day in school followed by four days of on-the-job training). Apprenticeship experts argue that there is a deficit of college- and workshop-based learning, as not all of the necessary skills may be learnt by doing.
- The requirements for construction apprenticeships are stricter than for apprenticeships in other sectors due to the more dangerous nature of the work in construction (e.g. working in heights, operating heavy machinery, working in big power plants).
- The sectoral training fund has levy-raising powers. However, the problem is that the levies raised are difficult to apply to apprenticeships, as companies are reluctant to take on apprentices for many different reasons. For example, many workers in the construction sector are self-employed and are subcontracted by large firms. Therefore, the latter are not willing to take on apprentices. However, the number and size of construction firms is also decreasing. It is troubling, as smaller firms do not take on apprenticeships due to a lack of resources for dedicating to training. Even if smaller firms take on apprentices, they cannot cover the breadth of skills and activities required for high-quality training to obtain a profession. In turn, the use of grants from the levy raised has been expanded to a wider range of training that is not limited to apprenticeships.

### ***FMB pledge: Creating new construction apprenticeship standards***

Overall, FMB is well on track with their pledged actions regarding the development of apprenticeship standards. These actions are implemented through adherence to the self-set timelines. The actions have made significant **progress**.

### **Activity 1: Developing two new apprenticeship standards in bricklaying and plastering**

As mentioned above, all apprenticeship standards must be converted into trailblazers by 2020. FMB, concerned that too many of these standards are being developed by large contractors, took the initiative and applied for permission to develop standards in bricklaying and plastering (FMB pledge, 2016).

The standards and the corresponding end-point assessment plans were submitted to the government by July 2016. FMB received feedback in November 2016 and had worked on some amendments. It had aimed to resubmit a revised version of the standards at the end of January 2017. The standards were approved in March 2017. The next step entailed communication of the new standards and assessment plans to training providers and colleges so that they could start working on the delivery of these programmes. As part of this communications campaign, FMB would try to promote construction apprenticeships to young people as well. FMB hoped that these standards would be ready for delivery by September 2017 (Interview, McMonagle, 2016). However, the standards were not ready to use by that time. An apprenticeship standard is only available for delivery when both the standard and assessment plan are approved and a funding band (core government contribution) has been assigned to the standard (HM Government, 2017a, 2017b).

### **Activity 2: Holding the Master Builder Awards that includes categories called 'Apprentice of the Year' and 'Apprentice Employer of the Year'.**

FMB holds the Master Builder Awards every two years. The launch of nominations for the categories of 'Apprentice of the Year' and the 'Apprentice Employer of the Year' were launched in September 2016. Generally, they receive about 30-40 nominations every time and FMB encourages as many applications as possible. As this is a members-only award scheme, FMB can actively encourage their members to

participate in submitting nominations. The nomination process was closed in January 2017 and the process moved to judging the nominations by a regional/devolved countries judges' panel that shortlists the best entries. A nation-wide winner was then chosen from the nominations that won at regional level. An award logo was provided to all regional and national winners with guidelines regarding its use. The Master Builder Awards Winner 2017 (builder category) won a Vauxhall Vivaro van worth up to £20,000 (FMB, 2017). Their client received a cheque for £1,000. The Master Builder Apprentice Winner 2017 received a cheque for £500. The winners were announced on the 15<sup>th</sup> of September 2017. These awards are always a good opportunity to get some publicity – FMB normally gets good press coverage for the event (Interview, McMonagle, 2016).

The main **target group** for these actions is FMB's member organisations and SMEs, as well as VET schools and learners. The **resources** needed to implement these standards are associated with the workload of one person responsible for coordinating the preparation of the standards. There are 10 members from different construction companies that agreed to develop the two new standards (FMB, 2015).

The implementation of the pledge was underpinned by one major **success factor** – the standards were created as part of a collaborative process involving SMEs in construction, training providers and awarding bodies. This is said to be particularly important, as two thirds of the apprentices entering the construction sector are estimated as having been trained by SMEs. Given this composition of the sector, no businesses are better suited to lead the development of these apprenticeship standards than SMEs themselves (FMB, 2016). One of the main **challenges** to the standard development process is related to current changes in apprenticeship funding in the UK. Therefore, it is crucial that the new standards in bricklaying and plastering are approved quickly and in time so that they can qualify for higher levels of funding as soon as autumn of 2017 (Interview, McMonagle, 2016).

These actions have had a major **impact** in terms of ensuring the high quality of apprenticeships. By giving employers the power to design and deliver high-quality apprenticeships, employers are free to design apprenticeships based on skills that the industry needs (CTIB, 2016). In addition, FMB's activities further the government's efforts to create three million apprenticeships by 2020 because more apprenticeships mean larger benefits to employers, apprentices and the economy (FMB, 2016).

### ***Conclusions and recommendations***

FMB is moving forward with the development of new apprenticeship standards at a fast pace. The process has been successful. The standards had been expected to be rolled out to apprenticeship programmes soon so that the first learners could start apprenticeships that qualify for new higher levels of funding by autumn of the school year 2017/2018. However, the standards were not yet ready to use by September 2017. There are a few valuable lessons to be learnt from the pledge by FMB and, indirectly, from the entire apprenticeship reform process in the UK.

- FMB represents the interests of construction SMEs. Therefore, it is a crucial stakeholder in the reform of apprenticeship standards as SMEs need broader representation in such wide-scale apprenticeship reform.
- The design of the reform itself enables employers to design the standards of apprenticeship. Employer-led standards reflect the needs of the industry well.
- The standards will ensure that apprentices have the broad skills that will future-proof their careers.
- However, the interest of young people in construction sector training has been moderate over the years. Challenges of image and the quality of construction training are to be tackled if more young people are to be attracted to taking up apprenticeships in this sector.

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## PANHELLENIC ASSOCIATION OF ENGINEERS CONTRACTORS OF PUBLIC WORKS (ESTABLISHING NEW TRAINING PROGRAMMES)

### Introduction

The Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE) covers the entire range of companies involved in public or private construction works across Greece. Since its establishment in 1935, PEDMEDE has been committed to the following goals: (1) securing and promoting members' interests and welfare, (2) defending members' rights, (3) providing legal assistance and tax consultancy services.

Since the beginning of the financial crisis, youth unemployment in Greece has become a major concern. In 2015, the youth unemployment rate exceeded 40% (Eurostat, 2017). However, many construction sector companies refuse to hire young workers not only due to financial burdens, but also because of their lack of actual work experience. Links between skills provided in educational institutions and the needs of the labour market in Greece have traditionally always been weak. The economic recession has only aggravated this situation. The National Technical University of Athens established apprenticeship programmes to address this issue, yet did not develop a systematic approach in attracting the interest of construction companies. In response to this situation, PEDMEDE issued a pledge in March 2015 targeting both young people and construction companies. It primarily aims to provide civil engineering students an opportunity to gain work experience in construction companies and consequently helps them to access the labour market.

The pledge by PEDMEDE was made following the aftermath of the financial crisis and in the midst of major vocational education and training (VET) reforms in Greece. The pledge focuses on two targets and outlines five activities that aim at building a bridge between unemployed youth and construction companies (see table below).

**Table 12: Targets and corresponding activities of the pledge by PEDMEDE**

Pledged targets	Corresponding pledged activities
<p><b>Target 1:</b> Repeat and establish PEDMEDE's involvement in training and educating young graduate engineers, who suffer the most from the financial crisis in Greece.</p>	<p><b>Activity 1:</b> Increase the number and quality of apprenticeship places in construction companies that are members of the association and promote the apprenticeship initiative in order to help young university graduates acquire professional experience (key focus of the study)</p> <p><b>Activity 2:</b> Establish training programmes targeted at SMEs that form the majority of PEDMEDE members and would benefit the most from such innovative initiatives</p> <p><b>Activity 3:</b> Launch specialised training actions for topics that are highly important to PEDMEDE members. More specifically, PEDMEDE has already launched a series of seminars on electronic tendering and procurement.</p>
<p><b>Target 2:</b> Increase the participation of PEDMEDE's members in the apprenticeships program by min. 20% for the next year.</p>	<p><b>Activity 4:</b> Provide support to the members of PEDMEDE in order to adapt and establish apprenticeship programmes. For example, PEDMEDE aids them in (a) defining the scope of the apprenticeship, (b) determining the content and time outline of the scheme, (c) evaluating the results, and (d) determining the lessons learned at the end of the activity (key focus of the study)</p> <p><b>Activity 5:</b> Use the communications tools of PEDMEDE (newsletter, media, press releases, position papers etc.) in order to increase the</p>

attractiveness of the apprenticeship programmes and enhance the participation of PEDMEDE members irrespective of the company's size and region of business.

Source: PEDMEDE Pledge, 2015.

The aims of this specific case study are to:

- Present the particular features of apprenticeship programmes in the construction sector in Greece.
- Address the particular actions, namely 1 and 4, by PEDMEDE, in relation to VET reforms in Greece.

### **Country context**

Before the financial crisis, the construction sector had been a major driving force of the Greek economy – it employed more than 7% of the country's labour force and contributed an average of 6-8% to the total GDP (Vlami, 2013). However, the economic recession brought this sector dangerously close to a collapse, resulting in severe job losses (the number of jobs cut was approx. 60%) and overall stagnation (Eurostat, 2016). Many construction companies would like to see a revival of the construction sector and furthermore, successfully tackle the challenges brought about by the *Europe2020* climate and energy targets (Panas, 2016). Given the situation, apprenticeship programmes may be an attractive option to address these issues.

The financial crisis affected both low-skilled and qualified workers in the construction industry. Low-skilled workers have faced great competition that has led many employers to take advantage of them: these workers are often not granted adequate job security, social insurance, acceptable working conditions or a decent wage as they do not have formal employment contracts (Manos, 2012). Furthermore, employers tend to hire individuals with a post-secondary education even if that particular job only requires a limited set of skills (Corner, 2015). The latter aspect contributes to a mismatch between qualifications and on-the-job tasks, which further leads to the disappointment and frustration of workers. Due to these unfavourable working conditions, most young people and their parents opt for higher education rather than vocational training.

In the case of qualified workers, PEDMEDE estimates the shortage of a qualified workforce in the future due to the following factors (Interview, Panas, 2017):

- Many graduates with post-secondary education are not being integrated into the labour market due to poor links between educational institutions and the labour market, and consequently, do not develop practical skills.
- Due to the severe aftermath effects of the economic crisis still being felt in Greece, many young qualified graduates choose to leave the country, causing a brain-drain effect.

The shortage of a qualified workforce is already becoming visible, as there is a rising demand for professionals between 30 and 50 years of age because many of these professionals often choose to migrate abroad in search of better prospects (Interview, Papagianni, 2017).

Legislation plays a major role in the Greek economy as most sectors (incl. construction), are highly regulated. Recent legislation<sup>121</sup> adapting EU directives<sup>122</sup> has fundamentally reformed the construction sector. This legislation covers tender

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<sup>121</sup> Law 4412 of 2016.

<sup>122</sup> Directive 2014/24/EU and Directive 2014/25/EU.

procedures, public procurement rules, awarding of contracts and documentation requirements. Pledge-holders believe it has set out the strategic goals and objectives for the upcoming decade. Due to these changes, there are new possibilities for implementing training and educational programmes in the construction sector. More particularly, this new legislation introduces stricter regulations regarding the competence of companies participating in public tenders. Consequently, companies will be required to employ highly skilled personnel, and will therefore be more interested in training medium to high skilled workers via apprenticeship programmes (Interview, Panas, 2017). In 2010, only 21% of construction enterprises (Eurostat 2017a) participated in training programmes in Greece compared to the EU average of 64%. Yet, given the recent legal changes and ongoing VET reforms, the situation could be significantly improved.

### ***Greek apprenticeship systems in the construction sector***

A school-based VET is the dominant approach in Greek education. The first vocational schools were established in 1952. At the time, they had been poorly linked with the labour market and therefore were not popular. The dual-VET system was introduced in 1956 in order to facilitate school-to-work transitions and promote VET. However, despite the introduction of a dual-VET system, school-to-work transitions rates in Greece remain well below the EU average as most employers consider the actual working experience of school or university graduates to be insufficient (Eurostat, 2015). Despite several attempts to reform the apprenticeship system in the late 1970s and early 1980s, the overall development of vocational training remains fragmented and uneven. There are no common rules for apprenticeships and sharp disparities exist between the regulations of apprenticeships as outlined by different ministries.

Apprenticeships are mainly available at the post-secondary level and are provided in two forms, namely formal and non-formal (Cedefop, 2015). Since apprenticeships are mainly undertaken by young adults rather than young adolescents, on-the-job-training programmes organised by universities may also be considered as apprenticeships in the Greek system in cases that require superior technical skills. The majority of schemes are non-formal and are offered by numerous establishments under the supervision of different ministries (e.g. Higher Professional Schools (gr. *Ανωτάτες Σχολές*) run by the Ministry of Tourism or the Ministry of Agriculture). Those who wish to gain relevant skills for construction work may enrol in post-secondary VET schools (gr. *Ινστιτούτο Επαγγελματικής Κατάρτισης, IEK*). These schools were originally established in 1992. They offer programmes that consist of four semesters of school-based theoretical learning and one semester of practical learning or an apprenticeship.

There is only one formal apprenticeship scheme offered at the upper secondary level, namely at Technical Apprenticeship schools (gr. *Εκπαίδευση ΕΠΑΣ Μαθητείας, EPAS*), operated by the Manpower Employment Organisation (gr. *Οργανισμός Απασχόλησης Εργατικού Δυναμικού-, ΟΑΕΔ, OAED*). These schools were established in 1952. They provide a two-year school-based VET and include paid work for four days a week in accordance to the principle of dual-VET. The overall employment statistics of EPAS graduates are impressive: 73% of graduates continue working in their initial place of employment and 68% of all graduates have kept their jobs despite the recession (Petkovic, 2015). However, following recent reforms, EPAS will be abolished and replaced by newly established EPAL and SEK schools (cf. below). At the moment, EPAS apprenticeship programmes are planned to continue until the school year 2021/2022 (Petkovic, 2015).

The latest legislative measures regarding VET came into effect in 2013. These measures were mainly focused on the establishment of two types of schools: Vocational Upper Secondary Lyceums and Vocational Learning Schools. The former belong to the category of formal education, while the latter are institutions for non-formal apprenticeship schemes.

- Vocational Upper Secondary Lyceums (gr. Επαγγελματικά Λύκεια (ΕΠΑΛ: EPAL)). EPAL schools are organised by the Ministry of Education and Religious Affairs. These schools offer a three-year programme and an optional apprenticeship year. This optional year is an innovative measure that aims at facilitating school-to-work transitions and helps young people to successfully enter the labour market. Each week consists of 28 hours of work in a private company and 7 hours of school. According to new regulations, speciality programmes offered by the school must be in compliance with the recommendations of ministries, regional administrations and social partners. All EPAL graduates may continue their education at the tertiary level.
- Vocational Learning Schools (gr. Σχολή Επαγγελματικής Κατάρτισης (ΣΕΚ: SEK)). These schools offer three-year programmes, of which the final year is a compulsory apprenticeship. Those who are over 20 years old may attend evening classes and complete their studies in four, rather than three, years. During this last year, lessons are combined with workplace learning. The programmes are structured according to 'streams' (e.g. agronomy/food or technological applications), and those are further sorted into particular trades. Continuation towards a tertiary education is not possible within this scheme. However, in 2016, a law was passed to abolish these schools.

These measures are in accordance with the broader strategy of a major Greek educational reform. This strategy consists of multiple steps, the most important of which are the following (European Commission, 2016):

- Match the supply of apprenticeship schemes with labour market needs.
- Improve cooperation between stakeholders.
- Increase the number of persons participating in apprenticeships.

The issue with Greek VET in the construction sector is that all the above-mentioned apprenticeship schemes are mostly concerned with basic trades (e.g. carpenters, masons) and rarely involve medium to high-level workers. Although this had not been a problem prior to the financial crisis as the employment rate in the construction sector was as high as 95%, it has become a serious issue during the last couple of years (Interview, Panas, 2017). Previously, there was no need for any specific apprenticeship schemes as few workers faced any difficulties in finding a job. Motivation and basic work skills were sufficient for receiving an employment contract. Occasionally, the largest construction companies initiated training courses in order to improve the skills of their personnel, but there had been little systematic training in the construction sector regarding professions that require more skills. A study on the Greek VET system confirms this: professional trades oriented towards construction work are said to be either absent or inadequate (Cedefop 2014). Only during the past few years have there been more attempts to strengthen apprenticeships in the construction sector. Given the fact that young university graduates have been particularly affected by the economic crisis (OECD, 2016) and furthermore, due to the fact that civil engineering students are especially lacking in on-site experience, PEDMEDE established a training scheme targeting this group. The actions of PEDMEDE, together with the National University of Athens, are a particularly good example of introducing a more consistent approach to VET in the construction sector (Interview, Papagianni, 2017).

The National Technical University of Athens and PEDMEDE introduced an apprenticeship scheme for civil engineering students in their final year of studies. While some universities offer traineeships or apprenticeships in various fields, relatively few civil engineering students have benefited from systematic on-the-job-training. The students take part in various construction projects in the city of Athens or its surrounding regions for a period of three months. During the time of their apprenticeship, the students receive a salary of €500 to €600 per month. The training programme is designed by the university and the company at which the student



trains: the university helps to determine the student's level of skills while the company provides the actual on-site activities. The student is supervised by an in-company tutor. Most of the time, students are encouraged to undergo training in specialised companies (e.g. focusing on bridge construction or marine infrastructure, etc.) in order to develop highly specialised skills. At the end of their five-year studies, students receive a degree that is equivalent to a Master's degree.

### ***PEDMEDE pledge: Establishing new training programmes***

PEDMEDE successfully completed the first cycle of apprenticeship placements for the school year of 2015/2016 and was halfway through the second cycle of 2016/2017 at the time of drafting this study. There was a third cycle planned for 2017/2018 and, depending on the success and demand for such apprenticeship programmes, these activities were said to possibly later be renewed.

**Activity 1: Increase the number and quality of apprenticeship places in construction companies that are members of the association, and promote the apprenticeship initiative, in order to help young graduates acquire professional experience.**

PEDMEDE has been committed to this action and in the past two cycles has arranged for approx. 15 to 20 apprenticeship places in each cycle. The Innovations and Communications Committee of PEDMEDE has been very active in trying to reach as many companies as possible in order to inform them of the apprenticeship initiative. Their communication tools include sending newsletters and publishing position papers as well as personally contacting different PEDMEDE enterprises.

**Activity 4: Provide support to the members of PEDMEDE in order to adapt and establish apprenticeship programmes. For example, PEDMEDE aids them in (a) defining the scope of the apprenticeship, (b) determining the content and time outline of the scheme, (c) evaluating the results and (d) determining the lessons learned at the end of the activity.**

PEDMEDE provides step-by-step support for companies that show interest in establishing apprenticeship programmes. This mainly entails providing assistance in administrative and legal matters. A legal consultant advises enterprises with regard to regulations they must respect and helps to fill out all the necessary documents. Administrative issues mainly consist of handling student applications and ensuring a smooth process of employment. In this case, PEDMEDE receives and thoroughly reviews applications from students studying at the National Technical University of Athens and evaluates their submissions. Organisation members conduct multiple interviews with applicants in order to clearly determine their needs, interests and capabilities. This leads to a better match between companies and students. The students then begin working in a particular company, most often at an SME with no more than 10-50 employees, placing the student in a highly personalised environment. Companies are required to assign a tutor responsible for supervising the apprentice and keeping a log of all of the apprentice's activities on the construction site. PEDMEDE provides guidance in choosing a tutor and instructing him/her on how to keep track of all of the apprentice's activities. Such consistent tracking of an apprentice's activities allows all of the relevant people to monitor and evaluate the progress of the apprentice and to use their experience to assess what works and what does not work within the scheme. This feedback may then be used to improve the scheme.

The main **target groups** of PEDMEDE's actions are young engineers in their 5<sup>th</sup> (last) year of university studies and a variety of SMEs. PEDMEDE has a distinct advantage regarding the versatility of companies because it is the only association in Greece that incorporates an exceptionally wide range of enterprises, both in terms of their size and in terms of their areas of specialisation.

The **impact** of the scheme on target groups, namely the civil engineering students and the construction companies, seems to be positive. An important mutual benefit is the establishment of personal links between young students and companies that may lead to employment in later years. In addition, students reported an improvement in their capability for applying theoretical skills to practical tasks (Interview, Panas 2017). Another relevant aspect was the programme's contribution towards highly specialised professional development: students were encouraged to undertake an apprenticeship in a very specific sector and develop highly specific, yet necessary, skills. The long-term impact on target groups, however, is not yet evident, as the scheme is relatively new. Most students do not directly enter the labour market right after they finish an apprenticeship scheme due to many factors: many of them are required to enlist in military service (that is compulsory in Greece), some enrol in a Master's programme or choose to continue their studies abroad. Whether the opportunities provided by this scheme will be made use of highly depends upon the general situation in the construction sector and the Greek economy. Unfortunately, at the moment, most predictions are rather gloomy.

PEDMEDE identified student motivation as the key **success factor** in the implementation of the pledge. An opportunity to work on-site provides students with the chance to experience various work-related situations in their chosen career path and to gain highly relevant practical skills. Students were very motivated by the opportunity to gain on-site experience and demonstrated a mature commitment to working in the construction sector. Such motivation also encouraged companies to take students seriously and to offer quality training as well as to trust the students' theoretical knowledge and potential.

**Resources** did not cause any difficulty in the implementation of the pledged actions. All financial expenses were covered by the National Technical University of Athens, including apprentice remunerations of €500 to €600 per month. As a result, neither the construction companies nor the PEDMEDE members had any financial burden. PEDMEDE provided the staff required for the management of the apprenticeships that included four employees for administrative services and one legal consultant.

The main **challenge** identified by pledge-holders was getting companies involved in the scheme. This is due to the current economic situation in Greece. The recession created a very competitive environment for construction companies to be awarded with contracts and most companies feel reluctant to invest time and resources into education and training. However, PEDMEDE was persistent in its attempts to reach out to companies through personal contacts: this included telephone calls, on-site visits and numerous negotiations with the heads of enterprises. As a result, compared to the first cycle of the scheme in 2015, companies were much more willing to participate in the second cycle in 2016 as they had become more convinced of the benefits of apprenticeships (Interview, Panas, 2017).

### ***Conclusions and recommendations***

While the pledge by PEDMEDE is only halfway complete, due to its reasonable success, PEDMEDE is considering the option of extending its activities. Even though it is too early to determine the impact of PEDMEDE's actions, an early general assessment seems promising and indicates positive results.

The Greek VET system presents many challenges for VET education providers as well as for enterprises and young people especially given the current economic climate. The key challenge is to ensure better cooperation between educational institutions and enterprises in order to improve the school-to-work transition rates. PEDMEDE has undertaken this challenge and established a new apprenticeship scheme. It therefore exemplifies EU-wide efforts to prioritise apprenticeships. The following aspects of this case are worth emphasising:

- Even though it is difficult to convince enterprises to receive apprentices in the short term, it may lead to encouraging results in the long term.
- A thorough review of student applications ensures that the apprentices' skills and motivation are matched in accordance with the particular needs of various companies.
- Apprenticeships in highly specialised enterprises contribute to superior professional development.
- An ongoing evaluation of an apprentice's progress permits for monitoring of the quality and effectiveness of this type of training as well as enables further improvement.

Despite the slow recovery of the Greek economy and the construction sector in particular, developing young people's skills can have a positive influence on the overall situation. The effects of the crisis cannot be reversed, nor can they be easily managed. Nonetheless, investing in education and training can help build skills and consequently increase labour productivity. PEDMEDE sets an excellent example in convincing enterprises of the multiple benefits of apprenticeship placements and therefore contributes to a systematic change in Greek VET.

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# CONFÉDÉRATION CONSTRUCTION BRUXELLES-CAPITALE (STRENGTHENING COOPERATION BETWEEN VET SCHOOLS AND COMPANIES)

## Introduction

The Confédération Construction Bruxelles-Capitale (CCBC) is a regional professional body under a national confederation in Belgium. The Belgian national Confédération Construction brings together approx. 15,000 companies ranging from independent businesses and SMEs to large enterprises and those working in all domains of construction. The confederation is primarily concerned with defending the interests of construction sector companies and negotiating with authorities on behalf of its members. CCBC is engaged in the following activities: (1) promoting the construction sector, (2) developing construction activities in the region, (3) informing affiliated enterprises about new regulations and changes in the region, (4) providing members with free consultancy services.

The pledge by CCBC was submitted in November 2015 as a commitment to achieve the targets set out in the *Construction2020* action plan (European Commission, 2012). One of its key objectives, namely, improving human capital, is directly related to improving and encouraging apprenticeship schemes. The construction sector in the Brussels-Capital region is constantly faced with labour shortages in certain trades. Given the situation, apprenticeship schemes can be an effective tool in bringing the workforce more in line with the current needs of the construction sector. CCBC committed to improving the image associated with dual training as well as to raising the quality and increasing the number of apprenticeship placements in enterprises.

CCBC acknowledges the limited number of apprenticeship places offered by companies and has taken steps to help resolve this issue. The pledge has outlined two targets and three activities to successfully achieve its goals (see table below). Particular focus is given to establishing a single point of contact between enterprises, education providers and young people in order to strengthen the links between these groups.

**Table 1: Targets and corresponding activities of the pledge by CCBC**

Pledged targets and deadlines	Corresponding pledged activities
<p><b>Target 1:</b> Provide young people with their first working experience in a construction enterprise in which they could: a) test their motivation; b) verify their chosen career path; and c) gain basic and specific knowledge and skills.</p> <p><b>Target 2:</b> Strengthen the links between education providers, enterprises and young people.</p>	<p><b>Activity 1:</b> Encourage young people to participate in apprenticeship programmes through the Alternating Training and Education Centres (CEFA) schools and further support and enhance the appeal towards such learning schemes.</p> <p><b>Activity 2:</b> Offer a single contact point to facilitate administrative tasks for implementing dual training for schools and businesses (main focus of this case study);</p> <p><b>Activity 3:</b> Engage in communication activities with the general public, schools and businesses (site visits, website, brochures, briefings, etc.) to raise their awareness about apprenticeships.</p>

Source: CCBC Pledge, 2015.

The aims of this case study are to:

- Describe the construction sector-specific context and identify the sector specifics of the apprenticeship system in the Brussels-Capital region.
- Address the actions by CCBC that have contributed to developing apprenticeships and in particular, have successfully linked vocational schools to enterprises.

## Country context

The general situation in the construction sector in the Brussels-Capital region is characterised by the following trends:

- Over recent years, the number of construction enterprises has been steadily rising in the Brussels-Capital region, despite a significant number of bankruptcies up until 2012.
- Following the EU Energy Performance of Buildings directive<sup>123</sup>, the region is committed to the construction of nearly zero-energy buildings (nZEBs). As 70% of CO2 emissions in the Brussels-Capital are due to poorly insulated buildings, this calls for major renovation work. If the Brussels-Capital region wishes to successfully develop such construction works, it will need a significant increase in the number of skilled workers.
- Traffic and mobility is also a cause for concern. The region experiences a loss of €511m each year due to an ineffective transport infrastructure. The Brussels-Capital region has already agreed to a long-term investment strategy for 2016-2025, involving a plan to extend the subway and increase security on the roads. These plans will also require large numbers of skilled construction workers.

In 2015, the construction sector employed around 7.1% of the total workforce in the general Belgian economy and 6.1% in the Brussels-Capital region (Eurostat, 2017). Most of the workforce is employed by SMEs (89.6%) and the rest are either self-employed or work in large enterprises that employ more than 5,000 employees (ECSO, 2016). The number of workers is projected to increase by 13.7% in 2017. Non-residential construction and renovation is predicted to increase, while prospects for residential construction are more modest. While these developments in the sector provide ample opportunities for the further growth of the industry, several key problems in the labour market might hinder the said positive developments:

- Undeclared work has an especially profound effect on Belgian employment rates. Posted workers are officially employed in other countries and, although employers are required to respect the legislation of the host country, they seldom do so. Belgian employers are being pushed out of the labour market due to high costs. This is known as social dumping and, despite an increase in construction works, it contributed to as many as 15,000 job losses in the Belgian construction sector (CCBC (with partners), 2015).
- Labour shortages and skills mismatches are reported to be a significant problem. Around 70% of companies in Belgium, and the Brussels-Capital region in particular, have difficulties finding sufficiently skilled and motivated workers. The national construction sector is therefore affected by bottleneck vacancies for such professions as engineers, technicians, designers and electricians, resulting in lower productivity by construction companies (ECSO, 2016).
- While young people are generally expected to fill vacancies in the sector, this is not the case in the Brussels-Capital region: each year, 1,000 new jobs become available in the region and only approx. 30 of these jobs (3%) are filled by young people. At the same time, youth unemployment in the region is estimated to be 25% (Vanderhaegen, 2016).

Given these trends and challenges, investing time and effort into apprenticeship schemes may prove beneficial on multiple levels. On the one hand, helping young people to gain relevant skills enables them to find employment. On the other hand, apprenticeship schemes may significantly contribute to reducing labour shortages and ensuring the quality of construction works in the region.

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<sup>123</sup> Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

## **Brussels-Capital Region apprenticeship systems in the construction sector**

The development of apprenticeship schemes in the Brussels-Capital region differs between the Flemish and the French-speaking communities. Apprenticeships in the **Flemish-speaking community** are organised either through part-time vocational schools (nl. *Deeltijds beroepssecundair onderwijs*, DBSO) or through the Flemish Agency for Entrepreneurial Training (SYNTRA)<sup>124</sup>. While the latter option had been available for many years, the former option is relatively new. Such part-time vocational schools were established after compulsory education was extended from the age of 14 to the age of 18 in 1984. Likewise, in the **French-speaking community**, new part-time vocational schools were also introduced after the extension of the compulsory education age. Originally known as Centres for Part-Time Learning, in 1991 they were reformed into Training and Education Centres (fr. *Centre d'Enseignement et de Formation en Alternance* (CEFA)) once dual training became obligatory for those learners who were unwilling to pursue general education (CCFEE, 2017). There are several options available for those willing to undertake an apprenticeship in the French-speaking community:

- CEFA's offer dual training programmes for young adolescents aged between 15 and 25. The programme takes three to four years to complete. During the week, two days are spent at school and three or four days at the workplace. The apprentice receives an apprenticeship contract as well as a monthly wage that increases over time. Furthermore, the school ensures that the apprentice is guided and assisted by a personal tutor who also helps in finding an employer. After completing this type of education, young graduates may choose between continuing education and entering the labour market.
- The Training Centre for SMEs (fr. *L'Espace Formation PME*, EFP), together with the Training service for SMEs (fr. *Service Formation PME*, SFPME), offers two types of learning programmes: (1) apprenticeship schemes for adolescents over 15 and below 18 years of age; (2) entrepreneurship schemes for anyone over 18 years of age. The training duration depends on the chosen track. Apprenticeship programmes take two to three years to complete. During this time, learners participate in classes for one to two days per week at the centre and spend the rest of the week at the workplace. Learners receive apprenticeship contracts and individual tutoring at the workplace as well as a modest salary.
- Brussels Formation (fr. *Bruxelles Formation*) is a public body that is responsible for organising professional learning for francophone job seekers and workers in the Brussels-Capital region. Either independently or in collaboration with various partners, it offers various training schemes for those over 18 years of age. Such training schemes range from language classes to vocational training schemes associated with various trades and businesses. Vocational training includes an apprenticeship with a company for at least one month and is tailored to suit each individual's needs.
- Some Schools for Higher Education (fr. *Hautes écoles*) offer degree programmes that include an apprenticeship. The student can obtain a Master's degree and a professional qualification through such programmes. They offer short-term and long-term courses that are comprised of either one or two study cycles. In the first case, studying combines theoretical studying and practical training in more or less equal proportions, while in the second case, more focus is given to the application of knowledge in actual work settings<sup>125</sup>.

The Centre for Alternating Training in Construction (fr. *Centre de Formation en Alternance de construction*, FAC)<sup>126</sup> is responsible for the organisation and

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<sup>124</sup> The Flemish system is discussed in more detail at: Bouwunie, Unie van het KMO-bouwbedrijf vzw (Monitoring the reforms of dual VET).

<sup>125</sup> See more at: <http://www.enseignement.be/>.

<sup>126</sup> See more at: <http://www.centre-fac.be/>.



coordination of construction apprenticeships in the CEFA schools of the Brussels-Capital region. In addition, FAC acts as a socio-professional integration body (fr. *Organisme d'Insertion socio-professionnelle*, O.I.S.P.) by helping school dropouts find employment or enrol in training schemes. Furthermore, FAC develops various projects in cooperation with partners such as the Brussels Formation or the Funds for Professional Learning in Construction (FFC).

In Belgium, the transition from VET to the labour market is relatively smooth for most trades. Many stakeholders are in close collaboration and are further involved in social negotiations regarding employment: VET schools, social partners, employment services and business leaders participate in all levels of decision-making. However, there are some exceptions to this trend of which the construction sector is the most prevalent example. In the construction sector, the transition rate from VET schools to working in the industry is only 3.9% (Vanderhaegen, 2016). In the Brussels-Capital region, this is due to several reasons:

- Pupils from full-time secondary schools are not acquainted with most professions and are therefore not aware of multiple career opportunities. This is especially true of the construction sector, because, different from other sectors, the construction sector suffers from a bad image. Secondary schools seldom arrange on-the-job-training for any professions, and, even if they do, these periods tend to be very short and amount to one or two months. CCBC believes that an adaptation of some features of the German and Swiss dual VET systems would greatly benefit both young adolescents and the construction sector as a whole. CCBC is thus trying to encourage general education pupils to switch to full-time VET and undertake apprenticeships or, alternatively, to introduce more flexibility to general education schools in terms of providing training opportunities.
- VET learners in the construction sector also lack on-site experience because while their on-the-job-training periods tend to be longer compared to pupils in general education schools, they either lack continuity or have difficulties in finding an enterprise at which to train. This is due to the fact that enterprises in the construction sector are much less involved in VET than other sectors in the Brussels-Capital region as they are less inclined to undertake all of the responsibilities associated with training. As a consequence, young workers seldom meet professional requirements in terms of job-specific skills and subsequently, do not successfully enter the construction labour market. The main challenge here is to establish stable links between VET schools and enterprises in order to ensure that all VET learners benefit from on-the-job-training. CCBC has established a single point of contact in order to create and help manage these links (see Section 3).
- Early leaving from education is a major issue in the Brussels-Capital region both generally and in the construction sector, where around 20% school dropouts do not gain any qualifications. 70% of dropouts occur in the 1st year of VET because learners are poorly informed on career prospects and are therefore highly unmotivated. One of the key tasks is to improve the image of the construction sector and convince young people that this particular sector may provide many opportunities (Interview, Lamolle, 2017).
- Signing an apprenticeship contract used to be a complex procedure for most companies due to heavy administrative burdens. Companies were given multiple options regarding apprenticeship contracts and had to select one on the basis of various apprenticeship features (e.g. duration, age of apprentice, etc.). However, all Belgian regions have replaced these contracts with a single contract (fr. *Contrat d'alternance*) in September 2015 that greatly simplified the procedure, thereby making it easier for companies to hire apprentices (Interview, Lamolle, 2017).

