



**STRENGTHENING EDUCATION AND  
LEARNING SYSTEMS TO DELIVER  
A 4IR-READY WORKFORCE**

**SYNTHESIS REPORT**  
FEBRUARY 2022



# ACET African Center for Economic Transformation

The **African Center for Economic Transformation (ACET)** is a pan-African economic policy institute supporting Africa's long-term growth through transformation. We produce research, offer policy advice, and convene key stakeholders so that African countries are better positioned for smart, inclusive, and sustainable development. Based in Accra, Ghana, we have worked in nearly two dozen African countries since our founding in 2008.

## Contact

### Ghana

***Office location:***

7 Yiyiwa Drive  
Abelemkpe, Accra - Ghana

Phone: +233 (0) 0242436858

***Mailing address:***

Cantonments PMB CT 4 Accra, Ghana

***Contact us:***

E-mail: [info@acetforafrica.org](mailto:info@acetforafrica.org)

Web: [acetforafrica.org](http://acetforafrica.org)

### United States

***Office location:***

1776 K Street, NW Suite 200  
Washington DC 20006

Phone: +1 202 833 1919



## ABOUT THIS REPORT

The study builds on findings of the Mastercard Foundation report *Secondary Education in Africa: Preparing the Youth for the Future of Work* to map progress in strengthening secondary education systems to deliver a workforce prepared for the Fourth Industrial Revolution (4IR). The study focuses on the secondary education level, including technical and vocational education and training (TVET) in six African countries: Côte d'Ivoire, Ethiopia, Ghana, Niger, Rwanda, and Uganda.

Working with national think tanks and research institutes, ACET developed a primary report for all six countries, each containing a review of the structure and composition of the workforce and a survey of policies, regulations, and institutional arrangements to align education and training outcomes with labor market demands. This report is a synthesis that identifies overarching issues and presents recommendations for action. It is divided into four chapters.

**Chapter 1** provides the context for the report and introduces the methodology and analytical framework guiding the study. [Page 16](#)

**Chapter 2** explores the alignment of the education and training systems to the labor market by synthesizing the country-level supply-side findings through the lenses of access, quality, and relevance. Secondary education and TVET are covered in two separate sections. [Page 24](#)

**Chapter 3** analyzes the demand side, exploring how labor demand in the private sector is changing in the face of digital technologies and what role the private sector plays in ensuring education and training systems produce a future-ready workforce. [Page 53](#)

**Chapter 4** offers recommendations and priorities for action to be undertaken at the country level. [Page 63](#)

# TABLE OF CONTENTS

<b>About this report</b> .....	<b>1</b>
<b>Table of contents</b> .....	<b>2</b>
<b>Acronyms</b> .....	<b>4</b>
<b>Acknowledgments</b> .....	<b>5</b>
<b>Executive summary</b> .....	<b>6</b>
<b>Chapter 1. Background and context</b> .....	<b>16</b>
1.1 Background .....	16
1.2 Country selection and local context.....	19
1.3 Objective of the study .....	20
1.4 Analytical framework .....	21
1.5 Methodology and approach.....	22
<b>Chapter 2. Supply side: Secondary education and TVET (access, quality, and relevance)</b> .....	<b>24</b>
2.1 Overview .....	24
2.2 Secondary education systems .....	24
2.3 Access to secondary education.....	25
2.3.1 Physical distance and financial costs as barriers for access to secondary education .....	25
2.3.2 Access to secondary education for girls and special needs students.....	27
2.3.3 Access to career guidance in secondary education .....	29
2.3.4 Access to professionalized teacher training in secondary education.....	30
2.3.5 Access to digital infrastructure in secondary education .....	31
2.3.6 Access to lifelong learning in secondary education.....	33
2.4 Quality and relevance of secondary education .....	34
2.4.1 Quality and relevance of the secondary education curriculum .....	34
2.4.2 Quality and relevance of professionalized secondary education teacher service .....	38
2.4.3 Quality and relevance of career guidance and early exposure in secondary education .....	38
2.4.4 Quality and relevance of digital infrastructure in secondary education.....	39
2.4.5 Quality and relevance of lifelong learning in secondary education.....	40
2.5 Technical and vocational education and training systems.....	41
2.6 Access to TVET.....	43
2.6.1 Access to TVET for girls and persons with special needs .....	43

