

# Competency-based approach to technical and vocational education and training in Africa

## Country report: Ghana



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## EXECUTIVE SUMMARY

Under the authority of the Ministry of Education, technical and vocational education and training (TVET) in Ghana is managed primarily by the Council for Technical and Vocational Education and Training (COTVET).

COTVET was established in 2006 to manage vocational training nationwide. It is the body responsible for standardising, regulating and supervising vocational training activities in public and private TVET institutions.

Since 2012, COTVET, as provided for by legislation Instrument LI 2195, has a mandate to serve the institutions under 12 ministries related to TVET. Its board of directors is co-chaired by the Ministry of Education and the Ministry of Science, Technology and Innovation.

The implementation of the competency-based training approach (CBT) was introduced in 2006 with the support from the Japan International Cooperation Agency (JICA) and the Netherlands Organisation for International Cooperation in Higher Education (NUFFIC). The focus of this pilot phase was on selected institutions and only five training programmes were involved.

From 2012, legislation stipulated the mainstreaming of the CBT approach in all sectors and training institutions, but operationalisation measures of this decision were not ensuing.

Thanks to the support from the German Corporation for International Cooperation, *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) and the Credit Institute for Reconstruction, *Kreditanstalt für Wiederaufbau* (KfW), the CBT has been implemented more extensively, but still remains limited to 25 training institutions out of more 280 public institutions and 67 private institutions out of more than 290.

According to Ghanaian actors, the main obstacle to mainstreaming CBT approach is the substantial investment needed to rehabilitate infrastructure and purchase training equipment.

From the analysis of the TVET system in Ghana and the various interviews with actors, the mission identified the following aspects regarding the CBT implementation:

- Positive aspects

1. The CBT implementation has been more successful in apprenticeship training, a success demonstrated by the high level of involvement of master craftsmen and apprentices. One reason may be that, for this type of training, the actors are not reproducing the professional environment within the training centres.
2. The CBT implementation has been accompanied by the development and introduction of a National Qualifications Framework (NQF) specific to the TVET sector, which includes eight levels of qualification ranging from Certificate of Apprenticeship Level 1 to Professional Ph.D. Level 8, despite the lack of a global NQF in the education system.
3. The integration of apprenticeship into vocational training pathways is a recognised method of acquiring skills. Apprenticeship (Proficiency Level 1 and Level 2) is clearly considered in the NQF of TVET. The CBT approach has greatly contributed to the development of this training mode and its recognition. It has been the basic methodology used to define professional standards and the real involvement of economic actors in the development of training pathways.
4. The CBT implementation to a reflection on a harmonisation approach for the TVET sector by bringing all actors under the same authority.
5. The organisation of the private sector, especially the informal sector, and forming associations for the craft activities concerned, enable it to fully play its role of coaching in apprenticeships.

- Barriers/obstacles

1. The extension of the pilot phase, which began in 2006, over several years and the restriction to a few sectors did not make it possible to accelerate the mainstreaming process. Instead, the TVET system operates in a dual rhythm, with some actors involved and others in a position of observation and judgment.

2. The CBT implementation, particularly during the pilot phase, was focused on only a few institutions and created disparities between institutions, and even within the same institution (e.g., four out of 16 programmes in CBT in one institution, while the other programmes remained in objective-based teaching).
3. The decision to mainstream CBT has not been translated into concrete operationalisation actions, particularly in terms of mobilising and providing additional resources from the Ministry of Education and COTVET.
4. The CBT implementation is primarily based on external funding, indicating the country's weak commitment to a sustained mainstreaming approach.
5. The need to reproduce the professional environment in training institutions in order to better implement the reference frameworks developed according to CBT characterises the perception of the actors, especially in the public sector, and consequently increases the need for financial and material resources.
6. Due to the lack of financial resources for the equipment and upgrading training institutions, the actors have not sought to collaborate with the private sector to remedy these shortcomings.
7. The CBT implementation seems to be limited to the pedagogical engineering aspects, leaving aside sector governance (i.e., partnership management of training institutions, private sector involvement in TVET policies/decisions, etc.).
8. TVET is more based on training supply than labour market demand.

## ABBREVIATIONS

<b>ATTC</b>	Accra Technical Training Centre
<b>CBT</b>	Competency-based training (or approach)
<b>COTVET</b>	Council for Technical and Vocational Education and Training
<b>GIZ</b>	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> (German Corporation for International Cooperation)
<b>IFEF</b>	Francophonie Institute for Education and Training
<b>IIEP</b>	International Institute for Educational Planning (UNESCO)
<b>JICA</b>	Japan International Cooperation Agency
<b>KfW</b>	<i>Kreditanstalt für Wiederaufbau</i> (Credit Institute for Reconstruction)
<b>KTU</b>	Koforidua Technical University
<b>NABPTEX</b>	National Board for Professional and Technician Examination
<b>NQF</b>	National Qualifications Framework
<b>NTVETQF</b>	National Technical and Vocational Education and Training Qualifications Framework
<b>NUFFIC</b>	Netherlands Organisation for International Cooperation in Higher Education
<b>NVTI</b>	National Vocational Training Institute
<b>OBT</b>	Outcome-based training (or education)
<b>SDF</b>	Skills Development Fund (sources of funding for TVET)
<b>TFPs</b>	Technical and financial partners
<b>TVET</b>	Technical and vocational education and training
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>VAE</b>	Validation of Acquired Experience
<b>WEL</b>	Workplace Experience Learning

## 1. BACKGROUND

### 1.1 Study objectives

The IIEP-UNESCO Dakar and the Francophonie Institute for Education and Training (IFEFF) wanted to study how the CBT was adapted, what contextualisation and adaptation of programmes according to the CBT has taken place, and what positive practices have made the CBT sustainable. Therefore, they launched a joint study on the CBT contextualisation and adaptation in seven African countries, Benin, Morocco, Rwanda and Senegal, and three non-francophone countries – Ethiopia, Ghana and South Africa. The study includes non-francophone African applying a modular CBT model whose certification is validated by the companies.

**The aim of the study is, firstly, to identify good practices and explore how these practices can be used in other contexts/countries to enhance the performance of the CBT in their TVET systems and, secondly, to identify the difficulties encountered in introducing and/or sustaining the CBT implementation.** Particular attention was devoted to identifying positive or negative tipping points that characterised the implementation of the CBT, in order to take stock of the lessons learned.

Based on the findings of the analysis of the CBT implementation in the seven countries, the study will make recommendations on how best to adapt the CBT to the specific contexts of African countries.