### **CCBC pledge: single point of contact**

Due to labour shortages and skills mismatches, CCBC is looking for ways to attract more young people to the construction industry. Their EAfA pledge is regarded as an extension of their prior initiatives. In 2011, CCBC launched the Youth and Education Unit (fr. *Cellule Jeunes et Enseignement*) aimed towards the promotion of various careers in the construction sector. At first, the unit mainly focused on raising awareness amongst young people and companies regarding the positive prospects of apprenticeship training. Yet, in 2013, this CCBC Unit, in partnership with the Wallonia-Brussels Federation, launched an 'On-the-Job-Education' pilot project (fr. *Project Pilote de stage d'immersion en entreprise de construction*)<sup>127</sup>. This project was oriented towards improving the quality of apprenticeships in companies and towards facilitating the school-to-work transition as well as guaranteeing a successful renewal of the labour force (CCBC, CJE, undated).

CCBC has expressed an aspiration to adopt the German and Swiss vocational training models that generally achieve great success in preparing apprentices for professions in the construction sector and which are considered as a first, rather than a last, choice for young people and their parents. In view of this general goal, it will take some time before any long-term results may be observed. However, CCBC has already achieved significant progress in some of its pledged activities, out of which the one regarding a single point of contact has been particularly successful.

#### **Activity 2: Offer a single contact point to facilitate administrative tasks for implementing dual training for schools and businesses**

CCBC has undertaken an intermediary role between companies, apprentices, general education and VET schools. It has appointed a single person within the organisation to assist SMEs in various management tasks in relation to the apprenticeship, such as finding financial support or filling out application files. CCBC emphasises the importance of establishing trust between stakeholders involved in dual training and therefore seeks to ensure that entrepreneurs can always contact the same person for help. Furthermore, this person attends construction sites in order to resolve any communication problems between companies and VET schools as well as to follow-up on individual apprentices. A detailed list of actions is provided in the table below.

**Table 2: Actions by CCBC as a single point of contact**

<b>Before the apprenticeship</b>	<ul style="list-style-type: none"><li>• Meets entrepreneurs, school headmasters, professional bodies and school pupils to explain the goals of the project and clarify agenda</li><li>• Ensures that the school and the enterprise agree on the educational means and goals which permit them to work together and set up individual tailor-made programmes for each young apprentice</li><li>• Helps to pick out tutors who are professionally experienced and who have the capacity to be good teachers</li><li>• Helps each potential apprentice to write a cv and a motivation letter in preparation for a job interview; organises job interviews</li><li>• Informs the school and the apprentice about the location and the type of construction site, organises visits to the sites</li><li>• Instructs the apprentice about work hours, particular features of the site and security measures</li><li>• Accompanies the apprentice to the construction site on his/her first day and introduces him/her to the team</li></ul>
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<sup>127</sup> See more at: <http://www.confederationconstruction.be/bruxellescapitale/fr-be/serviceauxentreprises/cellulejeunesenseignement.aspx>

<b>During the apprenticeship</b>	<ul style="list-style-type: none"> <li>• Ensures that all administrative and organisational questions have been sufficiently clarified for all relevant parties via telephone briefings and on-site visits</li> <li>• Intervenes if there are any difficulties regarding the apprentice</li> <li>• Visits the construction site approximately once per week in order to check-up on the apprentice and make sure he/she is successfully integrating into the team and can cope with all of the assigned tasks</li> <li>• Visits the construction site to discuss the competence, attitude and professional progress of the apprentice with the person who oversees and monitors his/her activity</li> <li>• Contacts a schoolteacher who helps to ensure that all of the tasks demanded of the apprentice correspond to his/her level of schooling and will result in a positive experience</li> </ul>
<b>After the apprenticeship</b>	<ul style="list-style-type: none"> <li>• Arranges round-table discussions in schools amongst the pupils who participated in apprenticeships and asks them to complete an evaluation questionnaire</li> <li>• Arranges debriefing sessions for enterprises in order to receive any relevant feedback</li> <li>• Assists in any remaining administrative and financial procedures related to hiring an apprentice</li> <li>• Starts preparing for the new cycle and seeks to ensure continuous communication between schools, institutional partners and enterprises by organising information sessions, press conferences, articles etc.</li> </ul>

Source: CCBC, Projet Pilote de stage d'immersion en entreprise de construction, Rapport Final, 2016

On March 21 2017, CCBC was planning to open a guidance platform *ConstruCity* modelled after the French good practice example, i.e. the *Cité des Métiers*<sup>128</sup>, that are information and counselling centres open to the entire public. The aim of this platform is to bring together all relevant actors (companies, schools, young individuals and their parents) to a single place with open access that would enable all interested parties to share their experiences as well as to find needed relevant information about professional opportunities in the construction sector.

Actions by CCBC **target three groups**, namely SMEs, general education schools together with VET schools and individual young persons. Establishing a single point of contact has already had considerable **impact** and helped to achieve the following results (Interview, Lamolle, 2017):

- CCBC managed to link 6 general education schools to 71 companies and 2 CEFA schools to 50 companies in terms of cooperative partnerships.
- A total of 152 apprentices have undertaken apprenticeships under CCBC guidance since 2013 out of which 100 apprentices were registered for the school year of 2015/2016 alone.
- CCBC services helped approx. 110 companies (80 companies in 2016) to build trust in apprenticeship schemes and therefore hire apprentices more willingly.
- School-to-work transitions in the construction sector increased from 4% in 2011 to 66% in 2016.

As all of the activities pledged by CCBC emphasise a highly personal approach, the essential **resource** is the number of people working on the project. Currently, there is only one person coordinating 58 apprentices, 50 companies and one person coordinating 4 different schools. In order to ensure a smooth operation and further on-site follow-up, CCBC needs two or three times as many people to coordinate these

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<sup>128</sup> See more at: <http://www.reseaucitesdesmetiers.com/index.php>

activities. However, as this project relies on public subsidies, at the moment CCBC operates on a tight budget and therefore cannot assign more people to this project (Interview, Lamolle, 2017).

Good cooperation with companies, schools and apprentices is the essential **success factor** for the implementation of the single contact point. Receiving continuous feedback from all three groups was very important to CCBC in order to effectively address any unresolved issues and to build a relationship based on trust. VET teachers were willing to call upon apprentices and assess whether the level of their training matched the level of their capabilities and theoretical background. Company tutors were willing to share and discuss any aspects concerning the ongoing on-the-job training of the apprentice and, likewise, the apprentices were clear in communicating their needs. CCBC was persistent in making sure that each party received personal support and that most of their needs were met by engaging in dialogue and apprehending their concerns (CCBC, 2016).

CCBC has identified the following four **challenges** in the implementation of their pledged actions (Interview, Lamolle, 2017):

- *A conservative educational system.* There is a lot of inequality between general education and VET schools in terms of learner performance and learning resources (e.g. classroom equipment or support facilities) due to institutional complexity (see point below). Apprenticeship schemes are the ones most affected by this inequality and therefore a lot of energy must be invested into their promotion.
- *Institutional complexity.* Belgium is divided into three regions and three cultural communities and the Brussels-Capital region incorporates two of these cultural communities, i.e. Flemish and French. Neither of these communities can make any political decisions without addressing the other community, as they are obliged to coordinate their actions in all domains. This complicates and prolongs any policy decisions.
- *Pressure exerted by the EU workforce.* With the flow of workers from other EU Member States, local companies are facing higher costs and a higher demand to be more productive. Consequently, they cannot afford to take time in training apprentices on site.
- *Lack of financial resources.*

### **Conclusions and recommendations**

The pledge by CCBC is a significant part of their more ambitious goals. Even through the implementation of this pledge is more than halfway complete and all activities are scheduled until 2018, CCBC intends to continue working in a similar direction for many years to come. CCBC exemplifies EU-wide efforts to prioritise apprenticeships by strengthening the links between the education system and the labour market and, consequently, successfully manages youth employment issues. Their success in delivering high-quality apprenticeships relies on these key elements:

- Building strong relationships between schools and enterprises through the support of a trusted third party. This provides a valuable means of increasing the supply of apprenticeships as well as contributing to improving the quality of school-to-work transitions.
- Providing individual assistance to all apprentices ensures that their needs and professional capacities are taken into account and, as a consequence, that training programmes are well developed to match their interests.
- A personal approach towards all relevant parties helps to ensure the high quality of all apprenticeship placements.
- A single point of contact reduces administrative burdens to companies, clarifies any doubts regarding processes and procedures (thus reducing the complexity of the system) and, therefore, encourages them to take more apprentices.

CCBC cannot successfully address such issues as institutional complexity, lack of financial resources or the pressure exerted by the EU workforce. However, as this particular case shows, other means are available that can help reach satisfactory results.

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# FÉDÉRATION NATIONAL DES TRAVAUX PUBLICS (FNTP) (SUPPORTING FINANCING OF APPRENTICESHIPS)

## Introduction

The Fédération National des Travaux Publics (FNTP) is a professional body representing the companies of public works<sup>129</sup> in France. Currently, it links together 7,500 enterprises (approx. 245,000 employees) through its federal commissions, regional federations and trade unions. It is mainly concerned with: (1) dealing with various economic, social and political issues facing companies, (2) promoting the image of the construction sector, (3) defending the interests of construction companies, and (4) providing information to member companies.

During the last eight years, the French civil engineering sector suffered one of the worst crises in its history. The public works output dropped by more than 20% since 2008 and a total of 35,000 jobs were lost. Consequently, there was also a considerable drop in the number of apprenticeship placements offered by construction and civil engineering companies: between 2008 and 2015, the number of apprentices decreased by 16% (Observatoire des métiers du BTP, 2016). Furthermore, the youth unemployment rate in France has been consistently over 20% since the start of the financial crisis (Eurostat, 2017). Given this situation, FNTP issued a pledge aimed at increasing the supply of apprenticeships and helping to improve overall conditions for apprenticeship placements.

The pledge by FNTP is a single case within a wider attempt by multiple construction sector stakeholders to revitalise the construction industry. The pledge identifies one key target and outlines a comprehensive action plan for achieving it (see table below). Supporting apprenticeship financing seems to be an activity of critical importance, as investing in training can have a positive effect on sector productivity by reducing costs for enterprises recovering from the crisis in the long-term.

**Table 1: Targets and corresponding actions of the pledge by FNTP**

Pledged target	Corresponding pledged actions
<b>Target 1:</b> Increase the number of apprentices (kick-start apprenticeships in the construction sector)	<b>Action 1:</b> Promote public works trades and apprenticeships <b>Action 2:</b> Improve training quality <b>Action 3:</b> Offer training that is adapted to labour market needs <b>Action 4:</b> Support apprenticeship financing ( <b>focus of this case study</b> ) <b>Action 5:</b> Develop cooperation between training centres <b>Action 6:</b> Reinforce tutorship <b>Action 7:</b> Encourage contacts between company professionals and apprentices <b>Action 8:</b> Support social action for apprentices during and at the end of their training

Source: Pledge by FNTP, 2016

This case study aims to:

- Highlight the particular features of the construction sector and construction sector apprenticeships in France.
- Examine FNTP support for apprenticeship financing in the context of the most recent French tax reform (Action 4).

<sup>129</sup> This case study focuses on a construction sub-sector, namely public works (also known as civil engineering). This sub-sector is responsible for the public infrastructure, such as the transport infrastructure, public services (e.g. water supply) and other public facilities.

## **Country context**

The French civil engineering sector was heavily affected by the financial crisis and, in contrast to the rest of the French economy, did not recover as swiftly. This was mainly due to a significant decline in public investment: from 2015 to 2017, State grants to local governments were reduced by €11 billion. Nonetheless, in 2016, the public works industry showed signs of an upturn in activity of 3.5% in real terms compared to 2015. In 2017, this positive trend is expected to continue. It is mainly driven by numerous infrastructure projects and by a slight increase in local government investment spending. There are multiple infrastructural opportunities in France for companies specialising in public works (FNTF, 2016):

- *Water management.* One out of every five litres of water is lost due to relatively poor water management in France. A better water management infrastructure needs to be built in order to preserve water resources.
- *Environmental protection.* Many areas need constant maintenance and protection from natural disasters and therefore require innovative construction works. For example, in 2016 alone, the costs of flood damage was estimated to be around €1 billion.
- *Development of public transport services.* Pollution levels in France are becoming exceedingly high due to car emissions and a lack of green spaces. Development of public transport networks plays a major role in tackling this issue.
- *Development of road networks.* On average, each French citizen spends around 28 hours per year stuck in traffic. Developing and maintaining the road network (more than 1 million kilometres of roads) is crucial in order to ensure smooth transportation services throughout the country.
- *Development of electric power industry.* Currently, there are 15,000 electric vehicle charging stations all over France, yet the goal is to have 7 million of these stations by 2030. Furthermore, with more than 100,000 km of high voltage cables and more than 1.4 million km of distribution lines, public works companies must guarantee the security and operational capacity of the entire electrical grid.
- *Infrastructure for digital technologies.* Only one out of ten French citizens has access to a high-speed fibre optic internet connection. The aim is to cover 100% of French territory by 2022. Whether this target will be reached largely depends upon the capacity of the companies in the public works industry.

Employment in the public works sub-sector generally makes up from 20% to 25% of all employment contracts in the construction sector. All of the opportunities mentioned above will have a considerable impact on employment prospects in public works. Even though as many as 30,000 jobs had been lost since 2008, which constitutes approx. 11% of all workers in the sub-sector, many companies are already looking for new employees (Observatoire des métiers du BTP, 2016). For example, even single new projects such as the *Nouveau Grand Paris* (i.e. public transport development in Paris) are estimated that they will require almost 30,000 new employees before 2020 (FNTF, 2016). Therefore, even though education in the construction sector is fairly well developed in France, the VET system must be continuously improved in order to ensure a good match between the supply and demand of skills in the construction sector and especially in the public works sub-sector.

## **French apprenticeship systems in the construction sector**

Apprenticeships in France have a very long history. Guild-based learning, a precedent to the current apprenticeship model, dates as far back as the Middle Ages. The legal framework for the present-day apprenticeship system has its roots in the 19<sup>th</sup> century. In 1925, an apprenticeship tax for companies was introduced in order to finance apprenticeship training and, in 1928, a written apprenticeship contract became an



official requirement by law. Reforms in the 1980s were oriented towards the decentralisation of VET and apprenticeship schemes whereby regional councils were granted legislative powers to shape vocational education. To this day, the apprenticeship framework has been under continuous development and many minor reforms take place every few years (Gués, 2010).

In France, dual-training schemes are offered under two types of contracts (Pigeaud, 2014):

- The apprenticeship contract (fr. *Contrat d'apprentissage*) is an employment contract signed between the apprentice and the employer. Established in 1919, this contract is based on the principle of dual training. The apprentice, who must be between 16 and 25 years of age, alternates between on-the-job training and learning in a training centre (fr. *Centre de formation d'apprentis*, CFA). The pupil receives a salary and has the status of an employee. The apprentice needs to be accompanied by a certified instructor at the workplace. Training under this contract enables an apprentice to acquire skills that lead to either an official State diploma<sup>130</sup> or a professional qualification recognised by the State<sup>131</sup>. The acquired qualification depends on the duration of the apprenticeship, which may last from one to three years.
- The professionalisation contract (fr. *Contrat de professionnalisation*) is a relatively new option for those who wish to acquire a professional qualification recognised by the State and/or various industrial sectors while they are working. Established in 2004, this contract enables young people to alternate between periods of either general or vocational education and an apprenticeship. This contract targets the least qualified persons and offers a 'second chance' option for school dropouts by reinserting them into education through on-the-job training. The apprentice may be either between 16 and 25 years of age, or over 26 if he/she has been searching for a job for longer than one year. The maximum duration of this contract is 24 months. The apprentice has the status of an employee and receives a salary, depending on his/her age and his/her level of diploma.

VET in the construction sector in France is fairly well developed. 20% of all apprenticeship contracts belong to the broad construction sector (Pigeaud, 2014). The main body in charge of VET in the construction sector is the Committee for Consulting and Coordination of Apprenticeships in Building and Public Works (fr. *Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics* (CCCA-BTP)). This organisation operates at the national level and it is responsible for more than 70% of apprenticeships in the construction sector (see also the case study on CCCA-BTP<sup>132</sup>).

The most recent reforms in French VET have also affected the construction sector. In 2013, the French parliament ruled that improving VET is essential for boosting productivity in order to recover from the financial crisis. As part of this policy, the government set out to establish VET campuses all over France that bring all relevant training stakeholders of a particular economic sector within a single territory (Gratadour, 2014). So far, there are 77 campuses all over France, 26 out of which were established in February 2017. Five of these campuses are oriented towards professions in the construction sector (Ministère de l'Éducation nationale, 2017). By bringing together all stakeholders within one territory, these campuses facilitate links

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<sup>130</sup> The following national qualifications in VET are available in France: *Certificat d'aptitude professionnelle* (CAP), *Brevet d'études professionnelles* (BEP), *Bac professionnel*, *Brevet de technicien supérieur* (BTS), *licence professionnelle*.

<sup>131</sup> As opposed to national qualifications in VET, professional qualifications are more specific occupational qualifications listed in the National Directory of Professional Certifications (fr. *Répertoire national des certifications professionnelles*).

<sup>132</sup> The CCCA-BTP is discussed in more detail in the case study on *Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics* (CCCA-BTP) (Training of trainers).

between all stakeholder groups, namely enterprises, social partners, CFA schools, educational providers, etc. These links are crucial in order to offer relevant training courses, provide professional guidance and, most importantly, to ensure smooth cooperation with regional councils when it comes to financial support.

The VET system in France is financed through a national training funds. The funds are collected and distributed by nationally approved institutions in order to finance various vocational training needs. In 2014, the government introduced a set of reforms in order to increase financial support for apprenticeships. First of all, the following financial subsidies that enable the coverage of some apprenticeship costs were introduced (Service Public, 2017):

- Apprenticeship allowance (fr. *Prime à l'apprentissage*). This allowance is paid by regional councils to companies that participate in apprenticeship programmes and employ up to 10 employees. The sum can be no less than €1,000 per year. Companies that employ between 11 and 249 employees may receive this sum in two instances: (1) if they recruit an apprentice for the first time or (2) if a company chooses to employ an apprentice that it previously hired as a full time employee.
- Apprenticeship tax credit (fr. *Crédit d'impôt apprentissage*). Any enterprise that hires an apprentice for longer than one month may benefit from this tax credit. Since January 2014 this benefit only applies if apprentices are being trained for their first diploma and are in their first year of training. The tax credit amounts to €1,600 multiplied by the average number of apprentices in the company during the previous year.

The French government launched an online calculation tool<sup>133</sup> that allows companies to estimate the costs of training based on the apprentice's conditions of training (i.e. contract type, duration etc.) and the financial help available. This tool also allows apprentices to estimate their wages.

In addition, in order to further support apprenticeships, the government introduced an apprenticeship tax reform in March 2014<sup>134</sup>. The apprenticeship tax has been obligatory since 1925 for commercial and industrial enterprises. Generally, this tax is collected in order to finance various training schemes (not only apprenticeship programmes) that enable young adolescents to receive their first diploma/official education certificate. The apprenticeship tax is the only contribution that enterprises may allocate to the educational institutions of their choice. The tax is usually equal to 0.68% of the total company's (staff) payroll<sup>135</sup>. The government introduced legal changes regarding this tax. While this reform has many implications, two of the most relevant changes were the following:

- First of all, it simplified the tax collection system, as the number of tax collection institutions was reduced from 147 to 20. Companies must pay their apprenticeship tax either to a national or a regional approved tax collecting body. In 2015, a national joint collective body (fr. *Organisme paritaire collecteur agréé, OPCA*) for the construction industry, including public works, was approved to collect the apprenticeship tax. FNTF is in close collaboration with this particular body, also known as Constructys<sup>136</sup>. Companies in the

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<sup>133</sup> The tool may be accessed via the following link:

[https://www.alternance.emploi.gouv.fr/portail\\_alternance/jcms/hl\\_5641](https://www.alternance.emploi.gouv.fr/portail_alternance/jcms/hl_5641)

<sup>134</sup> Law of March 5, 2014 on vocational training, employment and social democracy. See more at:

<https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000028683576>

<sup>135</sup> In some regions (i.e. Bas-Rhin, Haut-Rhin and Moselle) this proportion is slightly smaller and amounts to 0.44%.

<sup>136</sup> See more at: <http://www.constructys.fr/>

construction sector may also pay their contributions via a regional collective body, namely a singular consular chamber<sup>137</sup>.

- Secondly, the reform significantly increased the role of regional councils. Since 2014, 51% of all collected tax is allocated to regional councils that are responsible for the effective distribution of these funds towards the development of apprenticeship schemes. 26% of all collected tax is used to finance CFA schools and the rest (23%) is given to educational institutions chosen by companies themselves (these institutions do not necessarily provide apprenticeships or offer VET) (Service Public, 2017a).

The focus of this case study is the FNTF action related to this most recent apprenticeship tax reform. The key issue at stake is the distribution of collected tax according to training priorities in the construction sector.

FNTF does not have any control over the budget income from this tax. Likewise, FNTF cannot influence tax distribution ratios, because tax distribution is based on regulations that are established according to government policy. However, in spite of such a formal structure of tax collection and distribution, FNTF is able to encourage enterprises to allocate part of their apprenticeship tax to institutions training for professions in public works. Based on active advocacy, FNTF therefore contributes to increasing financial support for apprenticeships in public works. In addition, there are many minor regulations that affect the distribution of financial resources that can in fact be modified. FNTF negotiates with regional authorities over such regulations and, by doing so, also affects how the apprenticeship tax is distributed.

### ***FNTF pledge: Supporting financing of apprenticeships***

FNTF submitted its pledge in December 2015 and has been active in its attempts to increase the supply of apprenticeship placements. Their pledged activities do not have an end-date and therefore are foreseen to continue for as long as FNTF considers it necessary.

### **Action 4: Support apprenticeship financing**

FNTF has been supporting the tax reform by actively cooperating with regional councils on questions regarding an effective distribution of funds. By constantly analysing and monitoring construction activities in public works in various regions, FNTF is able to provide regional councils with evidence on labour market needs in the sub-sector of public works.

In addition, as part of action 4, FNTF also carries out promotional campaigns targeting enterprises. Each year, FNTF organises a series of events to convince enterprises to allocate the remaining 23% of their apprenticeship tax to certain training institutions, and, in this case, to invest in public works apprenticeship programmes. During these events, FNTF provides the necessary information including: which institutions would benefit from financial support, which new programmes need financing and which steps the companies should take in order to ensure a successful transfer of available funds. FNTF has published a guide for all companies that can be easily found online<sup>138</sup> and which provides all of the details on apprenticeship tax arrangements, including step-by-step instructions on how to pay the tax, tax calculating guidelines and official tax forms (FNTF, 2017). Furthermore, FNTF continuously reminds enterprises of the multiple benefits of apprenticeship placements. Following the development of

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<sup>137</sup> Each company may choose from a number of chambers, namely the Chamber of Commerce and Industry, the Chamber of Trades and Crafts or the Chamber of Agriculture.

<sup>138</sup> The apprenticeship tax guide can be found via this link: [http://www.fntp.fr/upload/docs/application/pdf/2017-01/la\\_taxe\\_d'apprentissage\\_2017\\_-\\_guide\\_d'utilisation.pdf](http://www.fntp.fr/upload/docs/application/pdf/2017-01/la_taxe_d'apprentissage_2017_-_guide_d'utilisation.pdf).

apprenticeship subsidies (i.e. the apprenticeship allowance and the apprenticeship tax credit), FNTF must also inform companies about their benefits.

The pledge by FNTF **targets** potential and current apprentices and all enterprises in public works. Under the new apprenticeship tax reform, the government has set an ambitious goal of increasing apprentice numbers in all of France from 435,000 in 2013 to 500,000 in 2017 (AGEFA PME, 2017). As of January 2016, FNTF reports that there were a total of 14,000 pupils training for various professions in the public works of which 5,500 were training under an apprenticeship contract. The number of pupils has increased compared to the previous years thanks to financial contributions from enterprises specialising in public works (FNTF, 2017). FNTF cannot yet accurately determine the **impact** of its activities on target groups, as there is insufficient information on the direct effects of its actions.

The key **success factor** for the implementation of their pledge is good relations between regional councils and enterprises. Maintaining close ties is necessary for effective cooperation between multiple stakeholders as this allows for the monitoring of relevant trends and, subsequently, promotes apprenticeships in the most needed professions. In terms of **resources** used for relevant action, FNTF mainly relies on its broad network, information-gathering capacity and negotiating skills to ensure the most beneficial apprenticeship support.

FNTF has outlined two major **challenges** that prevent enterprises from hiring apprentices (see table below). These challenges are legal and therefore require efforts at a national level. FNTF is trying to initiate reforms that would help companies increase the supply of apprenticeship placements.

**Table 2: Legal challenges and FNTF responses**

Challenge	Response by FNTF
<b>Occupational health and safety (OHS) of minor apprentices (aged below 18 years).</b> The construction sites of public works are considered too dangerous for minor apprentices. To hire apprentices, enterprises must receive an official authorisation regarding OHS conditions for minor apprentices. This procedure involves a lot of paperwork and thus is very inconvenient for most enterprises.	FNTF initiated a legal reform that permits enterprises to hire apprentices without undergoing complex official authorisation procedures. Instead, enterprises need to sign a legally binding declaration that specifies the type of work an apprentice will be doing and affirms the enterprise's commitment to ensure OHS for a minor apprentice.
<b>Work duration of minor apprentices.</b> Everyone who is aged below 18 in France can work for a limited number of hours. This also applies to minor apprentices who would greatly benefit from spending more time on the construction site. Currently, no exceptions can be made within the legal framework.	FNTF is making an effort to address this challenge on a national level. However, extending work hours for minor apprentices is more difficult compared to, for example, changing OHS legislation. Work hours legislation also affects apprentices in other sectors and therefore is much more difficult to modify.

Source: Pledge by FNTF, 2016.

### **Conclusions and recommendations**

The pledge by FNTF exemplifies a positive commitment and the support of a construction sector stakeholder regarding national reforms that benefit apprenticeships in the construction sector. The results of such a commitment are encouraging and generally reflect EU-wide efforts to prioritise apprenticeships. With regard to supporting the financing of apprenticeships, the following aspects are worth mentioning:

- Good relations between authorities, enterprises and professional bodies is key, as they enable successful cooperation that further contributes to reaching the targets. VET campuses introduced in France both extend the networks of stakeholders (used by FNTF) and strengthen relations between them within these networks. FNTF persistently tries to strengthen its relations with stakeholders and by doing so, also expands its zone of influence.
- Information campaigns targeting enterprises ensure that enterprises receive all of the relevant information regarding the costs and benefits of apprentice training. Step-by-step guides and cost evaluation tools may also be useful when trying to encourage companies to provide financial support for apprenticeships.
- FNTF demonstrates how effective lobbying and campaigning can influence decision-making on a political level. By engaging in a dialogue with multiple stakeholders, FNTF initiates legal reforms and ensures that they are followed by adequate financial support.

Even though the French apprenticeship system has been under development for centuries, multiple legal issues still cause obstacles for apprenticeships in the construction sector. As this case demonstrates, the sub-sector of public works also has unique aspects such as health and safety regulations that need to be taken into consideration regarding apprenticeship placements. As FNTF is capable of lobbying for financial support for apprenticeships on a regional level, it is also capable of advocating legal change. If FNTF is to successfully continue with their pledged actions, enforcing legal change ought to become a priority, especially as financial support and legal requirements are largely dependent upon one another.

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## BERUFSFÖRDERUNGSWERK E.V. DES BAUINDUSTRIEVERBANDES BERLIN-BRANDENBURG E.V. (INTEGRATED TRAINING MODULES FOR SUSTAINABLE CONSTRUCTION)

### Introduction

The Berufsförderungswerk (BFW) des Bauindustrieverbandes Berlin-Brandenburg e.V. (Vocational Training Institute of the Construction Industry Association of Berlin and Brandenburg) is a non-profit institution operating two vocational training centres in Brandenburg an der Havel and Frankfurt (Oder) in Brandenburg. Further, it operates the competence centre for sustainable construction in Cottbus (also located in the state of Brandenburg), which implements the pledge. The competence centre is an inter-company training institution (de. *Überbetriebliche Berufsbildungsstätten*, ÜBS) where apprentices in dual VET spend a part of their learning time. It also provides continuing vocational education and retraining in the field of energy efficiency and sustainable construction.

The pledged activities are part of the *KoopBau* project that supports cooperation between several education and competence centres focused on energy efficiency and sustainable construction. The project is funded by the German Federal Ministry for Environment, Nature Conservancy and Reactor Safety (BMUB) and the European Social Fund (ESF)<sup>139</sup>. The project aims to train the trainers (instructors) who guide apprentices in the inter-company vocational training part of German VET.

It should be noted that the project described in this case study has a similar focus to the pledge described in the case study on Berufsförderungswerk der Bauindustrie NRW gGmbH, Ausbildungszentrum Hamm. Both pledgers are inter-company training providers and both focus on sustainability in construction. Finally, both activities are funded by the same programme ('Supporting VET for sustainable development – green key competences for climate and resource protecting work' (de. *Berufsbildung für nachhaltige Entwicklung befördern. Über grüne Schlüsselkompetenzen zu klima- und ressourcen-schonendem Handeln im Beruf – BBNE*)).

**Table 13: Targets and corresponding activities of the pledge by Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V.**

Pledged targets	Corresponding pledged activities
<b>Target 1:</b> Improving the quality of apprentices in sustainable construction	<b>Activity 1:</b> Developing additional training modules for trainers related to sustainable and energy-efficient construction with a comprehensive learning approach together with several other training institutions
<b>Target 2:</b> Avoiding deficiencies on the construction site in general	<b>Activity 2:</b> Delivering these training modules to trainers in construction companies and in inter-company vocational training centres in order to improve vocational training

Source: Pledge by Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V., 2016

The aims of this case study are to:

- Describe the demand for an improved quality of apprenticeships in sustainable construction.
- Present the actions by the competence centre for sustainable construction Cottbus to improve teaching modules for trainers in companies.

<sup>139</sup> See more at: <http://www.koopbau.info/>.



### ***Country context: sustainability trends in construction***

More energy-efficient and sustainable construction is an important policy trend in Germany as well as worldwide. In the 2050 Energy concept (de. *Energiekonzept 2050*) (Bundesregierung, 2010), important quantitative and qualitative targets are defined. A particularly ambitious target is to reduce the primary energy demand of buildings by 80% by 2050 (compared to 2008). Other important drivers of the trend towards sustainability in Germany include the Energy Saving Act (de. *Energieeinsparverordnung*) that has introduced an obligation to increase the number of zero-energy buildings in the country (BMUB, 2007). Various new targets increase challenges for the construction sector, as higher shares of renewable energy and energy-efficient materials must be used.

The trend towards sustainable construction is a main goal of several policy initiatives:

- Activities at the national level include subsidies for energy-efficient buildings and minimum requirements for energy-efficiency in construction (BMWf, 2017). The Federal Ministry of Economics and Technology is promoting an array of construction research projects as part of the Energy-Optimised Construction (de. *Energieoptimiertes Bauen, EnOB*) initiative (BMWf, 2016).
- The German Federal Ministry for Environment, Nature Conservancy and Reactor Safety also supports various initiatives, for example, via the 'Forschungsinitiative Zukunft Bau', a research initiative towards future-proof construction (BMUB, 2016).
- This federal ministry also operates the programme 'Supporting VET for sustainable development – green key competences for climate and resource protecting work' (de. *Berufsbildung für nachhaltige Entwicklung befördern. Über grüne Schlüsselkompetenzen zu klima- und ressourcen-schonendem Handeln im Beruf, BBNE*) that is co-financed by ESF. The pledged activity is part of a subproject in this programme.

### ***German apprenticeship system in the construction sector***

Apprenticeships in the construction sector are based on the German dual VET system. This system combines theoretical training in a vocational school and practical training in a company. In construction and in other crafts sectors, inter-company vocational training centres are involved as a third learning venue, as mentioned above. Currently, Germany has more than 1,000 of these inter-company training centres in different sectors of the economy, most of them related to specific groups of crafts occupations (BMBF, 2016).

Apprentices in Germany have a contract with their company and usually stay there for three years until they complete their apprenticeship. Learners finish their apprenticeship with a degree in a specific training occupation. However, VET in the construction sector also has the specific feature of being organised in a stage model (Hauptverband der Deutschen Bauindustrie, 2015):

- In the first year, the contents of all training occupations in construction are identical, permitting joint education and training.
- In the second year, there are three curricula for three broad categories of training occupations, namely building construction, civil engineering or construction finishing.
- In the third year, apprentices learn the specifics of their training occupation, such as plastering, carpentry or track-laying, just to name a few examples.

There are two aspects of the German dual VET system that are relevant to this pledge:

- Inter-company training centres, which do not only play an important role in initial vocational education and training (IVET) but are also important providers of continuing vocational education and training (CVET) for skilled workers and trainers. The latter is the focus of the current pledge. These CVET training activities stand in direct relation to IVET due to their aims to increase the quality of IVET through the training of trainers that deliver IVET.
- Quality assurance of in-company training is also an important aspect of the German VET system and relevant in the context of this case study. Since a substantial part of the vocational training is delivered in the company and the ÜBS, it is particularly important that trainers are well trained and certified, for example, in the field of sustainability and energy efficiency. The standard instrument is an obligation to be certified according to the Instructor Aptitude Ordinance (de. Ausbilder-Eignungsverordnung, AEVO), that regulates the skills that each trainer in dual VET needs to have (BIBB, 2009). Inter-company vocational training centres offer an array of additional training opportunities – the pledged activities are a case in point.

Integrating sustainability aspects into vocational education and training is a constant challenge because it often means reforming traditional training curricula and upgrading trainers' knowledge. The Federal Institute for Vocational Education and Training (BIBB) has implemented several projects to support the necessary developments (BIBB, 2016a).

Another challenge particular to VET in Eastern Germany (where the pledger is located) is a demographic change. Attracting apprentices is particularly challenging for companies in Eastern Germany since the number of soon-to-be school leavers (future graduates) is constantly declining. The share of unfilled apprenticeship places among all apprenticeships offered by companies has increased considerably from 4.8% in 2010 to 9.9% in 2015. This rate was even higher in the crafts sectors (including construction) and stood at 11.3% (BIBB, 2016b). This means overcoming particular challenges for VET actors in Eastern Germany to increase the attractiveness of their VET programmes and to attract promising candidates.

***Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V pledge: Offering additional training modules for apprentices trainers in construction***

In addition to the mandatory training for trainers, the KoopBau project provides an opportunity for in-company trainers and trainers working at the ÜBS to voluntarily participate in one or several of 13 training modules – three of them are provided by the competence centre for sustainable construction at Cottbus (the pledger)<sup>140</sup>. The other modules are developed by other project partners in East Germany.

