International Labour Organization

SKILLUP
Upgrading skills for the changing world of work

Sector Skills Strategy

Construction Sector

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June 2020

Foreword

Transforming the Technical and Vocational Education and Training (TVET) sector is one of government's strategy to particularly reduce unemployment and generally enhance the livelihoods of Ghanaians. So the Council for TVET (COTVET), together with the Ministry of Education on their part developed the five year Strategic Plan for TVET Transformation 2018 – 2022 and among the goals are enhancing the governance and management of TVET and improving upon the quality of TVET delivery under which the establishment of Sector Skills Bodies (SSBs) also known as Sector Skills Councils (SSCs) is one of the strategies.

The SSBs are a group of related industry players and training service providers that come together under a common structure to drive growth and competitiveness across the sector. Fundamentally, sector skills bodies focus on exploration of business opportunities and capacity needs within the sector and on how they can remain competitive through the development and implementation of skills development measures. The need for sector skills bodies in Ghana has become very crucial. If a sector is to maximise its full potential then it needs a skilled workforce that can meet its current and future needs.

The Sector Skills Strategy is a critical document that articulates the needs and galvanises a sector together with its key partners to address specific challenges and ensure that the TVET system functions well.

This skills strategy for the construction sector intends to facilitate the integration of skills development into sector development policies, thereby ensuring that the supply of skills is tailored not only to meet the skills demand of the sector, but also engineer the necessary growth in productivity which when sustained, will produce sustained decent employment. It builds on the sector's vision of a maintained and integrated cost effective, safe and sustainable civil and housing infrastructure responsive to the needs of users, supporting growth and poverty reduction.

The Construction SSB was set up by COTVET in collaboration with the ILO/SKILL UP Project funded by the Norwegian Ministry of Foreign Affairs and Ghana Skills Development Initiative (GSDI) implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The strategy developed by the SSB brings together available research and data with sectoral analysis and provides a comprehensive overview of the employment structure in the sector and key trends affecting the demand for skills and labour using ILO's Skills for Trade and Economic Diversification (STED) methodology. It also sets out the supply of TVET for the sector; the current challenges facing the sector and the actions that need to be taken forward to ensure that the TVET system is fully responsive.

We hope this strategy does not only stimulate collective action, but also galvanises employers as they invest in their workforce, inform TVET institutions in their curriculum development and policy makers as they devise and implement policy.

The impact of COVID-19 has reinforced the urgency of action to address sectoral skills and labour market needs and it is more important than ever that each sector have skilled workforce to compete as they recover from the pandemic. We hope this strategy provides a ready blueprint to start that recovery.

Dr. Fred Kyei Asamoah
Executive Director
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1. Introduction

1.1 The need for a sector skills strategy

Construction is a critical sector for the Ghanaian economy; in terms of its employment potential and contribution to the economy.

If it is to maximize its potential it is critical that it has a skilled and productive workforce. However, evidence suggests that it lacks essential skills in a variety of occupational areas (COTVET, 2019).

Skills mismatch and shortages are a common challenge in many countries, where applicants and the existing workforce do not have the skills to meet organizational and sectoral requirements (ILC, 2013).

In response to this challenge, countries have been adopting a demand-driven skills development approach that aims to provide individuals with the current and future skills required by the labour market through more effective linkages between technical and vocational education and training (TVET) institutions and employers.

The Council for Technical and Vocational Education and Training (COTVET) in collaboration with the International Labour Organization (ILO) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has established Sector Skills Bodies (SSBs) for the agriculture, construction and tourism and hospitality sectors with the aim of establishing a demand-led TVET system in these sectors.

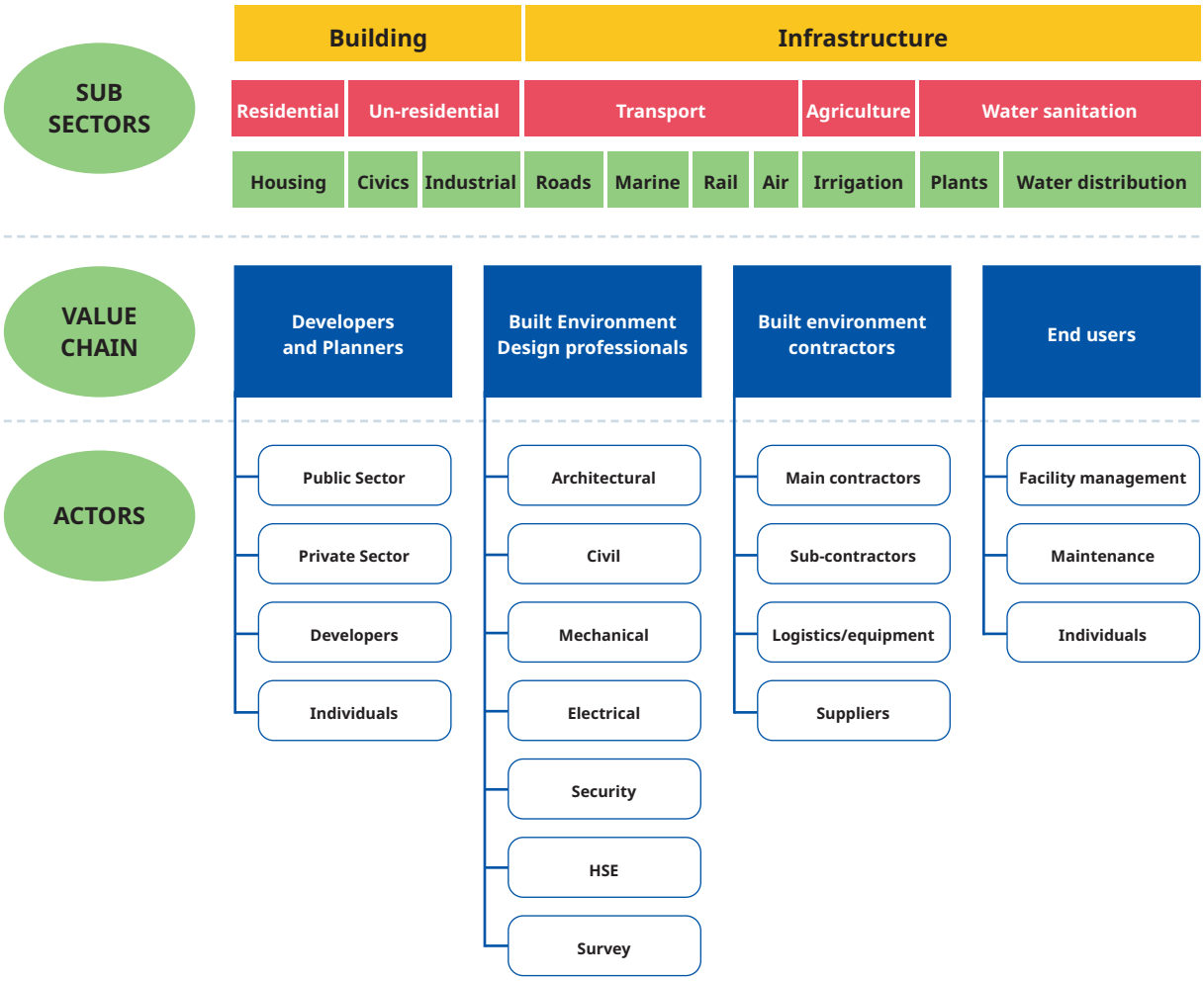
To support their establishment, the ILO worked with the SSBs to develop sector skills strategies through applying ILO's Skills for Trade and Economic Diversification (STED) approach in order to better align skills development to labour market needs. This document sets out that strategy and outlines a range of proposed actions to address the skill needs of the construction sector.