### 1.2 Methodology used

Initial planning and orientation work was completed in November 2018, refining the terms of reference of the study while unifying the team's practices and conceptual visions, framing the objectives and limitations of the study, but also developing the tools used for data collection. A second stage of validating the tools and comparing the preliminary results obtained following two country missions (Morocco and Senegal) was carried out during an experience-sharing workshop in January 2019. This workshop, held in the presence of the consultants and representatives of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and IFEFF, stabilised the tools and strengthened the functional links of the working team, while making the most of synergy. The diversity of expertise provided during this study was a valuable source of methodological approaches and especially in the understanding of the qualitative and cultural dimensions of the evaluation as well as in the analysis and interpretation of the data collected.

## 2. TVET IN GHANA

### 2.1 General data and economic context

The Republic of Ghana has a population of just over 30 million. Ghana is a West African country located along the Gulf of Guinea. Ghana is bordered by the Côte d'Ivoire in the west, Burkina Faso in the north and the Togo in the east. The country is part of the Economic Community of West African States (ECOWAS). The official language is English. The currency is the Cedi. Surrounded by Francophone countries, Ghana has been an associate member of the International Organisation of La Francophonie since 2006 and is giving an increasingly important place to the French language.

Ghana is a country with a rich supply of raw materials, especially minerals and oil. However, its economy remains essentially based on agriculture. Ghana was for a long time the world's largest cocoa producer (more than 1.6 million hectares of village plantations) before being largely overtaken by its neighbour, Côte d'Ivoire, which now produces more than twice as much. Between 2010 and 2016, Ghana has consistently maintained its position as the world's second largest cocoa producer, behind Côte d'Ivoire.

Industry is more developed than in the rest of West Africa. In addition, after the discovery of the massive Jubilee oil field (located in the south-west), Ghana began oil production in 2010, which in 2012 became its second largest export after gold, with a total production of 110,000 barrels per day, which is expected to increase. With an estimated GDP of €54.9 billion in 2018, Ghana, the second largest economy in the Economic Community of West African States behind Nigeria and ahead of Côte d'Ivoire, has entered the middle-income category.



## 2.2 Overview of the education sector and TVET

Education is taught in English. The curriculum is compulsory and free until the age of 15 years old. The academic year usually runs for 10 months, from August to May. Ghanaian educational cycle is divided into three parts: basic education, secondary education and tertiary education.

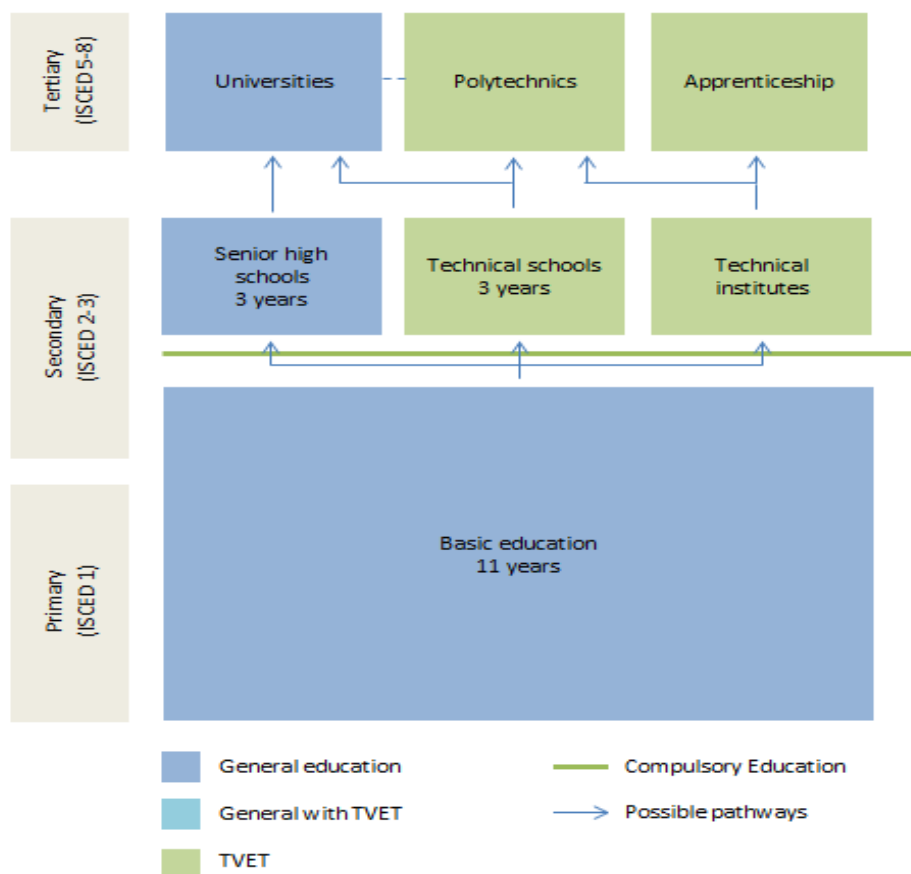
Basic education begins at age 4 and lasts 11 years. It is divided into kindergarten (two years), primary school (two three-year modules) and junior high school (three years), which ends on the Basic Education Certificate Examination. This examination gives access to the secondary cycle, which can be general in a Senior High School or vocational and technical in Technical Senior High Schools, vocational and technical training institutes or public schools of the same level. Usually, training in technical schools lasts three years.

The general secondary cycle ends with an examination: the West African Secondary School Education Certificate Examination.

Tertiary education is divided into university studies (a four-year course leading to a Bachelor's degree, which may be followed by a one- or two-year Master's degree and then a Ph.D.) and, with regard to vocational and technical training, polytechnic education (a two- to three-year programme). The last reform in 2012 changed the status of polytechnics to technical universities giving access to a Master of Technology degree and a final Doctor of Technology degree.