The project's intended effect on apprenticeships is to provide an additional element of holism to the formalised and occupation / trade-centred learning approach in traditional construction apprenticeships. Trainers and, as a second-order effect, apprentices, are supposed to increase their awareness of the numerous actors present on the construction site and the relationships between them. The approach focuses on frequent errors in construction works and how to avoid them. The modules are not limited to specific construction occupations and are focused on energy-efficient and sustainable construction throughout the whole sector (Interview, Puhlmann, 2017).

A special feature of the training modules is their problem-centred approach. The standard training of apprentices focuses on 'how to do things right', while the approach of the extra modules concentrates on 'what happens as a result of possible deficiencies', especially during cooperation between different trades. In the experience

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<sup>140</sup> See more at: <http://www.koopbau.info/projektpartner/kompetenzzentrum-fuer-nachhaltiges-bauen-cottbus/>.

of the pledger, apprentices are often unaware of long-term consequences resulting from small errors in performance. For example, shortcomings at building envelopes are often related to insulation problems and often result in mould formation. Awareness of these correlations should be mediated in the training modules (Interview, Kaiser, 2017).

**Activity 1: Developing additional training modules for trainers related to sustainable and energy-efficient construction with a comprehensive learning approach together with several other training institutions.**

Cottbus is responsible for the delivery of three out of 13 modules:

- A module that concentrates on the technical and legal foundations associated with German energy-saving principles and regulations.
- A second module that concentrates on thermal bridges and methods of detecting them.
- A third module focuses on measuring air tightness<sup>141</sup>.

All three modules focus on sustainable construction. It is intended that trainers learn the necessary technical and pedagogical skills and use them in their work with learners. The new approach is also supposed to offer modules for trainers that focus on teaching apprentices a more integrated view of the construction site. The project's main starting point is to see the building as a unified system, rather than an assembly of different trades and techniques. Thus, it does not only reflect the increasing requirements in terms of energy efficiency and sustainability, but also the increasing role of advanced complex technology in buildings. This activity was completed in 2016 (Interview, Kaiser, 2017).

**Activity 2: Delivering these training modules to trainers in construction companies and in inter-company vocational training centres in order to improve vocational training.**

Three training modules are delivered at the competence centre in Cottbus. Each module can be completed in one day by the trainers. Putting the skills obtained during the training into practice by the trainers in the companies can take up to three days per module. Due to the fact that implementation has started only recently, there are no reliable experiences about the success of this activity. Trainers are free to tailor the contents to their specific occupational group and the needs of their company or training centre when implementing their newly obtained knowledge. This activity only started in August 2016. Fifty-six trainers had participated by February 2017 in at least one of the three modules implemented by the pledger. The pledger intends to continue this activity until 2018, when the funding ends (Interview, Kaiser, 2017).

The ultimate aim of the pledge is the improvement of in-company training and training in the ÜBS. However, the **impact** is difficult to estimate, as trainers are not monitored in their implementation of modules at their companies or their training courses at the ÜBS. The participation of trainers in all modules (including those offered by the other project partners) is completely voluntary. Until now, most trainers who have participated in the training were trainers from inter-company training centres. The main **target groups** of activities were trainers at inter-company training centres and in-company trainers. However, until now, the latter group has not been reached to the same extent. Thus, the focus of the activities in 2017 is to reach more in-company trainers and to make sure that the benefits reach the apprentices (Interviews, Puhlmann, Kaiser, 2017).

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<sup>141</sup> Ibid.

An important **success factor** of the implementation of this pledge is the innovative training approach focusing on frequent errors instead of idealistic performance descriptions in combination with the continually increasing requirements in terms of energy efficient building. The activities of the pledger are embedded in a more general effort to increase and improve VET by a more efficient collaboration of different trades in light of ever-tightening construction regulations. Substantial **challenges** have not been encountered so far. However, the second step of implementation – the initiation of the modules in the construction companies – is still a work in progress. It is often difficult for successful smaller companies to set aside capacity for training the trainers, especially when daily business is hectic. Another challenge is the limited time budget of in-company trainers to participate in modules that require extra time and effort in addition to their regular work.

### **Conclusions and recommendations**

As a result of their activities, Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V. expects a higher quality of apprenticeships in construction and, also, better trained apprentices who work as specialists, but always have the big picture of the construction site in mind. A long-term consequence of the pledge may also be an improvement of the image of construction sector apprenticeships due to their increased quality. Finally, the activities support sustainability and energy efficiency in the construction sector, providing participating firms with a competitive edge. Lessons to be learned from the experience of the pledger include the following:

- The occupation-centred vocational education and training system and the focus of many construction companies on a specific trade is both an advantage and a problem. On the one hand, such VET supports the development of specialised knowledge and high quality. At the same time, however, such specificity sometimes leads to the lack of a holistic view of the building site that is very important for successful work.
- Sustainability aspects are important, however, due to the decentralised structure of the VET provision in vocational schools, inter-company vocational training centres and companies, a large number of trainers need to be prepared if new aspects are to be successfully implemented in VET. Cross-section technologies in the fields of renewable energy or energy efficiency are thus not adapted automatically. Trainers need intensive support to implement these innovations.
- Reaching the target group of in-company trainers remains a challenge because of their high workload (many of them, especially in SMEs, not only train apprentices but also work as regular employees in their company). This holds especially true in times of high demand for construction activities, as is currently the case in Germany.

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# BERUFSFÖRDERUNGSWERK DER BAUINDUSTRIE NRW GGMBH, AUSBILDUNGSZENTRUM HAMM (ATTRACTING YOUNG PEOPLE TO SUSTAINABLE CONSTRUCTION)

## Introduction

The Berufsförderungswerk (BFW) der Bauindustrie NRW (Vocational Training Institute of the Construction Industry in North Rhine-Westphalia) is a non-profit institution operating three inter-company vocational training centres (ÜBS) in cities in North Rhine-Westphalia (Hamm, Essen, Kerpen). The training centre in Hamm (ABZ Hamm) is the pledger presented in this case study. The training centre is an inter-company training institution, where apprentices in the dual vocational education in 25 training occupations spend parts of their learning time. It also provides continuing vocational education (CVET) in various fields<sup>142</sup>.

The pledged activities are part of a four-year project in greening construction occupations, *Bau-Berufe-Greening*, that is aimed at improving the image of construction apprenticeships, increasing the role of sustainability in construction VET and integrating young migrants into apprenticeships in construction. It is the joint project of nine institutions; most of them are inter-company vocational training centres, but other institutions such as a network for sustainable construction are also involved. The project is led by VIA e.V., a non-profit organisation focusing on the integration of migrants<sup>143</sup>.

The project (and thus activities by the pledger) is financed by the German Federal Ministry for Environment, Nature Conservancy and Reactor Safety (BMUB) and the European Social Fund (ESF)<sup>144</sup>. It should be noted that the project described in this case study has a similar focus to the pledge described in the case study about Berufsförderungswerk e.V. des Bauindustrieverbandes Berlin-Brandenburg e.V. Both pledgers are inter-company training providers and both focus on sustainability in construction. Finally, both activities are funded by the same programme ('Supporting VET for sustainable development – green key competences for climate and resource protecting work' (de. *Berufsbildung für nachhaltige Entwicklung befördern. Über grüne Schlüsselkompetenzen zu klima- und ressourcen-schonendem Handeln im Beruf – BBNE*)).

The pledger's main activities are described in the table below.

**Table 14: Targets and corresponding activities of the pledge by Berufsförderungswerk (BFW) der Bauindustrie NRW, Ausbildungszentrum Hamm**

Pledged targets and deadlines	Corresponding pledged activities
<b>Target 1:</b> Improving the image of construction apprenticeships.	<b>Activity 1:</b> Hosting an exhibition about construction apprenticeships with a focus on energy efficient building and modernisation.
<b>Target 2:</b> Acquiring 15 additional apprentices for cooperating companies.	

Source: Pledge by Berufsförderungswerk (BFW) der Bauindustrie NRW, Ausbildungszentrum Hamm.

The aims of this case study are to:

- Illustrate what role inter-company vocational training centres can play in vocational guidance and in raising the awareness of sustainability aspects in construction.
- Present the actions of ABZ Hamm as a possible strategy for attaining the abovementioned goals.

<sup>142</sup> See more at: <http://www.berufsbildung-bau.de>.

<sup>143</sup> See more at: [http://www.via-bund.de/projekte.html?page\\_id=2](http://www.via-bund.de/projekte.html?page_id=2).

<sup>144</sup> See more at: <https://bau-berufe-greening.de/index.html>.

### **Country context: construction sector trends**

More energy-efficient and sustainable construction is an important policy trend in Germany as well as worldwide. In the 2050 Energy concept (de. *Energiekonzept 2050*) (Bundesregierung, 2010), important quantitative and qualitative targets are defined. A particularly ambitious target is to reduce the primary energy demand of buildings by 80% until 2050 (compared to 2008). Other important drivers include the Energy Saving Act (de. *Energieeinsparverordnung*) that has introduced an obligation to increase the number of zero-energy buildings in the country (BMUB, 2007). Various new targets increase challenges for the construction sector as higher shares of renewable energies and energy efficient materials must be used.

The trend towards sustainable construction is the main goal of several policy initiatives:

- Activities at the national level include subsidies for energy-efficient buildings and minimum requirements for energy-efficiency in construction (BMWl, 2017). The Federal Ministry of Economics and Technology is promoting an array of construction research projects as part of the Energy-Optimised Construction (de. *Energieoptimiertes Bauen, EnOB*) initiative (BMWl, 2016).
- The German Federal Ministry for Environment, Nature Conservancy and Reactor Safety (BMUB) also supports various initiatives, for example, via the 'Forschungsinitiative Zukunft Bau', a research initiative towards future-proof construction (BMUB, 2016).
- This federal ministry also operates the programme 'Supporting VET for sustainable development – green key competences for climate and resource protecting work' (de. *Berufsbildung für nachhaltige Entwicklung befördern. Über grüne Schlüsselkompetenzen zu klima- und ressourcen-schonendem Handeln im Beruf – BBNE*) that is co-financed by the European Social Fund. The pledged activity is part of a subproject in this programme.

### **German apprenticeship system in the construction sector**

A specific feature of the German VET system in the construction sector (and other crafts) that deserves mentioning in the context of this case study is inter-company training. Apprenticeships in the construction sector do not only include training in firms and vocational schools. The training is complemented by a third training site – the inter-company vocational training centre (de. *Überbetriebliche Berufsbildungsstätte, ÜBS*). ÜBS training contains standardised practical training and is provided in sector-specific training centres. It was implemented to give small companies the opportunity to offer apprenticeships even if their resources to provide in-house training were limited. Besides that, the inter-company training of apprentices in the construction sector ensures technology transfer to small and medium-sized enterprises via apprentices. In addition, inter-company training secures some standardised practical training for an apprentice (Bundesagentur für Arbeit, 2009). Currently, Germany has more than 1,000 of these inter-company training centres in different sectors of the economy, most of them related to crafts (BMBF, 2016).

VET in the construction sector also has the specific feature of being organised in a stage model (Hauptverband der Deutschen Bauindustrie, 2015). VET in the various training occupations in construction normally have a regular duration of three years. There are a considerable number of training occupations, each preparing apprentices for specific occupations in the sector. However, they have some common structure:

- In the first year, the contents of all training occupations in construction are identical, permitting joint education and training.



- In the second year, there are three curricula for three broad categories of training occupations, namely building construction, civil engineering or construction finishing.
- In the third year, apprentices learn the specifics of their training occupation, such as plastering, carpentry or track-laying, just to name a few examples.

It is thus possible to paint a coherent picture of the system of VET in construction up to a certain point, as is demonstrated by the exhibition hosted by ABZ Kerpen that is part of the pledge (see Section 3 below). However, it must be emphasised that the main feature of the apprenticeship system is its complexity. As a result, pupils often leave school lacking information on how apprenticeships in different trades work. For example, there are 18 training occupations in the core fields of construction, each reflecting the specific qualification needs of certain trades<sup>145</sup>.

In many of the quantitatively important construction occupations, the number of apprentices has decreased dramatically. The training occupations of mason/bricklayer and carpenter are important examples. Regarding masons/bricklayers, the number of new apprenticeships in 2015 is 75% lower than it was in 1997 (BIBB, 2016a). Similarly, the decline of apprenticeships for carpenters has been 47% since 1997 (BIBB, 2016b). Besides the demographic change, the increasing attractiveness of tertiary education programmes leading to a Bachelor's degree is often noted as a reason for this development (BIBB, 2016c). It must be noted, however, that the trend in apprenticeships is in the same direction in all sectors: the number of new apprenticeships has been declining for many years now and skills shortages are becoming increasingly problematic for companies in many sectors (BIBB, 2016c).

Another important challenge to the German VET system is the need to integrate a large number of migrants. More than 720,000 persons applied for asylum in Germany in 2016 alone (BAMF, 2016). Approximately 44% of asylum seekers were between 16 and 30 years and thus in the right age to start VET. There is evidence that VET can support the integration of migrants into the labour market (BIBB, 2017). However, important obstacles such as language barriers remain. Firms offering apprenticeships for migrants thus need an array of support services such as language training and help with administrative procedures for taking on a migrant as an apprentice. Generally, North Rhine-Westphalia, the state where the pledger is located, has one of the highest shares of persons with a migrant background (24.5%) among all German states (Statistisches Bundesamt, 2011).

***Berufsförderungswerk der Bauindustrie NRW gGmbH, Ausbildungszentrum Hamm pledge: Attracting young people to sustainable construction***

The project *Bau-Berufe-Greening* (en. greening of construction jobs) is a project implemented by VIA e.V., an association for intercultural work. Within the project, VIA e.V. works together with several inter-company vocational training centres (ÜBS), including ABZ Kerpen. It is supported by *ÖkoBau NRW*, an association of 135 companies with a focus on sustainable construction. The main target group of the project are migrants under 25 years. The project aims to integrate this target group into vocational education and training. At the same time, the project is aimed at increasing the awareness for sustainability in construction apprenticeships and at giving sustainability a bigger role in in-company vocational training. The project's strategy is also based on the assumption that emphasising the role of sustainability in construction apprenticeships can make them more appealing to soon-to-be school leavers (future graduates) (Interview, Soremsky, 2017).

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<sup>145</sup> See more at: <https://www.bau-dein-ding.de/berufe>.

### **Activity 1: Hosting an exhibition about construction apprenticeships with a focus on energy efficient building and modernisation.**

The exhibition is displayed as different parts of a house in order to show the different trades and techniques relevant in construction<sup>146</sup>. The exhibition is created as a roadshow to be hosted at different ÜBS and other learning institutions. There, it can be visited by groups of young persons or individually. The exhibition itself is not particularly created for migrants, but is part of the concept to increase awareness for construction apprenticeships and its sustainability aspects amongst this and other **target groups** including learners of secondary schools in their last or penultimate year and learners from the ÜBS (Interview, Soremsky, Geske, 2017).

ABZ Hamm hosted the exhibition for a period of one month in November-December 2016. During this time, it allocated personnel for the exhibition and provided guided tours for groups. These groups consisted of learners of secondary schools in their last or penultimate year, as well as learners from the ÜBS. The aim of the exhibition was to attract pupils who, potentially, after graduating from school, might enter the apprenticeship pathway in the construction sector. The exhibition was also used to give apprentices in the ÜBS an overview of sustainability aspects in their respective training occupations.

This activity fits into the more general sustainability focus of the activities of ABZ Hamm. Other activities in this field include participation in the *Öko-Profit* network in the state, focusing on CO2reduction. Moreover, ABZ Hamm aims at implementing sustainability aspects in all training provided by the centre, be it IVET or CVET (Interviews, Geske, Soremsky, 2017).

The **impact** of the exhibition on finding new apprentices for regional construction companies has not yet been measured. Additional information will become available when the next yearly survey among all new apprentices at ABZ Hamm will be conducted in September of 2017. In this survey, a question about where the apprentice got his or her information about the occupation is part of the questionnaire. However, the persons responsible for the pledge consider the exhibition to be a success because it showed a larger number of young persons the VET job opportunities in construction. According to interviewees, the activities have also contributed to raising awareness for sustainability aspects in construction (Interview, Geske, Soremsky, 2017).

An important **success factor** for this and other activities with relation to sustainable construction is the availability of support programmes for sustainability in construction and inclusion of this aspect in VET. Specific **challenges** to the implementation of the pledge have not been encountered. A general challenge for construction ÜBS is the fact that the number of apprentices in the field is continually decreasing (see context section above). This creates the need to engage in promotional activities together with companies and to experiment with various ways to attract new target groups to construction apprenticeships.

### **Conclusions and recommendations**

The pledger considers the topic of sustainable construction to be an important driver for the improvement of VET in the future. The case shows that the trend towards sustainability in construction serves as a good selling point to increase the attractiveness of apprenticeships in construction to young workers. The experience of ABZ Hamm also illustrates one of many possible approaches to improving awareness

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<sup>146</sup> See more at: <https://bau-berufe-greening.de/konzept.html>.

of construction apprenticeships among migrants. However, integrating migrants into VET is a difficult and long-term process that involves working on their language skills, providing vocational guidance and improving companies' abilities to work with apprentices from different cultural, educational and linguistic contexts.

The following recommendations can be drawn from the case study:

- Vocational guidance is an important task for all VET providers in construction in order to counter the continuous decline in construction apprenticeships.
- Migrants represent a prospective target group for VET in Germany, but their vocational orientation and integration are tasks that cannot be solved with a single project. Vocational guidance must be offered jointly with other support measures such as language training, competence assessment and social assistance.
- Highlighting sustainability is both a necessity and a possible way to improve the general image of apprenticeships in construction because it highlights the importance of advanced technology and materials in construction occupations that are generally viewed as 'traditional'.
- ÜBS are important actors in the modernisation of German VET because they are able to implement larger projects than single companies would be able to.

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## STUCK BELZ (VOCATIONAL GUIDANCE VIA VOLUNTARY SOCIAL WORK PLACEMENTS)

### Introduction

Stuck Belz is a small company with 12 employees in Bonn, North Rhine-Westphalia (Western Germany). The company specialises in stucco and plastering works. Stuck Belz has a long history of activities regarding the promotion of apprenticeships and improvement of the image of apprenticeships in the construction sector. They have participated in various apprenticeship marketing campaigns launched by the German business associations BGV (de. *Baugewerbliche Verbände North Rhine-Westphalia*) and ZDB (de. *Zentralverband des Deutschen Baugewerbes e. V.*), as well as in the programme *Ausbildungsbotschafter* (en. *Ambassadors for Vocational Education*) managed by the regional association of business chambers<sup>147</sup>. The company also participates in the yearly world championships of plasterers to improve the perception of their company and the apprenticeship places that they offer.

The pledge of Stuck Belz started in 2016 in response to various workforce-related challenges that are experienced by construction SMEs. Despite the high demand for plasterers in Germany, not many young people choose to pursue an apprenticeship in this field. What is more, many of them are not even aware of the training occupation and prefer better-known construction professions or trades from different sectors altogether. Due to these sectoral conditions, although the company did not have problems with attracting apprentices, they were aware of apprentice shortages experienced by others and felt the need to take precautionary actions.

The pledge of Stuck Belz must also be seen in the context of the specifically German tradition of young people doing one year of social work after school. Until 2011, social service of approximately one year was mandatory for all male soon-to-be school leavers (future graduates) who did not serve in the army. However, even after the end of the mandatory service, many young people choose to participate in a federal volunteer service (de. *Bundesfreiwilligendienst*). Currently, more than 90,000 young people choose a voluntary service each year (BMBFS, 2014; BAFzA, 2016). Together with an NGO in the field of building heritage conservation, Stuck Belz engages in various activities in this field and offers placements for volunteers.

**Table 15: Targets and corresponding activities of the pledge by Stuck Belz**

Pledged targets and deadlines	Corresponding pledged activities
<b>Target 1:</b> Promoting apprenticeships in the training occupation of plasterer.	<b>Activity 1:</b> Offering places for voluntary social service in the company with a focus on building heritage conservation.
<b>Target 2:</b> Improving the image of stucco and plastering in general.	<b>Complementary Activities:</b> Participating in national and international competitions for artistic plastering, supporting the <i>Ausbildungsbotschafter</i> (en. <i>Ambassadors for Vocational Education</i> ) programme.

Source: Pledge by Stuck Belz, 2016

The aims of this case study are to:

- Describe the challenges that construction companies (especially SMEs) face when they offer apprenticeships.
- Present the actions by Stuck Belz as an example of innovative approaches to improve the image of construction activities.

<sup>147</sup> See more at: <http://www.ausbildungsbotschafter-nrw.de/>.

### ***Country context: construction sector trends***

With a share of 5.6% of all employment in the German economy, the construction sector is of major importance for the German labour market (CEDEFOP, 2016). Within the industry, 90% of all companies are small businesses (less than 20 employees) accounting for 45% of total construction turnover (Atradius, 2016). These businesses are important providers of apprenticeships.

In the relatively small subsector of plastering, 5,666 (mostly small) companies were active in 2016 in Germany. This represented a small decline of 1.3% compared to 2015. However, the total number of companies in the sub-sector has not changed much in the past 10 years (ZDH 2017). In 2014, 30,866 persons were employed (or self-employed) in the subsector, an average of only 5.4 persons per company. Overall, employment in the subsector has been growing slightly. Compared to 2008, there is an increase of 9% in total employment in the subsector (ZDH, 2017). The main reason for this development is the growth in residential building activities (VR Branchen Special, 2013). Residential construction was expected to further increase its turnover by 5% in 2016, driven by a high employment rate, low interest rates and the need to provide housing for the high number of migrants (ZDB, 2015).

Skills shortages are an important topic in the subsector due to an ageing workforce (VR Branchen Special, 2013). Possible solutions discussed include the increasing workforce participation of older workers and the integration of migrants into work and apprenticeships (VR Branchen Special, 2013).

### ***German apprenticeship system in the construction sector and voluntary social services***

Apprenticeships in the construction sector are based on the German dual VET system in all German states and in all vocational training occupations. This system combines theoretical training in a vocational school and practical training in a company. An important specific feature of apprenticeships in the construction sector that makes it attractive for companies (compared to dual vocational education in other sectors) is its financing. All companies in the sector must pay a contribution to *SOKA-Bau*, an industry institution and social fund. This institution subsidises apprenticeships by co-financing courses in the inter-company training centres (de. *Überbetriebliche Berufsbildungsstätten, ÜBS*). Additionally, they reimburse companies a part of the salary they pay to apprentices (SOKA-Bau, 2016).

Despite its financial attractiveness and overall sector growth, the number of apprenticeships in the construction sector has been declining since the mid-90s, albeit at a lower rate than in other sectors. Over the past 10 years, the number of apprentices per 100 persons working in the construction sector has declined from 14.0 in 1997 to 8.7 in 2016 (HDB, 2016). This also holds true for the subsector of stucco and plastering in which Stuck Belz is active. In 2015, only 507 apprentices started an apprenticeship in the training occupation of plasterer, down from 1,353 in 1997. Apprentices are predominantly male – only 3% of those starting an apprenticeship in 2015 were women (BIBB, 2016). It is also remarkable that, similar to other construction occupations, the share of apprentices with a nationality other than German is comparatively large compared to other sectors - 20% of all apprentices in 2015 (BIBB, 2016).

The system of voluntary services in Germany is also relevant to training and vocational guidance in the construction sector. There are several possibilities for young people to engage in a voluntary social year. A general voluntary social year (de. *Freiwilliges Soziales Jahr, FSJ*) was established in 1964 (BMFSFJ, 2014). Volunteers engage primarily in activities in welfare and social work in nursing homes, sheltered workshops, kindergartens, etc. As an expansion of the programme to other sectors,

the voluntary ecological year (de. *Freiwilliges Ökologisches Jahr*, FÖJ) was introduced in 1993 (BMFSFJ, 2014). Both voluntary services are open to people from the ages of 16 to 27. The field of monument conservation – as in the case of Stuck Belz – is offered in 11 of 16 German federal states. This special type of voluntary social year is organised by youth masons' guilds (de. *Jugendbauhütten*), which are a project of the German Foundation for Monument Protection (IJGD, 2017). In North Rhine-Westphalia the two existing youth masons' guilds are sponsored by the State Ministry of Building, Housing, Urban Development and Transport, and the Social and Cultural Foundation of Rhineland Regional Association (IJGD, 2017). Young people learn traditional practical craftsmanship from an instructor in these guilds. In addition, there are seminars in material science, research and working methods as well as basic principles of monument protection (Deutsche Stiftung Denkmalschutz, 2017).

### ***Stuck Belz pledge: Offering voluntary social year placements in heritage conservation***

Overall, Stuck Belz focuses on promoting apprenticeships in the plastering subsector. Besides the pledged activity of offering voluntary social year placements in the company, the firm participates in various other activities in order to attract skilled job entrants to their apprenticeships. Activities include participating in competitions, school fairs and other activities.

#### **Activity 1: Offering places for voluntary social service in the company with a focus on building heritage conservation.**

Social year placements are organised by large social institutions, charities and NGOs. One of the institutions offering voluntary social year placements is a foundation that aims at preserving building heritage, the German Foundation for Monument Protection (de. *Deutsche Stiftung Denkmalschutz*). This institution offers voluntary social year placements in cooperation with companies. Young people interested in conservation activities and crafts in general are the main **target group**. They have the opportunity to learn relevant techniques in the company during a period of up to one year. The training happens both at real construction sites and at the company, using mock-ups. Work in the company also alternates with seminars provided by the youth masons' guilds of North Rhine-Westphalia (de. *Jugendbauhütten NRW*). Stuck Belz often carries out conservation works in buildings that are protected as historic monuments and participates in the provision of placements. Volunteers get the opportunity to see whether work in plastering and building conservation is the right occupational choice for them (Interview, Christmann, 2017).

The company profits from these activities in a couple of ways:

- Firstly, they allow the company to get in touch with promising candidates for their apprenticeship places (Stuck Belz offers one to two apprenticeships per year).
- Secondly, these activities improve the overall image of the company through enhancing their perception as an innovative and socially engaged company in the field of conservation works.

The pledged activities produced their first tangible **result** in late 2016: through this activity, Stuck Belz attracted a new apprentice. During his voluntary work with the firm, the volunteer decided that stucco making and plastering was the right occupational choice for him and decided to stay with the company for a three-year apprenticeship. He also intends to continue working with the company after completing his apprenticeship. For him, the voluntary social year was an important step in the process of vocational orientation and in finding the right training occupation among a wide array of crafts occupations (Interview, Koop, 2017). In 2017, another two young people started a voluntary social year in monument protection in cooperation with Stuck Belz. **Success factors** of the pledge include the mutually beneficial cooperation with the German Foundation for Monument Protection.



While Stuck Belz learns from the Foundation's experience in volunteer management, the Foundation benefits from the opportunities offered by Stuck Belz for volunteers to gain hands-on conservation work experience. A concrete success is that the first volunteer who worked in the company has already started an apprenticeship at the company. Substantial **challenges** have not been encountered so far. The company considers its participation in these activities to be successful and has already expanded its participation to two places for voluntary work at Stuck Belz per year. A small but manageable challenge is that training and support of volunteers requires their experienced company staff's valuable time. On the other hand, the company benefits from the work of the volunteers, especially after the initial training is completed. According to the company, they are also confronted with a more general challenge: the training occupation of a plasterer is not well known among young soon-to-be school leavers (future graduates). Constant promotion activities (not only for the firm, but for the occupation and the subsector as a whole) are thus crucial for securing skilled workers.

**Complementing Activities: Participating in national and international competitions for artistic plastering, supporting the *Ausbildungsbotschafter* (en. *Ambassadors for Vocational Education*) programme.**

Besides the pledged activity, the company participates in various other activities to improve their attractiveness for future apprentices (Interview, Christmann, 2017):

- Stuck Belz participates in the programme 'Ambassadors for Vocational Education' carried out by the association of business chambers in North Rhine-Westphalia. In this programme, experienced apprentices (usually in their last training year) visit schools and inform soon-to-be school leavers (future graduates) about training occupations and their companies. The company has developed an individual leaflet that informs about training opportunities (apprenticeships, internships, voluntary work placements) for the purposes of this programme.
- They regularly participate in international competitions for artistic plastering. Such events provide the company with regional press coverage, improve general awareness for the field of work and the company's image specifically. One of their employees is part of the national team of artistic plasterers<sup>148</sup> and regularly participates in international competitions.

**Conclusions and recommendations**

The company is determined to continue with its activities as they are crucial to coping with demographic changes and the fact that the training occupation of a plasterer offered by the company is not well known among soon-to-be school leavers (future graduates). Overall, the case study shows some innovative ways for increasing awareness for construction occupations and attracting future apprentices. A number of insights may be drawn from this pledge:

- As a result of this bundle of activities, Stuck Belz receives a high number of high-quality applications for their apprenticeships. This helps the company to avoid the skilled labour shortages experienced by many other companies in the sector and the region.
- Despite their small size, they receive regular regional press coverage due to their activities. This boosts their image and helps to attract future apprentices.

It is possible to draw the following recommendations for other construction SMEs from the experience of Stuck Belz:

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<sup>148</sup> See more at: <http://www.nationalteam-stuckateure.de/>.

- A lack of applicants for apprenticeships may be due to inadequate vocational guidance. Small training occupations such as plasterer are not well known among soon-to-be school leavers (future graduates). Constant orientation and promotional activities are thus required to secure a sufficient number of applicants.
- Small firms are not defenceless against skills shortages. Stuck Belz's participation in activities related to the voluntary social year and international competitions demonstrate a proactive and cost-efficient way to attract new apprentices, promote the company as a socially responsible employer and increase awareness for plastering in general.
- However, all activities require the efforts of company management. Participating in school fairs, training young soon-to-be school leavers (future graduates) and participating in competitions are time-consuming activities that may be difficult to implement in times of high demand for a company's products and services. However, they are crucial in order to avoid skills shortages in the future.

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# KARL HEINZ STEVENS BEDACHUNGEN (PROMOTION OF ROOFING TO YOUNG PEOPLE)

## Introduction

Karl Heinz Stevens Bedachungen GmbH & Co. KG is a small company of 12 employees in Brüggen, North Rhine-Westphalia, in the western part of Germany. The family-owned-company specialises in roofing, including works on windows, terraces and facades. They regularly provide 1-2 apprenticeship positions in their company. Karl Heinz Stevens Bedachungen has been engaged in activities regarding the promotion of apprenticeships in their company and improving the image of the construction sector for a few years. They have regularly participated in the local school fair since 2012 and provide local kindergarten groups with an opportunity to visit the company. The strategy of Karl Heinz Stevens Bedachungen is to promote roofing locally, informally and particularly to children at the beginning of their career orientation process.

The pledge of Karl Heinz Stevens Bedachungen started in 2016. It can be considered a preventive measure since the company does not have any problems in attracting apprentices in general. However, in the perception of the company, applicants increasingly lack the basic prerequisites for an apprenticeship (such as reading, writing and mathematics), sometimes leading to problems in vocational school (Interview, Stevens, 2017).

Besides its activities related to early vocational orientation (described in the pledge), the company engages in offering short-time internships (see Table 1 below).

**Table 16: Targets and corresponding activities of the pledge by Karl Heinz Stevens Bedachungen**

Pledged targets and deadlines	Corresponding pledged activities
<b>Target 1:</b> Promoting apprenticeships in the training occupation of roofers.	<b>Activity 1:</b> Participate in local school fair for occupational orientation.
<b>Target 2:</b> Improving the image of roofing and related occupations in construction.	<b>Activity 2:</b> Provide visits to their company for kindergarteners.
	<b>Complementary activity:</b> Provide short-term internships for school children.

Source: Pledge by Karl Heinz Stevens Bedachungen GmbH & Co. KG.

The aims of this case study are to:

- Describe the challenges that construction companies, especially SMEs, face when they offer apprenticeships.
- Present the innovative approach used by Karl Heinz Stevens Bedachungen to improve the image of construction activities in combination with the self-promotion of their company.

## Country context: Roofers' trade trends

The performance of the German roofers' trade has been positive in the past 10 years. In 2015, there were nearly 97,000 people working in roofing companies in Germany, which means an increase by nearly 17% compared to 2005 (ZVDH, 2016). Total turnover grew to a further degree in the same time period. It all added up to 9 billion in 2015, which is an increase of 47.5% compared to 2005 (ZVDH, 2016). Roofers predominantly work in small companies. Among the 15,700 German roofing companies, approximately 60% employ less than 10 persons (ZVDH, 2016). This is similar to the general situation in construction.

In comparison to finishing trades and the entire construction sector, development of the roofers' trade has been less dynamic in the past few years (ZVDH, 2017). However, there was an exceptional boom in demand for roofers in 2016 due to

tightened German energy saving regulations and a large number of construction projects were even predated to profit from the lower regulations before the change (ZVDH, 2017). But, this effect will not be permanent.

### ***German apprenticeship system in the construction sector***

Apprenticeships in the construction sector are based on the German dual VET system. This system combines theoretical training in a vocational school with practical training in a company. German apprentices have a contract with their company. Usually, an apprenticeship lasts three years. Learners finish their apprenticeship with a degree in a specific training occupation (e.g. a roofer).

An important specific feature of apprenticeships in the construction sector that makes it attractive for companies (compared to dual vocational education in other sectors) is the system of financing. All companies in the sector must pay a financial contribution to *SOKA-BAU*, an industry institution and social fund. This institution subsidises apprenticeships in two ways: (1) by co-financing courses in the ÜBS (courses in vocational schools are financed by the government) and (2) by reimbursing companies a part of the salary that they pay to apprentices<sup>149</sup>. This system increases the attractiveness of apprenticeships considerably compared to other sectors, where such a system of reimbursement does not exist.

The market for apprenticeships continues to be tight. The number of apprentices in the construction sector has been declining since the mid-1990s. Over the past 10 years, the number of apprentices per 100 persons working in the construction sector has declined from 14.0 in 1997 to 8.7 in 2016 (HDB, 2017). The slight increase in the number of new apprenticeships in the construction sector in 2016 compared to 2015 cannot be seen as a trend reversal. This can be attributed to the reduction of applicants for apprenticeships in construction rather than to a lack of apprenticeship places offered by companies (SOKA-BAU, 2016). It is thus increasingly difficult for companies to find qualified applicants for their apprenticeship openings. There are 1.4 apprenticeship openings for each applicant (SOKA-BAU, 2016). The decline in regular apprenticeships corresponds with the increasing attractiveness of tertiary education programmes in the sector<sup>150</sup>.

The situation is similar in the subsector of roofing in which Karl Heinz Stevens Bedachungen is active. Only 2,907 apprentices started an apprenticeship in the training occupation of roofers in 2015, while there were 5,661 in 1993 (BIBB, 2016). As in other construction occupations, apprentices in roofing have been predominantly male. Only 2% of those starting an apprenticeship in roofing in 2015 were women (BIBB, 2016).