1.2 Sector definition and scope

The construction sector is concerned with erecting buildings and infrastructure. It is segmented into two broad sub-sectors: buildings and infrastructure. Buildings can be further classified into residential and non-residential and infrastructure into transport, agriculture and water/sanitation categories. Further breakdowns can be found in figure 1.

The value chain consists of developers and planners; built environment professionals; built environment contractors and end-users.

▶ Figure 1: Construction value chain



1.3 Sector skills strategy aims and scope

The skills strategy has been devised by the Construction SSB and outlines the current and future skills and labour needs for the sector and sets out a comprehensive action plan to ensure that the supply of skills and labour meets those needs.

It aims to formulate the requisite policies, monitor and evaluate programmes and projects to ensure the provision of affordable, integrated, safe, responsive sustainable, socio-economic and environmental infrastructural needs to meet national and international industry standards.

The strategy will also ensure that TVET can effectively underpin any future regulation of the workforce by ensuring that clear and robust pathways exist in which to enter and progress within the construction sector and that qualifications reflect the skills, knowledge and competence that is required to work safely and effectively within the construction sector.

2. Profile and situation analysis for the sector and subsectors

2.1 Economic and workforce profile

Construction continues to be one of Ghana's key economic sectors, with a growth rate of 30.6% and a 14.8% share of GDP (GSS, 2015). It has grown consistently between 2012 and 2015, up more than 70%. This has largely been driven by broader growth across the economy, investment in infrastructure, rapid urbanisation and a policy drive for more affordable housing (Oxford Business Report, 2018). Whilst the impact of COVID-19 is likely to adversely affect government and consumer spending which may reduce the demand in the sector, the government's pledge to build 88 district hospitals, six regional hospitals and three infectious disease centres in coastal, central and northern regions will provide some necessary investment.[1]

Key development projects in recent years include the expansion of Tema and Takoradi Ports. Tema received a $2.5bn upgrade, including construction of a $1.5bn facility alongside the existing port. Takoradi has also experienced a $450m upgrade to increase capacity and reduce congestion. A new free port has also been developed in Atuabo (Oxford Business Report, 2018).

The government is considering a build-operate-transfer arrangement for the 245-km coastal Accra-Takoradi Highway and a new terminal has been built at Kotoka International Airport in order to increase capacity (Oxford Business Report, 2018).

The energy sector is also driving the demand for construction, with the building of new gas and oil fields and a new coal plant at Ekumfi Aboano (Oxford Business Report, 2018).

However, the sector's performance is being undermined by poor access to finance and a delay in payments of government contracts. Despite the amount of international investment accessing capital is seen as a challenge for many operators, as is the rising cost of electricity and building materials. Access to land is also a hurdle for construction companies. Roughly 80% of land belongs to traditional local authorities or individual families, and the current land registration system is expensive and time consuming to navigate (Oxford Business Report, 2018). Another challenge is that much of the equipment being used is ageing and developers are not using modern and up-to-date equipment, which can impact quality and the length of time to complete work. Poor access to finance and late payments partly explain the lack of investment in new equipment.

2.2 Employment

According to the Labour Force Survey (2015) the construction sector has a workforce of 316,365, of which 94.0% are male. It is still too early to tell the impact of COVID-19 on the workforce. It is likely that demand for construction will be severely impacted if the pandemic continues to affect economic output and with it the negative impacts on consumer demand and government spending.

The workforce suffers from high rates of labour turnover in lower skilled roles. Labour is relatively transient and those working informally in the construction sector often move freely between the agriculture and construction sector depending on demand. This exacerbates skill gaps and undermines quality.

1 https://www.designbuild-network.com/comment/sub-saharan-africa-construction-sector-covid-19/, viewed on 17 May 2020

There is concern that as the sector has become more competitive, it has attracted new entrants from Benin, Togo, Chad, Nigeria and Mali (Oxford Business Report, 2018). The LFS (2015) suggests that 3.2% of migrants work in construction. This rises to 4.5% in urban areas. Members of the SSB suggest that the percentage of migrant labour is higher than the figures suggest. Artisan workers from Togo and Cote d'Ivoire are seen to have higher level technical skills, particularly in tiling and plastering as well as being seen to be more willing to work than their Ghanaian counerparts.

2.3 Drivers of change, enablers and key major trends and their likely impact on employment.

Meeting standards and regulations

There is a concern about the number of buildings and to a lesser extent infrastructure that do not meet standards and regulations. Whilst this can have health and safety implications, it also means that producing a good finish is a consistent problem (Ministry of Works and Housing, 2017). The lack of ongoing inspections is seen to be partly responsible for this problem, but the lack of a regulated workforce that do not have the required skills is also seen as a critical factor undermining standards.

The absence of a regulatory body responsible for the certification of building and civil contractors has led to an increase in untrained and uncertified technicians and professionals in the construction sector.

The current framework for the registration of construction contractors with the Ministry of Works and Housing and the Ministry of Roads and Highways is optional as only those contractors that seek a government contract need to register. This means that many contractors are unregulated.

In order to do this a Bill is being drafted to establish a statutory body, the Construction Industry Authority, to enforce measures and standards as well as promote best practice. It is envisaged that the Bill will encourage growth and position the sector to compete internationally and ensure compliance with standards.