2.7 Quality and relevance of TVET curriculum .....	44
2.7.1 Quality and relevance of formal TVET .....	45
2.7.2 Quality and relevance of informal and non-formal TVET .....	47
2.7.3 Quality and relevance of professionalized teacher training in TVET .....	49
2.7.4 Quality and relevance of career guidance in TVET .....	50
2.7.5 Quality and relevance of digital infrastructure in TVET .....	51
2.7.6 Quality and relevance of lifelong learning among teachers and trainers in TVET institutions .....	52
<b>Chapter 3. Demand side: Labor market dynamics (employment and skills).....</b>	<b>53</b>
3.1 Overview .....	53
3.2 Private sector landscape and labor market requirements.....	53
3.3 Public-private engagements: Education and skills training.....	55
3.4 Labor market information systems (LMIS) .....	57
3.5 Government initiatives to support youth employment.....	58
3.6 Recognition and certification of informal learning.....	59
3.7 Gender inequalities in the labor market.....	60
3.8 Persons with special needs in the labor market.....	61
<b>Chapter 4. Recommendations and priorities for action .....</b>	<b>63</b>
4.1 Overview .....	63
4.2 Supply-side recommendations for Africa’s education sector .....	64
4.3 Demand-side recommendations for Africa’s labor markets.....	67
<b>References .....</b>	<b>69</b>
<b>Annex 1: Key elements of access, quality, and relevance.....</b>	<b>72</b>
<b>Annex 2: Labor market indicators and trends .....</b>	<b>74</b>
<b>Annex 3: Sectoral composition of employment 2019 .....</b>	<b>77</b>

## List of figures and tables

Figure 1: Capacity to adapt and exposure to the future world of work.....	16
Figure 2: Analytical framework.....	21
Figure 3: Graduate skillset requiring additional training .....	47
Table 1: Comparison of education systems in the study countries .....	25
Table 2: Gross enrollment, transition, and completion rates.....	27
Table 3: Access to digital infrastructure in secondary schools, 2018-2019 .....	31

# ACRONYMS

<b>4IR</b>	Fourth Industrial Revolution	<b>NFE</b>	Non-formal education
<b>ABE</b>	Alternative Basic Education	<b>NGO</b>	Non-governmental organization
<b>AfDB</b>	African Development Bank	<b>NQF</b>	National qualifications framework
<b>ATI</b>	African Transformation Index	<b>PPP</b>	Public-private partnership
<b>BAC</b>	Baccalaureate Certificate Program	<b>RDB</b>	Rwanda Development Board
<b>BEP</b>	Brevet d'Etudes du Premier Cycle (vocational training certificate)	<b>SERFE</b>	Secrétaires Exécutifs aux Relations Formation Emploi (Executive Secretariat for Training and Employment Relations)
<b>BTVET</b>	Business, Technical and Vocational Education and Training	<b>SHS</b>	Senior high school
<b>CBC</b>	Competency-based curriculum	<b>SSA</b>	Sub-Saharan Africa
<b>CIDFOR</b>	Centre Ivoirien pour le Développement de la Formation Professionnelle (Ivorian Center for the Development of Vocational Training)	<b>STEM</b>	Science, technology, engineering, and mathematics
<b>CIO</b>	Centre d'Information et d'Orientation (Information and Orientation Center)	<b>TVET</b>	Technical and vocational education and training
<b>COTVET</b>	Council for Technical and Vocational Education and Training	<b>TVI</b>	Technical and vocational institution
<b>COVID-19</b>	Coronavirus disease 2019	<b>UPE</b>	Universal primary education
<b>CPD</b>	Continuous professional development	<b>USE</b>	Universal secondary education
<b>DOB</b>	Direction de l'Orientation et des Bourses (Directorate of Orientation and Scholarships)		
<b>FAL</b>	Functional adult literacy		
<b>GDP</b>	Gross domestic product		
<b>ICT</b>	Information and Communications Technology		
<b>ILO</b>	International Labour Organization		
<b>IMF</b>	International Monetary Fund		
<b>KBC</b>	Knowledge-based curriculum		
<b>LMIS</b>	Labor market information system		
<b>NEET</b>	Not in employment, education, or training		