Apprenticeships in roofing also have a remarkably high dropout rate. From 2013 to 2015, up to 40% of the apprentices in roofing did not complete their vocational degree (BIBB, 2016). This is also a general feature of apprenticeships in construction: in many training occupations in the sector, an above-average dropout rate can be found (SOKA-BAU, 2016). There is an inconclusive debate about the reasons for the high number of dropouts. For example, reasons for dropping out can be found in the working conditions in construction as well as in the personal characteristics of an apprentice (BIBB, 2017).

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<sup>149</sup> See more at:

[http://www.soka-bau.de/soka-bau\\_2011/desktop/de/Arbeitgeber/Berufsausbildung/Ueberbetriebliche\\_Ausbildung/](http://www.soka-bau.de/soka-bau_2011/desktop/de/Arbeitgeber/Berufsausbildung/Ueberbetriebliche_Ausbildung/).

<sup>150</sup> See the case study on apprenticeships in dual studies programmes for an in-depth exploration of this topic.

### **Karl Heinz Stevens Bedachungen pledge: Early vocational guidance in combination with company promotion**

Karl Heinz Stevens Bedachungen responds to the 'fight for talents' with opportunities for young people to familiarise themselves with roofing in general and with their company in particular. As a special feature, they do not only address soon-to-be school leavers (future graduates), but also very young children – this shifts the focus to a broader **target group**, including those pupils who are not yet familiar with vocational education and training.

#### **Activity 1: Participate in local school fair for occupational orientation.**

One of the pledged activities consists of participating in a school fair for VET orientation, where occupational groups present themselves to schoolchildren one year before they become eligible to start an apprenticeship. This fair is visited by groups of schoolchildren from several local schools. The company presents the training occupation of roofing together with a local brick company due to their close personnel and business relations. The activities at the school fair are supported by the regional roofers association (de. *Dachdecker Verband Nordrhein*)<sup>151</sup>, which provides some exhibition material. This activity is considered to be a success because of the substantial interest that schoolchildren show during the fair. However, its direct **effect** on the number and the quality of applications the company receives for their apprenticeships can hardly be measured. (Interview, Stevens, 2017).

#### **Activity 2: Provide visits to their company for kindergarteners.**

As a second activity, Karl Heinz Stevens Bedachungen invites kindergarteners to get in touch with their company. A group of 10 to 15 children visits their company every year. The children can participate in various activities, for example, try their manual dexterity by processing slate. There has also been an attempt to guide such groups through a construction site, but the activity had to be cancelled due to safety concerns. The company expects that this activity will increase the fascination of young children in the construction sector (and for roofing in particular) early in the process of vocational orientation. As mentioned before, it is impossible to measure its effects on the quantity and quality of future applications (Interview, Stevens, 2017).

#### **Complementing activities: Provide short-term internships for school children.**

Besides the pledged activities, the company regularly provides short-term internships for schoolchildren between the ages of 14 and 18 (earlier than standard school internships). The short-term internships are part of a campaign by the State Government of North Rhine-Westphalia (MAIS NRW, 2015). Short-term internships are aimed at early vocational orientation and last one day<sup>152</sup>. In general, Karl Heinz Stevens Bedachungen tries to offer attractive apprenticeships and help apprentices with inter-company training if they experience problems there (Interview, Stevens, 2017).

An important **success factor**, especially for the pledged activities, is the support of the regional roofers' association (de. *Dachdecker Verband Nordrhein*) and a local roofers' guild (de. *Dachdeckerinnung*) in Krefeld/Viersen. Both institutions support the company's activities, for example, provide illustrative materials for the school fair. The popularity of activities is ensured by suitably designing presentations for kindergarteners. For this target group, the central association of the roofing trade (ZVDH) has already produced a children's colouring book and a children's storybook

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<sup>151</sup> See more at: <http://www.dachdecker-verband-nr.de/aufgaben.html>.

<sup>152</sup> See more at: [www.fachkräfte-für-morgen.de](http://www.fachkräfte-für-morgen.de).

related to the roofing trade (only available for signed-in members of ZVDH)<sup>153</sup>. Karl Heinz Stevens Bedachungen already uses this material during the kindergarteners' visits. Substantial **challenges** include the fact that pupils and kindergarteners are of a very young age and usually do not have vocational orientation in mind. In addition, one-day internships usually do not result in sufficient vocational orientation. However, as the activities concerned with this target group also have social and promotional effects, they are still considered worthwhile by the company (Interview, Stevens, 2017).

### **Conclusions and recommendations**

In general, Karl Heinz Stevens Bedachungen does not have problems in finding applicants for their apprenticeship positions. Based on their experience, the further extension and expansion of early vocational guidance and orientation to young pupils can be recommended.. Their engagement in vocational orientation activities for schoolchildren and kindergarteners stabilise the already existing local network of partners and improves general awareness of the occupational field in the region. Local schools and kindergartens profit from the informal and experience-oriented approach of vocational orientation. The bundle of activities implemented by the company is an example of a typical approach available to SMEs in order to increase the attractiveness of their trades for future skilled workers.

However, the case study also shows that SMEs often do not benefit directly from early vocational guidance and orientation. Their activities may increase interest in construction occupations, but it will usually only be beneficial in the long-term since these activities do not translate directly into new apprentices. Therefore, further support for SMEs engaging in these activities by industry associations and other (public) institutions may be useful and warranted. The support by industry associations described in this case study can be seen as a best practice example as to how such support can be implemented. Results from this and other case studies also underline the problem that vocational orientation generally starts at a later time in the education process, i.e. at a time when many learners have already made a choice regarding their desired career path. Activities for early vocational orientation such as those presented in this case study should thus be implemented more systematically across many other construction sector trades.

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<sup>153</sup> See the cover of the book at: [http://dachdecker.org/download/-332982440/zvdh-kompakt\\_45-2014-Kater\\_Felix\\_und\\_Dachdecker\\_Thomas-buedocx\\_19122014145228.pdf?ITServ=CY34189945X15b8b7f6515X6c3f&l=95454463](http://dachdecker.org/download/-332982440/zvdh-kompakt_45-2014-Kater_Felix_und_Dachdecker_Thomas-buedocx_19122014145228.pdf?ITServ=CY34189945X15b8b7f6515X6c3f&l=95454463).



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## FUNDACIÓN LABORAL DE LA CONSTRUCCIÓN (INNOVATIVE TRAINING TOOLS)

### Introduction

The Fundación Laboral de la Construcción (FLC) is a non-profit labour foundation that has been helping to prevent occupational risks, provide training, foster innovation, sustainability and new technologies in the construction sector since 1992. FLC actively supports professional training in the sector as they possess 45 training centres that offer more than 400 training courses.

Apprenticeship is not a very common training option in the construction sector in Spain, so FLC launched their pledge in October 2015 with the principal aim of increasing the participation of construction companies (especially SMEs) in apprenticeship programmes. As the dual vocational education and training (VET) system in Spain is currently being rolled out for implementation for the first time, FLC also hoped that EAfA would help them in deploying this system in construction companies by providing opportunities to learn from other countries that have this kind of training already running.

**Table 17: Targets and corresponding activities of the pledge by Fundación Laboral de la Construcción**

Pledged targets	Relevant corresponding pledged activities
<b>Target 1:</b> To professionalise the construction sector, especially by promoting high level quality training. <b>Target 2:</b> To increase the quality of VET schemes to get better trained people, both nationally and internationally.	<b>Activity 1:</b> Sociological and market research to know and understand what kind of training and skills companies and trainees really need. <b>Activity 2:</b> Proposal of new qualifications and skills as well as the enhancement of current ones via joint projects with partners. <b>Activity 3:</b> Accreditation of skills at the European level by promoting tools such as professional cards, Memorandums of Understanding, Europass, etc. <b>Activity 4:</b> New didactical resources to hone the learning and teaching process by implementing innovative applications in order to match the new generations' taste for new technologies ( <b>focus of the case study</b> ). <b>Activity 5:</b> Mobility project for trainers and training staff in order to encourage mutual learning between professionals from various countries. <b>Activity 6:</b> Mobility project for trainees with the aim of providing them with new skills related to various construction types, materials and building techniques, etc.

Source: FLC pledge, 2015.

The aims of this case study are to:

- Outline the sector-specific trends and specifics of the apprenticeship system in Spain.
- Present the projects carried out by FLC that correspond to their pledged activity to introduce new didactical resources in construction sector training (incl. apprenticeships).

### **Country context: Construction sector trends in Spain**

in the European context, Spain struggles with high overall unemployment. Unemployment has been on the increase since 2007 (at 8% in March 2007) and peaked in February 2013 at 26.3%. The unemployment rate has been slightly, but steadily declining since Q4 2013 – by April 2017 the rate had dropped to 17.8% (Eurostat, 2017a). The construction sector has also seen declining employment rates during 2008-2014 – employment declined from over 2.6 million to just under 1 million employed during that period (by 64.8%). In Q3 2014, the numbers of employed people in the sector climbed to just over 1 million and remained relatively stable up to 2017 (Eurostat, 2017b).

Declining employment rates have been coupled with increasing skills shortages in the sector. The number of job vacancies in the construction sector increased by 30.9% between 2012 and 2013, from 2,286 to 2,992. However, adult participation in education and training in the construction sector is low and decreased further from 7.8% in 2012 to 6.7% in 2014 (although the rate is similar to 2008 levels at 6.4%). FLC calculates that only 30% of Spanish construction workers have received appropriate training, compared to an average of 60% across other sectors (FLC, 2015). Low adult participation in education and training is troubling, especially as the sector has traditionally employed many low-skilled workers. In addition, many of them, particularly youth educated below an upper secondary education, will need to be retrained and pulled out from unemployment (OECD, 2015).

### **Spanish apprenticeship system in the construction sector**

The apprenticeship system in Spain has a recent history. Dual VET (es. *Formación profesional dual*) was established in 2012 as a different pathway for acquiring the same qualifications that are available for acquisition via school-based VET. The Royal Decree establishing a framework for the development of apprenticeship projects regulates some key aspects of the pathway, such as:

- The basic content of the training programme (programme of each module, activities, their length, and evaluation and grading criteria)
- The minimum share of in-company training
- The minimum information requirements to be included in the agreement between the training centre and the company (including the training programme, number of participants, their remuneration, number of hours and schedule of alternation between the company and training centre)

Dual VET is being progressively introduced in Spain through projects developed by the Autonomous Communities since 2012. Some of the projects are still being implemented on a pilot or experimental basis. The following examples concern pilot dual VET schemes in different regions:

- The Autonomous Community of Aragon established a pilot scheme for the school years 2016/2017. The scheme focuses on projects where the first year of training is delivered through school-based training, and the second year is delivered via alternated training between the school and the company through a 1-year employment contract (Boletín Oficial de Aragón, 2016).
- The Autonomous Community of Catalonia offers a pilot scheme where in-company training is organised in two phases. During the first phase, the apprentice spends 80-100 hours in in-company training and is not remunerated. During the second phase, the apprentice starts receiving remuneration. The training is available in two different modalities: 1) via an apprenticeship contract with a minimum length of 1 year, 2) via a tripartite training agreement with a length of between 2 and 10 months per year (the learner receives an allowance instead of a salary) (Government of Catalonia, 2017).

- The Autonomous Community of the Basque Country promotes a pilot scheme similar to the one in Aragon: projects most commonly include a year in the training centre (e.g. school) and a year of alternance training between the centre and the company (Government of the Basque country, 2017).

The newly introduced dual VET framework has some important strengths. Most importantly, since the dual VET is based on the same qualifications that are available via traditional school-based VET, permeability within the VET system is guaranteed. Moreover, dual VET is not confined to certain programmes and this educational pathway is open for use in all existing programmes that are based on the national catalogue of occupational standards (Armaolea, 2016).

The dual VET system has grown substantially since 2012 – the number of learners enrolled has quadrupled in the school year 2015/2016. However, the number of learners enrolled in dual VET (15,304 in the school year 2015/2016) still represents a small proportion (approx. 2.6%) of all VET learners (Eurostat, 2017c). In addition, the number of companies providing dual VET placements represented about 0.2% of all firms (OECD, 2017). Even though the number of companies providing apprenticeships has increased tenfold - from 513 in the school year 2012/2013 to 5,665 in the school year 2015/2016, it is still difficult for companies in Spain to provide training. Approximately 90% of all construction companies are SMEs with five employees or less. Therefore, most works at a worksite are carried out by very specialised small and micro-sized companies. This means that it is impossible for most companies to cover the entire apprenticeship curriculum. It is necessary to engage a group of small companies to provide an apprenticeship. However, this implies high coordination costs. In addition, the legal framework for hiring an apprentice in Spain requires that the apprenticeship last for a minimum of one year. This apprenticeship contract is hard to implement in practice since companies would only hire apprentices for a few months (Interview, González López, 2017). It is also difficult for such small companies to dedicate one of their employees to act as a full-time training tutor for the apprentices (OECD, 2017).

### ***FLC: innovative tools for construction apprenticeships***

FLC continuously implements projects that facilitate the delivery of training in the construction sector. FLC is committed to increasing the participation of construction companies in apprenticeship programmes and to improving the quality of training. One of their key activities is implementing projects that develop innovative training tools.

### **Activity 4: New didactical resources to hone the learning and teaching process by implementing innovative applications in order to match new generations' taste for new technologies**

Since making their pledge in October 2015, FLC has implemented a wide variety of innovative training resources in different fields. FLC has implemented multiple projects that aim to develop mobile applications to facilitate training (Interview, González López, 2017; FLC, 2017):

- The mobile application Construye 2020 was launched in 2015 in the framework of a BUILD UP Skills Construye 2020 project<sup>154</sup>. The application contains good practices of greening in construction and the renovation of houses in five thematic modules: energy efficiency, insulation, exterior carpentry, efficient installations and renewable energy systems. The application presents these good practices through the use of drag and drop exercises, interactive navigation, animations and simulations (see Figure 1).

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<sup>154</sup> See more at <http://construye2020.eu/en/plataforma-sobre-formacion-profesional/recursos-de-formacion>.

- FLC is currently working in a strategic partnership with five other organisations<sup>155</sup> to create an Android application for mobile devices to improve the quality of the preparation, operation and post-processing of exchanges of trainees and staff. Participants will have to update – in real time – information about the preparation, operation and post-processing of their exchange process that will facilitate their mobility placements. This is being done in the framework of the ERASMUS+ project SOMEX (2015-2017)<sup>156</sup>. The project aims to develop an extensive tool-kit for the preparation, operation and post-processing of exchanges of trainees and staff using various mediums (e.g. social media) to improve mobility experiences.
- During their ERASMUS+ Sector Skills Alliance project BuS. Trainers (2016-2019)<sup>157</sup> FLC is developing an extensive training system for professional trainers in order to improve training in sustainable construction through interconnected activities. In addition to multiple other deliverables, a mobile application for trainers that would be available in five languages and that would have other services and tools, teaching resources, tutorials, etc. is also envisaged.
- The ERASMUS+ project WinApp<sup>158</sup> running from October 2016 until September 2018 is aimed at supporting the implementation of dual VET in Spain. A mobile app will be developed to support the teaching and learning process of apprenticeships in the construction industry in Europe by comprehensively revealing the stages that are to be followed during the work process: obtaining the initial information needed about an assignment; planning, decision-making, execution, control and evaluation of the work done.

### Box 1: A closer look into the *Construye2020* mobile application

The *Construye2020* mobile application was launched in 2015. It was developed as one of the didactical resources within the BUILD UP Skills Spain 'Construye 2020' project. The application comprises a collection of good practices on energy efficient building and includes valuable information on the five modules of the app:

- The module on energy efficiency includes information on the main concepts, energy consumption patterns, relevant legal framework and energy certification
- The module on insulation includes information on bad practices, insulation material reception and stock, and installation of the material
- The module on exterior carpentry focuses on the proper installation of windows and includes information on their installation, glazing, sealing and the use of the shutter box
- The module on efficient installations includes information on individual gas boilers and condensing boilers
- The module on renewable energy systems includes information on their types and their energy performance

Figure 1: A snapshot of the *Construye2020* mobile application



Source: GooglePlay app store, <https://play.google.com/store/apps/details?id=com.esampedro.simuladorApp&hl=es>

The application is user-friendly and suitable for use in training as the teaching material

<sup>155</sup> Bildungszentren des Baugewerbes e. V. (BZB, Germany, also made a pledge to the EAfA), Centre IFAPME Leège-Huy-Waremme (Belgium), Ente per la Formazione e l'addestramento professionale nell'edilizia (Formedil, Italy, is also an active partner of pledge-holder ANAEP) and Centro de Formação Profissional da Indústria da Construção Civil e Obras Públicas do Sul (CENFIC, Portugal).

<sup>156</sup> See more at <http://www.somexproject.eu/>.

<sup>157</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/bustrainers-2016-2019>.

<sup>158</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/winapp-2016-2018>.

is presented in a way that is more attractive to young learners than traditional didactical resources such as manuals or textbooks.

The application has been downloaded approx. 2,500 times.

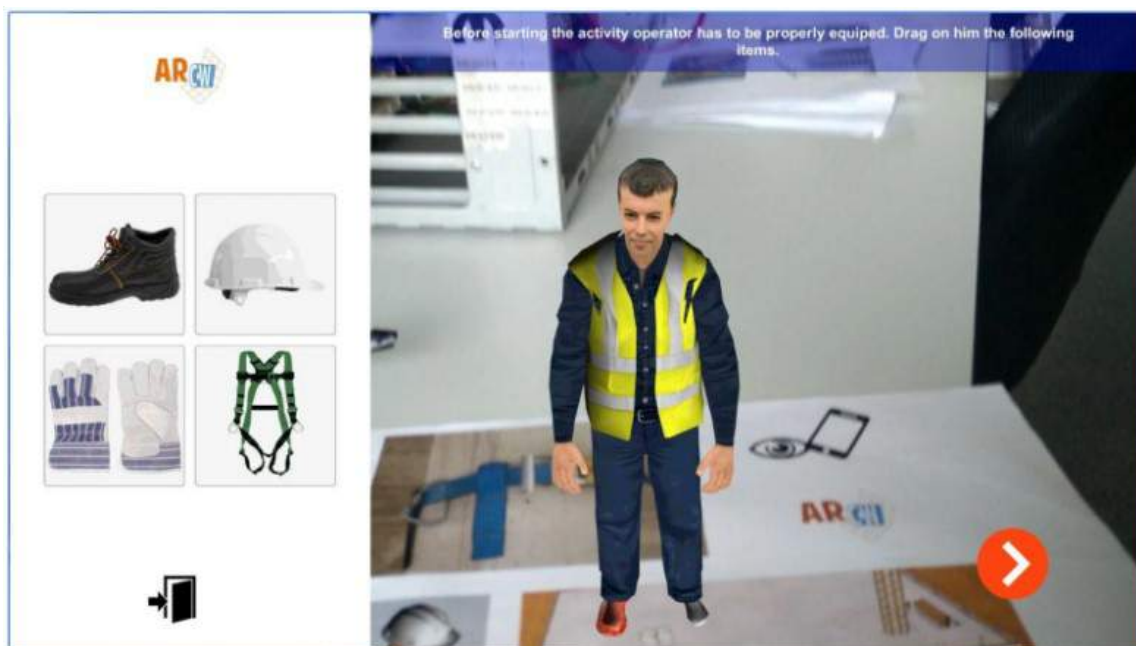
Source: FLC et al. (2016). Build Up Skills Spain: Construye 2020.

<http://construye2020.eu/construye2020/descargas/informe-resultados-build-up-skills-construye2020>

Several projects are making use of augmented reality (AR) in training (Interview, González López, 2017; FLC, 2017):

- The Leonardo da Vinci project AR.KEY159 that was implemented in 2013-2015 developed a training system for non-qualified workers from the construction industry in order to improve their mathematical competence and basic competences in science and technology and open up better prospects for their professional careers. This project used AR to augment elements of a real-world construction site environment such as sound, video, graphics or GPS data.
- The Leonardo da Vinci project ARCW160 aimed at decreasing the accident rate during construction of tall buildings, especially during curtain wall assembly. To achieve that goal, a manual was prepared that contains information about curtain wall assembly technology with a particular emphasis on the efficiency of work and health and safety regulations. Modern training materials using AR were developed (see Figure 2). AR ensured for the efficient completion of activities by workers, ensuring their safety at the same time.
- The ERASMUS+ project Arfat161 is a follow-up project, as the need for more training using AR was confirmed by questionnaires that were carried out during the ARCW project. As the project began relatively recently (December 2016), the Arfat project is planned to result in the creation of a training system along with a course manual, as well as an application for mobile devices, based on augmented reality and other supporting multimedia files. The training will be open to all stakeholders and anyone interested and will use innovative methods that adapt to our digital age.

**Figure 1: A snapshot of the ARCW mobile application using elements of AR**



Source: GooglePlay app store, <https://play.google.com/store/apps/details?id=es.uv.ARTEC.arcw&hl=en>.

[reality-applied-to-the-key-competences-training](https://play.google.com/store/apps/details?id=es.uv.ARTEC.arcw&hl=en).

<sup>160</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/arcw>.

<sup>161</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/arfat-2016-2018>



Several projects aim at using innovative technological solutions for facilitating migrant integration in the construction sector (FLC, 2017):

- A mobile application with serious games<sup>162</sup> about health and safety on site was to be developed within the ERASMUS+ project *Health & Safety Games*<sup>163</sup> and would run from October 2015 until September 2017. These games are envisioned to facilitate not only health and safety training, but also migrant integration. This app was to be available in Spring 2017 in six different languages (English, Spanish, German, Italian, Romanian and Finnish)<sup>164</sup>.
- ERASMUS+ project *RefuTools*<sup>165</sup> running from September 2016 until August 2018 envisages four main products as project deliverables: (1) a mobile application with basic information on dual training adapted to the needs of migrants, (2) a participatory theatre outline (i.e. a role playing technique where different roles are assigned to participants to practice real life situations), which enables the dynamics of comprehension and facilitates integration, (3) a board game to support the resolution of everyday scenarios, (4) a curriculum for integration, adequacy and basic skills learning of competences in vocational training in the construction sector.

FLC is also developing supporting material to attract construction sector SMEs to participate in educational programs that include vocational training. For example, during their ERASMUS+ project *Co.Tutor*<sup>166</sup> a series of guidelines will be prepared, i.e. analysis and proposals for strategic solutions that may help to overcome difficulties in receiving apprentices that an SME may encounter and to promote the figure of the in-company tutor – a key player for successful learning by the apprentice.

The **target groups** of these activities are both VET learners and their teachers. The main **success factor** for the implementation of new didactical resources is that both trainers and trainees are keen on experimenting with new technologies for training. Thus, both of these groups receive all innovative products very enthusiastically. In addition, FLC has the full support of their board to undertake projects that deal with the creation of innovative training resources. Also, it is noteworthy that FLC has the sound support of the national government, as shown by the participation of key stakeholders in the BUILD UP Skills initiative *Construye 2020*, as well as by the high endorsement received during other projects. Finally, VET schools always collaborate in their projects by testing the materials produced with real trainers and trainees. The **impact** of the use of new technologies in developing innovative didactical tools is that they facilitate teaching and encourage self-studying. In turn, new types of learning complement classroom-based learning and improve the overall effectiveness of training (Interview, Tenorio, 2017). As an example of take-up of new learning resources, the mobile application *AR.KEY* was used to teach 103 learners from Spain, Romania, Italy, Germany and Portugal. In addition, 30 trainers participated in the testing of the application. The feedback on the application was quite good, as the users rated the application with an average of 4.25 out of 5 (Interview, González López, 2017).

Innovative didactical resources are well received in the VET system by learners. Young people receive new technology input outside of their learning environment every day. Some of these inputs provide an opportunity for easily incorporating these technologies in their learning environment as well (e.g. WhatsApp, Skype, gaming

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<sup>162</sup> Serious games are games that have other purposes than entertainment, enjoyment or fun. The 'seriousness' of these games refers to content that may well be used as teaching material (Djaouti et al. 2011).

<sup>163</sup> See more at <http://microsites.fundacionlaboral.org/hs-games?pag=9&idioma=1>.

<sup>164</sup> Many more projects are or were implemented by FLC in the area of development of didactical resources. A full list of projects is available here: <http://www.fundacionlaboral.org/proyectos/formacion/recursos-didacticos?pc=&anyo=&tematica=%2Fproyectos%2Fformacion%2Frecursos-didacticos>.

<sup>165</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/refutools-2016-2018>.

<sup>166</sup> See more at <http://www.fundacionlaboral.org/en/projects/training/training-tools/cotutor-2016-2018>.



consoles, etc.). However, these tools need decades to be incorporated as teaching resources. New systems always awaken the interest of learners. However, it is important to keep the design attractive and useful for the learner (Interview, Tenorio, 2017). The main **challenge** related to this is that although trainers usually receive good quality innovative training resources, paradoxically, they do not use them in an extensive manner. This is due to the fact that most of the trainers are reluctant to change their ways of teaching. FLC carries out pilot testing for all of their new training resources and the results show that trainees like innovative solutions and deem them to be useful for learning. Therefore, the key actors in making the new didactical resources useful are trainers, because if they do not introduce these new means within their teaching practice, trainees will not have a chance to use them. Moreover, it is still difficult to get SMEs involved in the apprenticeship system, which puts the success of apprenticeships at stake.

The development of didactical resources was funded by different European calls. The **resources** obtained from these funding sources were enough to cover all of the costs of the projects' execution. Due to the support from various stakeholders that FLC received for projects in the area of development of new training resources, they were able to participate in more than 25 EU initiatives in this area in the last five years. In addition, FLC anticipates that the *Co.Tutor* project will help to set up thorough strategies that may help to progressively achieve a higher level of involvement by SMEs in apprenticeships.

### **Conclusions and recommendations**

FLC is committed to facilitating the path of dual VET implementation by fulfilling their pledge and working beyond its limits. The newness of the scheme in the country poses many challenges and uncertainty as to the right path for the implementation of the dual VET scheme however, it also opens up possibilities for taking into account specific needs that may arise at the present moment. These relevant recommendations may be drawn from the experience of FLC:

- Even though the current dual VET framework is flexible and open for use in training for various qualifications, the lack of companies participating in providing training is a major obstacle to the expansion of this educational pathway. Efforts to increase participation by companies in training are needed in order to ensure the stable expansion and eventual establishment of a dual VET pathway.
- Innovative training materials can be used not only to make the learning process more attractive to learners, but also to attract more construction companies to offer apprenticeship placements.
- Special attention is needed to acquaint the trainers with the new didactical tools, as it has proven difficult for them to change their methods of teaching. Trainers are key to the success of new didactical resources as their teaching methods determine whether trainees will even have the opportunity to try innovative ways to study and learn.

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## COMITE DE CONCERTATION ET DE COORDINATION DE L'APPRENTISSAGE DU BATIMENT ET DES TRAVAUX PUBLICS (CCCA-BTP) (TRAINING OF TRAINERS)

### Introduction

The French National Committee of Apprenticeships in the Construction Industry (fr. *Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics*, CCCA-BTP) is the main body responsible for initial vocational education and training (IVET) in the construction sector in France. Established in 1946, CCCA-BTP is a professional organisation that involves both employer and employee organisations. It manages its own network of 118 training centres (fr. *Centre de formation d'apprentis*, CFA) throughout France and administers 70% of all apprenticeships in the French construction sector. CCCA-BTP is financed by sectoral partners in the construction sector. CCCA-BTP is responsible for the following activities: (1) providing career guidance and information on IVET and apprenticeships, (2) developing VET through their CFA network, (3) contributing to the training of apprentices' tutors and CFA teachers, (4) helping to finance training and purchase training equipment, (5) financing vocational integration measures for young people under 26 years of age and other activities related to apprentices' training. CCCA-BTP also carries out research of the labour market in the construction sector, maintains social relations between construction VET stakeholders and takes part in other activities<sup>167</sup> (CCCA-BTP, 2016).

CCCA-BTP is continuously working towards improving the quality, image and supply of apprenticeships in the construction sector in France. CCCA-BTP believes that the quality of VET and apprenticeships is the key element in successful training and therefore has launched a programme targeting trainers. The programme for dual VET trainer admission and training (fr. *Dispositif d'accueil et de formation de formateurs en alternance*, DAFFA) is a CCCA-BTP initiative that aims at enhancing trainer competences such as technical know-how, management skills and pedagogical capabilities. The programme focuses on three aims and proposes six general actions to achieve them<sup>168</sup> (see Table below). These aims are an extension of the more general aims of the organisation, namely improving apprenticeship quality both in companies and in dual-training centres, enhancing professional development capacities and ensuring comparable quality standards of competences and qualifications for trainers across different regions.

**Table 18: Aims and corresponding actions by CCCA-BTP**

Aims	Corresponding actions
<b>Aim 1:</b> Enhance pedagogical upskilling.	<b>Action 1:</b> Support initiatives that aim to strengthen the skills of regional CFA management teams.
<b>Aim 2:</b> Provide trainers with a general knowledge of the sector.	<b>Action 2:</b> Support strategy development for apprenticeships in the construction sector.
<b>Aim 3:</b> Form a community between VET trainers and professionals within the sector.	<b>Action 3:</b> Strengthen CFA trainer technical skills; <b>Action 4:</b> Continue to offer training in specific domains (e.g. occupational health and safety or sustainable construction); <b>Action 5:</b> Implement professional activity periods in construction companies; <b>Action 6:</b> Provide individualised follow-up of actions offered by CCCA-BTP.

<sup>167</sup> For a comprehensive guide to all CCCA-BTP activities, see: <http://www.ccca-btp.fr/le-ccca-btp/nos-missions-nos-valeurs/>.

<sup>168</sup> Members of CCCA-BTP emphasise broad-reaching aims as opposed to the specific quantitative targets of their initiative. Furthermore, they also indicate that CCCA-BTP actions differ according to the scope of the activities they comprise (e.g. Action 1 comprises a series of activities, while Action 5 concerns a single more particular activity).

The aims of this case study are to:

- Highlight key trends in the construction sector in France and education in the construction sector, especially focusing on the training of trainers.
- Present the DAFFA initiative by CCCA-BTP within the wider context of apprenticeships in the construction sector in France.

### **Country context**

The construction sector in France is starting to recover from the financial crisis. In 2016, the volume of production in the sector increased by 1.9%, and in 2017 it is projected to increase by another 3.4% (FFB, 2016). This positive trend is mainly due to an increase in residential and commercial building construction. However, rising construction costs, labour shortages and a recent decline in housing prices have all contributed to a slower recovery. The French government is striving to revitalise the industry: its most recent measures aim to lighten administrative burdens, lower construction costs and facilitate business development. New tax incentives for people investing in new rental buildings are expected to boost sales of new dwellings (ECSO, 2016). In addition, the government has made activities for improving the energy performance of existing and new buildings its top priority<sup>169</sup>. These developments will have an effect on training in the construction sector, especially by increasing the demand for new skills in sustainable construction.

While education in the construction sector in France is well developed, the financial crisis has had a considerable impact on training activities. Unfavourable economic conditions discouraged companies from investing financial resources and time into education and training (Lawinski, 2017). Yet, as the sector undergoes significant shifts (e.g. development in sustainable construction), training is becoming more and more central to the development of the construction industry. A recent law<sup>170</sup>, which was passed on 5<sup>th</sup> March 2014 and came into effect on 1<sup>st</sup> January 2015, includes several features that affect training in the construction sector. The most relevant aspects are the following:

- *Decentralisation of vocational education and training.* The regions are now assigned a more significant role in how training is organised. This brings more flexibility to training in the construction sector, as regions become more autonomous (ECSO, 2016).
- *Apprenticeship tax reform.* This reform simplified the tax collecting mechanism and increased the role of regional councils in allocating funds towards developing apprenticeship schemes<sup>171</sup>. This reform allows for a more efficient distribution of funds according to training priorities in the construction sector.
- *Establishment of a national joint collective body.* The construction industry set up a national joint collective body (fr. *Organisme paritaire collecteur agréé, OPCA*), also known as Constructys<sup>172</sup>. This institution collects the apprenticeship tax, develops training schemes in accordance with new market requirements and provides companies with support in training their employees (ECSO, 2016). This new institution facilitates VET development in accordance with enterprise needs and ensures that training is more coordinated and better organised.

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<sup>169</sup> For more information on sustainable development policies in France, see the following case study: *Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME) (Innovative training platform)*.

<sup>170</sup> Law of March 5, 2014 on vocational training, employment and social democracy. See more at: <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000028683576>.

<sup>171</sup> For more information on the apprenticeship tax reform in France, see the following case study: *Fédération Nationale des Travaux Publics (FNTP) (Supporting financing of apprenticeships)*.

<sup>172</sup> See more at: <http://www.constructys.fr/>.

## French apprenticeship systems in the construction sector

There are two types of dual training schemes available in France<sup>173</sup> under two types of contracts, namely the apprenticeship contract (fr. *Contrat d'apprentissage*) and the professionalisation contract (fr. *Contrat de professionnalisation*). The standard type of dual training is offered under the apprenticeship contract. In this case, the pupil alternates between on-the-job training and learning in a training centre (fr. *Le centre de formation d'apprentis, CFA*). The trainers who train at CFAs are responsible for providing professional guidance to the apprentice, instructing them on the technical aspects of construction and preparing them for in-company training. At the worksite, the apprentice is accompanied by an in-company tutor (fr. *maître d'apprentissage*) who oversees all his/ her activities. Both the trainers and the tutors are subject to the basic standard requirements in all of France, which are set out in the French Labour Code<sup>174</sup>.

Any professional may become a CFA trainer or an in-company tutor as long as he/she meets the necessary criteria. The trainers and tutors must possess an equivalent or a higher level of qualification than they wish to train for or, alternatively, have at least two to three years of work experience in the vocation for which he or she is training (Contrat d'apprentissage, 2016). Generally, CFA schools look for highly experienced trainers with the ability to transmit their knowledge to young apprentices. CFA trainer and in-company tutor responsibilities are outlined in the table below (see Table 2).

**Table 19: CFA trainer and in-company tutor responsibilities**

CFA trainer responsibilities	In-company tutor responsibilities
<ul style="list-style-type: none"><li>• Effectively organise apprentice training by providing a clear structure for training, proposing learning activities and making training accessible</li><li>• Evaluate apprentice abilities, continuously monitor his/her development and help assess whether he/she is meeting the targets set for reaching the necessary objectives for achieving the certification of choice</li><li>• Outline clear methods for assessing progress and ensure that the apprentice is capable of meeting the evaluation criteria</li><li>• Help organise and monitor the work of the apprentice outside of CFA</li><li>• Ensure that apprentices who are behind in certain areas of training benefit from extra training activities</li><li>• Administer apprentice course attendance</li><li>• Oversee the filling in of the apprenticeship booklet (fr. <i>Le livret d'apprentissage</i>)*. This includes both filling in the relevant parts of the booklet and also ensuring that this tool is used by the apprentice and the in-</li></ul>	<ul style="list-style-type: none"><li>• Introduce the apprentice to the team members, the work location and the economic activity of the enterprise</li><li>• Introduce the apprentice to the novel occupational aspects of his/her vocation, including work equipment</li><li>• Ensure that the apprentice is familiar with and respects occupational health and safety (OHS) regulations at the workplace</li><li>• Cooperate with the CFA schools on various aspects of apprentice training</li><li>• Evaluate apprentice abilities, continuously monitor his/her development and provide assignments that meet the training level of the apprentice</li><li>• Organise an apprentice's daily tasks and ensure that he/she clearly understands what is expected of him/her</li><li>• Prepare the apprentice for the practical examinations necessary to receive the diploma or a qualification certificate for which he/she is training</li><li>• Fill in the apprenticeship booklet</li><li>• In case the apprentice is handicapped, ensure that he/she receives all necessary support and ask for additional help to adapt workplace conditions to his/her</li></ul>

<sup>173</sup> For a detailed overview of the French apprenticeship system, see the following case study: *Fédération National des Travaux Publics (FNTP) (Supporting financing of apprenticeships)*.