Late payment of contracts

Many contractors do not receive payment on time for government contracts, which poses problems for their cashflow. This is felt to be a consistent problem and uncertainty over payments can undermine investment in equipment and the workforce. Late payments can also exacerbate the high levels of employee turnover and the lack of investment in training and development.

Increased investment in affordable housing

The construction of housing and in particular affordable housing across the country is set to continue. Available statistics indicates that the housing deficit is in excess of 1.7m housing units. To reduce the deficit and accommodate new households, there is the need for an annual delivery of over 170,000 housing units per year over 10 years (2017-2027 (Ministry of Works and Housing, 2017). Whilst this will stimulate the demand for skilled labour, the impact of COVID-19 could mean that it takes longer for the demand to fully realised.

Continued commitment to infrastructure development

Increased government tax revenues are being used to invest in better road and water infrastructure. In addition, there is a renewed focus on preventing coastal erosion which is likely to trigger large-scale construction.

Sustainable construction

The focus on climate change means that there is increasing pressure on the sector to use more sustainable resources and to construct buildings that are better adaptable to climate change, such as preventing heat entering buildings. It also means using more sustainable techniques such as compact blocks to reduce the amount of raw materials being used to build. This is outlined in the Ghana Building Code.

3. Profile of major occupations and key skills in the sector

The breadth of the sector means it employs a wide range of specific occupations. These specific occupations tend to be found in larger organisations, whereas in smaller businesses employees often have a wider array of skills to perform multiple functions.

Occupations in the sector may be organised into four main categories: executive management; project professionals; technicians and associate professionals; crafts, operators and basic occupations.

1. **Executive Management:** This category involves managers responsible for policy and strategy implementation, and administration. They include the owner or director and technical managers such as human resources, financial controllers/cost managers, operations and procurement managers.

   The main skills required include generic skills such as people management, including recruitment, coaching and performance management; critical thinking and conceptual thinking; financial management; monitoring and evaluation; brand development, presentation, negotiation; procurement; inventory management. Also technical skills related to the sector as well as knowledge of standards and legislation and health and safety.

2 **Project Professionals:** This category comprises the highest level of technical managers who provide technical oversight in companies. Employees in this category act as an interface between the executive management, technicians and other mid-level and basic occupations. This category includes civil engineers, project managers, project engineers, construction managers, architects, surveyors (land and quantity), service engineers, health, safety and environment professionals among other professional occupations in the construction sector.

   The main skills and knowledge required include planning and design skills; numeracy; knowledge of different materials; project management, critical thinking and problem solving, oral and written communication, negotiation skills, including recruitment, coaching and performance management; financial management; monitoring and evaluation; brand development, presentation, negotiation; procurement; inventory management; knowledge of standards and legislation and health and safety.

3 **Technicians and other mid-level occupations:** These are mid-level skilled technicians, professionals and mid-level construction and site managers who work directly under the supervision of the project professionals category. It comprises: building surveyors; mastercraft persons (MCPs) and supervisors, among other certified technicians and mid-level occupations.

   The main skills required include technical skills such as drawing and reading architectural plans; laying out; laying bricks and blocks, plastering, tiling, problem solving, oral communication, coaching and performance management; monitoring and evaluation; inventory management; knowledge of standards and legislation and health and safety.

4 **Crafts, Operators and Basic Occupations:** This category comprises occupations, such as craftsmen, machine operators, construction helpers, and construction labourers. Some in these roles have TVET qualifications but many have no formal qualifications. Turnover rates can be high.

   The main skills required include technical skills such as laying bricks and blocks, electrical work, carpentry, machine operation, erecting scaffolding, plastering, tiling, problem solving, oral communication; knowledge of standards and legislation and health and safety, punctuality and attention to detail.

4. The supply of skills:

4.1 Career pathways

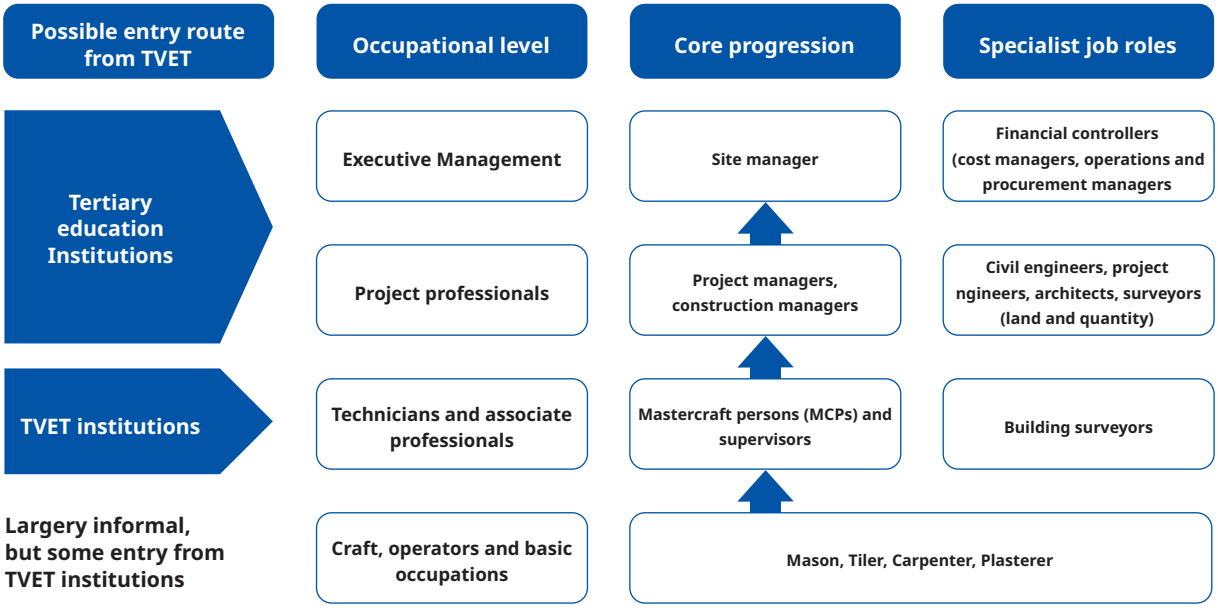
Employees in occupations at management and supervisory levels are generally recruited directly from technical and traditional universities or among experienced staff from other industry players.

Employees in craft, operator and basic occupations are recruited from pre-tertiary TVET institutions or from other employers in the sector. However, a large proportion of the workforce at this level are recruited with no training or prior experience after completing high school or among early school leavers. They acquire their skills and knowledge through informal, on-the-job training. The high levels of labour turnover in the sector results in a continuous demand for this type of labour.