Below is an overview of the structure of the Ghanaian education system.<sup>1</sup>

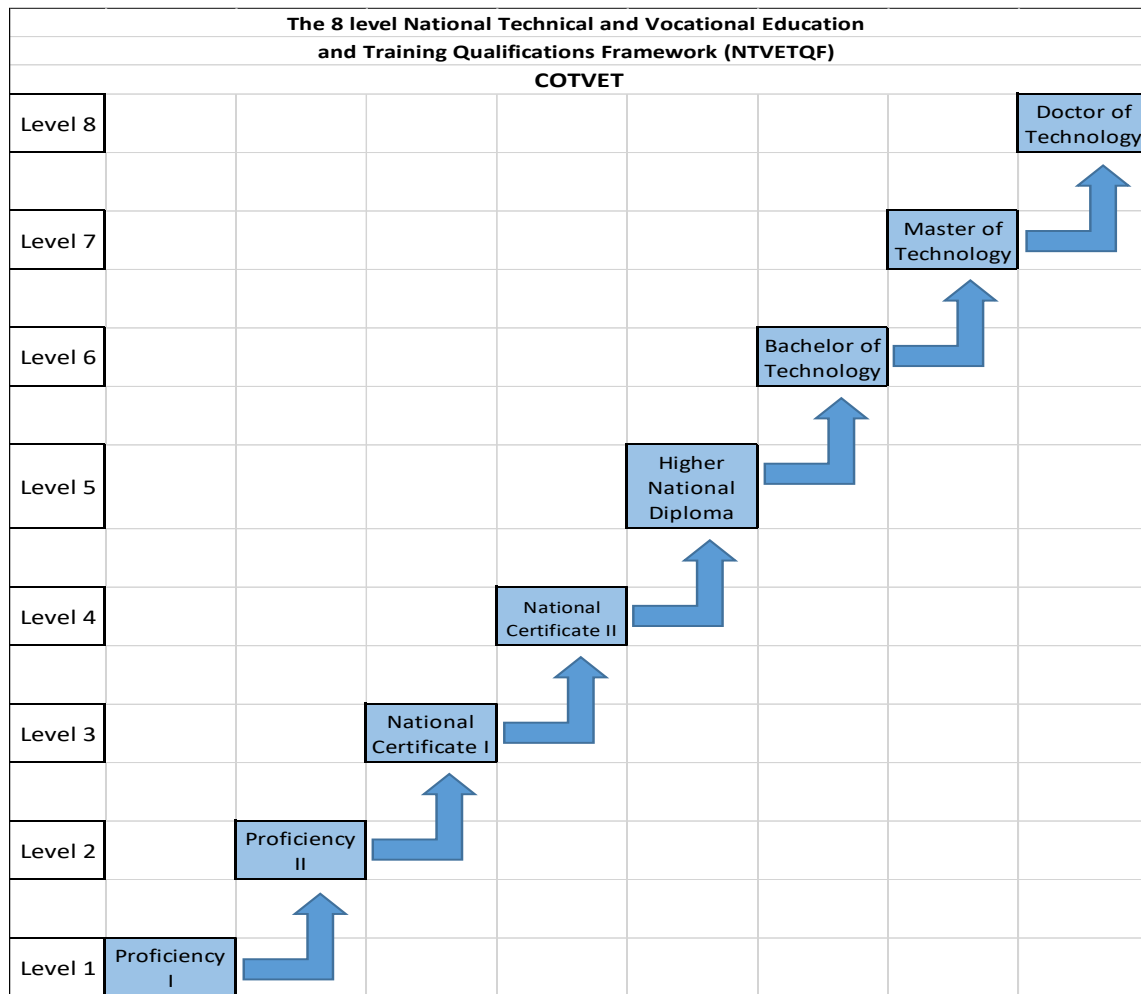
**FIGURE 1 – STRUCTURE OF THE GHANAIAN EDUCATION SYSTEM**



Note: This model has been compiled by UNESCO but Ghana has not yet adopted its national education model.

<sup>1</sup> World TVET Database Ghana (2016), UNESCO-UNEVOC (UNEVOC/2016/TVETDB/GHA/1), February 2016, validated by the Department of Vocational and Technical Education – University of Cape Coast

**FIGURE 2 – STRUCTURE OF THE GHANAIAN TVET SYSTEM**



The National Technical and Vocational Education and Training Qualifications Framework (NTVETQF) aims to improve and expand pathways for TVET graduates. The NTVETQF is administered by COTVET.

### 2.3 Mission and strategy of TVET in Ghana

The TVET mission in Ghana is to contribute to the development of a skilled labour force by matching the education system to the needs of the economy to provide young people with the skills they need to improve their employability. TVET in Ghana is influenced by the growing demand for post-basic education and training opportunities in the productive sector and civil society.

The policy guidelines aim to improve TVET by encouraging, among other things:

- Competency-based training (CBT), driven by the private sector and demand-driven. These programmes are outcome-based and aim to promote fair access, opportunities and career pathways for learners and employees to develop their professional, technical and generic skills;
- Workplace Experience Learning (WEL) ensures that the theoretical and practical aspects of the CBT model are integrated and adequately prepare learners for the workplace. WEL policies and the increased private sector involvement in the TVET system aim to enable learners to match theory with practice by organising work-like situations.

## 2.4 TVET legislation

The TVET system in Ghana is governed by the following texts:

- The Council for Technical and Vocational Education and Training Act 718 (2006) establishes and governs COTVET. This act mandates COTVET to coordinate and supervise TVET in Ghana in all sectors.
- The National Accreditation Board Act 744 (2007) establishes and governs the National Accreditation Board and mandates the accreditation of the content and standards of training programmes of all public and private TVET institutions.
- The Polytechnic Act 745 (2007) mandates polytechnics (now technical universities) to provide post-secondary education programmes in the following fields: industry, commerce, science, technology. They should also provide opportunities for skills development, applied research and publication of research results.
- The National Board for Professional and Technician Examination (NABPTEx) Act 492 (1994) conducts examinations for non-university professional and technical schools.
- The COTVET Legislative Instrument LI 2195 (2012) regulates the Ghanaian TVET system and ensures that it is in line with the National Qualifications Framework (NQF).
- PNDC Law 322 of September 1992 establishing the University of Education Winneba and Law 672 of 14 May 2004 enacted to improve the status of the University of Education Winneba, granting full university status, including technical and vocational education programmes.

A major reform is underway regarding the national apprenticeship policy. It provides for the implementation of an integrated and standardised approach to learning at all levels and in all sectors of activity.

## 2.5 Formal and informal TVET system organisation

Formal TVET is provided at secondary level (Proficiency level 1, Proficiency level 2, National Certificate I and National Certificate II) and higher levels (Higher National Diploma, Bachelor of Technology, Master of Technology, Doctor of Technology). After basic education, students can choose to attend high schools, secondary technical schools or technical institutes. Access to these programmes is based on students' performance in examinations. TVET is provided at technical universities at the post-secondary level. Informal training is provided by community organisations and associations. Young people who have not had the opportunity to complete their secondary education can choose from a range of apprenticeships and other training programmes, including vocational training centres. Informal TVET is offered mainly through apprenticeships with master craftsmen. Apprenticeships last between two and three years. Informal apprenticeships lead to a qualification and certification, via Proficiency 1 or Proficiency 2.