# ACKNOWLEDGMENTS

The Mastercard Foundation supported this paper as part of its strategy on youth employment in Africa. The report was prepared by a team led by Edward K. Brown, ACET Senior Director of Research, Policy and Programs, and co-authored by Maggie Okore, Mohammed Traore, George Boateng, and Mona Iddrisu, with special thanks to Rik Moors, Nii K. Bentsi-Enchill, and Jason Thompson for editorial support.

The authors are grateful for the support and helpful comments received from the reviewers: Birger Fredriksen, former Director for Human Development for Africa at the World Bank, and Professor Takyiwaa Manuh, former Director of the Social Development Policy Division at the United Nations Economic Commission for Africa.

The authors would like to express profound thanks and gratitude to partners from the following institutions for their collaboration with ACET as leads of the country case studies: the Institute of Policy Analysis and Research (IPAR) team led by Dr. Dickson Malunda (Rwanda); the Policy Studies Institute (PSI) team led by Dr. Amare Matebu Kassa (Ethiopia), the Economic Policy Research Center (EPRC) team led by Dr. Madina Guloba (Uganda), the Université Félix Houphouët Boigny de Cocody (CREMIDE) team led by Prof. Clément Kouakou (Côte d'Ivoire), and the Cabinet d'Etudes et de Recherche en Industrie, Sciences de l'Environnement, Eaux, Energie et Sociale (CERISES-CSF) team led by Dr. Oudou Halidou Mahamadou (Niger).

The authors would also like to thank the participants of the virtual policy learning event on youth employment and skills for their insights.



## EXECUTIVE SUMMARY

### Background

One-fifth of the global population under the age of 25 now resides in rapidly growing Sub-Saharan Africa (SSA). The region's working-age population is expected to reach 600 million in 2030, with a youth share of 37 percent—larger than that of China. With the right education and training, coupled with well-defined national development strategies and employment policies, Africa's large and fast-growing youth population could be a great asset for development and provide a comparative advantage in world markets.

However, governments face significant challenges in realizing the demographic dividend, including high unemployment rates—across Africa, youth unemployment (10.9 percent) is essentially double that of adults (5.6 percent)—and slow growth in productive jobs. In most African countries, over 80 percent of workers are in the informal sector, either in traditional agriculture or in urban informal economic activities. The employment situation has also been unfavorable for women, almost 90 percent of whom are employed informally. Gender differences tend to be more pronounced in countries with high levels of youth unemployment.

Increasingly, the face of the unemployed or informal sector worker in Africa is no longer only the uneducated man or woman, but also a secondary or tertiary school graduate. Why? There are two primary reasons. First, formal sector job creation has not kept pace with the increased number of secondary and tertiary school graduates. And second, where there are formal sector jobs, applicants often lack the necessary skills and training. Employment projections suggest the overall picture is not going to change soon.

Education is one of the main drivers of economic transformation, and governments need to emphasize skills needed in high job growth sectors, especially with regard to the Fourth Industrial Revolution (4IR)—encompassing the rapid evolution of robotics, artificial intelligence, 3D printing and additive manufacturing technology, and the internet-of-things. High-quality and relevant learning is needed throughout the education system to produce a workforce with the advanced skills needed to

make the most of 4IR. However, SSA has the lowest secondary education enrollment rates globally, and completion rates are low. In addition, curricula tend not to reflect the changing nature of work, while teachers often lack adequate training and tools to provide young people with relevant skills. The poor quality of delivery results in the overall challenge of low educational attainment.

No other region has ever faced the magnitude of the education challenges most SSA countries will face over the next couple of decades. At the same time, 4IR innovations and new technologies carry significant implications for the nature and growth of jobs in Africa. Addressing these challenges will require: (a) ensuring young people have the skills for productive and fulfilling work, and (b) transformative strategies that promote job creation and boost productivity in labor-intensive sectors.