Whilst it is possible to progress into more senior positions, it is only after extensive experience that someone in a craft, operator and basic occupation can progress into a project professional or senior management position within a larger business without significant training.

Figure 2 outlines the possible career pathways through the construction sector and the potential entry routes through TVET:

Figure 2: Career pathways through the construction sectors



4.2 Key institutions, formal programmes and qualifications relevant to the sector

Institutions

There are two broad areas of provision of construction-related courses: pre-tertiary and tertiary.

Pre-tertiary education

Private and public pre-tertiary TVET institutions, such as the National Vocational Training Institute; the Technical Institutes under the Ghana Education Service; Integrated Community Centres for Employable Skills; the Department of Community Development and the Opportunities Industrialization Centres Ghana (OICG), YMCA, and GRATIS provide training for the sector.

Tertiary education

All ten technical universities/polytechnics offer Higher National Diploma and Bachelor of Technology programmes in construction. Traditional public universities and selected private universities offer undergraduate and post graduate programmmes in construction. These include:

- Kwame Nkrumah University of Science and Technology (KNUST)
- Kaaf University College
- University of Cape Coast
- University of Ghana
- Central University
- Accra Institute of Technology: engineering, but not construction

4.3 Enrolment data

Figures from COTVET indicate that in 2017, there were 14,941 students enrolled on construction-related courses in TVET institutions (see table 1).[2] This is quite substantial compared to other areas of provision, but without robust labour market information it is difficult to assess the extent to which this meets potential demand from the construction sector. Enrolments have risen year on year since 2015.

Whether courses are solely construction-related is difficult to determine as for example carpentry may relate to furniture making and similarly, electronics and welding may be related to other sectors.

Table 1 also shows that across the three years, only 5.3% of students were female which highlights the challenge of attracting more women into sector.

Table 1: Students on construction-related courses (male and female) (2015–2017)

2015			2016			2017		
Male	Female	Total	Male	Female	Total	Male	Female	Total
13,468	447	13,926	15,239	364	15,620	14,394	521	14,941

Source: COTVET, 2020

Note: gender and totals may not add up owing to incomplete entries for gender

There is a broad range of construction-related courses on offer, with little consistency in their titles. However, the largest percentage of courses are potentially broader in scope with 'building and construction' in their title. Given the demand for masons, carpenters and tilers it would appear that there are fewer courses to address these skill areas. Further analysis is required to better understand the content of these courses and the extent to which they reflect the skill needs sought by the sector.

2 This figures excludes enrolments on courses in tertiary education

▶ Table 2: Students on construction-related courses by region (2017)

Course title	Total	Percentage
Architecture design/drafting	350	2.3
Block laying and concreting	66	0.4
Building/building and construction	3,208	21.3
Building draftsmanship	38	0.3
Building technology	236	1.6
Carpentry and joinery	377	2.5
Civil engineering	106	0.7
Electric engineering	1,328	8.8
Electrical	1,083	7.2
General electrical	1,948	12.9
Electrics	190	1.3
Electronics	1,083	7.2
Masonry	681	4.5
Mechanical engineering	462	3.1
Plumbing/plumbing and gas fittings	1,144	7.6
Welding/welding fabrication	868	5.8
Wood construction technology	871	5.8
Other	1,050	7.0
Total	15,089	100.0

Source: COTVET, 2020

An analysis of student enrolments on construction-related courses in 2017 by region shows that Central Region had the highest number of students followed by Eastern and Greater Accra Regions.

▶ Table 3: Students on construction-related courses by region (2017)

Region	2017			
	Male	Female	Total	%
Greater Accra	1,755	26	1,781	11.6
Volta	1,303	74	1,377	9.0
Eastern	1,908	40	1,948	12.7
Central	2,549	26	2,599	16.9
Western	1,287	69	1,376	9.0
Ashanti	1,545	173	1,700	11.1
Brong Ahafo	1,525	65	1,590	10.4
Northern	689	22	711	4.6
Upper West	574	116	690	4.5
Upper East	1,564	26	1,590	10.4

Source: COTVET, 2020

When the figures are broken down by institution, they show that many institutions offer construction-related courses and that these often attract a significant number of students. However, some institutions may not have sufficient facilities to deliver quality provision given the large number of students they attract.

4.4 Workbased and informal learning

Workbased training is typically led by team leaders (foremen) who mentor new entrants to acquire relevant skills through on-the-job training. A similar approach is used to train staff that are hired with limited experience and lack the necessary skills required.

In the majority of smaller companies, workbased training is coordinated by a project manager. However, in larger companies, it can be coordinated by human resource departments.

Where employment is limited to short contracts, or where the employer is less well managed, then work-based learning is unlikely to result in a labourer becoming fully competent in all areas of their role. If a mastercrafts person was trained informally then they are likely to be delivering an incomplete range of skills. However, under a skilled and experienced mastercrafts person, the labourer can develop the appropriate skills and critically the types of finishing skills that the sector is seeking.

5. Supply side challenges and constraints

5.1 National skills policy and strategy

TVET is delivered at the secondary and tertiary education levels. Ghana has good literacy rates compared to the region as a whole. Literacy rates for those aged 15-24 years is 92.5% and 79.0% for those aged over 15 years.[3] Since September 2017, secondary education has been free and as a result net enrolment has increased, but enrolment rates still pose a challenge. In 2013, net enrolment rates were 52.7%. This had risen to 57.24% by 2019.[4]

A review of the Ghanaian TVET system found that the current technical vocational education and training system neither reflects the current skill needs of employers, nor is it anticipating and developing the future skills that Ghanaian businesses and the Ghanaian economy will require in the future (COTVET, 2018).

The 2018-2022 Strategic Plan for TVET Transformation produced by COTVET identifies a number of critical challenges that need be addressed:

1. Poor linkage between training institutions and industry.
2. Deeply fragmented training landscape and lack of co-ordination among multiple TVET delivery agencies.
3. Multiplicity of standards, testing and certification systems.
4. Low quality of instruction, due to inadequate instructor training and lack of instructional support and TVET infrastructure.
5. An informal TVET system that has been neglected and detached from the formal sector.
6. Poor public perception of TVET, which is seen as good for only the academically weak students.

A lack of sustainable funding and poor partnership linkages between employers, TVET institutions and government is deemed a central reason for many of these problems.