<sup>174</sup> Article R.6233-13 of the French Labour Code (fr. *Code du Travail*). See more at: <https://www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT000006072050&idArticle=LEGIARTI000018497600&dateTexte=&categorieLien=cid>.

CFA trainer responsibilities	In-company tutor responsibilities
company tutor • Help manage the necessary administrative procedures between CFA, the apprentice and the enterprise.	needs

\* The apprenticeship booklet is a communication tool used to document an apprentice's training activities, including course attendance, both school and in-company work evaluations and other notes (Jouanot, undated).

Source: Contrat d'apprentissage, 2016a.

Preparing qualified trainers and tutors is an important element in the construction sector due to such aspects as on-site OHS regulations and the highly advanced technological elements of the work. Furthermore, the highly individualised relationship between a CFA trainer or an in-company tutor and an apprentice requires not only expert knowledge, but also excellent pedagogical skills. Major CFA trainer competences are discussed in more detail in the box below. CCCA-BTP is invested in proposing more individualised approaches to training, depending on trainer needs and the broader regional context of the industry. The DAFFA initiative is precisely oriented towards trainers who work at different CFA centres run by CCCA-BTP throughout France.

### Box 2: Insights on major CFA trainer competences

For a CFA school trainer to be considered competent in dual training pedagogy, three key abilities are necessary:

1. *Management of dual training.* Such management concerns the relationship between the trainer, the apprentice and the enterprise. The trainer must be capable of situating himself or herself in a particular type of environment and (1) identify the activities apprentices are carrying out in a company, (2) understand their daily tasks and (3) recognise the skills the apprentice needs to be taught to do well during on-the-job training.
2. *Organising training courses.* This competence concerns the ability to design, carry-out and evaluate training programmes. This is a directly pedagogical competence that all trainers need to possess. The trainer must be able to outline a strategy and set guidelines in order to ensure a steady progression in the training of the apprentice.
3. *Ability to design and carry out a project with apprentices.* This element of pedagogical competence requires the trainer to lead a group of apprentices and carry out a pedagogical project. For example, the trainer must be capable of managing a situation where the level of preparation within the group is not all the same.

Source: Interview, Miché, 2017.

### CCCA-BTP: Training of trainers

The DAFFA programme was originally launched in 1985, but significant changes were introduced in 2014 and 2016. The new DAFFA model is more focused on individualised training and takes into account specific regional needs. In addition, the programme now awards a certificate that is adjusted to the French National Qualification Standards (NQF). These changes are based on several important factors that had to be taken into account (Interview, Lawinski, 2017):

- Recent technological advancements are creating a more individualised society. As a consequence, training needs to become more flexible and trainers ought to be better equipped to handle the challenges that these developments entail.
- Company needs differ according to the region in which they operate, e.g. the terrain in the north of France is very different to the terrain in the south, which means that working techniques will also vary accordingly. Closer collaboration

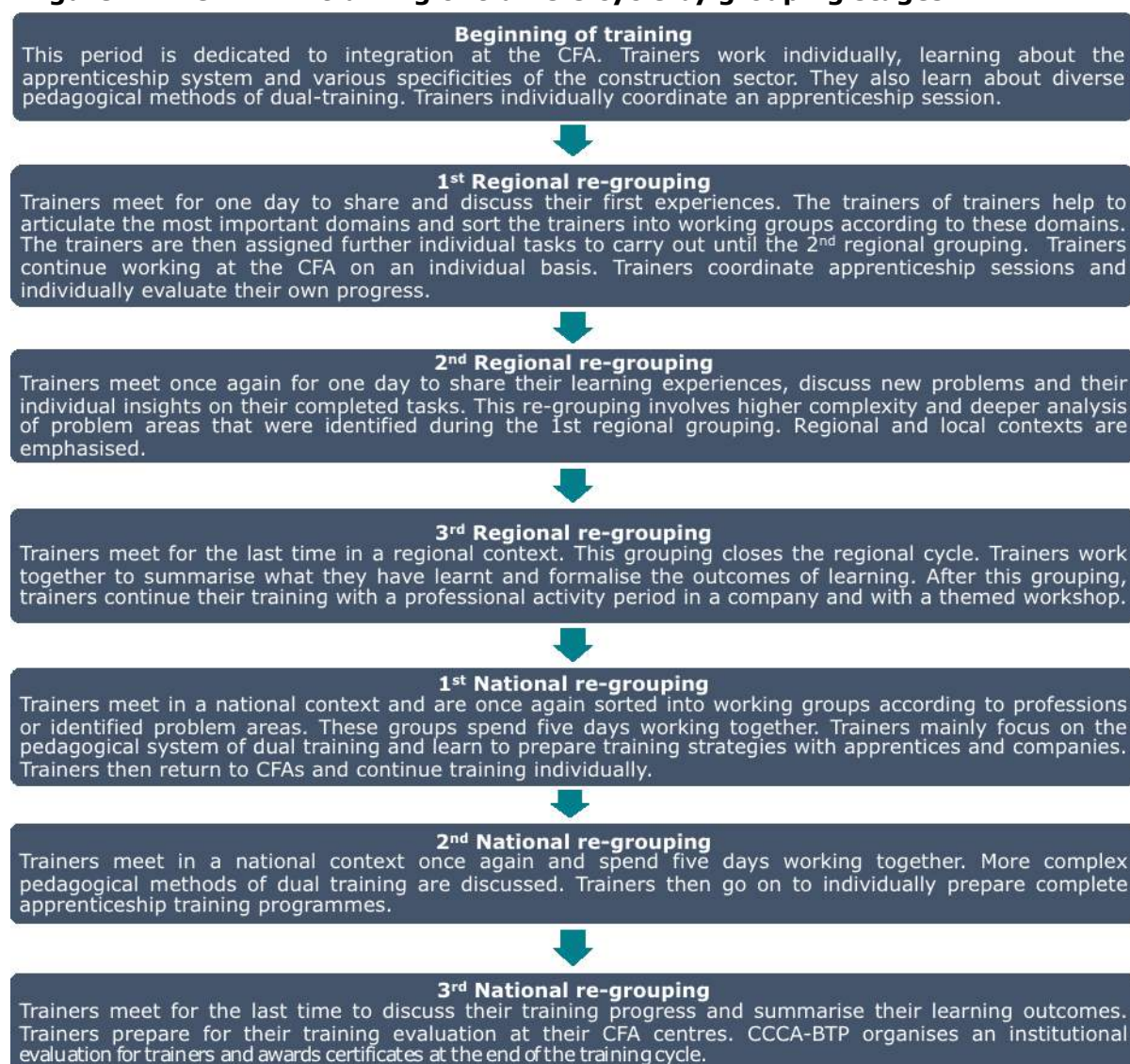


with companies is necessary if trainers wish to be capable of providing adequate pedagogical guidance for apprentices.

- Young apprentices come from very diverse cultural and social backgrounds that need to be taken into account. Trainers must be able to adapt their pedagogical methods to suit a variety of different learning profiles.
- Trainers have diverse professional backgrounds that need to be taken into account. Teaching similar pedagogical methods irrespective of trainer background does not benefit the trainers because they are not encouraged to use their particular strengths and learn from their particular weaknesses.
- Previously, the DAFFA programme did not lead towards a nationally recognised certificate. Even though the programme was widely recognised by sectoral social partners, lack of national certification limited its appeal for trainers.

The modified DAFFA programme cycle lasts 18 months and is structured under a series of re-groupings. The full DAFFA programme cycle is illustrated in the figure below (see Figure 1).

**Figure 1: The DAFFA training of trainers cycle by grouping stages**



Source: Interview, Lawinski, 2017; CCCA-BTP, Dispositif de developement professionnel 2015 propose par le CCCA-BTP, 2015.

The figure also partly demonstrates the main actions that CCCA-BTP is carrying out under the DAFFA programme. **Action 1: Support initiatives that aim at strengthening the skills of regional CFA management teams** and **Action 2:**



**Support strategy development for apprenticeships in the construction sector** are more general actions that encompass several DAFFA activities. For example, supporting strategy development involves many steps in the training of trainers: group discussions, individual training, professional activity periods in companies etc. Likewise, supporting initiatives that strengthen the skills of CFA management teams rely on a continuous cooperation with regional actors and entail multiple activities (e.g. identifying expectations, analysing experiences, proposing particular activities etc.). The other actions are more specific and concern particular DAFFA activities (Interview, Lawinski, 2017).

### **Action 3: Strengthen CFA trainer technical skills.**

This is a direct action that is achieved through offering training workshops that include activities focused on specific technical skills. Such activities may include training to use various materials (e.g. wood, metal), working with various resources (e.g. equipment) and learning about the multiple aspects of elements in the construction process (e.g. electronic systems, mechanical devices etc.) (Interview, Lawinski, 2017).

### **Action 4: Continue to offer training in specific domains (e.g. occupational health and safety or sustainable construction).**

This action is related to Action 3. During different stages of the DAFFA cycle, CCCA-BTP offers various workshops that focus on particular themes or issues in construction training. For example, in 2015, DAFFA included a workshop on preparing apprentice activities that integrate the French Heating Regulation 2012 (RT 2012)<sup>175</sup> and the theme of air-tightness. The content of this workshop included both training in the technical aspects of air-tightness (e.g. the impact of air-tightness on a building) and on pedagogical methods (e.g. how to present the problematic aspects of air-tightness to apprentices). DAFFA proposes diverse workshops structured in a similar way, e.g. the option entitled 'Training apprentices for working at heights' includes a theoretical introduction to the occupational health and safety regulations and a practical training session on assembling and dismantling scaffolding (CCCA-BTP, 2015).

### **Action 5: Implement professional activity periods in construction companies.**

Such activity periods are an essential part of training at the DAFFA programme. Throughout the DAFFA programme, the trainer participates in 10-15 visiting sessions. During these sessions, trainers enrol in an enterprise to observe and learn by actively participating in daily tasks. Through immersing themselves in this kind of environment, trainers gain a deeper insight into what kind of training would be most beneficial to apprentices. Trainers experience specific work situations, interact with industry professionals and later assess this information from a pedagogical point of view individually and during national re-groupings. (Interview, Lawinski, 2017).

### **Action 6: Provide individualised follow-up of actions offered by CCCA-BTP.**

Individualised follow-up ensures that there is adequate support and guidance for the trainers in training. CCCA-BTP continuously helps trainers to develop their competences through CFA team managers who act as tutors to CFA trainers in training. The trainers may discuss any questions they may have regarding training activities or pedagogical methods at any point during the DAFFA cycle (Interview, Lawinski, 2017).

Several features of the DAFFA programme cycle are significant (Interview, Lawinski, 2017):

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<sup>175</sup> For more information on the Heating Regulation 2012 in France, see the following case study: *Agence de l'Environnement et de la Maitrise de l'Energie (ADEME) (Innovative training platform)*.

- CCCA-BTP chose to eliminate extracurricular courses (e.g. theoretical courses in physics, engineering, etc.) because most of the information in these courses may be found online. This allowed CCCA-BTP to save time and instead focus on pedagogical methods that add more value to the training of trainers.
- The programme puts strong emphasis on an exchange of experiences and the management of social situations in relation to training. Trainers are encouraged to observe various work and training circumstances and to become capable of acting upon them.
- The programme aims to work within the concept of active learning. This is a student-centred approach that enables students (or trainers in this case) to shape their own learning pathways. The trainers must themselves identify problematic areas in both their own training and apprentice acquisition skills and then look for ways to resolve these problems. The trainers are further encouraged to apply this methodology to apprentice training.
- The community element is very important to the training of trainers, hence the regional and the national re-groupings of trainers. DAFFA is designed to cultivate a sense of belonging to a vocational training system and, more importantly, to help trainers regard themselves as professionals who play an important role in the construction industry as a whole.
- Trainers are trained to design, manage and evaluate full training programmes. DAFFA emphasises the importance of having a complete and well-developed conception of apprentice training. Trainers are also encouraged to learn to evaluate their own training by looking at how their trainees progress.
- Trainers learn to design, implement and evaluate different projects not only on the basis of content, but also by including elements such as contacting partners, collaborating with appropriate services, etc.

Members of CCCA-BTP report that both financial and human **resources** were sufficient to carry out the DAFFA training activities. Each year, DAFFA requires around €600,000 for its training activities. CCCA-BTP receives these funds from sectoral social partners who are committed to improving IVET in the construction sector and are therefore keen on financing its development. The programme relies on 12 main trainers (who train other trainers) who are, for the time being, fully sufficient for running the programme. In addition, CFA management teams provide guidance for the CFA trainers during the implementation of the programme (Interview, Lawinski, 2017).

The **impact** on the **target groups**, namely VET trainers, IVET pupils and construction companies, is said to be positive. DAFFA contributes to the better overall quality of VET in the construction industry by (1) enhancing trainer competences and (2) enforcing better collaboration between VET providers and construction companies. DAFFA also contributes to improving the image of VET trainers. Currently, the programme trains between 80 and 120 trainers each year (Interview, Lawinski, 2017). The box below presents the most beneficial aspects of the DAFFA programme from the viewpoint of one of its trainers, P. Miché.

### **Box 3: Trainer's comment on the benefits of the DAFFA programme**

- DAFFA offers trainers a type of training that allows them to alternate between different activities, such as group work, in-company periods or individual learning. The programme allows them to try out and to test their abilities on their own.
- DAFFA involves all levels, namely local, regional and national, within its training activities. Awareness of the implications of training and subsequent concern is established across all levels.
- DAFFA always relies on expert knowledge and guidance. All training activities include a high-level expert who ensures the accuracy of the training content. In addition, this expert is always available for consultations during the training sessions.
- Peer grouping, where the same trainers who train in the same professions and within the same problematic areas, facilitates cooperative exchange. DAFFA allows

them to share their problems that are often very similar. Such communication helps trainers to feel less alone in facing the problems they encounter and encourages them to find collective solutions to common problems.

- The content of DAFFA activities is always up to date. The content of training is regularly adapted to training needs. Each year, a small group that works on the organisation of DAFFA re-evaluates the numerous activities and ensures that all content, including content material, is relevant.

Source: Interview, Miche, 2017.

The main **success factors** that enable for the smooth operation of the DAFFA programme are the following (Interview, Lawinski, 2017):

- CCCA-BTP receives sustainable financing from sectoral partners. This allows DAFFA and other VET initiatives to be carried out each year.
- Good cooperation between CFA centres and enterprises is important insofar as it ensures that all stakeholders cooperate and work together to develop training strategies.
- A solid governance system ensures that the apprenticeship system is operational, and consequently, that such programmes as DAFFA contribute to its improvement.
- The trainers who train other trainers are highly qualified and fully committed to their mission.

The following list of **challenges** were seen as problematic in the implementation of DAFFA (Interview, Lawinski, 2017):

- CFA centres cannot easily replace the trainers that are in training. This stops CFA managers from encouraging more trainers from participating in the programme.
- Some CFA managers regard the DAFFA programme as an additional luxury rather than an essential investment into the future. It is sometimes difficult to change their attitude and convince them to invest in the training of trainers.
- Previously, the role of VET trainers was underestimated and not sufficiently recognised. However, the introduction of a formal qualification certificate on the national level improved the general attitude towards the significance of VET trainer competences.

### ***Conclusions and recommendations***

The DAFFA programme is fully operational and will continue to run for an indefinite period of time. CCCA-BTP has a long-standing tradition in organising VET in the construction sector and has therefore accumulated a vast amount of experience. This knowledge enables CCCA-BTP to accurately identify the most important issues in VET, and accordingly, propose novel solutions. DAFFA is the outcome of continuous effort, commitment and a deep understanding of the issues of dual training. The following aspects ought to be taken into account when implementing programmes that target trainers in VET:

- Adopting active learning methods and a problem-solving approach is highly recommended for the training of trainers. Trainers are more engaged and work on the implementation of their own ideas, becoming better leaders in training activities for apprentices. Furthermore, trainers become capable of evaluating their own performances in apprentice training.
- Highly individualised training pathways are attractive to trainers and beneficial for apprenticeship development. On the one hand, trainers work on themes that they find interesting and relevant, while on the other hand, they are encouraged to use their personal strengths to advance apprentice training.
- Involving all levels, namely local, regional and national, is a useful strategy when it comes to establishing connections and creating a sense of community

between VET trainers. This further benefits the construction industry, as trainers become more invested in advancing its development. Furthermore, trainers also become acquainted with different contexts and broaden their perspective on issues in construction and training.

- Constant follow-up activities during training are a good means for providing individualised guidance and ensuring training progress.
- More detailed impact assessment studies could be carried out in order to demonstrate the benefits of such programmes and convince stakeholders to invest time and resources in them.
- A well-established and stable apprenticeship system in the construction sector needs to be maintained and developed according to educational and labour market needs. This system is a conditioning factor in the emergence of such programmes as DAFFA. Thus, introducing novel training practices requires a secure training network where these practices are welcome.
- Finally, solid and sustainable financing from sectoral partners ensures that DAFFA will continue to be available without meeting any financial difficulties.

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## CONSTRUCTION INDUSTRY FEDERATION – APPRENTICES.IE (ONLINE PLATFORM)

### Introduction

The Construction Industry Federation (CIF) is an Irish social partner representing construction companies in each sub-sector and region. CIF is involved in shaping policy and focuses on the following: public capital spending programmes, public sector procurement contracts, policies and procedures, ensuring that regulation is smart, targeted and effective, improving access to finance for SMEs, ensuring that there are adequate skills to support growth and enhancing the reputation of the sector. CIF also provides support to its members on issues of industrial relations/employment legislation.

Since 2014, CIF has witnessed signs of recovery in the construction sector and realised the need to be more proactive in attracting talents to the sector at all education levels. As a response to the lack of accessible information about apprenticeships for young people, CIF initiated an online platform with information on apprenticeships in January-February 2016. The website *apprentices.ie* was fully launched in April 2016.

**Table 20: Construction Industry Federation: creating an online platform for apprenticeships**

Pledged targets		Corresponding activities
<b>Target 1:</b> To give apprenticeship better promotion.	To give better people considering a career path and to provide a marketplace for advertising apprenticeships.	<b>Activity 1:</b> To develop and launch a website for young people considering a career path and to provide a marketplace for advertising apprenticeships.

Source: Interview, Carey, 2017.

The aims of this case study are:

- To elaborate on the country and sector-specific context of the construction sector and its apprenticeship systems.
- Present the initiative by CIF focusing on making information on apprenticeships more easily accessible to youth.

### Country context: construction sector trends

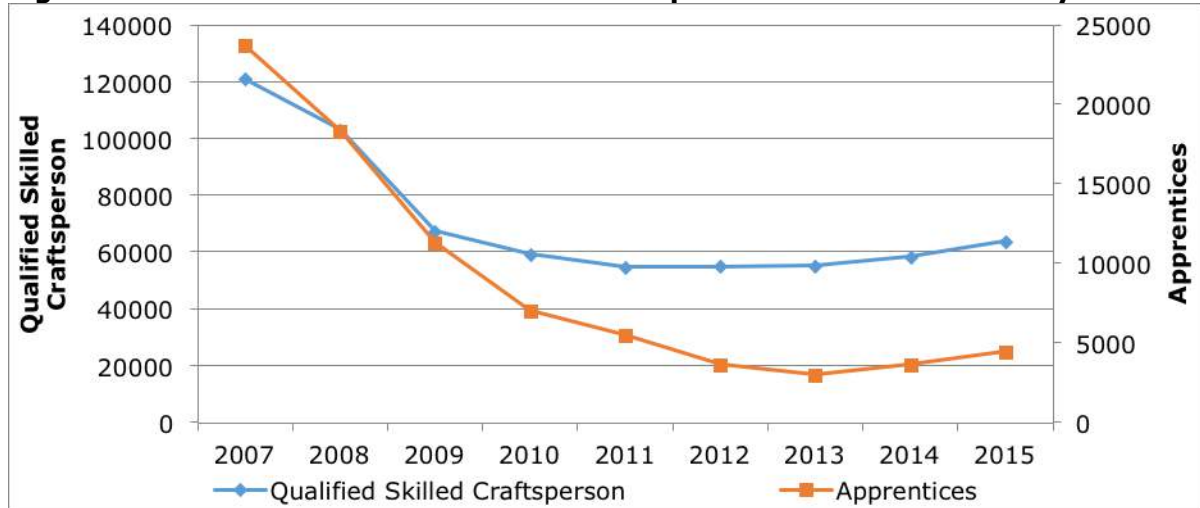
The construction sector in Ireland suffered a major crash during the recession. Employment declined drastically between 2007 and 2013 – the number of workers shrunk by almost 180,000, accounting for 65% of all people employed in the sector at the peak in 2007 (see Figure 1 below). The number of enterprises also contracted by 23% between years 2008 and 2014 (DKM Economic Consultants, 2016). In addition, the industry has traditionally been a very fragmented sector and relies on sub-contracting. Even 70% of all construction industry firms are registered in the category of 'self-employed with no employees'. Moreover, 98% of all enterprises employ less than 10 employees (DKM Economic Consultants, 2016). Both of these trends had serious implications for apprenticeships:

- Apprenticeships in Ireland are heavily dependent on the construction sector. Out of the 27 apprenticeship programmes, 25 are construction sector-related crafts (Interview, Carey, 2017). What is more, the 14 craft apprenticeship programmes that lead to qualifications in construction trades in the narrow sense account for over 87% of all apprentices recruited in 2012 (Department of Education and Skills, 2014). As apprenticeships are heavily reliant on the construction sector, the educational pathway came to a near collapse as new apprenticeship registration numbers fell from almost 7,000 in 2005 to about 650 per year in 2011. There were about 4,400 apprentices across all trades in construction in 2015 compared with 23,700 apprentices in 2007 (see Figure 1 below). All apprenticeship construction trades (with the exception of

electricians) had suffered more than a 70% decline by the end of 2015 (DKM Economic Consultants, 2016).

- Larger contractors with the potential resources to train apprentices employ fewer people and prefer to sub-contract workers instead. The companies that directly employ workers are small contractors that are less likely to want or are able to meet the requirements for training or they are not able to plan work for an apprentice as far as four years ahead (most apprenticeships are four years in duration). This has meant a difficulty in creating apprenticeships, as smaller employers tend to take on mobile labour (i.e. sub-contractors) that sometimes has dubious skill levels (Interview, Carey, 2017).

**Figure 1: Construction-related Skilled Craftpersons in Whole Economy**



Source: Solas, Skills and Labour Market Research Unit (SLMRU) analysis of Quarterly National Household Survey (QNHS).

Central Statistics Office (CSO). Employment figures have been rounded to the nearest 100.

The sector has been in recovery since 2013. Residential construction was the first to recover and Ireland has been confronted with a housing crisis: as the economy has recovered, the supply of houses no longer meets the demand (Interview, Carey, 2017). Projections estimate that the total labour requirement over the next four years will be around 112,000 workers (over 80% of the overall number of people directly employed in construction in Q2 2016) – 76,000 people required due to the expansion of the sector and an additional 36,000 new workers to meet the demand for a replacement of workers who leave the labour market as the result of illness, retirement or death (DKM Economic Consultants, 2016). As the construction sector expands and the workforce ages, there will be a great demand for new workers with the required skills. Therefore, enhancing the supply and quality of apprenticeships is crucial for meeting this demand.

### ***Irish apprenticeship system in the construction sector***

Craft Apprenticeship in Ireland is a dual system incorporating both on- and off-the-job training, providing at least 50% workplace based training. Training for craft apprenticeships takes a minimum of four years (with some exceptions, e.g. training for floor/wall tiling is shorter, with a minimum of three years). Training is divided into seven phases of alternation between the workplace and an education facility (SOLAS, 2016):

- Phase 1 – minimum three months of on-the job training with the employer
- Phase 2 – generally 22 weeks of off-the job training in a training facility
- Phase 3 – minimum six months of on-the job training

- Phase 4 – 10 to 11 weeks of off-the job training
- Phase 5 – minimum six months of on-the job training
- Phase 6 – 10 to 11 weeks of off-the job training
- Phase 7 – minimum three months of on-the job training.

The apprenticeship system is demand-led and employer-led, meaning that in order to begin a craft apprenticeship, the potential apprentice has to find an approved employer in his/her chosen craft and become employed. The schools are not responsible for finding an apprenticeship place for a learner (Interview, Carey, 2017). Off-the-job training starts with a phase in an Education and Training Board (ETB) Training Centre, while the remaining phases are generally held in an Institute of Technology or a college of further education. Apprentices receive remuneration during their work at the company. These apprenticeships lead to an award at NQF Level 6/EQF Level 5.

The apprenticeship system struggles with the following traditional and crisis-related challenges:

- The reputation and professional status of construction companies has been a long-standing issue for Ireland. Completing tertiary education is a target for most students and their parents – at 37.4%, Ireland had the second highest percentage of a population that has attained tertiary education (EQF levels 5-8) in Europe. However, a perceived high dropout rate of 16% continued to characterise new higher education entrants who did not progress beyond their 1st year of tertiary education from 2010 to 2014 (Higher Education Authority, 2016). Construction sector stakeholders are putting their efforts into raising the profile of the apprenticeship route as a promising career choice (Interview, Carey, 2017).
- The practice of subcontracting in the construction sector disables apprenticeships. Most of the contractors that work on-site are working on a single-project basis and have temporary workspaces. Thus, it makes it almost impossible to arrange for stable training of an apprentice during a four-year period (Interview, Carey, 2017).
- Due to reputational issues and a reliance on less stable and secure subcontractor work career-wise, career guidance teachers at secondary schools advise learners to steer clear from careers in the construction industry (Interview, Carey, 2017).
- Achieving a balance between the number of apprenticeship places offered by companies and the number of places demanded by potential apprentices is an ongoing issue for the construction sector. Apprenticeship is heavily state-funded in Ireland. The construction sector had experienced a boom in the past when the numbers of apprentices grew and facilities were provided for apprenticeship places that then became redundant during the recession. Now, a more strategic approach is being adopted for the provision of apprenticeship places based on mid-or long-term economic forecasts (Interview, Carey, 2017).

A review of apprenticeship training was carried out in 2014 (Department of Education and Skills, 2014) and it recommended the expansion of currently mainly construction-based apprenticeships into new industry sectors, including ICT, retail, hospitality, business administration, medical devices, sport and leisure programmes, childcare and social care, financial services, accounting, hairdressing, and beauty care sectors. The review also recommended that apprenticeships be offered at higher levels than the current NQF level 5. In consideration of the recommendations to expand the scope of apprenticeships, the Apprenticeship Council launched an apprenticeship review process in 2015. A consortia of industries, professional bodies and education and training providers wishing to design new apprenticeship programmes had their proposals evaluated. The new types of apprenticeships selected range in duration from two to four years and will lead to a qualification from NQF level 5 to 10. This means that for the first time apprenticeships will be



available at the graduate level in Ireland. The first honours degree apprenticeship (i.e. Bachelor's degree in Insurance Practice, NQF level 8/EQF level 6) became available in September 2016 (IT Sligo, 2016).

Expanding apprenticeships to the tertiary level is a widespread trend in Europe, with Germany, Italy, Poland and Finland providing various tertiary VET qualifications with significant workplace training elements. Providing apprenticeships within higher education is justified by the following reasons (Department of Education and Skills, 2014):

- Due to the high level of learners opting for higher education, it is desired that apprenticeships be seen as facilitating progression routes into higher education.
- A very significant proportion of learners learn best by doing, and the apprenticeship system offers theoretical education and training soundly grounded in practical experience, producing a work ready employee.
- There is an increasing emphasis on improved co-ordination between education and training providers and employers and a stronger role for companies in shaping the content of programmes within further and higher education and training.
- To keep up with the changing landscape in the Irish labour market, significant investment in upskilling of the labour force must be made.

The recommendations to provide apprenticeships within higher education are designed to use the potential of apprenticeships to provide a seamless transition from training to the labour market at any qualification level.

Apprenticeships in Ireland are in need of more widespread advertisement, as they possess various recognised benefits, but they lack visibility and the image of a legitimate alternative training pathway to higher education.

### ***Apprentices.ie: a marketplace for advertising apprenticeships***

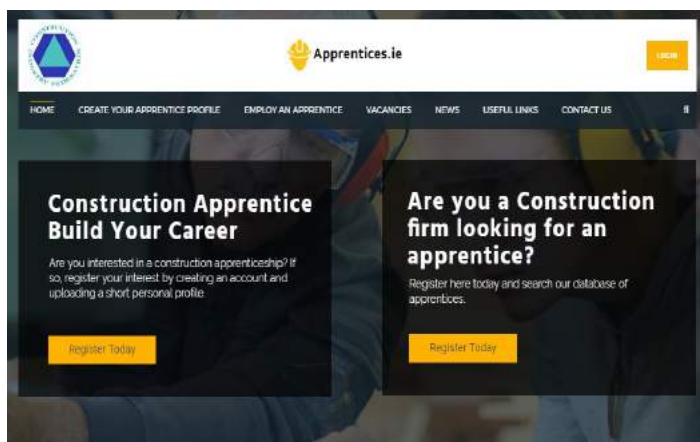
CIF started to recognise the need for more promotion of the apprenticeship route as a real career choice when the sector started to recover in 2014. After discussions with career guidance teachers at 2<sup>nd</sup> level (secondary) schools, it became clear that there is barely any information on construction apprenticeships readily available to both teachers and learners. Teachers advised young people to stay away from the construction sector, which at that time was deemed to be a 'dead industry'. In addition, entrance to apprenticeships in the construction industry was also limited as apprenticeships are often found through 'word of mouth' among people working in the industry and people who are looking for apprenticeships. CIF wanted to open up the process of finding an apprenticeship and to provide a marketplace for both companies and young people to register their interest in arranging an apprenticeship contract.

### **Activity 1: To develop and launch a website for young people considering a career path and to provide a marketplace for advertising apprenticeships.**

The initial idea of CIF was to coordinate with SOLAS (Irish Further Education and Training Authority) in developing a website covering information about apprenticeships in all sectors. However, CIF felt that there was a more pressing need for such a platform in the construction sector and pressed for the quicker development of a platform called *apprentices.ie* that it launched separately in April 2016. In the meantime, SOLAS also developed and launched (albeit, at a later time) a similar online platform called *apprenticeship.ie* that covers apprenticeships in all sectors. Both apprentices and companies can register on the website if they are interested in an apprenticeship. People can create a personal profile and get included in the database of apprentices that is accessible to all construction firms that register with the website.

There are also instructional videos presenting what work in 10 different construction professions entails (Interview, Carey, 2017).

**Picture 2: Title page of the *apprentices.ie* website**



Source: Website apprentices.ie

greatly from more information on apprenticeships (CIF, 2016).

The **target groups** of this website are companies and young people looking for apprenticeships. Both of these parties benefit from the platform as they can register their interest at no cost. CIF designed and created the website for less than 10,000 Eur. The **resources** that CIF has available for such initiatives are very limited, as they too have experienced major cutbacks and lost half of their staff due to the near collapse of the industry. However, this did not stop the Federation from driving the initiative forward as hard as possible, with the long term aim of getting the levels of apprenticeship sign-ups back to those of 2008 (i.e. 8,000 apprenticeship starts per year).

The very fact that this initiative was set up is considered as a major **success factor** for CIF. Career guidance teachers can finally direct learners to a website containing all relevant information about construction apprenticeships in one single place. In addition, the government is openly promoting the need for boosting apprenticeship participation and participates in discussions about this with various stakeholders. There is some evidence of the **impact** of the website from the growing interest in apprenticeships – a 10% increase since 2016 in registration to the website was observed in January 2017 (Interview, Carey, 2017). Companies report that the website has helped them significantly boost the numbers of applicants for their apprenticeship placements (see Box 1 below for an illustration). CIF is also in regular contact with guidance teachers who report that they in fact use the platform when advising young schoolchildren on career possibilities. In addition, interest in apprenticeship is increasing in general. For example, the largest 3-day long career fair that takes place every September in Dublin attracted more interest in apprenticeships – CIF reported that all of their seminars on apprenticeships at the September 2016 career fair were full as opposed to 2015 when there was much less interest in these seminars.

**Box 4: Experience of using *apprentices.ie* from a building development company**

Anthony Neville Homes Ltd. is a construction company located in Wexford, in the South East region of Ireland. The company is a member of CIF and is part of a pilot programme being carried out by CIF, Solas, which is a further education and training authority, and partner companies, that aims to make available apprenticeship placements for block laying and plastering that are guaranteed for the apprentice through the whole four-year period. Fewer people tend to join block laying and

plastering apprenticeships and the aim was to build apprenticeship numbers for these programmes. The company offered two apprenticeship placements – one in block laying as a part of the pilot scheme and one in carpentry as a separate apprenticeship placement.

Prior to putting up a notice of apprenticeship placements on the website, the company was having difficulty in finding applicants. They were unable to find apprentices via traditional channels, i.e. talking to construction workers on site and reaching out to other contacts. As soon as they started advertising their placements on the website, they received a number of applications from interested persons. After the apprentices had been recruited, the company had to ask CIF to take down their advertisement as they continued to receive applications from interested people long after the apprenticeship placements had been filled.

The company had a great response from the apprenticeship website and they would therefore recommend it to other companies, like themselves, looking for apprentices in the areas of block laying, plastering, electrical, plumbing and carpentry. From the company's experience, the CIF website is probably the best direction to take from the beginning as it made finding an apprentice for them much easier.

Source: C. Daly, Personal Assistant to Anthony Neville, Anthon Neville Homes Ltd., 6 June 2017.

There is one main **challenge** to the success of the website perceived by CIF. Some trends of the construction sector development are alarming. The pent-up demand for houses implies a high demand for skilled workers in trades such as painting and decorating, plastering, bricklaying, as the housing industry is labour-intensive. Currently, the apprenticeship numbers in these trades are increasing very slowly. It will be a big challenge for CIF to address these issues, as they need tailored responses as part of a wider strategy to revive training for construction sector skills.