## 2.6 TVET system governance

The Ghanaian TVET system is under the Ministry of Education. Within the Ministry of Education, the Ghana Education Service is responsible for the implementation of the pre-tertiary education policies set by the Ministry.

The main actors involved in the TVET governance are:

- COTVET, under the Ministry of Education, coordinates and oversees the development of the entire TVET system in Ghana. The Council is supported by five permanent technical committees, namely: The National TVET Qualifications Committee; Industry Training Advisory Committee; Training Quality Assurance Committee; National Apprenticeship Programme Committee; Skills Development Fund Committee. The committees operate as national

bodies. They were created in collaboration with stakeholders, including the private sector. COTVET is also responsible for the quality of TVET programmes and ensures it through collaboration with the Training Quality Assurance Committee.

- The National Vocational Training Institute (NVTI) under the Ministry of Employment and Labour Relations offers apprenticeship training programmes in the formal and informal sectors alongside the COTVET system. The NVTI runs 38 public vocational training centres throughout the country, offering training opportunities in 28 fields/occupations, for Proficiency 2 certification level. According to the Act of Parliament No. 351 of 12 January 1970, establishing the NVTI, the mandate of the institute is to organise apprenticeship training in enterprises and training programmes for industrial and office workers, as well as to train the instructors and trainers needed for this purpose.
- The Technical Examinations Unit is responsible for conducting technical examinations at the craftsman, master craftsman, technician and graduate levels. Therefore, the Unit certifies and delivers certificates for: i) final examinations of technical institutions (public and private accredited); ii) final examinations for non-higher education programmes at polytechnics, including Advanced Craft programmes, Technician programmes and the Diploma in Business Studies.

COTVET started to coordinate the TVET system in 2010. Its main tasks are:

- Rationalisation of assessments and the certification system;
- Regulation of the CBT implementation;
- Standardisation of certification through the NQF.

## 2.7 TVET funding

In addition to support from various technical and financial partners (TFPs) such as GIZ, JICA, the Netherlands Cooperation, NUFFIC, or, more recently, VET Toolbox, the Government of Ghana is in charge of financing TVET. All ministries involved in TVET receive funding for their activities. The funds include budget allocations as well as contributions from development partners.

Previously, TVET funding was the exclusive responsibility of COTVET. However, in 2011, the Government of Ghana established a fund to finance TVET: Skills Development Fund (SDF). This fund is an independent structure. Its board of directors, a partnership agreement, is made of five representatives from the private sector (including the President) and four representatives from the public sector. The State is the guarantor.

From 2011 to 2015, the SDF was 100% funded by external aid:

- 70% by the World Bank (as a loan);
- 30% by the Netherlands Cooperation (as a donation).

For the 2016-2020 period, the fund is financed as follows:

- USD 15.5 million from the Netherlands Cooperation;
- USD 1 million from the Government of Ghana.

The fund allocates grants to institutions on the basis of calls for projects. It provides grants to companies that provide training, to training operators and to associations in the informal sector that train young apprentices.

According to the SDF decision-makers, the main challenges are:

- Lack of a payroll tax to contribute to the fund;
- TVET system is based on supply rather than on labour market demand;
- Lack of prospecting for promising jobs in the years to come;
- High cost of developing curricula and organising training;
- Low capacity of companies to financially participate;
- Duration of an apprenticeship (sometimes longer than residential training and therefore less attractive);

- Financial difficulties of apprentices and their families. In Ghana, apprenticeships are not free: the master craftsman who takes on the apprentice must be paid.

### 3. CBA IMPLEMENTATION IN GHANA

#### 3.1 Brief History of CBT introduction in Ghana

The idea of introducing CBT in Ghana was initiated in 2000.

In 2004, TVET Policy officially introduced CBT into the system.

In 2006, the TVET system received support from JICA for a five-year pilot phase to introduce CBT into the TVET system (including the development of new benchmarks). Ghana also interacted with the Government of Botswana during this first phase of CBT introduction.

In 2012, the Ministry decided to harmonise CBT as well as the certification/qualification framework. In collaboration with the private sector, occupational standards were formulated, new curricula were developed, and training activities were organised with master craftsmen in the informal sector.

#### 3.2 CBT programmes funded by TFPs

Since its introduction, the CBT has been widely supported by development partners and continues to be so.

The introduction of CBT in 2006 started with formal vocational training institutions, especially with the support of JICA.

With regard to the informal sector, the CBT introduction was supported by the German Skills Development Initiative from 2012. It concerns apprenticeships and the first two levels of the NTVETQF (Proficiency 1 and 2) and focuses on five apprenticeship fields: textiles, cosmetology, electronics, car mechanics and welding, not to mention:

- General courses such as science, mathematics and English;
- Entrepreneurship;
- Information and communication technologies.

With support from KfW, Ghana has moved towards the CBT mainstreaming for learning. As a result, seven of Ghana's ten regions currently use CBT in apprenticeships for all five fields in the informal sector. The obstacles remain the lack of equipment in the schools, but also in the companies hosting the learners, because the CBT implementation in apprenticeship requires the improvement of master craftsmen's workshops so that they can meet the requirements of the training programmes. This initiative is not currently planned in Ghana, but could be an interesting avenue for action to increase the effectiveness of apprenticeship systems. Another difficulty is the non-certification of master craftsmen. In fact, the system did not provide for prior recognition of their skills. Currently, regulations on the validation of acquired experience (VAE) have been developed but have never been implemented due to a lack of approved legislation. This is an important factor in discouraging master craftsmen from collaborating in the implementation of apprenticeship programmes. Another difficulty encountered in the CBT implementation is related to evaluation, which remains almost exclusively summative at the end of the training (absence of formative evaluation).

Over the past seven years, GIZ has also supported the CBT implementation in agricultural training through two programmes: TVET and TVET for Women. Both programmes cover not only Ghana but several other African countries including Benin, Kenya, Malawi, Namibia, Sierra Leone and South Africa. Two aspects are involved in this project, namely curriculum development and agricultural value chains. GIZ is supporting COTVET in the establishment of a sectoral skills council, which is the equivalent of the economic sectors' professional branches for vocational training. The Ghanaian economy is currently structured into 22 sectors; GIZ supports the agriculture skills council.