The Strategic Plan for TVET Transformation aims to overcome many of these challenges by 'transforming Ghana's labour force to enhance productivity and performance'. It has five policy objectives:

1. Governance and management of TVET: to provide a coherent legal and institutional framework for the TVET sector which is accountable and responsive to the demands of the private sector and other stakeholders.
2. Increased access: to ensure equitable access and promote gender mainstreaming in TVET.
3. Improving quality: to ensure quality assurance in TVET according to internationally accepted standards.
4. TVET financing: to develop a sustainable source of financing for TVET.
5. Environment sustainability: to green TVET for environmental sustainability.

3 http://uis.unesco.org/en/country/gh viewed 15 May 2020
4 http://uis.unesco.org/en/country/gh viewed 15 May 2020

The National Commission for TVET Bill is currently going through Parliament. It makes provision for the voice of employers and private sector industries to be represented through a new National Commission for TVET. It will also have representation from relevant ministries, educational agencies and public and private educational bodies.

The object of the Commission is to regulate, promote and administer technical and vocational education and training transformation and innovation for sustainable development.

The Bill outlines provision for five standing committees of the Board which includes the Sector Skills Committee. SSBs may be sub-groups of this committee.

The Bill also outlines the creation of a TVET Service to manage, oversee and implement approved national policies and programmes relating to pre-tertiary technical and vocational education and skills development.

The TVET Service will be responsible for all the existing government pre-tertiary technical and vocational institutes currently under various ministries and agencies, such as the Ministries of Education; Employment and Labour Relations; Gender, Children and Social Protection; Youth and Sports; Trade and Industry; Food and Agriculture; Trade and Highways; Transport; Local Government and Rural Development.

The TVET Service Board will include representation from the National Commission for TVET, Association of Ghana Industries, Ghana Employers' Association and the Ministry of Trade and Industry.

Currently, there is limited labour market information available that provides detailed projections of occupational demand. As a result, it is difficult to ensure that the availability of provision is effectively aligned to these needs

5.2 Governance and stakeholder coordination

Private and public post-secondary level TVET institutions are directly administered by a board of governors or a council of their respective institutions. Despite an institution delivering construction-related provision, there is often no representation from employers or industry associations at a board level.

Curricula are approved by the National Accreditation Board, however there is currently minimal sector input into the scope, content, delivery and assessment of a programme. Employers are often asked their opinion of a proposed course, but are not engaged in its development or delivery. In most TVET institutions there are currently no sector advisory bodies to help shape the content and delivery of programmes.

5.3 Funding

Funding of TVET and tertiary education institutions in the construction sector is through government budgetary allocations and interventions; development partners interventions and fees paid by students. At the tertiary level, the cost of training is shared between students and government, with students contributing the largest portion, especially for practical training. Government contributions cover the cost of lecturers and other administrative costs of the institutions.

At the pre-tertiary level, students in training institutions under the Ghana Education Service benefit from free tuition, food and accommodation. However, the cost of practical training is borne by students, with minimal support from government. The lack of funding means that students are not receiving sufficient practical training, which means they are having to be trained once they enter employment.

Institutional Production Units (IPUs) are used as means of internal funding in larger institutions, but it is felt that this can be used more extensively by construction departments to hire out equipment and sell bricks and blocks to contractors which means that the institution is receiving an income to invest in more up to date equipment for their students. In this way, the students and contractors benefit from more modern technology, but at the same time the institution receives an income.

5.4 Relevance of curriculum and qualifications

The lack of practical content and assessment is seen to be a major weakness in the range of current qualifications and courses on offer.

The current curricula offered across pre-tertiary and tertiary institutions has limited input from the sector and as a result does not adequately reflect the needs of construction employers.

The curriculum is often developed to reflect available facilities, rather than what is required by the sector and as a result it is felt to be too theoretical and offers too few practical opportunities to develop the technical skills required.

It is also felt that it does not reflect the latest practices and techniques undertaken in the sector and often this is because of the lack of available equipment.

There is little consistency across the content being taught across different institutions nor is it felt that programmes adequately reflect the national occupational standards.

In tertiary education it is felt that students do not develop sufficient practical skills, which means that often they have fewer technical skills than the labourers they are working with and sometimes overseeing.

5.5 Delivery and assessment practices

There is generally no up-to-date or state of the art equipment and laboratories available for practical training. Curricula are being developed to take into account available equipment, rather than reflecting what is required in the workplace. Given typical class sizes there is also insufficient equipment to provide students with the range of practical experience required.

The main reasons for the over-emphasis on theoretical training in the form of lectures, rather than practical training, are large class sizes and limited funding to support practical training.

Trainers and lecturers often lack up to date experience and the focus on gaining academic qualifications to teach may mean that some lecturers have limited experience of working in the sector.

A lack of engagement between TVET and tertiary education institutions and the construction sector means that students are not often not undertaking internships to develop practical skills, nor are employers and trade associations coming into institutions to support delivery and assessment.

A challenge at this level is the prevalence of early leavers. These are trainees and informal apprentices who leave their training earlier than their full circle of training and therefore do not acquire their final certification before transiting into the job market. Whilst some employers accept these workers, it is likely to exacerbate existing skill gaps.

The Institutions currently responsible for delivery and Assessment of TVET in Ghana are:

- National Accreditation Board (NAB)-Tertiary Level
- National Board for Professional and Technician Examination (NABPTEX)- Pre-Tertiary (Diploma and Higher national Diploma)
- Technical Examination Unit (TEU)- Pre-Tertiary (Below Diploma)
- National Vocational Training Institute (NVTI)- Pre-Tertiary (Below Diploma and Informal Apprenticeship)

5.6 Access to training

Workbased training is critical given the high proportion of the workforce entering the sector without the necessary skills and experience. Training is often ad hoc and its effectiveness is largely dependent

on the size of the contractor, the skills and experience of the mastercrafts persons and the retention of labourers. As such, there is no standard approach to training across the sector.

Given the lack of engagement with TVET institutions, training does not result in formal qualifications nor is it certified.

Apprenticeships are used in the sector to develop the skills, knowledge and competence of young people. These are informal and vary in quality and length. There are opportunities to formalise these apprenticeships to provide greater consistency and ensure they develop the full competencies required to become a carpenter, mason, tiler etc.

There is also seen to be a need to assess existing workers through Recognised Prior Learning (RPL) assessments in order to identify gaps, provide tailored development and provide certification. This would help to upskill and professionalise the workforce and align with efforts to introduce workforce regulation.

5.7 Industry-training providers' linkages and support for work based learning

Short-term training courses can be developed by TVET institutions, but this happens infrequently. There are opportunities for contractors and TVET institutions to work together to upskill and professionalise the workforce. Encouraging TVET institutions to become more innovative and entrepreneurial is also seen as an important step that institutions can take to increase their engagement, invest in their facilities and provide a better training experience for their students.