### **Conclusions and recommendations**

CIF regards apprenticeship as one part of its three-pronged strategy to attract talents to the construction sector via university programmes, semi-skilled worker training and apprenticeships. The issue of low apprenticeship numbers is connected to the fact that tertiary level education is more attractive to young people and their parents. Therefore, the three elements are interconnected and need to be addressed in a comprehensive manner. However, the experience of CIF with *apprentices.ie* provide some insight on how large-scale issues can be mitigated via small scale activities:

- Good connections with other stakeholders allow social partners to uncover problem areas and channel their limited resources to providing the best response to a manageable issue. In this case, the website *apprentices.ie* has filled a substantial information gap relevant to the process of enabling apprenticeships, which was pointed out to CIF by guidance teachers, with relatively little resources.
- This website is a tailored response to the country- and sector- specific characteristic of hiring apprentices through 'word of mouth', which closes off many interested young people from entering the 'construction club'. *Apprentices.ie* contributes to opening up communication around apprenticeship supply and demand to a wider audience.
- Ireland has launched tertiary-level apprenticeships for the first time. The experience of Ireland will offer much knowledge in the future on the benefits of extending apprenticeships into the tertiary level and its effects on the quality of construction-relevant skills, drop-out levels and other salient issues related to apprenticeships in the industry.

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# PASSIVE HOUSE ASSOCIATION OF ROMANIA (INTRODUCING INNOVATIVE TRAINING TECHNIQUES IN CONSTRUCTION)

## Introduction

The Passive House Association of Romania (ro. *Asociatia Casa Passiva*, ACP) was founded in 2011 in order to promote the Passive House standard<sup>176</sup> in Romania. The association provides consultancy services, energy performance reviews and distributes Passive House Planning Package (PHPP) tools in Romania. In addition, it publishes articles, participates in various events and continuously strives to raise awareness amongst the general public regarding energy-saving buildings and renewable energy sources.

The CertCraft project was initiated by the Austrian IG PASSIVHAUS PLUS<sup>177</sup> association in order to train and inform workers in the construction sector about the Passive House standards. ACP participated in this project as a partner<sup>178</sup>. The general goal was to help participant countries reach the EU Horizon 2020 climate and energy objectives<sup>179</sup> by (1) training workers in the construction of nearly zero energy consumption buildings (nZEB) and (2) developing training modules that could then be used by the workers to train other employees. This is especially important in Romania, as very few enterprises offer training courses that aim to increase worker competences as well as to introduce novel construction techniques. Given the situation, ACP considered it necessary to start a project that would introduce practical know-how on how to implement EU building and energy efficiency guidelines. The project foresaw three activities in order to advance towards its general goal (see Table below).

**Table 21: Target and activities of the CertCraft project by ACP**

Pledged targets	Corresponding pledged activities
<b>Target 1:</b> Introduce practical know-how and, consequently, help to implement EU building and energy efficiency guidelines.	<b>Activity 1:</b> Development of the Passive House Craftsmen Course (PHCC) for new buildings. <b>Activity 2:</b> Development of a training module for the thermal renovation of existing buildings. <b>Activity 3:</b> Practical adaptations of national and EU frameworks to nZEB construction.

Source: Interview, Abos, 2017

The aims of this case study are to:

- Outline the key features of the construction sector and the relevant aspects of the apprenticeship system in Romania.
- Present the activities of ACP within the wider context of education in the construction sector in Romania with a focus on introducing innovative construction techniques.

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<sup>176</sup> The Passive House Standard is an international standard in energy efficient construction set by the Passive House Institute, Germany. The standard is based on a set of criteria, namely space heating and cooling demands, primary energy demands, air tightness and thermal comfort. See more at: <https://www.passivehouse-international.org/>.

<sup>177</sup> In 2015, the organisation changed its name to *Vorstand Plattform Innovative Gebäude Österreich*.

<sup>178</sup> The project consortium was comprised of the following organisations: IG PASSIVHAUS PLUS (lead partner), Weiterkommen Verein für Bildung und Nachhaltigkeit (AT, project coordinator); Campus Sursee Bildungszentrum Bau AG (CH); Passive House Association of Romania (RO); Passive House Association of Hungary (HU); Falcon - Bau BT. (HU)

<sup>179</sup> See more at: [https://ec.europa.eu/clima/policies/strategies/2020\\_en#tab-0-0](https://ec.europa.eu/clima/policies/strategies/2020_en#tab-0-0).

## Country context

The construction sector in Romania was heavily affected by the financial crisis: between 2008 and 2013, the gross revenue in the construction sector decreased by 31.9% while the total workforce decreased by 29.3% (ECSO, 2016). Yet the sector has been rapidly recovering during the last few years due to government support for residential construction and international exports. Furthermore, investments in commercial construction are on the rise as real estate developers plan to initiate the construction of new office buildings, shopping malls and industrial parks in different regions of Romania (FRD, 2016). However, numerous issues prevent an expansion of the construction sector from gaining momentum, the most important of which are the following (ECSO, 2016):

- *Legal obstacles in construction development.* Until 2016, it was difficult to obtain construction permits and other licenses in Romania due to a heavy administrative burden. Authorities imposed high costs on permits and subjected all construction activities to a construction tax. In 2016, the government issued several changes, including a reduction of bureaucracy in the construction permit process and an abolishment of the construction tax, but whether these adjustments will be sufficient in bringing about positive change is not yet clear.
- *Lack of transparency in administrative procedures.* Due to lengthy and complex administrative procedures, companies often resort to bribery in order to speed up the process. As a result, the construction sector is heavily affected by corruption and fraud. Public procurement lacks clear-cut regulation and is often exposed to corrupt practices. Currently, the government is introducing anti-corruption measures and transposing the EU Directive on public procurement into national legislation. However, even if these measures prove to be effective, it will take some time before any actual change is visible.
- *Skill shortages* is a very serious issue in the construction sector in Romania: as many as 27% of all construction workers lack the necessary skills that range from soft skills, such as entrepreneurship and digital competences, to technical skills, particularly in insulation and thermal rehabilitation. Given the Horizon 2020 climate and energy objectives as well as the fact that the Romanian government considers improving building energy efficiency a strategic goal, these soft and technical skills are particularly relevant.

In 2015, the construction sector in Romania employed approx. 7.5% of the workforce (Eurostat, 2016). Yet it is estimated that the construction industry will need at least another 50,000 skilled workers by 2020 in order to meet all of the labour market's needs (ECSO, 2016). Furthermore, the construction sector lacks a general workforce, as there are not enough people who are willing to work in the construction sector. Both skill and general labour shortages in Romania relate to the wider range of problems within the overall demographic as well as educational trends in Romania. The following aspects are worth emphasising (ECSO, 2016):

- Many qualified people are leaving the country for better prospects abroad, creating a brain drain effect. This creates a shortage of skills and a decrease in the overall number of workers.
- Romania has a rapidly aging population as many young people are leaving the country. It is estimated that in order to meet all skill shortages, investing in adult education ought to become a priority.
- Most companies do not have sufficient resources that could be invested in long-term development projects such as technological innovation. As a consequence, enterprises operate with outdated equipment that, in turn, hinders workers' development.
- Very few companies in Romania offer training courses for their employees. The workers have very little to no chance of increasing their competences and, consequently, they do not upgrade their skills to meet labour market demands.

- VET in the construction sector has multiple issues and cannot effectively help to satisfy labour market needs (see Section 2.).

Considering the fact that Romania scores considerably below the EU average in skills and innovation, investing in both continuous and initial VET has become one of Romania's key priorities (European Commission, 2016a).

### ***Romanian apprenticeship systems in the construction sector***

Apprenticeships in Romania were first introduced in 1929. Apprenticeship contract requirements, including employer and apprentice rights and obligations, were set out in the Labour Code. Several provisions were added in 1950 and 1972, stating that apprentices are entitled to fair wages, protective work equipment, social security and healthcare, as well as textbooks and other training materials. Most apprentices had been previously unemployed adults (over 18 years of age) and the salary was paid from the State budget for unemployment benefits (ReferNet, 2017). This was the only apprenticeship scheme available until 2013.

Apprenticeships were very unpopular in Romania before 2013. Between 2006 and 2012, only 100 apprenticeship contracts were concluded in all of Romania. This was due to the following reasons (CEDEFOP, 2017):

- Companies were constrained by too many obligations when hiring an apprentice (e.g. registering the apprenticeship contract at the regional employment register, ensuring all necessary training conditions, providing a certified tutor, guaranteeing daily meals and financing the costs of accommodation). All of these obligations were subject to authorisation procedures that were lengthy and inconvenient.
- Apprentice training costs were high and there was no financial support available. As a result, companies showed no interest in apprentice training.
- Companies were required to train the apprentice full-time and ensure that he/she received a nationally recognised qualification. However, most enterprises were not able to award such a qualification as they did not have the status of an educational institution and could not offer training by a nationally certified instructor.
- Apprentices often did not receive any certified qualifications (see bullet point above) and many potential apprentices were discouraged from participating in an apprenticeship scheme.

In 2013, the government introduced a new apprenticeship scheme. Currently, there are two types of apprenticeship schemes available in Romania:

- Apprenticeships at the workplace (ro. *Ucenicia la locul de munca*) target unemployed adults (over 16 years of age). This scheme is supervised by the Ministry of Labour. Around half of the apprentices enrolled in this scheme are young early school leavers (16 to 25 years of age) and the other half are unemployed adults over 26 years of age. Apprentices have the status of an employee and are supervised by a tutor. The apprenticeship duration varies between one and three years depending on the level of qualification that the apprentice wishes to acquire. Approx. 75% of training takes place at the workplace and the rest is spent at a VET school. At the end of their training, pupils receive a certificate in accordance with the Romanian Classification of Vocational Occupations (ro. *Clasificarea ocupațiilor din Romania, COR*). Even though in 2014 multiple financing sources were made available, an apprentice generally receives his/her salary from the state budget for the unemployed (ReferNet, 2017).
- VET with dual training system elements (ro. *invatamant profesional si tehnic cu elemente de sistem dual*) that target pupils in lower and upper secondary



schools. This scheme was established in 2013 and is supervised by the Ministry of Education. During the first year, pupils spend approx. 20% of their training time in the workplace, while in the second and third years this period increases to 60% and 72% respectively. The remaining time is spent training at a VET school. After successfully completing three years of such training, pupils receive a certificate in accordance with COR. Apprentices receive a salary from the State budget but companies may also award scholarships to well-performing apprentices (European Commission, 2016a).

The government provides financial support (around EUR 200 per month for 12 months) for companies that offer apprenticeship placements for recently graduated professionals regardless of their professional level (e.g. civil engineers, bricklayers etc.). As a result, more and more companies are starting to offer apprenticeships in the construction sector. (Interview, Abos, 2017).

Given the situation in Romanian VET, education in the construction sector is mainly school-based. Pupils may enrol either in Technical High Schools (Ro. *Liceu Tehnologic*) or Technical Colleges (Ro. *Colegiul Tehnic*) that offer four year programmes for various low to medium skill professions in the construction sector (e.g. civil engineering technicians, assistant architects). Most training takes place in classrooms and school workshops. Alternatively, pupils may also choose to attend Schools for Arts and Crafts (Ro. *Școala de arte și meserii*) that offer two to three year programmes in the construction sector such as bricklaying or carpentry.

On the other hand, the participation rate in school-based initial VET amongst upper secondary school pupils in Romania is well above the EU average: in 2014, this rate amounted to 60% of all pupils in education while the EU average stood at 48% (European Commission, 2016a). This strong attraction towards vocational training is a good basis for apprenticeship development. However, Romanian VET has multiple issues (see Table below) that apply to both school-based and work-based VET.

**Table 22: Issues in Romanian VET**

Issues related to VET providers	Issues related to VET pupils
<ul style="list-style-type: none"> <li>• VET curricula is not adjusted to labour market needs</li> <li>• The quality of trainer staff is poor, trainers lack knowledge of latest developments</li> <li>• Providers lack the necessary financial resources to purchase and install workshop training equipment</li> <li>• Providers lack adequate quality assurance mechanisms</li> <li>• VET providers do not provide adequate counselling and career guidance services</li> </ul>	<ul style="list-style-type: none"> <li>• Pupils lack motivation and commitment</li> <li>• Pupils tend to leave education too early. In 2015, the dropout rate was 19.1% (EU average - 11%)</li> <li>• Employers are dissatisfied with graduates' competences and abilities</li> <li>• Low school-to-work transition rate: in 2015, the employment rate of VET graduates was only 62.4% (EU average - 73%)</li> <li>• Due to the decreasing numbers of pupils in rural areas, fewer teachers are offered teaching posts in VET schools in those areas. This results in less diversity in training as well as lower quality in large parts of the country because all of the qualified teachers leave for schools in the city</li> </ul>

Sources: European Commission, 2016a, ReferNet, 2017.

There are additional issues in the construction sector that also contribute to the low popularity of apprenticeships and include the following (Interview, Mereuta, 2017):

- Young people are not attracted to professions in the construction sector due to poor working conditions and low salaries.
- In-company training methods are not well developed within construction companies therefore companies avoid taking up apprentices.
- There is a lack of a qualified workforce in the construction sector that could provide adequate training services.

- The majority of companies are not interested in investing in the professional training of young people as they offer higher salaries for those workers who are already better trained. In addition, companies doubt whether young workers in the midst of their training will be as loyal to the company as full-fledged workers.

One of the biggest challenges in Romanian VET remains the lack of know-how when it comes to applying novel training methods or introducing novel construction techniques. A lack of accessible training materials sometimes even leads to situations where new technologies are used incorrectly (Interview, Mereuta, 2017). A notable problem that relates to this challenge is low adult participation in lifelong learning. In 2015, the rate of adult participation in lifelong learning in Romania was only 1.3% - the lowest in the EU. Bearing in mind that many pupils often do not gain the necessary skills at schools, developing continuous VET for adults is an important aspect in Romania in order to ensure an adequate supply of skills. Furthermore, training older workers is crucial for strengthening in-company training capacities and is therefore necessary for enhancing apprenticeships in Romania (Interview, Abos, 2017).

### ***ACP: Introducing novel construction techniques***

The CertCraft project in Romania was mainly targeted at adult learning and also tried to involve local VET providers. ACP believes that one of the key problems with apprenticeships in Romania is the lack of in-company tutor skills. Thus, according to ACP, targeting workers in companies may have more far reaching effects.

The first talks regarding the CertCraft project began in December 2013. However, due to several hold-ups, project activities were postponed, but eventually took place in September 2015. This project was a one-off effort by ACP to introduce novel techniques to workers in the construction sector regarding energy performance in buildings. ACP developed and organised two training modules, namely the Passive House Craftsmen Course (PHCC) for new buildings and a similar course that trained workers to improve the energy performance of already existing buildings. The courses met the European standard for continuous vocational training (ECVET) and participants received personal certification according to the ISO 17024 standard.

### **Activity 1: Development of the Passive House Craftsmen Course (PHCC) for new buildings.**

This course was designed to inform workers about the theoretical principles of energy efficient buildings and to train them to apply these principles through practical tasks. The theoretical part included learning about the various elements that may have an effect on the energy efficiency of a building, such as the materials being used, environmental conditions and seasonal changes. The practical part consisted of learning how to install important elements in passive house constructions: window and door installation, air tightness standards etc.

ACP was responsible for the development of the Passive House Craftsmen Course (PHCC). ACP received the original learning manual for PHCC from its Austrian and Hungarian project partners in the German and Hungarian languages, as the partners were the first to organise this course. ACP translated the manual into Romanian and extended its content to include the best as well as flawed practice examples of locally built passive houses<sup>180</sup>.

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<sup>180</sup> Local examples found in various cities such as Timisoara, Cluj-Napoca, Bucharest.

## **Activity 2: Development of a training module for the thermal renovation of existing buildings.**

This activity was similar to **Activity 1** insofar as it was a course that was designed to inform workers about the theoretical principles of energy efficient buildings and train them to apply the principles. Yet, this course had a special focus on building refurbishment and was oriented towards renovation rather than new construction. The same elements, such as door and window installation, ensuring air-tightness standards as well as choosing the right materials, remained important.

ACP also included a theoretical manual for the thermal renovation course, as the original PPHC version (see Activity 1) only addressed the construction of new passive house buildings. The complete manual could be distributed amongst company workers and VET providers upon need (Interview, Abos, 2017). In addition, ACP installed a temporary workshop to carry out all the activities.

## **Activity 3: Practical adaptations of national and EU frameworks to nZEB construction.**

In order to implement the EU 2020 climate and energy package targets<sup>181</sup>, EU Member States must adapt the current state of their buildings to fit within the established guidelines for sustainable construction<sup>182</sup>. However, the specific requirements for nZEBs in Romania had not been established before the start of the project. Therefore, by carrying out Activities 1 and 2, the project organisers were simultaneously seeking to reach the target of providing practical clarification regarding the specific EU-level requirements for nZEBs in Romania (Interview, Abos, 2017).

The main **target group** of the project were medium level craftsmen in the construction sector, especially masons, carpenters and heating and electrical contractors. However, as the project organisers had difficulty in finding interested participants from the narrow construction sector, architects and engineers who are directly involved in building construction were also included.

The main **success factor** of the project was the practical aspect of the training modules and the highly applicable character of the training modules. The participants were strongly motivated to learn skills that they could later use in their workplaces. ACP identified the following **challenges** for the implementation of their project (Interview, Abos, 2017):

- ACP had difficulties in finding participants for the project because very few workers in the construction sector in Romania are aware of energy efficient housing. Furthermore, even if some workers are aware of the issue, they are relatively uninformed about the benefits of such housing as well as the overall environmental impact of energy efficient buildings. The only available means for ACP to tackle this issue is to continue promoting the passive house standard and to keep on raising awareness about energy efficient buildings and renewable energy sources in Romania.
- ACP members participated in this kind of a project for the first time. The members were new to organising activities of this scale and therefore found the entire process rather challenging. However, with additional experience, this challenge ought to disappear.

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<sup>181</sup> The 2020 climate & energy package is a set of binding legislation that sets three key targets: (1) 20% cut in greenhouse gas emissions; (2) 20% of EU energy from renewables; (3) 20% improvement in energy efficiency (European 20-20-20 targets). For more information, see at: [https://ec.europa.eu/clima/policies/strategies/2020\\_en](https://ec.europa.eu/clima/policies/strategies/2020_en).

<sup>182</sup> Following the Energy Performance of Buildings Directive (2010/31/EU), all EU countries must set minimum energy performance requirements for new buildings, for the major renovation of buildings, and for the replacement or retrofit of building elements. Each country had to calculate the cost-optimal minimum energy performance requirements for new as well as existing buildings in their territory. For more information, see at: <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>.

The project has had a positive **impact** on the main target group, namely medium skill level craftsmen. Project managers received positive feedback from most participants, who said that all of the knowledge provided within the two courses was very useful in terms of its applicability to their work in the construction sector. Furthermore, participants reported that many of them will now be able to offer a wider range of services by their companies and, as a consequence, bring innovation to the construction sector in Romania. In addition, these workers are now able to teach these courses to apprentices, thereby disseminating their newly-gained knowledge and skills. A 300-page learning manual from the training modules was also made publicly available (Interview, Abos, 2017).

ACP believes that it would be very useful to use the project outputs in VET schools that train for various professions in the construction sector. However, their attempt to include local VET schools met many obstacles:

- The management of VET schools is centralised in Romania and therefore introducing innovative practices to VET schools is not within the power of the schools themselves, even if some schools would welcome such changes.
- VET schools often lack space for workshops and do not have sufficient financing to install the required equipment. Construction companies generally do not invest in vocational schools as they either lack the financial means themselves, or, alternatively, do not see the benefits in doing so.
- Many teachers are not at all aware of energy efficient housing and therefore are neither able to introduce it to schools, nor able to convince government officials who are responsible for the curricula to acknowledge the relevance of energy efficient housing (Interview, Abos, 2017).

ACP had all of the necessary **resources** to implement the initial CertCraft project. The project was funded by the Leonardo da Vinci programme under the European Lifelong Learning Programme<sup>183</sup> while the content of the project was developed in cooperation with project partners. In terms of human resources, ACP had enough members who were willing to assist in the project. However, for ACP to continue extending the project activities, the following needs ought to be addressed: (1) financial assistance to purchase learning materials and (2) space for establishing permanent workshops. The second element is especially important, as it would ensure stable conditions where many workers as well as VET pupils could be continuously trained.

### ***Conclusions and recommendations***

The initial CertCraft project has been successful in reaching the main target group and introducing medium skill level craftsmen to novel construction techniques. However, the main target, namely the introduction of practical know-how when it comes to implementing EU building and energy efficiency guidelines, remains a challenging issue in the Romanian construction sector. Given the situation, ACP would like to extend its project activities to construction companies and VET providers on a routine basis. In 2016, some of ACP's members successfully introduced the project activities to several companies in the construction sector. The following key points of this case study are worth emphasising:

- The construction sector in Romania is facing skill shortages, especially in energy efficient building construction and renovation. If these labour demands are to be successfully met, more efforts ought to be invested in improving Romanian VET in the construction sector.
- Setting up permanent workshops that include all training equipment would greatly benefit both construction companies and VET providers as this would

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<sup>183</sup> See more at: [http://ec.europa.eu/education/lifelong-learning-programme\\_en](http://ec.europa.eu/education/lifelong-learning-programme_en).

allow workers and VET pupils to acquire the necessary skills and become familiar with novel construction methods on a routine basis. This would set up continuity in introducing innovative training practices, currently lacking in the Romanian construction sector.

- Introducing novel construction techniques to VET providers is challenging, as most trainers and company workers are uninformed about such innovations. ACP chose to focus on the training of adults, as conditions for introducing innovations to the construction sector are virtually non-existent. This approach to the issue works on enabling the necessary foundation for any further actions regarding VET in the construction sector.
- Given the fact that most VET providers lack the necessary training materials, developing new training tools is very important and may be considered to be a helpful practice. The training manual developed by ACP can be regarded as an exemplary case insofar as it presents a systematic tool for training both company workers and VET pupils.

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## AGENCE DE L'ENVIRONNEMENT ET DE LA MAITRISE DE L'ENERGIE (ADEME) (INNOVATIVE TRAINING PLATFORM)

### Introduction

The French Environment and Energy Management Agency (fr. *Agence de l'Environnement et de la Maitrise de l'Energie*, ADEME) is a public institution, supervised by the French Ministry of Ecology, Sustainable Development and Energy and the Ministry of Higher Education and Research. Its main goal is to facilitate the energy transition towards green growth and environmental sustainability. ADEME operates as a consultative body and enables stakeholders to implement energy and environmental policies in France. Its activities include: (1) organising and financing research and innovation in environmental policy, (2) providing expert advisory services in energy policy, (3) carrying out awareness-raising campaigns and (4) assisting in the implementation of energy policies on both the national and regional levels.

The most recent energy and sustainable development policies in France carry strong implications for the construction sector. The *Grenelle de l'Environnement*<sup>184</sup> measures (see Section 1), complemented by the EU 2020 energy and climate objectives, establish that energy consumption for existing buildings ought to be decreased by 38%, while new buildings must meet the latest energy performance regulations. Successful implementation of these policies requires a skilful application of innovative building techniques and demands new competences from workers in the construction sector. Given the situation, ADEME developed the PRAXIBAT® technical and educational platform in order to train craftsmen, in-company tutors, apprentices, VET pupils, architects, job seekers and trainers in energy-efficient building construction.

The PRAXIBAT® training platform is a technical workshop that was one of the earliest systematic stakeholder initiatives within the French construction sector to introduce energy performance construction to multiple target groups. By setting-up the PRAXIBAT® training platforms, ADEME essentially aims to improve skills related to energy performance. This initiative comprises three key activities (see Table below).

**Table 23: Targets and corresponding activities by ADEME**

Targets	Corresponding activities
<b>Target 1:</b> Improve skills related to energy performance amongst craftsmen, in-company tutors, apprentices, VET pupils, architects, job seekers and trainers.	<b>Activity 1:</b> Develop courses in energy efficiency for continuing vocational education and training (CVET) and initial vocational education and training (IVET) learners <b>Activity 2:</b> Set up energy-efficiency building simulation sites all over France

Source: Interview, Forestier, 2017.

The aims of this case study are to:

- Present an overview of recent French energy policies that affect the construction sector and lead to new educational demands in the construction sector.
- Showcase the PRAXIBAT® initiative by ADEME within the context of the most recent training needs in the construction sector.

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<sup>184</sup> The Grenelle de l'Environnement (en. Grenelle Environment Round Table) was a debate that brought together various stakeholders to prepare a plan of action that aims to tackle environmental issues.



## Country context

In 2007, the French government launched a debate that brought together both state and non-state actors<sup>185</sup> in order to define the main elements of public policy on sustainable development. This debate, also known as the *Grenelle de l'Environnement*, resulted in two laws, namely the *Grenelle I Law* and the *Grenelle II Law*<sup>186</sup>. The first law (*Grenelle I Law*) sets out the more general objectives related to climate change and energy, while the *Grenelle II Law* presents further clarifications of the objectives and concrete actions needed to implement them. Considering the fact that the building sector accounts for more than 40% of all energy consumption and generates more than 20% of all greenhouse emissions in France, a large share of the *Grenelle de l'Environnement* provisions were directed specifically towards the energy performance of buildings. The *Grenelle Sustainable Building Plan*<sup>187</sup> sets the following key goals for sustainable construction (ECSO 2016):

- Reduce the energy use of existing buildings by 38% by 2020
- Renovate social housing to make it more energy-efficient
- Renovate all public administration buildings to reduce their energy use by 40%
- Develop positive energy buildings by 2020
- Support stakeholders in facing challenges in terms of recruitment, training and industrial development.

This plan is complemented by the Heating Regulation 2012 (fr. *Réglementation Thermique 2012*, RT2012) that is related to the *Grenelle I Law*. Its main objective<sup>188</sup> is to limit the primary energy use of new buildings to an average maximum of 50 kWh/m<sup>2</sup> per year. This objective is based on three indicators, each of which has a maximum value that should not be exceeded (Kyos Ingénierie, 2017):

- Bbio (Fr. *Besoin BioClimatique*) is the bioclimatic building energy performance indicator, which helps to optimise the orientation, the use of sunlight, the insulation and the inertia and compactness of the building.
- CeP (Fr. *Consommation d'énergie Primaire*) is the building primary energy use indicator, which takes into account heating, hot water production, air conditioning, lighting and additional elements such as ventilation.
- TiC (Fr. *Température Intérieure de Consigne*) is the interior conventional temperature indicator, which translates to the concept of summer comfort. For a total of five consecutive warm summer days, this indicator cannot exceed 26°C.

Achieving these targets requires most construction professionals to acquire new competences and skills. Many workers from all levels of construction are not prepared to work with innovative installation techniques, energy performance issues or the RT2012 standards. Vocational education and training (VET) providers are therefore facing the challenge of adapting training curricula to include training in sustainable construction, both within the framework of initial and continuing vocational education and training programmes (ECSO, 2016).

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<sup>185</sup> The debate was initiated by former president Nicolas Sarkozy and brought together state representatives, NGOs dealing in environmental issues, social partners and local community actors. For more information see: <http://www.connaissancedesenergies.org/fiche-pedagogique/grenelle-environnement>.

<sup>186</sup> Grenelle Law I, LOI n° 2009-967 of 3rd August, 2009. See more at: <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000020949548>; Grenelle Law II, LOI n° 2010-788 of 12th July, 2010. See more at: <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000022470434>.

<sup>187</sup> The Sustainable Building Plan (Fr. *Le Plan Bâtiment Durable*) was originally launched in February 2009. For more information see: <http://www.planbatimentdurable.fr/objectifs-r115.html>.

<sup>188</sup> The RT2012 includes the following additional objectives: (1) support innovation for all actors of the broad construction sector; (2) reach the highest energy efficiency standards, regardless of the energy system used; (3) ensure a technical and economical equilibrium with regard to the energy used for heating and hot water production (ECSO, 2016).



## ***French apprenticeship systems in the construction sector***

Apprenticeships in the construction sector in France have a long history and are a standard practice<sup>189</sup>. However, training for sustainable construction is a relatively new development and, as a consequence, most VET providers are unable to meet all of the challenges that such training entails. Several issues remain to be addressed (Interview, Boiteux, 2017):

- *Abundance and diversity of new themes.* There are many new themes that ought to be included in VET on sustainable construction such as natural materials, ecological sanitation, solar panel installation, double-flow ventilation, etc. Developing training in sustainable construction therefore requires an assessment of the importance of each theme and the development of training modules in accordance with training needs.
- *Lack of novel pedagogical approaches.* Seeing as most training content is fundamentally new and functions within a different conception of construction, it also requires innovative training methods. However, these methods are not being adequately developed due to a lack of time for a sufficiently systematic preparation and a shortage of awareness regarding the necessity for developing such training methods. Trainers also lack the means to exchange new pedagogical methods and exercises and, as a result, there is a shortage of accumulated know-how on good practices in the area.
- *Lack of time allocated to novel topics of sustainability in training.* Class hours are limited and are mostly reserved for standard themes in construction. Integrating new materials and techniques is therefore limited to their sporadic introduction into pre-existing courses. This means that training in sustainable construction lacks a coherent presentation within training on the overall building system.
- *Lack of qualified trainers.* Currently, there are a limited number of trainers who are sufficiently qualified to offer courses in sustainable construction.
- *Need for multidisciplinary training.* There are many secondary topics that relate to high quality training in sustainable construction such as efficient construction design, environmental impact, building maintenance, economic and social impact etc. Trainers must be aware of these interlinked elements and include these aspects in training accordingly. While this type of training is more general, it is nonetheless important for apprentices to gain this knowledge because it helps them to better understand the context within which they carry out their tasks.
- *Need for cross-craft understanding.* Similar to multidisciplinary training (see bullet point above), cross-craft understanding is relevant to sustainable construction since it helps apprentices to become familiar with the team within which they are working, acquire collaboration skills and learn how their own work affects the work of others.

An important challenge in sustainable development remains the lack of dialogue between different stakeholders, such as decision makers, project managers, consultants and professionals. This is best illustrated by a discrepancy that exists between political intervention and training needs (see Box 1 below). Most importantly, professionals who are responsible for developing training tools in sustainable construction need to collaborate with policy makers in establishing innovative methods in order to achieve long-lasting technical solutions. Furthermore, SMEs, which dominate in the French construction sector, find continuing training for sustainable

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<sup>189</sup> For more details, see the following case studies: *Comité de concertation et de coordination de l'apprentissage du bâtiment et des travaux publics (CCCA-BTP) (Training of trainers)* and *Fédération Nationale des Travaux Publics (FNTP) (Supporting financing of apprenticeships)*.

construction too expensive and therefore rely on collective organisational efforts such as national professional bodies or similar organisations to introduce this type of training (Interview, Forestier, 2017). The PRAXIBAT® training tool is a response by ADEME to all of these concerns.

### **Box 1: Comment by L. Boiteux on the discrepancy between political interventions and training needs**

Unfortunately, there is a discrepancy between political interventions and actual training needs in sustainable construction. This discrepancy is characterised by a fundamental tension between the two types of thinking about these issues:

- The conventional way of thinking in our society proceeds via causal reasoning. That is to say, we believe that there is a cause, we analyse this cause and we look for ways to fix it. This is perfectly normal and we should continue to do so. However, political and strategic decisions largely rely on this type of reasoning that requires setting quantitative targets in order to better define certain targets to verify the results of our actions. Such agreements as Agenda 21, the Rio Declaration or the Kyoto Protocol are perfect examples of this. The construction sector in France also operates according to this logic, exemplified by the RT2012, a recent regulation in France that limits the primary energy use of buildings to an average maximum of 50kWh/m<sup>2</sup>. We set quantitative targets for every instance that we are able to. Thus, we tend to prioritise the issues in energy consumption or carbon emission that have clearly established targets. However, areas like biodiversity or public health remain of secondary importance as their outcomes cannot be quantified nor quantitatively verified.
- However, there is another logic that is different (and complementary) to causal reasoning but it requires us to modify our standard ways of thinking. It is often used, albeit inconsistently, by apprentices, craftsmen and entrepreneurs, by large employers, successful start-ups or even companies such as Google. This is what is known as effectual logic. This logic is based on the assumption that we do not attempt to measure our accomplishments according to clear-cut targets. For example, today I am working with the people with whom I feel good, I am trying to do my best and all I am asking of them is to do the same. We are trying to achieve the best possible results with the means that we have at our disposal without setting any quantitative targets. This way of working allows apprentices to produce high quality output without having to justify their actions in advance, as quantitative targets always require their prior justification.

The issue is that the new generation does not understand quantitative targets: why, they ask, do we need to meet the 50 kWh/m<sup>2</sup> target and not 49 or 51? Their minds are not set to such targets, but rather on the willingness to do something and to do it well. This is a different culture of doing things and this culture should be more valued. Indeed, many actors in the sector are producing wonderful work, but cannot be evaluated in terms of these targets and are therefore not known to the wider public. Most professionals and their trainees are ready to achieve superb things, but the objectives imposed on them stop them from achieving these things at their own initiative. Thus it is necessary to consider integrating effectual logic into our conventional strategies of developing training in the construction sector in order to help each pupil work to the maximum of his/her abilities within a global framework.

Source: Interview, Boiteux, 2017.

### **ADEME: Innovative training tool**

ADEME began developing the PRAXIBAT® training platform in 2007. The original idea was to organise training for energy efficient construction directly on building sites but this was too inconvenient due to health and occupational safety regulations or the limited availability of such sites. Therefore, ADEME came up with an alternative and developed a stationary training platform. This training platform is a compact workshop

with training equipment that aims at simulating an actual construction site (see Figure 1). It enables trainees to become familiar with novel materials and building techniques through direct hands-on practice. These types of workshops have been set up all over France (see Figure 2). The training platform was also presented within the context of the BUILD UP Skills initiative's Pillar I projects in Ireland and Luxembourg<sup>190</sup> as a good practice example (Interview, Forestier, 2017).

**Figure 1: PRAXIBAT® training platforms**



Source: Acuna Consultants, Alphéïs (2017). PRAXIBAT® La newsletter mensuelle!, Lettre d'information No 12, Février 2017.

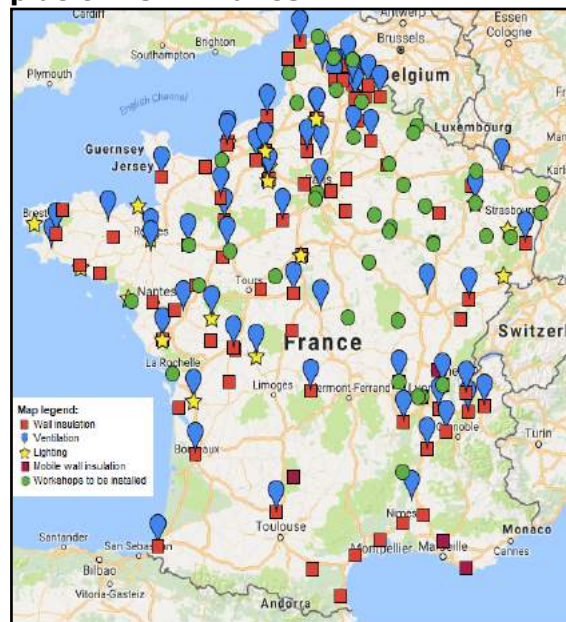
More particularly, the actual PRAXIBAT® training platforms are an innovative training tool that enables ADEME to (Loaëc, 2016):

- Provide professionals with a comprehensive training tool in energy efficient construction techniques
- Provide trainees with hands-on practical training and encourage the exchange of best practices
- Provide training sites that are locally accessible to trainees in different locations and which may offer homogenous thematic training modules.