Another programme, implemented by COTVET and funded by GIZ, the Ghana Technical and Vocational Education and Training Voucher Project, started in 2017. This programme introduced five new occupations to the apprenticeship program: stone laying, tiling, plumbing, restoration and

electrical. It aims to improve the access of master craftsmen, their workers and apprentices to vocational training coupled with advisory services.

### 3.3 CBT implementation process

Since 2006, CBT implementation in Ghana has been carried out at three levels:

- Apprenticeship programmes;
- Technical secondary education;
- Higher technical education.

- ***Apprenticeship programmes***

With regard to apprenticeship programmes, trainers and supervisors of associations were trained in CBT learning tools by the German Skills Development Initiative project from 2012.

The learning materials developed under the CBT are:

- Occupational standards;
- Curricula;
- Trainers' book;
- Learner manuals and logbooks.

The terms of an apprenticeship are as follows:

- 70% practice in the company and 30% theory in the school;
- Two days a week at school, three to four days a week in a company;
- Level 1 or 2 apprenticeship pathways, usually lasting between 9 and 12 months;
- Assessments carried out by the NVTI (trade tests - professional tests - including with external assessors);
- Quality assurance and certification by COTVET;
- Apprentices from the associations and placed in apprenticeships in the craftsmen's workshops.

The apprenticeship programmes currently cover Proficiency Level 1 and Proficiency Level 2 in five training areas: textiles, cosmetology, electronics, automotive engineering and welding. Initially, master craftsmen were neither trained nor certified. As a result, the problem of recognising their skills arose. How can apprentices be certified when their master craftsmen are not? A solution was found by training and certifying master craftsmen in educational aspects and the use of training materials developed according to the CBT, prior to training the apprentices. Currently there are around 10,000 master craftsmen trained to be trainers and 4,000 certified, who must be registered with COTVET if they wish to be accredited to become facilitators. To become a facilitator, COTVET requires master craftsmen to have at least a level 3. With regard to the recognition of the professional skills of master craftsmen, the ideal solution could be a VAE system. In Ghana, there is a legal text on VAE. However, the text has not yet been endorsed so that VAE has not yet been tested or operationalised. A national apprenticeship policy, currently being finalised, formalises the CBT implementation.

- ***Technical secondary education programmes***

From 2007 to 2011, CBT was introduced at the Accra Technical Training Centre (ATTC), NVTI and Accra Polytechnic, in collaboration with COTVET. From the outset, CBT introduction thus focused on the training institutions. After the pilot phase, several CBT guides were written, explaining the different steps of CBT implementation. These CBT user and implementation manuals were adapted to the Ghanaian context.<sup>2</sup> At ATTC, training programmes are developed for the five fields from level 1 to level 4 of the NTVETQF.

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<sup>2</sup> For example: Manual for CBT curriculum/material development and training implementation, COTVET, December 2012.

At Tema Technical Institute, among the 14 training programmes offered,<sup>3</sup> only three are implemented according to the CBT: car mechanics, electricity and fashion.

With regard to governance, CBT implementation has not been followed by the empowerment of training institutions. Public training centres have no autonomy over the following aspects:

- Opening or closing courses (e.g. discontinuing a training programme or starting a new programme);
- Recruitment of trainers (central government);
- Certification.

All these key aspects of integrating the institution into its socio-economic environment and improving the match between training and employment remain centralised and are managed by COTVET.

In training centres, evaluations do not involve private sector professionals, but private sector assessors conduct sample checks and validate or not the results of the evaluations. On the other hand, private sector representatives are involved in defining performance criteria and developing standards for examinations. Although the institutions have a low degree of autonomy in terms of governance, private sector representatives are represented on their boards of directors.

The training institutions have not developed tools for monitoring the integration of graduates.

This is due to the lack of a national monitoring system for inclusion. Only a few private institutions track their graduates in order to calculate and communicate the insertion rate of their graduates.

According to the heads of the schools visited during the field mission, the two major obstacles to the CBT mainstreaming in Ghana are:

- Lack of equipment in the workshops (budgetary CBT);
- Training of CBT trainers.

One solution to the lack of equipment in schools could be to reinforce the equipment in the workshops of the companies that receive the apprentices. To make up for the lack of trainers, more trainers from the professional world could be recruited.

- ***Higher technical education programmes***

In Ghana, CBT is implemented with the universities since 2007. The CBT approach has been adopted. Alternation as such is not applied at the university; it is a residential training, coupled with internships of various lengths. For the Higher National Diploma, which is a level 5 diploma, in the first year students spend one month in a company and in the second year they spend four months in a company. For the Higher National Diploma, level 5 diploma, in the first year, students complete a one-month internship in a company; in the second year, they spend four months in a company. For the Bachelor of Technology, a level 6 degree, which can be obtained with an additional year of study, students complete three to six months of internship in a company.

The CBT implementation in higher technical education is a major asset for Ghana but limitations have been identified. According to the university authorities, the cost of laboratory equipment is the main handicap for the CBT implementation. CBT is an expensive and difficult approach to implement. For example, at Koforidua Technical University (KTU), CBT has been introduced since 2007, but it only concerns the automotive engineering course. At the same time, these institutions have not engaged in alternative solutions, such as the use of companies' technical facilities to alleviate this problem. According to university officials, the explanation lies in the weakness of the economic fabric, especially the formal sector, which can only accommodate a limited number of trainees. Therefore, it seems difficult to currently consider a wider CBT implementation at the level of higher education.

Another problem identified was the size of the cohorts. Initially, KTU preferred classes of 15 students. Currently, the university is trying to accommodate more students, but there is a problem

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<sup>3</sup> Automotive mechanical engineering, building technology, business studies, carpentry and woodwork, catering, electrical installations, textile design, textile products, industrial mechanics, mechanical engineering, photography, plumbing, printing, welding and manufacturing.



with the capacity of the classes/workshops and the companies that receive learners for internships. According to those in charge of the Faculty of Automotive Mechanical Engineering, it is possible to extend the CBT to other sections, but the number of students must be limited according to the needs of companies.

### 3.4 Degree of implementation of programmes according to the CBT

Here are some figures to illustrate the degree of CBT implementation in Ghana.

Currently, according to COTVET, 92 schools out of 288 public and 290 public schools nationwide, including 25 public schools, are accredited to implement some CBT programmes, representing 16% of schools in total and only 4% of public schools. Most public technical schools are not prepared for the CBT implementation, hence the delay in CBT mainstreaming. CBT implementation is faster in apprenticeships (about 12,000 apprentices are certified each year).

### 3.5 Training of teachers and trainers in CBA education

Initial training of all TVET teachers and trainers is organised in university institutes.