5.8 Gender and disability equality

The construction sector continues to be seen as a male-dominated sector. As a result, there are few female students on construction-related courses relative to men.

More needs to be done to encourage women into the sector. There are currently examples of women who are successfully working in the sectors and this provides an opportunity to promote career opportunities for women in sector-specific careers campaigns in order to change the perception of the sector and attract more women to consider employment in the sector.

The physical nature of the sector means that there are challenges to employing someone with a physical disability. However, the sector can do more to identify opportunities to support those with a disability to work in construction.

6. Vision for the future of the sector

The SSB through the STED approach devised a vision for the sector which provides a future focal point for everything to become aligned:

A maintained and integrated cost effective, safe and sustainable civil and housing infrastructure responsive to the needs of users, supporting growth, poverty reduction and decent employment generation.

It will be important that the sector has a skilled and productive workforce to meet the sector's vision and that the TVET system adapts to meet the needs of the sector in developing the skills of the future workforce and supporting the development of the existing workforce.

To realise the vision, the SSB will develop appropriate key performance indicators to assess progress and ensure it remains within scope of its terms of reference.

7. Gaps in the capabilities and skills needed to achieve the vision for the future

The paucity of labour market information makes it difficult to assess the demand for labour in coming years, but also the types of skills that may be required and the types of skills currently lacking within the sector workforce. Developing a mechanism to collect timely labour market information for the sector is critical in order to create an effective demand-led TVET system.

In the absence of these mechanisms, labour shortages, skill shortages and skill gaps have been identified through an analysis of the recent skills gaps analysis undertaken for COTVET (2019) as well as through consultation with members of the SSB.

7.1 Labour shortages

Members of the SSB identified that the construction sector suffered labour shortages for the following occupations:

- Welding and fabrication
- Plumbing
- Carpentry
- Painting and decoration
- Masons
- Steel banders
- Air condition installers
- Block builders

7.2 Skill shortages

Similarly, whilst there are is robust labour market information, members of the SSB consistently reported that applicants for middle and functional managers often lack practical skills, which means that they are unable to perform routine tasks.

They also reported specific skill shortages for the following roles:

- Tilers
- Plasterers
- Crane operators

These shortages are often being addressed by recruiting migrant workers from neighbouring countries who are reported to have higher standards of finishing skills..

7.3 Skills gaps

There are extensive skill gaps across the sector. Middle managers lack practical skills and elementary occupations typically lack underpinning knowledge and finishing skills. This is particularly the case for key occupations such as carpenter, tilers and masons.

During their STED Technical and Policy workshop, members of the SSB identified a number of key business capacity gaps and the types of skills lacking. These are outlined in table 4 and the types of skills needed are largely generic management skills and technical and finishing skills.

▶ Table 4: Gaps in the capabilities and required skills within the sector

Key business capability gaps	Implications of gaps for type of skills needs
Sourcing and management of funds	Concept note and proposal writing, book keeping, budgeting & budget management, financial reporting and accounting skills, entrepreneurial skills for managers
Corporate governance, management and technical capacity	Human relations, stakeholder and compliance management skills, corporate governance skills, management style, shared values and corporate strategy and administrative skills
Managing supply chain relationships	IT skills, procurement, purchasing and supply, inventory and material management.
Enterprise development	Research and development skills, strategic management skills, product development skills, Project development skills
Technology and innovation	Creative thinking, entrepreneurial skills, critical thinking, research and development, Technical ICT Skills
Compliance to regulatory requirement	Legal skills and compliance with regulations and standards
Maintenance of plant and general infrastructure	Improved skills of engineers, technicians, craftpersons and operators to operate and repair machinery safely and efficiently
Technical know how to quality finishing and correct use of materials	Quality, poor finishing, incorrect use of materials, Occupational health and safety, waste management, material and resource requirement skills to estimate what is required to reduce waste and costs, interpretation of drawings, modern techniques

Core work employability skills

Gaps is core work employability skills cut across all of business capability gaps listed above. These include gaps in human relations, communication skills, work attitude, time management skills.

COTVET (2019) undertook a comprehensive analysis of skill gap occupations in the sector. SSB members narrowed this list to a number of key occupational skill gaps outlined in table 5.

▶ Table 5: Skills gaps identified across construction key occupations

Job title	Skills Gap
Masons	▶ Underpinning knowledge about interpreting plans ▶ Pointing and finishing bricks and blocks ▶ Accurate measuring and calculations
Plasters	▶ Techniques to create smooth matt finish ▶ Use of flexible trowel to create quality finish ▶ Use of dry and cross trowel techniques to create appropriate finish
Plumbers	▶ Use of electronic diagnostic tools to identify leaks
Tilers	▶ Attention to detail when finishing tiles ▶ Accurate measuring and calculations

Source: Adapted from COTVET, 2019

In assessing the current skill gaps, the SSB also identified potential interventions to address the key skill gaps:

▶ Table 6: Interventions required to address skill gaps

Key business capability gaps	Areas for interventions
Compliance with regulatory requirements	Improve skills in technical practices Efficient laboratories
Sourcing (development of local supply base, sourcing from suitable market suppliers)	Improve project management skills
Technology change	Continuous professional training to match technology trends
Corporate governance	Improve HR capacity
Construction inefficiency	Improve skills for project management, civil engineers quality management.
Financial management deficits	Improve auditing skills for accountants, accounts staff
Maintenance of plant and general infrastructure	Improved mechanical skills of engineers, technicians and operators

8. Recommendations on meeting priority skills needs and gaps

8.1 What skills are needed and where and who should deliver them

There are three key skills priorities for the construction sector. These are to:

1. Upskill and certify the current workforce and align TVET with efforts to regulate the workforce.
2. Ensure that students from TVET and tertiary education institutions enter the sector with the required technical skills and knowledge.
3. Create structured apprenticeship routes to develop the skills of young people in occupations such as masons, carpenters, tilers and plasters whilst in employment.

These three skills priorities will require greater collaboration between TVET and the construction sector and a regulatory landscape for construction that encourages the adherence to quality standards.

Whilst not directly a skill priority it will be essential as part of efforts to upskill the workforce to increase the professionalism of the sector by ensuring good working conditions and competitive pay. This should make the sector more attractive in which to gain employment and increase employee retention, which in turn will help reduce skill gaps and increase productivity levels.

9. Recommendations on meeting system-level priorities for the sector

9.1 National skills policy and strategy

There is a need to engage senior officials in the Ministry of Works and Ministry of Roads to secure their commitment to the skills strategy and ensure alignment across policy development and implementation.