Establishing the PRAXIBAT® training platforms required ADEME to undertake three separate activities.

**Activity 1: Develop courses in energy efficiency for continuing vocational education and training (CVET) and initial vocational education and training (IVET) learners.**

**Figure 2: The PRAXIBAT® training platforms in France.**



Source: Acuna Consultants, Alphéïs (2017). PRAXIBAT® La newsletter mensuelle!, Lettre d'information No 12, Février 2017

<sup>190</sup> Projects: BUILD UP Skills QualiBuild and BUILD UP Skills LuxBuild2020. For more information see: <http://www.buildup.eu/en/skills/bus-projects/IE> and <http://www.buildup.eu/en/skills/bus-projects/LU>.

ADEME has developed four modules that centre on a major theme of energy efficiency - airtightness. These modules focus on: (1) wall insulation, (2) ventilation systems, (3) energy efficient lighting and (4) carpentry. The modules, with the exception of carpentry<sup>191</sup>, are available on the PRAXIBAT® training platforms (see Figure 1 for details). Training takes three days for each module and trainees may choose which modules to attend. Due to the extensive complexity of the training modules and the lack of time allocated for training, CVET modules may be simplified and adapted to IVET pupils' needs. Extensive training manuals are available for the modules. They indicate the possible ways on how to set up the working space within the workshop, how to present the materials and their features, and how to install the different technical objects (ADEME, 2016).

### **Activity 2: Set up energy-efficiency building simulation sites all over France.**

There are very few building sites where skills in energy efficient construction may be acquired through hands-on training because such construction is still in the development stage. However, as most materials and techniques are still new, many workers do not have the required skills. Theoretical learning is insufficient to adequately familiarise target groups and prepare them for practical work in sustainable construction. Therefore, ADEME has set up numerous PRAXIBAT® training platforms across France that simulate actual building sites. These platforms were mainly set up in vocational schools, training centres (fr. *Centre de formation par apprentissage*, CFA) or other locations provided by local actors. The platforms contain a catalogue of many new materials and equipment used in energy efficient buildings. By experimenting with various materials, apprentices learn to work in diverse construction environments and gain a more in-depth understanding of the operational principles behind different elements.

### **Activity 3: Train the trainers in energy efficient building construction.**

Training in energy efficient construction requires trainers to be familiar with all of the materials, equipment and training methods. However, just as most workers are unfamiliar with multiple aspects of sustainable construction, trainers are also not yet acquainted with these aspects. ADEME trains a number of trainers each year (depending on how many are needed for new platforms) who then deliver training modules on the PRAXIBAT® training platforms for apprentices. These trainers are also required to learn and apply the principles of interactive pedagogy. This aspect is very important, as practical training is one of the key benefits of the PRAXIBAT® training platforms. The training of trainers takes five days, after which the trainers receive training certificates. Occasional meetings between trainers are held where trainers discuss training issues and exchange best training practices.

As already mentioned, ADEME tries to systematically engage multiple **target groups** in the construction sector, namely blue-collar workers, craftsmen, in-company tutors, apprentices, VET pupils, architects, job seekers and VET trainers. The qualitative **impact** on these target groups is currently too early to determine since ADEME has not yet carried out any systematic performance measuring campaigns. However, in terms of quantitative impact, ADEME has achieved the following results (Acuna Consultants, 2017):

- Set up 166 PRAXIBAT® training platforms across France
- Trained 832 trainers to provide training modules and maintain the PRAXIBAT® platforms
- Trained 3,599 trainees, 44% of which were apprentices in the construction sector

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<sup>191</sup> The carpentry module is not considered a priority and therefore it is seldom made available on PRAXIBAT® platforms for the time being.

## Box 2: L. Boiteux's (a PRAXIBAT® trainer) comment on the PRAXIBAT® training platform

The PRAXIBAT® training platform is a high quality tool that allows stakeholders in sustainable construction training to:

- Develop best practices on construction and renovation sites
- Initiate meetings and dialogue between construction professionals on a 'neutral' ground
- Understand the operational capacity of construction materials and techniques, and discover their limitations in a hands-on, direct working context
- Learn about the operational and pragmatic aspects of multiple elements in sustainable construction.

Currently, it has only one drawback: the trainees are taught to solve certain problems that would not exist at all if building in sustainable construction was conceived of and organised in a more coherent way. In other words, this tool should evolve to help trainees understand that their tasks could be easier by bringing a more conceptual and systematic approach to construction. Actors need to collaborate and bring a more holistic approach to sustainable construction. This would allow them to avoid common mistakes, reduce working time and costs, and facilitate the completion of many on-site tasks. Seeing as this tool was conceived to be adaptable to evolution and changes, I am sure that this aspect will soon be taken into account.

Source: Interview, Boiteux, 2017.

Both **financial and human resources** were sufficient for all of the activities by ADEME in setting up and maintaining a network of PRAXIBAT® training platforms. ADEME began with a small pool of trainers that gradually increased and currently forms a solid foundation for the maintenance of PRAXIBAT® training platforms across France. In terms of financing, up until this moment in time, PRAXIBAT® had received adequate support from regional councils and regional divisions of ADEME<sup>192</sup>. Both the councils and the divisions each contributed 50% to the PRAXIBAT® costs. However, ADEME runs another training programme, known as the FEE Bat<sup>193</sup>, which receives financial support from the EDF<sup>194</sup> through the Energy Savings Certificate (Fr. *Certificat-Economies-Energie*, CEE)<sup>195</sup>. Seeing as the PRAXIBAT® training platform complements this programme, starting from 1<sup>st</sup> January 2017, PRAXIBAT® will also be financed from the same source. This is an important development insofar as it will allow maintaining the technical and material resources of the PRAXIBAT® platforms (Interview, Forestier, 2017).

The main **success factor** that simplified the process of setting up the PRAXIBAT® training platforms was the willingness and support received from local actors. Regional divisions of ADEME engaged with regional councils, local communities, professional organisations and local vocational training institutions while coordinating the setting up of PRAXIBAT® training platforms. Most stakeholders agreed that there was a need for this type of training and they were motivated and willing to cooperate during the implementation process (Interview, Forestier, 2017). The main **challenge** identified

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<sup>192</sup> ADEME is affiliated with the French Ministry of the Environment, Energy and the Sea and the Ministry of Higher Education and Research and therefore it receives governmental funds for carrying out its activities.

<sup>193</sup> The FEE Bat initiative is a programme that offers traditional classroom-based training modules in energy efficient construction and thermal renovation. For more information see: <http://www.feebat.org/dispositif-feebat>.

<sup>194</sup> The EDF Group is an electric power company based in France. It is a global leader in low-carbon energy production, including nuclear, thermal and renewable energy production. For more information see: <https://www.edf.fr/>.

<sup>195</sup> The Energy Savings Certificate (ESC) (Fr. *Certificat-Economies-Energie*, CEE) is an environmental policy measure available in several European countries, including France, which certifies that an energy saving action has been successfully carried out either by a company, an individual or a public authority.

by ADEME was the difficulty in negotiating and convincing some professional organisations of the need to introduce training in sustainable construction. These organisations were initially rather sceptical towards the PRAXIBAT® training platforms as they were unsure about how beneficial this training would be (Interview, Forestier, 2017).

The following further **needs** were said to be important to the further development of the PRAXIBAT® training platforms (Interview, Boiteux, 2017):

- Need for more extensive communication about issues in sustainable construction training and the PRAXIBAT® training platform
- Revision of pedagogical tools and a constant review and update of professional practices.

### ***Conclusions and recommendations***

ADEME has been continuously working towards advancing VET in sustainable construction and will continue in its efforts for as long as such education remains relevant. The PRAXIBAT® training platforms provide target groups with the necessary space and means for hands-on training and, for the time being, remain an indispensable systematic training tool in energy-efficient construction in France. The most important elements which condition PRAXIBAT® platform's success are the following:

- Cooperation between multiple stakeholders at the local, regional and national levels, and stakeholder motivation in introducing this type of training were identified as the main success factors in setting up the PRAXIBAT® training platforms all over France
- Sufficient financing and sufficient human resources enabled ADEME to successfully launch and maintain the PRAXIBAT® initiative. Financial resources enabled ADEME to provide the platforms with necessary materials and equipment, while human resources were important for organising the setting up of these platforms on a local level
- A clear identification of problem areas in sustainable construction is paramount to delivering effective solutions. ADEME developed PRAXIBAT® training platforms as a straightforward response to the problem areas it found most in need of addressing.

Despite the PRAXIBAT® platform's success, a few issues in training for sustainable construction remain to be addressed, the most significant of which is the lack of a multidisciplinary and holistic approach to education in the construction sector. This type of training would benefit apprentices insofar as it could provide them with a more conceptual understanding of a construction site, enable them to develop a more flexible range of skills and, furthermore, foster responsibility towards their chosen occupation. However, reforms of this kind require more extensive efforts and will take much longer to develop and implement.

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## BOUWEND NEDERLAND: VAKGROEP OPLEIDINGSBEDRIJVEN (INITIATING STRUCTURAL CHANGE TO APPRENTICESHIPS)

### Introduction

Bouwend Nederland is an employers' organisation that links together 4,300 large, medium and small-sized enterprises in the construction sector and represents their interests. The organisation provides various services (legal advice, support on issues regarding day-to-day business operations, etc.) to its members. It operates at local, regional, national and European levels. Bouwend Nederland emphasises the significance of investment in cooperation between companies, education and training institutions and training companies. As a result, Bouwend Nederland partly subsidises a sector-specific branch within its organisation, namely the department of training companies.

The Vakgroep Opleidingsbedrijven (en. *The department of training companies, VO*) is a branch-specific group of Bouwend Nederland that is responsible for managing the interests of training companies in the construction sector and promoting the exchange of industry-specific knowledge. The group systematically coordinates and manages vocational education and training (VET) in the sector by working closely with its training companies. Currently, there are 44 training companies that belong to this group. VO has its own managing personnel, responsible for the general agenda and activities of the whole group.

VO was set up in 1985 and ever since then it has been systematically working towards ensuring that VET in the construction sector matches labour market demands. Due to multiple factors such as technological development and societal change, in 2012, VO decided to initiate significant reforms in training in the construction sector. The group believes it is important to increase the flexibility of training pathways, offer training that is linked to innovations in the sector and help trainees develop social skills. Given these needs, VO has been encouraging its training companies to organise VET under a new training structure centred on four main pillars (see Table below).

**Table 1: Targets and corresponding activities of VO**

Targets	Corresponding activities
<p><b>Target 1:</b> Help pupils training for professions in the construction sector achieve a diploma with labour market relevance</p> <p><b>Target 2:</b> Increase flexibility of alternation between classroom learning and training at the workplace</p>	<p><b>Pillar A: Talent Development and Career Coaching.</b> Orienting apprentices towards a long-term career perspective through counselling and continuous supervision</p> <p><b>Pillar B: Craftsmanship.</b> Introducing a change in perspective on what craftsmanship entails through cross-craft and project-oriented training</p> <p><b>Pillar C: Contextual Environment.</b> Ensuring a technologically updated training environment by providing adequate training facilities;</p> <p><b>Pillar D: Professionalisation.</b> Ensuring VET trainers possess the adequate knowledge and skills to train apprentices</p>

Source: Interview, van Lieshout, 2017

This case study aims to:

- Present an overview of the key features of the construction sector and the apprenticeship system in the Netherlands.
- Present the apprentice training structure developed and used by most VO companies.

## **Country context**

The Dutch construction sector was heavily affected by the financial crisis: production fell by 22.4% and investment in construction declined by 28.7% between 2008 and 2014. However, the sector has been slowly gaining momentum since 2014. The main factors driving its recovery are low mortgage rates for private housing and the rising incomes of the Dutch population. While the housing market experienced a fall in demand during the crisis, this is no longer the case, as the country is expected to face serious housing shortages by 2020. Furthermore, the government has ambitious plans for improving the quality and energy performance of the Dutch housing stock. These plans consist of financing renovation works and providing subsidies for programmes that benefit energy-saving incentives. Such developments are foreseen to boost construction activity and contribute to its recovery. The sector's most recent growth rate already exceeds that of the overall Dutch economy and is projected to continue to grow (ECSO, 2016).

In 2013, the Dutch construction sector employed approximately 8% of the total workforce. During the financial crisis, approximately 12% of people working in the sector lost their jobs. However, given the sector's recovery, many companies are now facing skill shortages. The following issues are currently hindering the sector from using its maximum development potential (ECSO, 2016):

- *An aging population.* From 2008 to 2015, the share of workers aged over 55 in the construction sector increased from 16% to 20%. However, the share of young workers aged below 24 during the same time period decreased from 15% to 9%. In the upcoming years, many workers are foreseen to retire, which will lead to a loss of knowledge, skills and labour shortages in the sector since the retirees are not being replaced by a younger generation of workers at the same rate.
- *Rapid technological advancements.* Many workers are unprepared for rapid technological advancements in the sector as they lack the skills necessary for working with new materials and equipment. This is especially relevant for the construction of energy-efficient buildings that rely on innovative construction practices. While the Netherlands are particularly advanced in the domain of sustainable construction and have developed an ambitious policy framework for energy-saving, the further success of this strategy depends on a thorough upskilling of its labour force.
- *Low number of learners interested in the sector.* The number of learners willing to follow a career in the construction sector has been rapidly decreasing. The share of learners in some professions, such as bricklayers, roofers and plasterers, saw a decline of almost 70% in the period between 2008 and 2014. The reasons behind this decline are two-fold: 1) SMEs are paying lower salaries both to apprentices and permanent workers due to high social costs and 2) VET in the construction sector is too theoretical, therefore lacking in sufficient hands-on experience that can later be applied to jobs available on the labour market.

Overall, the Dutch construction sector needs to make VET its main priority in order to meet growing labour shortages.

## **Dutch apprenticeship systems in the construction sector**

VET in the Netherlands has a long history with four major periods of development. The first period spans from 1850 to 1921 when the first laws that regulate VET came into force and the first private VET schools were founded. During the second period, two significant developments took place: in 1921, the Industrial, Technical and Domestic Education Act (nl. *Wet op het nijverheidsonderwijs*) entered into force, setting out the first provisions for the apprenticeship system. In 1969, it was followed by the

Apprenticeship Act (nl. *Wet op het leerlingwezen*) that provided apprenticeships their own legal base. The third period lasted from 1969 until 1996, during which the major focus of new legislation shifted towards higher professional education. Higher VET received separate legislation and became independent from the constraints imposed upon it by secondary education. Finally, the last period, which spans from 1996 until today, saw the development of the work-based training component. It became possible to achieve the same level qualification by following a learning pathway that did not include as much general education as previously required (van der Meer, Smulders, 2014).

Currently, the main initial VET tracks are offered at the upper secondary school level (nl. *middelbaar beroepsonderwijs*, MBO) for persons aged 16 and above. This type of education combines learning at a general education school and training at a specialised training company. Within the MBO, there are four levels of training available. Level two is considered basic vocational education (nl. *basisberoepsopleiding*) and is the official minimum entry requirement for entering the labour market. Most pupils, however, are encouraged to continue training and learn to carry out tasks more independently (MBO level 3), or, in addition to independent craftsmanship, achieve specialist training (nl. *specialistenopleiding*) and train for middle-management tasks (MBO level 4). MBO graduates who have completed all four levels of training may choose to continue their studies in higher professional education (nl. *hoger beroepsonderwijs*, HBO). About 50% of pupils opt for this option.

There are two types of training pathways available at the MBO (van der Meer, Smulders, 2014):

- The *Vocational Education Pathway* (nl. *beroepsopleidende leerweg*, BOL), which is mainly school-based. On average, the apprentice spends four days at school and one day training at the workplace. The pupil does not train at an actual enterprise, but at a specialised training company and does not earn a salary. Sometimes he/ she may receive an internship fee. The pupil has the legal status of a student and is therefore eligible for a study grant. The pupil's travel expenses are also covered under this pathway.
- The *Vocational Guidance Pathway* (nl. *beroepsbegeleidende leerweg*, BBL), which is mainly work-based. On average, the apprentice spends one day at school and four days training at a training company or an actual enterprise. At work, the apprentice is supervised by an in-company tutor. The pupil has the legal status of an employee and receives a salary. Seeing as the apprentice receives a salary, he/she is not eligible for a study grant and his/her travel expenses are not covered.

Apprenticeships in the construction sector are considered standard practice and approximately 80% of pupils in the sector follow one of the two paths described above. Most companies see apprenticeships as the best way to find new employees. They have the opportunity to familiarise themselves with his/her strengths and weaknesses and can also observe whether a potential future employee is successful in adapting to the company's culture. Compared to other sectors, apprenticeships in the construction sector are better paid and all BBL apprentices receive employment contracts (Interview, Fiers, 2017).

Until 2012, apprenticeships in the construction sector were managed by a sectoral Centre of Expertise on VET and the Labour Market (nl. *Kenniscentra Beroepsonderwijs Bedrijfsleven*, KBB). Such sectoral centres had the task of developing the qualification structure for upper secondary VET and accrediting as well as monitoring the quality of training companies within different sectors across the Netherlands (Van der Meer, Smulders, 2014). However, under the sectoral KBB umbrella, the training companies did not need to be concerned with innovation as the construction companies were relatively satisfied with their training. The training companies within the sector also did not have to compete for learners based on their teaching quality. Most training institutions felt that such centres did not stimulate positive developments and thus,

given their lack of efficiency and lack of innovation, these centres were abolished and replaced by a single Foundation for Cooperation on VET and the Labour Market (nl. *Stichting Samenwerking Beroepsonderwijs Bedrijfsleven*, S-BB). The new single body, namely S-BB, is now responsible for the VET qualification structure, cooperation between VET and the labour market, and the efficiency of offered training programmes on a national scale (Van der Meer, Smulders, 2014). In addition to the structural reform, new financial arrangements were also introduced. Until 2014, companies training apprentices benefited from income tax reductions. However, since 2014, the Dutch ministry provides companies with subsidies of a maximum of €2,700 per year per apprentice. As such, training companies are no longer protected by the sectoral centres and must therefore compete for pupils who are then paid for by construction companies themselves (Interview, van Lieshout, 2017). Given these changes, companies prefer to invest in high quality VET and choose to finance the best training companies.

From 2008 to 2015, the total number of learners at the MBO level training for professions in the construction sector decreased by almost half. The numbers have stabilised since 2015, but nonetheless remain low. Apprenticeships in the construction sector are affected by the following issues (Interview, van Lieshout, 2017; Fiers, 2017):

- *Lack of project-based work.* Training in the construction sector occurs mostly when companies perform standard project-based work, e.g. building a single house. During the crisis, the number of projects went down significantly and therefore many pupils could not get sufficient experience working under the standard conditions within the sector.
- *Lack of flexibility in training.* Initial VET in the Netherlands is either more school-based (BOL) or work-based (BBL), but lacks a more balanced, middle-ground pathway that would allow pupils to combine general education and work-based learning in a more flexible way. For example, pupils cannot choose a path with a strong work-based training element while at the same time continuing with general education for more than one day per week. In addition, allowing pupils to combine work-based learning and general education would prepare them for hands-on training in a more gradual way.
- *Qualifications of VET graduates do not match labour market needs.* Apprentices are trained according to old curricula that are out of date both in terms of technical material and other relevant elements of training such as soft skills. The training content of VET in construction professions needs to be redeveloped if schools are to provide qualifications relevant to the labour market.
- *Lack of learners interested in technical professions.* Many pupils are not attracted to professions in the construction sector since, in addition to many other aspects such as a negative image of the sector, they are also not interested in following a highly technical career.

Given these issues, a group of training companies has been working towards introducing structural changes to apprenticeships in order to boost the accessibility and quality of VET in the construction sector. These changes are especially important due to significant labour shortages in the sector. Some training companies regret not taking action during the crisis because training apprentices then would have had great benefits now, as the sector is starting to recover (Interview, Fiers, 2017).

### ***The Vakgroep Opleidingsbedrijven: initiating structural changes to apprenticeships***

VO companies have been accumulating relevant experience and have been planning to introduce novel training strategies since 2002. However, as this takes time and effort, VO only actually began initiating structural changes to apprenticeships in 2012. Furthermore, as the Centres of Expertise were only abolished in 2015, some of the

structural changes only became feasible after their abolishment. Currently, only some of the changes have been followed-through on and only in some companies. Starting in September 2018, all of the changes initiated by VO are expected to be fully implemented. VO offers the following new elements within their training (Interview, van Lieshout, 2017):

- The standard training path requires an apprentice to spend a total of 30 hours per week learning and training. However, having a limited number of hours does not enable apprentices to reach their maximum potential and achieve not only a branch-relevant diploma from the training company, but also a general education diploma that is valued outside the construction sector. VO therefore offers more intensive training pathways that require apprentices to spend 40 hours per week learning and training. This is done in close collaboration with general education schools.
- VO has developed a four-pillar structure in order to tackle some of the issues that have emerged over recent years and to help training companies evolve and offer better services. The four pillars operate as a guiding structure for further training activities.

### **Pillar A: Talent Development and Career Coaching**

This pillar is intended to help apprentices make better choices regarding their education and career paths. Under this pillar, training companies are committed to offering continuous coaching services throughout the entire period of training. VO believes that three to four years of MBO-level training is insufficient to train apprentices in becoming mature and independent workers. Given the limited time of MBO training, VO tries to orient apprentices towards a long-term, possibly a ten-year career perspective, and ideally, a life-long learning pathway. Each apprentice is supervised by a mentor who continuously monitors his/her progress and provides valuable advice. Apprentices undertake career tests throughout their training and their supervisors observe their progress. In addition, periodically, all trainers, supervisors, teachers etc. are required to attend a meeting session together with an apprentice in order to talk about his/her future. Currently, only a few companies have implemented this practice, but seeing as both apprentices and their parents are satisfied, more companies are expected to do so. It is expected that the implementation of this pillar will make training cheaper and more efficient because apprentices will be encouraged to train for skills that they will really benefit from without wasting time and resources on superfluous training (Interview, van Lieshout, 2017).

### **Pillar B: Craftsmanship**

In traditional VET, apprentices are trained to acquire numerous separate skills. To become a craftsman, they must become proficient in skill *a*, then proceed to skill *b*, etc. However, this kind of training presupposes a very narrow and limited understanding of what craftsmanship entails. Technical knowledge and years of experience are important for any professional, but VO is convinced that becoming a craftsman does not only entail having better technical skills or following an online learning course. With new technological advancements, technical knowledge is becoming less important while the relevance of collaboration with other professionals is increasing. As a result, a wider range of skills, such as social skills or group working skills, is necessary. Apprentices are being encouraged to acquire an overall responsibility for one's craft and understand the value of their work within a wider context. Yet, many companies and training institutions still understand craftsmanship in the traditional sense. While traditional craftsmanship remains valuable, VO believes that a shift towards a broader understanding of actual craftsmanship is needed in the sector. VO training companies are therefore initiating projects where apprentices work in mixed teams: apprentices must organise a whole project by themselves, buy the necessary materials, determine the tasks to be carried out and follow through with all of the activities. In other words, this project-oriented training is based on a step-by-step approach where the apprentices learn what constructing something means from a

holistic perspective. Enterprises welcome this kind of approach because they may assign more serious tasks to an apprentice earlier than otherwise expected (Interview, van Lieshout, 2017).

### **Pillar C: Contextual Environment**

In the construction sector, it takes approximately one to two years for new technologies to become widespread. However, at VET schools and training centres, apprentices are still being taught to use old machines and carry out manual tasks that are, in fact, no longer necessary. Technologies are taught on a fairly primitive level that is not present in the actual working environment. The actual working environment therefore needs to be simulated in the classrooms as well. It is a challenge to provide apprentices with all of the necessary equipment and very few schools may actually offer this. VO tries to provide schools with a chance to rent out updated training facilities at their training companies by looking at it as a business case that benefits the whole sector. Creating a contextual learning environment is in line with the wishes and expectations of companies in the construction sector, as these companies are more willing to accept apprentices or actual workers who have more relevant hands-on experience (Interview, van Lieshout, 2017).

### **Pillar D: Professionalisation**

VO is aware that many trainers of construction sector training companies lack the knowledge and skills relevant to today's labour market. A part of this fourth pillar is ensuring that the training staff at training companies is capable of delivering quality training services. The knowledge and skills of the training staff need to be continuously updated and therefore VO companies invest in the training of its instructors. Trainers are trained to work with new equipment, they are introduced to new training methods and introduced to the new four-pillar structure that aims to provide apprentices not only with technical, but also soft skills. In addition, trainers are encouraged to work on their portfolios in which they track their development as trainers and include the lesson plans they have developed, extra training they undertook or similar. In the future, VO plans to introduce specific professional profile books that would operate as educational guiding criteria: the person in training will be able to track his/her training progress according to this book and constantly monitor where extra training is needed. Professionalisation of the training staff is also related to the image of the sector as a whole given that only high-quality instructors will be able to deliver what the training companies promise. In other words, VO considers training based on results, or the impact their instructors have on the capabilities of apprentices, as more important than offering training that merely relies on pre-established rules and standards (Interview, van Lieshout, 2017).

VO collaborated with expert advisors and all of its training companies in order to develop and subsequently propose the most necessary and most beneficial structural changes. Currently, 22 VO companies have decided to follow through with the proposed new structure, while another 22 have not yet decided whether the new structure meets their expectations. Representatives of VO predict that another 11 will agree to apply the new structure to their training activities and that the remaining quarter will choose not to do so. If this training model (which is simultaneously a new business model) proves to be advantageous, VO will continue with its activities for as long as it remains beneficial for all parties involved. Therefore, it is difficult to accurately measure the **impact** on the main **target group**, namely construction companies and apprentices because the results of these changes will only become clearly visible in the long run. However, seeing as this new structure is based on a thorough analysis of the needs, problem areas and experience of the sector, its outcomes are expected to have a positive impact: the training will become more flexible, more efficient and better suited to the needs of the labour market, equally

benefiting the apprentices and the training companies (Interview, van Lieshout; Fiers, 2017).

VO had sufficient **resources** to initiate and implement these structural changes. The training companies mostly relied on their own internal resources, such as time and some additional financial expenses. External costs consisted of paying experts who assisted in creating a brand for marketing purposes. To cover any extra costs of training, VO applied for subsidies from Bouwend Nederland (Interview, van Lieshout, 2017).

These are the three most important **success factors** underlying the apprenticeship system transformation initiated by VO (Interview, van Lieshout, 2017):

- *Stakeholder involvement.* Continuous stakeholder involvement was said to be very important for the successful implementation of the proposed modifications. A top-down approach was not feasible because schools and companies are autonomous: if they disagree with the changes to be implemented, they will simply not follow through. However, a completely bottom-up approach is also not feasible, as it would result in average quality. A good overall knowledge of the sector and its ongoing developments are needed to offer better training solutions. Experts are needed to propose good solutions, and strong leaders are needed to make good decisions, but communication between the experts, the leaders and everyone else involved is the most important element in finding the right balance.
- *Acknowledging regional differences.* Construction companies in different regions have different traditions and different ways of working. Likewise, training companies in the sector must also adapt to these regional needs. Imposing a one-size-fits-all approach is not feasible in this case as these differences are an important factor for the successful operation of these companies. Each company may find its own method of approaching similar problems as long as they find what works best for them.
- *Clear and focused goals.* The apprenticeship system in the construction sector functions fairly well and while there are certain issues, the whole system does not need to be changed. VO representatives stress that it was important to clearly identify problem areas and focus on these areas without trying to fix everything else that falls outside of the identified range. In other words, determining what does not work and investing time in modifying those particular elements was a significant success factor.

The following aspects were said to be a **challenge** by VO in initiating structural changes to apprenticeships (Interview, van Lieshout; Fiers, 2017):

- Some training companies were reluctant to introduce a new training structure to their activities as this requires substantial personal efforts from them.
- It remains difficult to find suitable people to train apprentices. VO believes that a few hard-working and committed people who are driven to accomplish positive goals are needed in order to inspire and lead everyone else. However, such people are hard to find and sometimes they do not possess the right technical skills needed for the training of apprentices.
- It remains difficult to find new apprentices who are eager to obtain a construction qualification. Individual companies in the Netherlands may also offer apprenticeships and they are in direct competition with the training companies. The best pupils often choose to train in those companies rather than at the training companies due to better working conditions and direct access to the labour market after completion of their training. In addition, many pupils do not find the sector attractive and it is difficult to motivate them to train even if the system is modified.



## **Conclusions and recommendations**

VO training companies intend to work on the implementation of structural changes in the apprenticeship system for as long as they believe necessary. Training company representatives emphasise the need for continuous effort and working smarter in order to successfully adapt to ongoing changes in the labour market. While implementing structural change takes time and effort, it is seen as beneficial in the long run. The following points are worth emphasising:

- Attracting more learners to the sector is dependent upon the quality of the training providers who must be willing to adapt to changes if they wish to provide high-quality services. The training providers need to closely monitor ongoing technological as well as societal developments in order to be capable of offering the right training pathways for a younger generation.
- Introducing flexibility to training relies on the close collaboration of various stakeholders such as general education providers or regional training companies. Neither participant should feel pressured to carry out any activities that he/she does not believe to be right as this will not lead to voluntary participation and a feeling of ownership.
- A clear identification of problem areas allows the reforms to be more effective as they are specifically targeted at elements that are in most need of change. Collecting experience and undertaking preparations may seem lengthy, however, if problems are to be solved in the long term, this process is important.

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## GERMAN INITIATIVES TO SUPPORT DUAL VET REFORMS IN OTHER COUNTRIES

### Introduction

The German dual vocational education and training (VET) system has proven to be stable and efficient in the past number of years. The low youth unemployment rate in Germany has been understood to be partly the result of the employment-oriented dual VET system (BMBF, 2017a). Numerous countries in Europe and around the world are therefore interested in learning from the German dual VET system (BIBB, 2017a). Several activities and projects have been initiated to support the transfer of dual VET (elements) to other countries (BIBB, 2017b). Parts of them are discussed in Section 1 below. The Federal Institute for Vocational Education and Training (*de.* BIBB) carries out several of these activities at its central office for internationalisation in VET called GOVET (i.e. the German Office for International Cooperation in Vocational Education and Training). This case is focused on GOVET activities in developing dual VET systems outside of Germany.

The main targets of GOVET are summarised in the table below.

**Table 24: Targets and corresponding activities of the BIBB initiative GOVET**

Targets of the activities	Corresponding activities
<b>Target 1:</b> Provide on-demand information for foreign and national stakeholders on German dual VET and transfer initiatives.	<b>Activity 1:</b> Provide information for foreign and national stakeholders on German dual VET as a One-Stop-Shop.
<b>Target 2:</b> Provide a central contact point for German ministries, stakeholders and social partners.	<b>Activity 2:</b> GOVET round table.
<b>Target 3:</b> Provide support to stakeholders in other countries' educational systems, for example by recommending experts and facilitating study visits to Germany.	<b>Activity 3: (Main focus of case study):</b> Professional support for countries that maintain a bilateral partnership related to vocational education and training with the German Federal Ministry of Education and Research.

Source: BIBB, 2017b

The aims of this case study are to:

- Overview German initiatives in transferring the good practices derived from German VET
- Describe GOVET and its main activities
- Present current GOVET cooperation with Latvia, Slovakia and Slovenia.

### German initiatives to support international VET development

In December 2012, a Memorandum on Vocational Education and Training Cooperation was signed by six European countries - Greece, Italy, Spain, Portugal, Latvia, Slovakia and Germany (GOVET, 2015). The initiative came from these countries, which registered high youth unemployment rates after the financial and economic crisis (Interview, Wiechert, 2017). In July 2013, the German Federal Government published a strategy on international cooperation in VET (Bundesregierung, 2013). Since then, numerous activities such as bilateral working groups, advice on reforming the legal VET framework and pilot projects have been implemented (see also Section 2). Many of them are funded and carried out by the German Federal Ministry of Education and Research (*de.* BMBF) and the German Federal Institute for Vocational Education and Training (*de.* BIBB).

The first important step in international cooperation was the initiation of international VET partnerships (*de.* Berufsbildungsk Kooperationen). Greece, Italy, Portugal, Latvia

and Slovakia have held bilateral partnerships with the Federal Ministry of Education and Research since 2013 (BIBB, 2017c).

There are three projects founded by BMBF which complement the activities of GOVET in specific stakeholder groups (Interview, Le Mouillour, 2017):

- VETnet (since 2013) is a project for implementing dual VET structures in interested countries carried out by the German Chambers worldwide network. Currently, the project is implemented in the foreign chambers of commerce in eleven countries: China, Greece, India, Italy, Latvia, Portugal, Russia, Slovakia and Thailand. New locations are in Mexico and the USA (Atlanta) (DIHK, 2017).
- Unions4VET (2015-2017) is a network project for the transfer of good practices in VET coordinated by the trade unions of Germany. In the context of this project, initiatives with Portugal, Italy, Greece, Slovakia and Latvia have been started (Unions4VET, 2017).
- SCIVET ('Skilled Crafts Sector- International Vocational Education'). The project promotes international VET cooperation in the crafts sector. It started in May 2016 in cooperation with the German Confederation of Skilled Crafts (de. ZDH) and the Central Agency for Advanced Training in Skilled Crafts (de. ZWH). Subordinated standards and a strategy manual to secure the quality of training programmes abroad are being developed during this project (ZDH, 2017).

Besides GOVET, which will be described in more detail in the next section, BMBF, BIBB and other institutions support numerous other activities, including:

- iMOVE - an initiative for German education and training providers planning to offer training services abroad (BMBF, 2017b).
- European initiatives such as Erasmus+ and ReferNet, which are supported by BIBB and BMBF. A department of BIBB is responsible for implementing Erasmus+ in Germany (Erasmus+, 2017). ReferNet is a European innovation network for VET, connecting experts from 28 EU Member States. The German ReferNet Team is also supplied by BIBB (Cedefop, 2017).

The German Federal Institute for Vocational Education and Training also maintains multilateral cooperation with the European Centre for Development and Vocational Training (CEDEFOP), the European Training Fund (ETF) and the UNESCO International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC) (BIBB, 2017d).

## **GOVET**

The German Office for International Cooperation in VET (i.e. GOVET) was founded in September 2013 as a part of BIBB, the German Federal Institute for Vocational Education and Training. BIBB was founded in 1970 and constitutes the national competence centre for initial and continuing vocational education and training in Germany. It contributes to improvements in VET and provides research, development and advisory services on account of this. GOVET is the central institution for international cooperation in VET in Germany. It was founded to implement the strategy on international cooperation in VET. Due to this, various institutions such as the Federal Ministry of Education and Research (de. BMBF), the Federal Ministry of Economic Affairs and Energy (de. BMWi), and the Federal Ministry for Economic Cooperation and Development (de. BMZ) are in close contact with GOVET. Furthermore, staff from BMZ and the German Federal Foreign Office is sent to work at GOVET (GOVET, 2015 and GOVET, 2017). GOVET carries out three main types of activities:

**Activity 1:** For foreign and national stakeholders, GOVET is the main contact partner. On its website, GOVET provides basic information on the German dual VET system and

the possibilities available to explain this system to different audiences. This includes translated documents of the main German VET regulations (BIBB, 2017e). The website also provides information on relevant German and international stakeholders (e.g. UNESCO-UNEVOC and OECD) and funding instruments in and outside of Germany for the purpose of international VET cooperation, such as the European Alliance for Apprenticeships, the European Social Fund or Germany Trade and Invest (BIBB, 2017d). However, governments of other countries often contact the Federal Ministry for Education and Research first if they want support for reform of their VET systems. In the case of planned research cooperation, foreign governments are directed to the Federal Institute for Vocational Education and Training as a whole (Interview, Wiechert, 2017).