The College of Technology Education in Kumasi, which is affiliated to the University College of Education in Winneba, is the main provider of diplomas and certificate programmes. More specifically, the Faculty of Technical Education offers programmes in wood construction and technology, mechanical engineering, automotive and electrical technology and information and communication technology. The Faculty of Professional Education offers programmes in fashion and textile design as well as hospitality and tourism.

For the programmes implemented in CBT - of which there are currently five - trainers have been trained in the CBT implementation training programmes. The training material (learner's manual) and the trainer's material (trainer's manual) were developed with the support of methodological experts in the framework of projects financed by the TFPs. In the apprenticeship system, candidates apply to be trainers or assessors. They are trained by the technical examination unit (technical and educational training).

There are also continuing education programmes. Within the framework of the CBT programmes in technical secondary education, the ATTC has become a reference centre. It regularly organises train-the-trainer sessions for staff from other training institutions (on average one week long). With regard to university technical education, the KTU organises, among other things, continuing education programmes for trainers with the support of NUFFIC.

### 3.6 National TVET certification framework

In Ghana, the TVET NQF is operational. It defines eight levels of qualification. Therefore, it is possible for learners to progressively move up through levels 1 to 8.

However, the general qualification framework, covering the entire education system and opening up gateways between the various components of the system, has been developed but has not yet been approved.

With regard to TVET, the Technical Examination Unit (Ghana Education Service) is responsible for the certification of students from 48 public and 70 private technical schools, as well as eight technical universities and two polytechnics.

NABPTEX, established in 1994, has as its main task the organisation and administration of assessment and certification for three levels:

- Higher National Diploma (NQF level 5);
- Access Course (a preparatory course before the Higher National Diploma which consists of an upgrade in general subjects such as mathematics, English and science);



- Certificate II (NQF level 4).

Technical universities are not allowed to grant degrees. This is why they are called Non-Universities. NABPTEX is the certifying body for technical universities.

Within NABPTEX, in addition to VAE, there is a second type of recognition of current competencies, namely the validation of competencies in the workplace.

Finally, as mentioned above, there is a Decree on VAE, but so far it has not been tested or operationalised.

### 3.6 CBT impact on TVET quality

All Ghanaian stakeholders agree that the quality of TVET increases when training programmes are delivered using CBT as these programmes are better adapted to the needs of the private sector.

## 4. METHODOLOGY

### 4.1 Literature review

A literature review was carried out prior to the study, in parallel with the study and afterwards. The documents consulted can be found in Annex 3.

### 4.2 Collection, analysis and interpretation of the data collected

The preliminary information collected from the literature review was complemented by data collection through semi-structured interviews. Most of the interviewees are directly or indirectly involved in the CBT implementation process and may have an influence on its adaptation and/or mainstreaming. This was supplemented by interviews with trainers and learners during school visits. The different data collection strategies allowed for a triangulation of data, thus ensuring greater reliability of the findings and recommendations presented in this report.

Once the information had been collected, the data was processed and analysed in order to extract the most relevant elements. The cross-referencing of the information collected from the stakeholder interviews and the literature review has led to the identification of conclusions and recommendations.

Finally, a workshop to reflect and share observations following the missions to two countries (Morocco and Senegal) enabled the consultants and representatives of IFEF and UNESCO to take stock of the methodology, to reorient certain strategies and to agree on the framing of the content of the country report (and possibly the synthesis report). The subsequent reading of the country reports by all stakeholders allowed a mutual understanding of the recommendations and information presented.

## 5. CONCLUSIONS

### 5.1. General

TVET in Ghana faces a number of challenges, including:

- Funding, including for the training of teachers, trainers and assessors;
- Enhancing the image of TVET among the population;
- Development of public/private partnerships.

**CBT** in Ghana can be seen as an '**ad hoc**' approach. It is still in its pilot phase and has not yet been formalised as such.

## 5.2 Level and implementation progress

### **The strengths/successes are as follows:**

- Integration of apprenticeship into vocational training pathways;
- Inclusion of learning in the NQF (Proficiency 1 and 2);
- Establishment and operationalisation of a specific NQF for vocational training despite the absence of the general NQF;
- Harmonisation of the TVET sector by bringing all actors under the same Ministry;
- Decision to extend the CBT to almost all levels;
- Involvement of the informal sector and its organisation into associations, particularly for craft activities covered by apprenticeships;
- Training for CBT masters of apprenticeship;
- Development of CBT implementation manuals adapted to the Ghanaian context;
- Establishment of a vocational training fund that can play a key role in developing the system and improving quality and access to training.

### **The weaknesses/issues/failures are as follows:**

- Extension of the pilot phase is still ongoing;
- CBT has been restricted to a few fields;
- CBT implementation has remained focused on a small number of schools;
- Decision to mainstream the CBT has not been translated into concrete actions for its operationalisation;
- CBT implementation remains conditional on foreign funding, which shows the country's weak commitment to a mainstreaming approach;
- CBT implementation seems to be limited to educational engineering aspects and does not concern the governance of the sector (partnership management of training institutions, involvement of the private sector in TVET policies/decisions, etc.);
- The public-private partnership has not materialised in all functions of the TVET system and has not involved the governance of training institutions;
- No VAE system is in place for the recognition of the professional skills of master craftsmen.

## 5.3 Courses of action

Here are some courses of action for the future:

- Develop benchmarks for other occupations, in particular job-creating occupations, based on the data collected via a sectoral watch.
- Supporting quality improvement in benchmarks and at higher levels.
- Formalising the increased involvement of the private sector in TVET.
- Support the development of technical and material resources in training institutions (technical platforms adapted to CBT).
- Find innovative solutions to reduce the cost of equipment, in particular by enhancing the workshops of companies hosting apprentices.
- Establish a structured national system for regulating the supply of training.
- For the recognition of the professional skills of master craftsmen, the ideal solution may be to set up a VAE system, which would partly solve the problem of the low number of trainers available and the low rate of exposure to the industry of the trainers currently employed in the institutions.