Proposed action:

SSB to hold initial workshop for senior officials in the Ministry of Works and Ministry of Roads with the Ministry of Education to commit to supporting the implementation of the Skills Strategy, acknowledging the role of the SSB to underpin regulation of the workforce and addressing underlying challenges that underpin the investment in skills within the sector e.g punctual payments.

9.2 Governance and stakeholder coordination

It is important that the SSB establishes itself as a mechanism to bridge the current gap between the sector and the TVET system and to work with partners to pilot new approaches and innovation which if successful can be rolled out across the country. Its role will need to be clearly outlined in new legislation and its role understood. To fulfil its terms of reference it will need to be adequately resourced and be guided by robust labour market information and supply-side data.

Proposed action:

- SSB to support the implementation of the Ghana Construction Industry Authority and develop a MOU to outline how its activities can help align TVET to the Authority's work.
- SSB to engage partners to develop appropriate key performance indicators to assess the progress and impact of the SSB.
- SSB to engage with the sector to spell out its role and strategy, put in place secretariat to take forward strategy, work with key partners to fund and pilot activities in the strategy.
- COTVET to hold sensitization session with senior officials in Ministry of Works and Ministry of Roads to ensure they are aware of the implications of the TVET Bill and the role of the SSB and commit to holding six month review meetings with senior officials to review progress of the SSB and help review.
- COTVET to hold sensitization session with stakeholders in construction sector to raise awareness of the implications of the new TVET policy.
- SSB to identify mechanism to collect relevant LMIS for the construction sector, linking with broader approaches to collect LMIS. This will allow better understanding of demand, but also skill need.
- SSB to put in place a mechanism to collect supply-side data to collect and monitor the supply of sector-specific provision in technical secondary schools, TVET institutions and tertiary education.
- SSB to ensure that all TVET institutions delivering construction-specific provision have construction representatives on their Board.

- SSB to ensure that all TVET institutions and tertiary education institutions delivering construction-specific provision has an employer advisory panel that reflects the make-up of construction employers in the vicinity.
- SSB to support TVET institutions and tertiary education institutions put in place tracer studies to monitor impact and the impact of the strategy.

9.3 Funding

Funding continues to undermine practical delivery within TVET and tertiary education institutions. Addressing the funding problem will not be easy and requires a broader solution that engages all sectors of the economy. In the short-term, there is a need to pilot new approaches to how TVET can generate income for hiring out equipment.

Proposed action:

SSB to explore with ministries current contracts and whether a percentage of the contract can ring fence funding on the completion of training.

SSB to pilot more commercial activities within the TVET and tertiary education institutions that would generate income to increase practical delivery and the use of modern equipment. This include purchasing and hiring equipment.

9.4 Curriculum and qualifications

There is a need to engage TVET and tertiary education institutions and together with COTVET review the current range of construction-related qualifications on offer to ensure there is a greater alignment to employer needs. New courses need to emphasise the development of practical skills and be updated to reflect the current needs of the sector.

Proposed action:

- SSB to outline core occupations in the sector and produce career progression map to show entry and progression into and through the sector.
- SSB to outline a comprehensive career strategy with existing intermediaries to promote careers in the sectors, showcase career pathways and the opportunities of pursuing a career in the sector. The campaign should be aligned to practical guidance being offered, in particular that being offered to young people. This must include activities to encourage more women to enter the sector.
- SSB to develop or refresh occupational standards for priority occupations.
- SSB to review the curriculum delivered in technical schools to ensure it responds to labour market needs SSB to bring together relevant TVET institutions and tertiary education institutions to develop curricula for priority occupations that is consistent across the country.

9.5 Delivery and assessment practices

As part of a review of content of the courses on offer, there is a need to engage TVET and tertiary education institutions to increase practical delivery and introduce greater innovation and engagement with the sector. This includes structured internships and support with delivery and assessment by employers and industry associations.

Proposed action:

- SSB to audit technical schools to assess whether they have the relevant facilities to deliver construction-relevant skills and put in place action plan to address gaps.
- SSB to ensure that teachers in technical schools have the skills to engage learners and deliver construction-relevant curriculum.
- SSB to audit facilities in technical schools with COTVET and produce action plan to address gaps in facilities.
- SSB to pilot TVET institutions and tertiary education institutions hiring out equipment, linked with training and development of new equipment, assess the lessons from the pilot and rollout.
- SSB to facilitate capacity building with senior staff in TVET and tertiary education institutions to increase innovation, commercial activities, and engagement with the sector.
- SSB to put in place practical development strategy for existing TVET and tertiary education lecturers delivering construction-specific provision.
- SSB to work with relevant partners to put in place new specifications for teachers delivering construction courses to have relevant practical experience and to stipulate periodic industry refreshers.
- SSB to identify skill needs of current teachers and provide upskilling training to ensure their skills and knowledge are up-to-date.

9.6 Access to training

There is a critical need to assess the skills, provide targeted training and certify the current workforce in an effort to upskill and professionalise the workforce. The SSB will have an important role to work with sector partners and TVET institutions to pilot structured apprenticeships in the sector.

Proposed action:

- SSB to pilot Recognition of Prior Learning (RPL) with mastercraft persons, deliver top-up training (including finishing techniques, literacy and numeracy) and certify through COTVET.
- SSB to role out mastercraft persons RPL programme.
- SSB to pilot RPL programme for informal workers in core roles.
- Pilot formalized apprenticeship approach for core roles such as masons, carpenters and tilers.

9.7 Industry-institute linkages and support for workplace learning

Greater collaboration between the construction sector and TVET and tertiary education institutions are vital to support efforts to upskill the current workforce through RPL assessments, targeted training and apprenticeships. Such collaboration can reap positive benefits for all parties.

Proposed action:

- SSB to pilot internships with key employers, review, amend and roll out across all TVET and tertiary education institutions.

- SSB to pilot employers, associations and suppliers supporting the delivery and assessment of construction courses.
- SSB to pilot setting up of alumni networks to increase engagement with TVET and tertiary education institutions and the sector.

9.8 Gender and disability equality

There are opportunities to alleviate skills and labour shortages by attracting more women into the sector and onto construction-related courses in TVET and tertiary education institutions. Similarly, the sector can create real career opportunities for people with disabilities to gain employment in sector.

Proposed action:

- SSB to ensure that careers strategy and activities actively target more women, showcasing existing high profile female role models working in the sector.
- SSB to work with associations to take forward activities that address stereotypes and look to change behaviours in how women should be treated in the sector.
- SSB to establish a network for women managers and aspiring managers in the sector and provide mentoring opportunities.
- SSB to ensure that careers strategy and activities includes reference to people with disabilities.