**Activity 2:** GOVET is also responsible for implementing a round table on international VET cooperation. German stakeholders, for example the German Federal Foreign Office (*de. Auswärtiges Amt*), various federal ministries, social partners such as the Confederation of German Employers' Associations (*de. BDA*) and the German Trade Union Federation (*de. DGB*) discuss current issues of the internationalisation of VET and agree on common proceedings (BIBB, 2017f). The round table operates as an interface between German ministries and stakeholders that are involved in international development cooperation and cooperation in VET with this country. For example, the Federal Ministry for Economic Cooperation and Development also receives foreign delegations and supports them in developing inter-company standards in dual VET and VET examinations as well as programmes for the qualification of trainers in VET (GOVET, 2015). Due to the fact that strategies on dual VET reforms are tailor-made to the demand and requests of their partner countries, there are no regional or cross-country strategic approaches made by GOVET, e.g. for Eastern European or the Baltic States (Interview, Wiechert, 2017).

**Activity 3:** Currently, GOVET actively participates in bilateral vocational cooperation in Greece, Italy, Latvia, Portugal and Slovakia. Furthermore, they cooperate with thirteen non-European countries that are located in Brasilia, China, Costa Rica, Ecuador, Georgia, India, Mexico, Russia, South Africa, South Korea, Thailand, Turkey and the USA (BIBB, 2017g). These projects include, among other measures, the following elements (GOVET, 2015):

- Bilateral working groups for designing rules, standards, regulations and programmes aimed at implementing dual VET pilot projects in the target countries
- A database on international VET cooperation (<https://www.bibb.de/govet/de/2358.php>)
- A database on pilot projects in VET projects (<https://www.bibb.de/govet/de/2357.php>)
- Initiatives on implementing elements of dual VET in vocational sectors (see transfer projects in newer EU Member States)
- Assistance in improving the quality and acceptance of apprenticeships or other forms of VET, e.g. via conferences or exchange programmes, that provide apprenticeships in Germany
- Qualification projects for trainers in VET
- Exchange of information to VET experts and stakeholders in foreign countries via lectures, conferences, workshops, study visits in cooperation with BIBB Germany
- Delegations from countries of German development cooperation are welcomed and are custom advised by GOVET

A multilateral instrument has also been established - a peer-learning platform for the exchange of information among countries that are currently reforming their VET systems (BIBB, 2017h). Countries meet one or two times a year to discuss topics such as standardisation in VET and qualifications of trainers (Interview, Wiechert, 2017). The identification of concrete activities and tailor-made support for specific countries

depends on their targets and prerequisites (Interview, Wiechert, 2017). At the beginning of bilateral VET cooperation, the status quo of a country is observed, often in terms of audit missions that are common in international development cooperation (GOVET, 2015).

The experience of GOVET is that dual VET systems change in decades and not in years (Interview, Wiechert, 2017). This means that participants involved in dual VET reforms must be aware that their efforts have to remain in place for many years in order to achieve the intended effects.

Long-term targets of GOVET are the following (GOVET, 2015):

- Reduce youth unemployment in Europe
- Increase stability of the European economic area
- Increase chances for German employers to recruit skilled workers from foreign countries
- Increase markets for German educational services abroad
- Learn from innovations in VET worldwide

### ***Transfer projects in newer EU Member States***

Instead of the term 'transfer' or 'export' (of good German practice in dual VET), staff at BIBB prefers to speak about German activities as assisting other countries in developing or reforming dual VET system elements (Interview, Le Mouillour, 2017).

Numerous bilateral cooperation activities have been initiated in a number of EU Member States. This case study focuses on GOVET cooperation with three newer EU Member States – Slovakia, Latvia and Slovenia. There have been a number of attempts to reform the dual VET system in these countries:

- **Slovakia:** Slovakia already had a school-based dual VET system. Since shortages appeared in qualified personnel in technical occupations, reforms of dual VET were initiated with the support of Germany, Austria and Switzerland (GOVET, 2015 and 2017). A pilot project to bring dual VET to small and medium sized companies was conducted in the Slovakian city of Nove Mesto nad Vahom. The project started in April 2015 and was mainly operated by the Slovakian school ministry, which created the legislative and administrative framework for it. For example, a new education law was passed, which included the option to achieve a higher school certificate in combination with an apprenticeship degree. This option could be completed in four years and the work-based learning part covered up to 60% of all curricula. Young people were contracted by companies as apprentices (GOVET, 2015, GOVET 2017). The new law was prepared with the help of the German-Slovakian Chamber of Commerce. The regional government in Trenčín was supported by the federal school ministry of Slovakia to create new apprenticeship occupations, e.g. industrial and construction mechanic. Further, it receives financial support from the school ministry. GOVET supported these activities by consulting Slovakian ministries and companies and provided a feasibility study. The target of this pilot project is to run through one complete apprenticeship life-cycle with at least one group of young people including elements such as: vocational orientation, matching of apprenticeships and companies, selection of applicants and preparation of apprenticeship contracts, finding criteria for apprenticeship accreditation for companies, organising coordination between a company and a vocational school, developing apprenticeship regulations, qualifying of trainers and teachers and the development of standards for examinations (GOVET, 2015).
- **Latvia:** The Latvian VET system is highly regulated by the central State and the vocational education is mainly school-based. A work-based apprenticeship

system is only traditional in the crafts sector, however, it is entirely detached from formal education. The Latvian government wants to implement a company-based dual VET system in upcoming years (BIBB, 2017i). Therefore, the government has initiated several pilot projects. In total, 11 vocational schools have conducted pilot projects in cooperation with 29 companies. About 148 young people completed an apprenticeship of three years within a pilot project that concluded in 2015. The share of work-based learning increased by up to 50% in these apprenticeships. Such apprenticeships were available for example in mobility and logistics, construction and electronic assembly. Apprenticeship contracts were signed between three parties - the company, the apprentice and the vocational school. The number of participating vocational schools and companies has increased significantly since the school year of 2014/2015. Due to image problems of work-based apprenticeships in Latvia, some advertisement efforts have been undertaken in the run-up to the pilot projects. GOVET supported the Latvian activities by updating curricula in VET and organising two conferences on work-based VET in Riga (2013, 2014). There was also a supported fact finding mission (2014) and, in 2013, a Latvian delegation visited Bonn in Germany at the invitation of BMBF (GOVET, 2015). In October 2014, a bilateral German-Latvian working group decided to concentrate on the vocational sectors of engineering/metal, wood processing and information technology. As a result of these efforts, a pilot project to introduce company-based apprenticeships in eleven vocational schools was implemented from 2014 to 2016 (BIBB, 2017j). Further, German-Latvian partnerships of vocational schools, associations and chambers have been arranged for the qualification of trainers and teachers in VET (GOVET, 2015, 33). Latvia has also been engaged in a research project on governance and the financing of apprenticeships with the aim of paving the way for apprenticeships (Cedefop, 2016).

- **Slovenia:** The Slovenian education system provides a lot of options for accompanying VET on the secondary and tertiary school levels. Providers of VET programmes are schools together with companies. However, the share of work-based learning did not exceed 40% (Cedefop, 2014). Since 2016, Slovenia has wanted to re-implement a company-based VET system, which it had before 2006 (GOVET, 2017). Reforms of dual VET are not only supported by Germany, but by Austria and Switzerland as well. GOVET organised a meeting of experts together with the German embassy, the German-Slovenian Chamber of Commerce and with Slovenian stakeholders in March 2016. The Slovenian government mentioned the image problems of apprenticeships and the low motivation of companies to cooperate there (ibid). GOVET, on behalf of the German Federal Ministry of Education and Research, supported the Slovenian government in working on a new legislation base for apprenticeships. In March 2017, an expert meeting was organised in Slovenia, where advisory partners from Germany, Switzerland and Austria met to finalise the new legislative framework. GOVET, the German Embassy and the German Foreign Chambers participated from Germany (GOVET 2017). The re-introduction of a dual apprenticeship system is planned for the school year 2017/2018 (BIBB, 2017k).

**The expected impacts** of implementing work-based dual VET systems are always defined together with the supported country as equal partners (Interview, Wiechert, 2017). A specific country decides what the main expected impact of dual VET reforms should be. For example, a high takeover rate of apprentices from (new) dual VET programmes would show the success of activities, since it would reduce the problems of companies in recruiting qualified workers. However, some **success factors** have been identified from GOVET in their support of VET reforms in general (Interview, Wiechert, 2017):

- National contexts, specific demands of the target countries' economy and labour market and resultant timeframes must be considered.

- Commitments by governmental and implementing stakeholders must be given.
- A willingness by companies to participate actively in dual VET systems must be achieved.
- The economy of a country must be capable of integrating qualified employees.
- Central government structures facilitate the implementation of changes in dual VET systems.

**Challenges** occur if the prerequisites for dual VET reforms are not in place. For example, if a country does not have sufficient economic and governmental stability. In addition, the benefits of work-based apprenticeships are often not well known by stakeholders and the image of apprenticeships is often not very positive. It is then very challenging to reform a school-based VET to a more work-based one. Another main challenge is the activation of SMEs to support apprenticeship projects (BIBB, 2015). Furthermore, changing governments in partner countries can slow down the reform processes (ibid.). The image problem can be addressed by image campaigns supported by GOVET, however, other factors cannot be influenced by GOVET, e.g. economic or governmental stability). These factors will necessarily delay VET reforms in the respective countries. According to GOVET experience, linguistic problems may also occur during the advisory process. GOVET deals with this problem by assigning native speakers as project leaders of pilot projects if possible. When interpretation and interpreters dominate conversations, the probability of missing certain nuances increases (Interview, Wiechert, 2017).

### ***Conclusions and recommendations***

Activities in developing apprenticeship systems elsewhere are always initiated by countries looking for support related to this area. They get comprehensive information regarding the current apprenticeship system in Germany on the GOVET website and receive active support on behalf of the Federal Institute for Education and Research, if requested. Besides study visits, expert meetings and conferences, bilateral working groups, audit missions and pilot projects on work-based dual VET can be organised and supported by GOVET. All of these activities are characterised by a long-term approach, focusing on the inclusion of numerous stakeholders and the implementation of a legal and structural framework. A key challenge is the activation of stakeholders in companies and chambers of commerce and vocational schools, who are responsible for the implementation of more work-based dual VET options in their country.

GOVET is also an initiative that enables German stakeholders in VET to adjust their activities according to a shared strategy provided by the federal government. Germany thereby is able to provide an integrated strategy of cooperation in economic development and improvements in dual VET. Further, professional exchanges and discussions between different ministries and other stakeholders are carried out at GOVET round tables. Concrete activities are executed at a bilateral level and are framed by bilateral partnerships. Activities like iMove, VETnet, Unions4VET and European programmes like Erasmus+ and ReferNet complete the activities of GOVET.

Although there is no one ideal solution in attempts to implement work-based dual VET systems in other countries, some recommendations can be made according to this case study:

- Reforms in VET should be initiated only if stakeholders from the foreign State are convinced about their value (Interview, Wiechert, 2017).
- The organisation of financing, schedules, examinations and certification standards should be prepared by stakeholders from the foreign State and economy in cooperation (BIBB, 2017b).
- Benefits of work-based learning should be emphasised and advertised to companies and young people.



- Governmental financial support of structural reforms can increase a willingness for adjustments in dual VET on the part of companies (Interview, Wiechert, 2017).
- The qualification of teachers and trainers should be organised in a standardised way (BIBB, 2017b).
- A willingness by companies to participate increases if they have serious difficulties in recruiting qualified personnel (Interview, Wiechert, 2017). This can be exploited when establishing or reforming a country's apprenticeship system.

The above-mentioned prerequisites are also valid for the implementation of dual study programmes. The recommendation of BIBB is that VET reforms in other countries should be supported by a research and consulting institution of their own (Interview, Wiechert, 2017).

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## ANNEX 5: INVENTORY OF CHALLENGES AND SOLUTIONS TO IMPLEMENTING CONSTRUCTION APPRENTICESHIPS

Challenges	Country	Solutions
		Description (source)
<b>Attracting and motivating apprentices</b>	UK	<a href="#">Master Builder Awards</a> including categories 'Apprentice of the Year' and 'Apprentice Employer of the Year'. (Case study 'Creating new construction apprenticeship standards')
	IE	Websites aimed at informing/guiding potential apprentices including Irish <a href="#">website</a> guide to apprenticeships ( <a href="http://apprentices.ie/">http://apprentices.ie/</a> ). (Case study 'Apprentices.ie' online platform), Austrian website ' <a href="#">Build Your Future</a> ' (Bau Deine Zukunft)( <a href="http://www.baudeinezukunft.at/">http://www.baudeinezukunft.at/</a> ), British website ' <a href="#">bconstructive</a> ' ( <a href="http://www.citb.co.uk/bconstructive/">http://www.citb.co.uk/bconstructive/</a> ), Danish website ' <a href="#">Building the Future</a> ' (Byg Fremtiden) ( <a href="http://www.bygfremtiden.dk/">http://www.bygfremtiden.dk/</a> ) and Finnish website 'The Mesta.net' ( <a href="#">theMesta.net</a> )
	UK	For the school year 2017/2018, around 75 <a href="#">higher and degree apprenticeships</a> were offered including programmes in construction management. ( <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607531/COMPLETE-GUIDE-TO-APPRENTICESHIPS-201718.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607531/COMPLETE-GUIDE-TO-APPRENTICESHIPS-201718.pdf</a> )
	DE	<a href="#">Dual-study programmes</a> allowing one to combine a Bachelor's degree in, e.g. construction engineering with various training occupations offered by regional companies. (Case study 'Dual study programmes in Germany')
	DE	<a href="#">Emphasis on sustainable construction in attracting apprentices</a> . (Case study 'Attracting young people to sustainable construction')
	DE	<a href="#">Use of voluntary social service to attract apprentices</a> . (Case study 'Vocational guidance via voluntary social work placements')
	EU	Emphasis on <a href="#">offsite modular construction</a> to attract apprentices. (ECSO 2017)
	UK	<a href="#">Use of public sector</a> as an important employer of apprentices ( <a href="https://www.gov.uk/government/consultations/public-sector-apprenticeship-targets">https://www.gov.uk/government/consultations/public-sector-apprenticeship-targets</a> )
	DE	'Pre-apprenticeship' programme ' <a href="#">Einstiegsqualifizierung</a> ' (EQ) providing introductory training for those aged under 25 (OECD/ ILO 2017)
	EL	Apprenticeship scheme for civil engineering students to develop <a href="#">highly specialised skills</a> . (Case study 'Establishing new training programmes')
<b>Attracting and motivating apprentices: attracting women to apprenticeships</b>	EU	<a href="#">The European framework for quality and effective apprenticeships</a> ( <a href="http://ec.europa.eu/social/main.jsp?langId=en&amp;catId=89&amp;newsId=2873&amp;furtherNews=yes">http://ec.europa.eu/social/main.jsp?langId=en&amp;catId=89&amp;newsId=2873&amp;furtherNews=yes</a> )
	UK	<a href="#">Ambassador programme</a> where female members give talks about construction to school-children. (Case study 'Creating new construction apprenticeship standards')
	EU	<a href="#">Exhibitions of visualised stories</a> from women on their experiences from working in the construction sector and a related dinner-debate. Annual conference on equal opportunities. (Case study 'Promoting construction apprenticeships to women')

Getting employer buy-in	BG, CY EL, RO	EU project ' <a href="http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector">High Heels: Building opportunities for women in the construction sector</a> ' strengthened women's soft skills to improve their entrance into the sector ( <a href="http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector">http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector</a> )
	IE	SOLAS, the Further Education and Training Authority, offers a bursary of €3,000 for employers who take on female apprentice in in sectors that have traditionally low levels of female employment (including construction). SOLAS has recently commissioned <a href="#">a study</a> exploring the low take-up of apprenticeships among women. As part of <a href="#">the Action Plan to Expand Apprenticeship and Traineeship in Ireland 2016-2020</a> , SOLAS will also introduce a new branding and marketing campaign ( <a href="http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector">http://www.ksb.bg/en/high-heels-building-opportunities-for-women-in-construction-sector</a> ; <a href="http://www.solas.ie/SolasPdfLibrary/ActionPlanDec16.pdf">http://www.solas.ie/SolasPdfLibrary/ActionPlanDec16.pdf</a> )
	UK	Campaign ' <a href="#">Making apprenticeships work for young women</a> '. (Case study 'Promoting construction apprenticeships to women')
	ES	Project ' <a href="#">Co.Tutor. Systematic approach to enhance the participation of construction industry SMEs in apprenticeship programs</a> ' ( <a href="http://www.fundacionlaboral.org/en/projects/training/training-tools/cotutor-2016-2018">http://www.fundacionlaboral.org/en/projects/training/training-tools/cotutor-2016-2018</a> )
	ES	<a href="#">Innovative training materials</a> . (Case study 'Innovative training tools')
	ES	<a href="#">Sociological and market research</a> to analyse needs of companies. (Case study 'Innovative training tools')
	EL	Support to member companies in order to <a href="#">adapt and establish apprenticeship programmes</a> . (Case study 'Establishing new training programmes')
	BE	<a href="#">A single point of contact</a> between enterprises, education providers and young people to facilitate links among them. (Case study 'Strengthening cooperation between VET schools and companies')
	UK	<a href="#">Apprenticeship Training Agencies (ATAs)</a> (OECD/ ILO 2017)
	DE	Training modules related to <a href="#">sustainable and energy-efficient construction</a> emphasising cross-craft understanding and hereby creating competitive advantage for participating companies. (Case study 'Integrated training modules for sustainable construction')
	AT, AU, DE, IE, NO	Pooling of resources for training in the form of <a href="#">apprenticeship sharing models in Germany</a> (Poulsen and Eberhardt, 2016), <a href="#">collective training offices in Norway</a> (OECD/ ILO 2017), <a href="#">training alliances</a> (de. Ausbildungsverbünde) to share apprentices in Austria (Kuczera 2017), <a href="#">Apprenticeship sharing initiative</a> in Ireland ( <a href="https://cif.ie/2016/08/29/innovative-scheme-aimed-at-increasing-apprenticeships-in-construction-industry-launched/">https://cif.ie/2016/08/29/innovative-scheme-aimed-at-increasing-apprenticeships-in-construction-industry-launched/</a> ) or <a href="#">Group training organisations in Australia</a> (OECD/ ILO 2017)
	NO	Promotion of the <a href="#">label for 'approved learning enterprises'</a> (OECD/ ILO 2017)
	EL	Support in <a href="#">receiving and thoroughly reviewing student applications</a> for apprenticeship programmes (Case study 'Establishing new training programmes')
	FI	<a href="#">An on-site training ambassador</a> visiting construction sites, contributing to the training of trainers and workers, giving presentations during meetings/fairs/seminars and contributing to the preparation of

		several articles in the media ( <a href="https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep">https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep</a> )
	AT, DE, EL, PL	<a href="#">Catalogue of good examples</a> from four countries describing innovative ways of recruiting apprentices. In addition, the project developed a <a href="http://startapp-project.eu/startappfiles/products/good_practice_manual_EN.pdf">recruitment handbook for small and medium enterprises</a> ( <a href="http://startapp-project.eu/startappfiles/products/good_practice_manual_EN.pdf">http://startapp-project.eu/startappfiles/products/good_practice_manual_EN.pdf</a> ; <a href="http://startapp-project.eu/products">http://startapp-project.eu/products</a> )
	EL	An <a href="#">apprenticeship intermediate body network</a> of very small enterprises and training schools in the metal construction sector ( <a href="http://ian.oaed.gr/apprenet/the-project/">http://ian.oaed.gr/apprenet/the-project/</a> )
	NO	Adopting apprenticeship <a href="#">requirements in public procurement</a> (Kuczera 2017)
	AU	<a href="#">Enterprise-embedded apprenticeship</a> . (Case study in OECD/ ILO 2017)
	EU	<a href="#">Apprenticeship Support Services</a> to be launched by the European Commission in mid-2018. (European Commission 2017b and 2017c)
<b>Expanding vocational guidance</b>	DE	<a href="#">Exhibition</a> focused on construction apprenticeships in the area of energy efficient building and modernisation. (Case study 'Attracting young people to sustainable construction')
	EU	Websites aimed at informing potential apprentices. (See respective solutions aimed at attracting apprentices).
	DE	<a href="#">School fair</a> where occupational groups present themselves to school-children. (Case study 'Promotion of roofing to young people')
	DE	Inviting <a href="#">kindergarteners to visit the company</a> . (Case study 'Promotion of roofing to young people')
	DE	<a href="#">One day internships</a> for children 14 to 18 years old. (Case study 'Promotion of roofing to young people')
	EU	Young construction talent <a href="#">skills competitions</a> incl. national, European and worldwide. (Case study 'Vocational skills competitions in Germany')
	NL	<a href="#">Talent development and career coaching</a> throughout the whole period of training. (Case study 'Initiating structural change to apprenticeships')
	DE	<a href="#">Retired volunteer professionals</a> who guide young people in vocational education in times of crisis. (OECD/ ILO 2017)
	NO	<a href="#">Twofold counselling service</a> including career guidance and guidance in social or personal matters. (OECD/ ILO 2017)
	ES	Campaign ' <a href="#">Ruta Construye 2020</a> ' for the dissemination and awareness-raising of training supply in the area of energy-efficient construction in the form of visits to cities with a mobile unit (training bus). ( <a href="http://microsites.fundacionlaboral.org/ruta-construye-2020?pag=6&amp;idioma=0">http://microsites.fundacionlaboral.org/ruta-construye-2020?pag=6&amp;idioma=0</a> )
	DE	<a href="#">Vocational guidance for young people with special needs</a> including an analysis of their strengths and weaknesses, career orientation based on the analysis and support for starting a career. (OECD/ ILO 2017)
<b>Making training more flexible and innovative</b>	ES	Innovative training tools such as <a href="#">serious health and safety games</a> or a <a href="#">mobile application</a> for learning energy-efficient construction skills (Case study 'Innovative training tools';

		<a href="http://microsites.fundacionlaboral.org/hs-games?pag=10&amp;idioma=1">http://microsites.fundacionlaboral.org/hs-games?pag=10&amp;idioma=1</a> ; <a href="https://play.google.com/store/apps/details?id=com.esampedro.simuladorApp&amp;hl=en">https://play.google.com/store/apps/details?id=com.esampedro.simuladorApp&amp;hl=en</a>
	EL	<a href="#">Ongoing evaluation of apprentice's progress</a> . (Case study 'Establishing new training programmes')
	NL	<a href="#">More intensive apprenticeship training pathways</a> . (Case study 'Initiating structural change to apprenticeships')
	AU	<a href="#">Competency-based progression</a> . (OECD 2014b)
	CY	<a href="#">Accelerated initial training scheme</a> in high-demand occupations. ( <a href="https://www.refernet.de/images_content/2014_CR_CY.pdf">https://www.refernet.de/images_content/2014_CR_CY.pdf</a> )
	IT	Training of trainers in the <a href="#">BUILD UP Skills</a> project <a href="#">I-TOWN</a> including needs-based training strategy, use of field experts, individualised training pathways, group work on selected case studies and use of online database for self-learning. (Visionary Analytics 2017; <a href="http://www.buildup.eu/en/skills">http://www.buildup.eu/en/skills</a> ; <a href="http://www.bus-itown.eu/">http://www.bus-itown.eu/</a> )
	FR, DE, NL	<a href="#">VET boarding schools</a> . (Case study 'Monitoring the reforms of dual vocational education and training')
	NL	<a href="#">Renting of updated training facilities</a> . (Case study 'Initiating structural change to apprenticeships')
	FR	Fostering <a href="#">entrepreneurship</a> among young people. ( <a href="http://www.sensas-project.eu">http://www.sensas-project.eu</a> )
	NL	A mobile application for learning energy-efficient construction skills in the project <a href="#">BUStoB</a> . ( <a href="http://www.buildup.eu/en/explore/links/bustob-project-0">http://www.buildup.eu/en/explore/links/bustob-project-0</a> )
<b>Professionalising VET teachers and in-company trainers</b>	FR	A <a href="#">comprehensive programme</a> for dual VET trainer admission and training (DAFFA), including train-the-trainer concept, guidance and peer grouping of trainers, active learning methods and individualised learning pathways, mixed training contexts and adaptation of training content to specific needs. (Case study 'Training of trainers')
	NL	<a href="#">Professionalisation</a> of trainers including training to work with new equipment and introduction of new training methods to soft skills for apprentices. (Case study 'Initiating structural change to apprenticeships')
	ES	Integration of <a href="#">digital skills</a> in training programmes. (Case study 'Innovative training tools')
	ES	Design of a <a href="#">new sectorial qualification</a> in Europe called 'In-company tutor in the construction industry'. ( <a href="http://www.cotutorproject.eu">http://www.cotutorproject.eu</a> )
	EU	Developing courses for training the trainers under the BUILD UP Skills initiative. ( <a href="http://www.buildup.eu/en/skills">http://www.buildup.eu/en/skills</a> )
	NL	<a href="#">Trainers become 'ambassadors'</a> , initiating and organising national training programs to train other trainers. ( <a href="http://profrac.eu/open-training-platform-for-nzeb-professionals.html">http://profrac.eu/open-training-platform-for-nzeb-professionals.html</a> )
	FI	<a href="#">A concept of 'change agents'</a> - construction workers selected to act as multipliers by training their peers on issues in relation to energy efficiency in buildings. ( <a href="https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep">https://ec.europa.eu/energy/intelligent/projects/en/projects/build-skills-beep</a> )
<b>Integrating</b>	DE	<a href="#">Innovative training approach</a> that focuses on frequent errors using a problem-centred approach and



<b>Multidisciplinary and holistic approaches in training</b>		cross-craft perspective. (Case study 'Integrated training modules for sustainable construction')
	NL	<a href="#">Project-oriented training</a> . (Case study 'Initiating structural change to apprenticeships')
	UK	Flexible higher apprenticeship programme <a href="#">PlanBEE</a> dedicated to learning new digital technologies in construction, including Building Information Modelling. (BIM)( <a href="http://www.joinplanbee.com/">http://www.joinplanbee.com/</a> )
	UK	Developing an apprenticeship standard for the ' <a href="#">Digital Engineer</a> ' apprenticeship programme that would become a passport to a career in BIM. ( <a href="http://www.theconstructionindex.co.uk/news/view/bim-hire-desks-and-piling-to-join-constructions-apprenticeship-offer">http://www.theconstructionindex.co.uk/news/view/bim-hire-desks-and-piling-to-join-constructions-apprenticeship-offer</a> )
	LU	Project <a href="#">BIMEET</a> to leverage the take-up of ICT and BIM through a significant upgrade of the skills and capacities of the EU construction workforce. ( <a href="http://cordis.europa.eu/project/rcn/210091_en.html">http://cordis.europa.eu/project/rcn/210091_en.html</a> )
	AT	<a href="#">A qualification scheme</a> for across-the-crafts training of professionals in the construction industry. ( <a href="http://buildupskills-crosscraft.at/moodle/">http://buildupskills-crosscraft.at/moodle/</a> )
<b>Providing skills in energy efficient building construction</b>	ES, NL	Mobile applications for learning energy-efficient construction skills. (See respective solutions aimed at making training more flexible and innovative)
	RO	<a href="#">A Passive House Craftsmen Course</a> . (Case study 'Introducing innovative training techniques in construction')
	RO	<a href="#">A training module</a> for thermal renovation of existing buildings. (Case study 'Introducing innovative training techniques in construction')
	RO	<a href="#">Learning manual</a> from training modules on passive house construction and thermal renovation of existing buildings. (Case study 'Introducing innovative training techniques in construction')
	FR	<a href="#">PRAXIBAT® technical and educational platforms</a> to train craftsmen, in-company tutors, apprentices, VET pupils, architects, job seekers and trainers in energy-efficient building construction. (Case study 'Innovative training platform')
<b>Securing sufficient resources for apprenticeships</b>	FR	<a href="#">Establishing good relations</a> between authorities (incl. regional councils), enterprises and professional bodies. (Case study 'Supporting financing of apprenticeships')
	FR	Forming broad networks (e.g. <a href="#">VET campuses</a> ). (Case study 'Supporting financing of apprenticeships')
	FR	Promotional information <a href="#">campaigns</a> . (Case study 'Supporting financing of apprenticeships')
	FR	<a href="#">Online guide</a> for companies that provides all details on the apprenticeship tax arrangement. (Case study 'Supporting financing of apprenticeships'; <a href="http://www.fntp.fr/upload/docs/application/pdf/2017-01/la_taxe_dapprentissage_2017_-_guide_dutilisation.pdf">http://www.fntp.fr/upload/docs/application/pdf/2017-01/la_taxe_dapprentissage_2017_-_guide_dutilisation.pdf</a> )
	FR	<a href="#">Lobbying</a> for financial support for apprenticeships on a regional level, cooperating with regional councils. (Case study 'Supporting financing of apprenticeships')
	ES	<a href="#">Role of governmental agencies</a> in ensuring sufficient funding of mobility projects, use of <a href="#">EU funds</a> . (Case study 'Increasing mobility of apprentices')
	AT, AU, DE, IE, NO	Pooling of resources for training. (See respective solutions aimed at getting employer buy-in).



	EU	Most often used co-funding instruments include grants (incl. for individuals and grants for companies), tax incentives (also for companies and for individuals) and training funds (national or sectoral).
<b>Fostering mobility of apprentices, teachers and trainers</b>	BG	Providing mobility apprentices with <a href="#">cheaper accommodation</a> . (Case study 'Increasing mobility of apprentices')
	BG	Providing <a href="#">facilities for the language courses</a> . (Case study 'Increasing mobility of apprentices')
	BG	<a href="#">A face-to-face meeting</a> with all selected participants and their families. (Case study 'Increasing mobility of apprentices')
	ES	<a href="#">Accreditation of the mobility of learners</a> as a part of their national training curriculum by foreign authorities. (Case study 'Increasing mobility of apprentices')
	ES	<a href="#">Mobile application SOMEX</a> to improve the quality of preparation, operation and post-processing of exchanges of trainees and staff. (Case studies 'Innovative training tools'; <a href="http://www.somexproject.eu/results-results/results-app/">http://www.somexproject.eu/results-results/results-app/</a> )
	DE	<a href="#">Rigorous participant selection process</a> . (Case study 'Increasing mobility of apprentices')
	EU	<a href="#">Erasmus PRO</a> for longer mobility experiences of apprentices (European Commission 2017a)
	FR	<a href="#">A legal reform</a> that permits enterprises to hire minor apprentices without undergoing complex official authorisation procedures in relation to OHS. (Case study 'Supporting financing of apprenticeships')
<b>Ensuring occupational health and safety during and outside training</b>	DE	Voluntary certification via the <a href="#">Health &amp; Safety at Work System</a> . (Case study 'Addressing occupational health and safety issues in apprenticeships')
	ES	Mobile application <a href="#">Health &amp; Safety Games</a> . (Case study 'Innovative training tools')
	DE	Rigorous <a href="#">introduction of OHS training very early on in vocational training</a> . (Case study 'Addressing occupational health and safety issues in apprenticeships')
	DK	An <a href="#">apprenticeship-type scheme</a> called Integration Basic Training (IGU) designed specifically to facilitate the integration of social groups, including migrants. (Case study 'Integration of migrants into the labour market')
<b>Integrating migrants into the labour market</b>	DK	<a href="#">Facilitating communication</a> between companies, VET schools and apprenticeships with regard to migrant integration. (Case study 'Integration of migrants into the labour market')
	DK	<a href="#">Distributing migrants among different municipalities</a> . (Case study 'Integration of migrants into the labour market')
	DK	<a href="#">Lobbying and communication</a> with politicians and national authorities. (Case study 'Integration of migrants into the labour market')
	DK, DE	Access to <a href="#">language training</a> . (Case study 'Integration of migrants into the labour market')
	DK, DE	<a href="#">Well-developed infrastructure</a> to integrate migrants. (Case study 'Integration of migrants into the labour market')
	DK, DE	Sense of <a href="#">social obligation by companies</a> in the sector to integrate migrants. (Case study 'Integration of migrants into the labour market')
	BE	<a href="#">Cooperation with the service organisation for the construction sector Constructiv</a> to gain access to
<b>Initiating structural</b>		

<b>reforms of apprenticeship systems</b>		relevant decision-makers and also to encourage their members to provide more high-quality apprenticeship places. (Case study 'Monitoring the reforms of dual vocational education and training')
	BE	<a href="#">Building on expertise of other organisations</a> . (Case study of 'Monitoring the reforms of dual vocational education and training')
	BE	Participating (with the right to vote) in <a href="#">a new sectoral partnership for construction apprenticeships</a> . (Case study of 'Monitoring the reforms of dual vocational education and training')
	BE	Creating bricklaying and plastering standards with <a href="#">a close involvement of SMEs</a> . (Case study 'Creating new construction apprenticeship standards')
	NL	<a href="#">A four-pillar structure to improve apprenticeships</a> including (1) talent development and career coaching, (2) craftsmanship or project-based training, (3) contextual environment (updating training equipment), and (4) professionalisation (of teachers). (Case study 'Initiating structural change to apprenticeships')
	BE	Choosing <a href="#">the Bricklayer programme as one of the seven pilot programmes</a> in the new 'dual learning system' reforming the Flemish apprenticeships system. (Case study of 'Monitoring the reforms of dual vocational education and training')
	UK	<a href="#">Contributions of staff of 10 construction companies</a> to speed up the development of bricklaying and plastering apprenticeship standards. (Case study 'Creating new construction apprenticeship standards')
	UK	<a href="#">Active engagement with the Government incl. lobbying</a> . (Case study 'Promoting construction apprenticeships to women')
	LV, SK, SI	<a href="#">Prerequisites for successful apprenticeship reforms</a> : commitment of stakeholders, governmental financial support, timing of reforms, willingness of companies to participate, the status of a country's economy, central governmental structures. (Case study 'German initiatives to support dual VET reforms in other countries')
	DE	<a href="#">Contribution to apprenticeship reforms by the German Office for International Cooperation in Vocational Education and Training (GOVET)</a> incl. conferences, fact finding missions, study visits, pilot projects, feasibility studies, development of new legislation and experts' meetings. (Case study 'German initiatives to support dual VET reforms in other countries')
	BE	<a href="#">A single point of contact</a> reducing institutional complexity for apprenticeship stakeholders. (Case study 'Strengthening cooperation between VET schools and companies')

Source: Visionary Analytics consortium based on sources indicated next to each solution. All websites were accessed on 12-10-2017.

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