## ANNEX 1 – INTERVIEW GUIDELINES

Themes	Sub-themes	Questions
<b>1. History and institutional context of CBT introduction</b>	<b>Implementation conditions and history</b>	<ul style="list-style-type: none"> <li>• Could you please explain the history of CBT implementation?</li> <li>• How and by whom was it initiated?               <ul style="list-style-type: none"> <li>○ Who made the decision to initiate it?</li> <li>○ What type of CBT approach was adopted (what external support) and how was it adapted to the specificities of the country?</li> <li>○ What contributions have been made by government, TFPs, private sector and civil society?</li> <li>○ What was the level of commitment of each of these actors?</li> </ul> </li> <li>• How is TVET organised: technical education and vocational training, apprenticeship?</li> <li>• What is the status of CBT roll-out across the different sectors and regions? (Management of the transition)               <ul style="list-style-type: none"> <li>○ What have been the difficulties or obstacles to roll-out?</li> <li>○ What are the roles of regional and local actors in CBT implementation (education system, link between TVET and the private sector)?</li> </ul> </li> <li>• What influence do private school operations have on CBT (e.g. Don Bosco)?</li> </ul>
	<b>Political and institutional framework</b>	<ul style="list-style-type: none"> <li>• What key legal documents are required for the implementation of the CBT approach?</li> <li>• How has the CBT approach influenced TVET operations and institutions?</li> <li>• How did you (do you) establish linkages with socio-economic development priorities by sector?</li> <li>• Has the partnership inherent to CBT implementation helped to organise partnership governance mechanisms?               <ul style="list-style-type: none"> <li>○ What is the scope of that partnership?</li> <li>○ How about its national, regional, local and sectoral roll-out?</li> </ul> </li> </ul>
	<b>Issues of financing</b>	<ul style="list-style-type: none"> <li>• Who funded (is funding) CBT implementation?               <ul style="list-style-type: none"> <li>○ And, has CBT implementation facilitated private sector involvement in funding the mechanism?</li> <li>○ What has been the trend in the level of government involvement? Has it increased or decreased?</li> </ul> </li> <li>• What was the impact of transition to the CBT approach on funding?</li> <li>• What was the extent of funding invested in CBT teaching and training and what were the funds used for?</li> <li>• Question on continuing education and apprenticeship.</li> </ul>
<b>2. Processes of job and economic potential</b>	<b>Background and analytical process</b>	<ul style="list-style-type: none"> <li>• Before CBT implementation (or in the case of non-CBT design programmes), what process was used to analyse jobs and economic potential?               <ul style="list-style-type: none"> <li>○ What has changed since CBT implementation?</li> </ul> </li> </ul>

analysis in the countries	<b>Job analysis process</b>	<ul style="list-style-type: none"> <li>• What mechanism was used to analyse jobs by priority economic sector?</li> <li>• How are priorities set to select economic sectors or industries for CBT programme design?</li> <li>• How are new occupations identified?</li> <li>• What is the decision-making framework/process for developing new fields/occupations or for discontinuing fields that no longer meet needs? <ul style="list-style-type: none"> <li>○ How is the situation of trainers in the discontinued fields being dealt with?</li> </ul> </li> <li>• How are businesses/employers associated in decision-making? <ul style="list-style-type: none"> <li>○ At what level are decisions made? At public, private, partner level?</li> </ul> </li> <li>• Has the training method facilitated CBT implementation?</li> </ul>
	<b>Managing and regulating the flow of students</b>	<ul style="list-style-type: none"> <li>• How does the CBT approach help manage/regulate the flow of students?</li> </ul>
	<b>Consideration of distinctive features of regional/local development</b>	<ul style="list-style-type: none"> <li>• How are the distinctive features of regional/local development factored in to training programme development/revision?</li> <li>• Have vocational training centres (VTCs) begun specialising in sectors according to the qualification needs of businesses in their respective economic environments and geographical areas?</li> </ul>
	<b>Monitoring mechanism</b>	<ul style="list-style-type: none"> <li>• Is there a monitoring mechanism to support regular revision and adaptation of training programmes to meet new qualification needs? <ul style="list-style-type: none"> <li>○ Is the system revised on a regular basis to meet the needs of the labour market?</li> <li>○ What organisation or body organises or deals with programme revision? Is the private sector involved?</li> </ul> </li> <li>• Has CBT approach facilitated the monitoring of the supply of training and the productive sector's demand for skills and needs in terms of qualification (regulation of certification)? <ul style="list-style-type: none"> <li>○ What is the structuring effect of CBT approach in rationalising of needs or their analysis?</li> <li>○ Has the CBT approach helped facilitate the decision-making process?</li> <li>○ Have CBT practices in private training centres had an impact on the practices of public institutions?</li> </ul> </li> </ul>
<b>3. Development processes for work situation analysis (WSA), occupational competency standards, training frameworks and evaluation frameworks</b>	<b>Development and validation processes</b>	<ul style="list-style-type: none"> <li>• Is the CBT programme design process supported by a normative and/or methodological framework (e.g. CBT guide) or is reflected in a government policy? Who is involved in programme design (oversight and decentralisation)? <ul style="list-style-type: none"> <li>○ What is the subsequent validation process for the programmes developed?</li> </ul> </li> <li>• What body(ies) are involved in CBT programme development?</li> <li>• What is the validation process? <ul style="list-style-type: none"> <li>○ Who validates the certification/evaluation standards?</li> </ul> </li> </ul>
	<b>Partnership approach</b>	<ul style="list-style-type: none"> <li>• Were standards designed in partnership with all stakeholders in vocational training and notably with the participation of the</li> </ul>