10. Timescales

The passing of the TVET Commission Bill will help establish the role and authority of the SSB and will help increase its leverage to galvanise the change outlined in this strategy. The following sets out the actions outlined above across an eighteen month timeline and suggests those actions that can be taken forward before the Bill is passed and those where it would be more advantageous to wait.

10.1 Immediate actions

Time period	Category	Actions
First six months from launch of strategy	National skills policy and strategy	SSB to hold initial workshop for senior officials in the Ministry of Works and Ministry of Roads with the Ministry of Education to commit to supporting the implementation of the Skills Strategy, acknowledging the role of the SSB to underpin regulation of the workforce and addressing underlying challenges that underpin the investment in skills within the sector e.g punctual payments
	Governance and stakeholder coordination	SSB to engage with the sector to spell out its role and strategy, put in place secretariat to take forward strategy, work with key partners to fund and pilot activities in the strategy
	Governance and stakeholder coordination	SSB to support the implementation of the Ghana Construction Industry Authority and develop a MOU to outline how its activities can help align TVET to the Authority's work
	Governance and stakeholder coordination	SSB to engage partners to develop appropriate key performance indicators to assess the progress and impact of the SSB
	Governance and stakeholder coordination	SSB to ensure that all TVET institutions delivering construction-specific provision have construction representatives on their Board
	Governance and stakeholder coordination	SSB to ensure that all TVET institutions and tertiary education institutions delivering construction-specific provision has an employer advisory panel that reflects the make-up of construction employers in the vicinity
	Funding	SSB to explore with ministries current contracts and whether a percentage of the contract can ring fence funding on the completion of training
	Curriculum and qualifications	SSB to outline core occupations in the sector and produce career progression map to show entry and progression into and through the sector
First 12 months from launch of strategy	Governance and stakeholder coordination	SSB to set up mechanism to collect relevant LMIS for the construction sector, linking with broader approaches to collect LMIS at a national level and complement available data. This will allow better understanding of the job demand, and the skill needs
	Governance and stakeholder coordination	SSB to put in place mechanism to collect supply-side data to collect and monitor the supply of sector-specific provision in technical secondary schools, TVET institutions and tertiary education
	Governance and stakeholder coordination	SSB to support TVET institutions and tertiary education institutions put in place tracer studies to monitor impact and the impact of the strategy
	Funding	SSB to pilot more commercial activities within the TVET and tertiary education institutions that would generate income to increase practical delivery and the use of modern equipment. This include purchasing and hiring equipment.
	Curriculum and qualifications	Develop or refresh occupational standards for priority
First 18 months from launch of strategy	Curriculum and qualifications	SSB to review the curriculum delivered in technical schools to ensure it responds to labour market needs
	Curriculum and qualifications	SSB to bring together relevant TVET institutions and tertiary education institutions to develop curricula for priority occupations that is consistent across the country, but responds to local market needs

10.2 Actions after TVET Bill has been passed

Time period	Category	Actions
First six months after Bill is passed	Governance and stakeholder coordination	COTVET to hold sensitization session with senior officials in Ministry of Works and Ministry of Roads to ensure they are aware of the implications of the TVET Bill and the role of the SSB and commit to holding six month review meetings with senior officials to review progress of the SSB and help review
	Governance and stakeholder coordination	COTVET to hold sensitization session with stakeholders in construction sector to raise awareness of the implications of the new TVET policy
	Governance and stakeholder coordination	SSB to support the implementation of the Ghana Construction Industry Authority and develop a MOU to outline how its activities can help align TVET to the Authority's work
	Access to training	SSB to pilot Recognition of Prior Learning (RPL) with mastercraft persons, deliver top-up training (including finishing techniques, literacy and numeracy) and certify through COTVET
	Industry-institute linkages and support for workplace learning	SSB to pilot internships with key employers, review, amend and roll out across all TVET and tertiary education institutions
First 12 months after Bill is passed	Curriculum and qualifications	SSB to outline a comprehensive career strategy with existing intermediaries to promote careers in the sectors, showcase career pathways and the opportunities of pursuing a career in the sector. The campaign should be aligned to practical guidance being offered, in particular that being offered to young people. This must include activities to encourage more women to enter the sector.
	Gender and disability equality	SSB to ensure that careers strategy and activities actively target more women, showcasing existing high profile female role models working in the sector
	Gender and disability equality	SSB to ensure that careers strategy and activities includes reference to people with disabilities
	Delivery and assessment	SSB to audit technical schools to assess whether they have the relevant facilities to deliver construction-relevant skills and put in place action plan to address gaps
	Delivery and assessment	SSB to ensure that teachers in technical schools have the skills to engage learners and deliver construction-relevant curriculum
	Delivery and assessment	SSB to pilot TVET institutions and tertiary education institutions hiring out equipment, linked with training and development of new equipment, assess the lessons from the pilot and rollout.
	Delivery and assessment	SSB to facilitate capacity building with senior staff in TVET and tertiary education institutions to increase innovation, commercial activities, and engagement with the sector
	Delivery and assessment	SSB to put in place practical development strategy for existing TVET and tertiary education lecturers delivering construction-specific provision
	Delivery and assessment	SSB to work with relevant partners to put in place new specifications for teaching construction courses, including up-to-date practical (on-the-job) experience
	Delivery and assessment	SSB to identify skill needs of current teachers and provide upskilling training to ensure their skills and knowledge are up-to-date
	Access to training	SSB to role out mastercraft persons RPL programme following the pilot and its evaluation
	Access to training	SSB to pilot RPL programme for informal workers in core roles
First 18 months after Bill is passed	Delivery and assessment	SSB to audit facilities in technical schools with COTVET and produce action plan to address gaps in facilities
	Access to training	Pilot formalized apprenticeship approach for core roles such as masons, carpenters and tilers.

Time period	Category	Actions
	Industry-institute linkages and support for workplace learning	SSB to pilot employers, associations and suppliers supporting the delivery and assessment of construction courses
	Industry-institute linkages and support for workplace learning	SSB to pilot setting up of alumni networks to increase engagement with TVET and tertiary education institutions and the sector
	Gender and disability equality	SSB to work with associations to take forward activities that address stereotypes and look to change behaviours in how women and persons with disabilities should be treated in the sector
	Gender and disability equality	SSB to establish a network for women managers and aspiring managers in the sector and provide mentoring opportunities

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