		employers organisations, businesses and industries, as well as government?
	<b>Management of the transition</b>	<ul style="list-style-type: none"> <li>• How substantive is the transition? <ul style="list-style-type: none"> <li>○ Is the CBT implemented alone (pure CBT) or is there a transition between outcome-based training and CBT? in the country? Within the same vocational training centre? Within a single programme (e.g. a CBT approach but a conventional assessment system)?</li> </ul> </li> <li>• What are the obstacles to a full transition? <ul style="list-style-type: none"> <li>○ How long has the transition been taking place?</li> </ul> </li> <li>• What is the degree of acceptance/ownership of CBT use? <ul style="list-style-type: none"> <li>○ Has the transition been successful?</li> <li>○ Do donors still invest in the transition?</li> </ul> </li> <li>• What major changes have been observed since the adoption of the CBT approach?</li> </ul>
<b>4. Status of CBT programme implementation</b>	<b>Independent management of vocational training facilities (including their finances)</b>	<ul style="list-style-type: none"> <li>• How was the CBT implementation process set in motion? <ul style="list-style-type: none"> <li>○ What is the current status of roll-out?</li> <li>○ What are the obstacles and leverage for its deployment?</li> <li>○ How well is the process accepted?</li> </ul> </li> <li>• Are all VTCs given administrative, financial and pedagogical autonomy? <ul style="list-style-type: none"> <li>○ Can they hire professional trainers?</li> <li>○ Do they devise their own strategic and operational planning?</li> <li>○ Do they manage their own budgets?</li> <li>○ Has the CBT approach led training centres to generate funds through production units (financial innovation) and/or influenced their teaching methods (application)?</li> <li>○ Has the CBT approach helped training centres develop a lifelong learning plan?</li> <li>○ Have VTCs become players in the economic development of their respective areas? Or communities?</li> <li>○ Is budget adapted to CBT requirements (materials, infrastructures, equipment, working materials)?</li> </ul> </li> <li>• Is there an accountability mechanism in place? If so, how does it work?</li> </ul>
	<b>Organisation of learner-centred teaching</b>	<ul style="list-style-type: none"> <li>• What teaching changes have been made as a result of CBT (more specific questions)?</li> <li>• What is the role of the student in the learning process? <ul style="list-style-type: none"> <li>○ What learning strategies were put in place: subject-to-modular approach; multidisciplinary approach; reflective learning, etc.?</li> <li>○ What percentage of training time is used for practicals?</li> <li>○ What is the ratio of workstations (tool sets) to learners per class?</li> </ul> </li> </ul>
	<b>Training environment modelled on the working environment</b>	<ul style="list-style-type: none"> <li>• What changes have been noted in the training environment as a result of CBT ?</li> <li>• Are technical and professional tools in line with what is used in the local industry?</li> <li>• Are the consumables used the same as the ones used locally?</li> <li>• Beyond compliance, is there any added value that can enhance the quality of production locally?</li> </ul>
	<b>Partnership dynamics</b>	<ul style="list-style-type: none"> <li>• What changes resulting from the introduction of CBT are observed on local partners?</li> </ul>

		<ul style="list-style-type: none"> <li>○ Has a school-environment consultation framework (professional environment, NGOs, etc.) been put in place?</li> <li>○ Have teaching methods used for training in conjunction with companies (work-study, apprenticeship), or in the workplace, been adopted and coupled with CBT approach?</li> <li>○ Are they followed?</li> </ul>
	<b>Quality assurance system</b>	<ul style="list-style-type: none"> <li>● What changes resulting from the introduction of CBT are observed in the quality assurance systems of training centres?</li> <li>● Is there a mechanism to gauge the status of CBT implementation (quality over the mid to long term)?</li> </ul>
	<b>Degree of compartmentalisation (roll-out)</b>	<ul style="list-style-type: none"> <li>● What stage have you reached in the roll-out of the CBT implementation process?</li> <li>● What are the challenges that hindered, or the levers that helped, the roll-out (to other sectors and geographical areas) of CBT?</li> </ul>
<b>5. Training trainers on CBT teaching methods</b>	<b>Training trainers</b>	<ul style="list-style-type: none"> <li>● How are trainers trained on CBT methods? <ul style="list-style-type: none"> <li>○ Duration.</li> <li>○ Resources.</li> </ul> </li> <li>● Do trainers have access to standards and guides?</li> <li>● Do trainers use the standards and guides? Do they understand them? <ul style="list-style-type: none"> <li>○ What challenges and/or difficulties are encountered?</li> </ul> </li> <li>● What changes in teaching practices resulted from the training of trainers?</li> <li>● Who, in the VTC, is officially in charge of the implementation, coordination and management of CBT?</li> <li>● Is there a teaching methods unit within the VCT (or outside the centre, such as inspectors, sectoral, regional/national) for the purpose of pooling trainers learning or for sharing/sustaining the training of trainers?</li> <li>● What strategies are in place to support trainers' acceptance of, or commitment to, CBT implementation? <ul style="list-style-type: none"> <li>○ What are the main challenges faced?</li> </ul> </li> <li>● Were apprentice instructors and trainers, seconded from businesses, trained on CBT? <ul style="list-style-type: none"> <li>○ Are they supervised?</li> <li>○ Do they have access to documentation (standards, guides)?</li> </ul> </li> </ul>
	<b>Training of other players in the vocational training centre</b>	<ul style="list-style-type: none"> <li>● Are teaching consultants and/or inspectors, entrusted with the revision and development of syllabi (or with the facilitation of implementation), trained in CBT? <ul style="list-style-type: none"> <li>○ Are they trained at the same time as the trainers?</li> <li>○ What kind of training do they receive?</li> </ul> </li> <li>● Are VTC administrative and management staff trained on CBT? <ul style="list-style-type: none"> <li>○ Are they trained at the same time and in the same place as the trainers?</li> <li>○ What is the content of the training they receive? What are they trained on? Merely teaching methods or their implications.</li> </ul> </li> </ul>
<b>6. Development of occupational certification frameworks</b>	<b>Development and/or revision of certification/qualification frameworks</b>	<ul style="list-style-type: none"> <li>● Has the introduction of CBT impacted the development and/or revision of certification/qualification frameworks?</li> <li>● Is there a linkage between certification/qualification framework and the national occupational framework?</li> <li>● Has CBT approach facilitated the development/revision of systems</li> </ul>

		<p>for the validation of acquired experience (VAE)?</p> <ul style="list-style-type: none"> <li>• Does the qualification and certification framework work?</li> <li>• How are professional organisations involved in the assessment and certification process?</li> <li>• What is the impact of the CBT approach on creating bridges between TVET and other educational sub-systems (basic education, basic entry level for illiterates) and higher education?</li> <li>• How has CBT changed the certification offer (creation of new degrees and diplomas)?</li> </ul>
<b>7. Impact of CBT approach on the quality of TVET products</b>	<b>Business satisfaction</b>	<ul style="list-style-type: none"> <li>• How has business satisfaction changed in relation to staff recruited after their graduation from TVET following the introduction of the CBT approach? <ul style="list-style-type: none"> <li>○ Have actual improvements been observed in the professional act of freshly graduated staff?</li> <li>○ What are the main differences observed?</li> </ul> </li> <li>• What systems to collect business operators' feedback were put in place to feed and facilitate CBT implementation?</li> <li>• What tools are used to gauge business satisfaction?</li> </ul>
	<b>System to measure employability</b>	<ul style="list-style-type: none"> <li>• Is there a tool to monitor the professional integration of graduates? <ul style="list-style-type: none"> <li>○ In the affirmative, are there elements to determine whether the CBT approach facilitated their employability?</li> <li>○ If so, what changes have been observed in the measuring of professional integration following CBT implementation?</li> </ul> </li> </ul>

## ANNEX 2 - LIST OF PERSONS/ENTITIES CONTACTED/MET

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### ANNEX 3 – REFERENCES

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