## Study profile and objectives

This study examines youth (defined as those between the ages of 18 and 35) education, training, and employment, as well as skills challenges and opportunities in six African countries: Côte d'Ivoire, Ghana, Ethiopia, Niger, Rwanda, and Uganda. All but Niger were selected because of the access to robust employment and educational attainment data from existing studies and demographic and labor force surveys. While Niger is an outlier, its environmental and security challenges in the Sahel offer a unique opportunity to assess issues around the youth, employment, and skills in the region.

Several key socio-economic trends in the six countries are worth noting.

- The economic outlook for almost all the countries was relatively positive before the onset of the COVID-19 pandemic in 2020, which slowed growth considerably.
- Employment increased over the period 2014-19. Growth was highest in Uganda (4.1 percent) and Niger (3.5 percent), followed by Ethiopia (3.3 percent), Ghana and Rwanda (both 2.9 percent), and Côte d'Ivoire (2 percent).
- Unemployment rates are below the SSA average and have remained stable, while gender disparities largely reflect the SSA average.
- Labor force participation rates over 2014-19 were higher than the SSA average in all countries except Côte d'Ivoire.
- Youth employment greatly varies. Côte d'Ivoire and Ghana have youth employment participation rates below the SSA average, but rates are much higher in Ethiopia, Niger, and Rwanda—between two-thirds and close to three-fourths of the eligible population.
- The proportion of vulnerable workers in these countries is much larger than the 67.7 percent average for the SSA region.
- Working poverty rates are high, with at least 20 percent of the workforce in all countries but Ghana subsisting on less than US\$1.90 per day.

With this context, the study assesses the policies and regulations that align education and skills development systems (the workforce supply side) to rapidly changing labor market needs (the workforce demand side) under 4IR. In particular, it looks at access to education, quality of education, and the relevance of education to highly in-demand skill sets that require, among other things, foundational learning such as literacy, numeracy, and language fluency; the ability to adapt, innovate, and think creatively; and critical training in science, technology, engineering, and mathematics (STEM).

The scope of the study is limited to secondary education and technical and vocational education and training (TVET), levels of education that are crucial for the adoption of digital technologies and the development of higher-level thinking and technical skills needed to drive innovation, productivity, and jobs.

On the supply side, key respondents to country research surveys at the government level include policymakers (high-level government ministry officials) and those directly involved in curriculum development, monitoring, and assessment. Surveys at the school level targeted junior and senior high school students, teachers, administrators, and parents. The study also engaged students, graduates, teachers, and administrators in formal and informal TVET institutions.

On the demand side, key respondents include sector-specific associations, captains of industry, relevant government ministries of labor and human resource development, and labor recruitment institutions.

### Supply side: Secondary education and TVET

The countries have four levels of education: pre-primary, primary, lower and upper secondary, and tertiary. Basic education, which generally comprises primary and lower secondary education, is free and compulsory in all countries. The entry age for primary education is seven years for Ethiopia, Niger, and Rwanda, and six for Côte d'Ivoire, Ghana, and Uganda. Primary education lasts for six years in all countries except Uganda, where this phase lasts for seven years.

Secondary education systems are undergoing reforms towards competency-based curricula that promote critical thinking, skills acquisition, and problem-solving attitudes in place of the traditional, more theoretical and examination-oriented approach.

TVET is classified in three categories: formal, non-formal, and informal. Formal TVET refers to training in public or private schools with precise rules and fixed-term cycles, crowned with an accreditation in the form of a state diploma or certificate. Non-formal TVET involves significant learning that does not follow set rules and is not accredited, such as on-the-job training. Informal TVET refers to learning that occurs outside educational institutions but often with rules of trade that exist without necessarily being formalized, such as corporate training or apprenticeships.

### Access to secondary education

Over the last five years, access to secondary education in most African countries has improved as physical infrastructure has expanded and costs of education and training reduced. These policies have led to considerable improvement in secondary enrollment. However, these interventions have not fully achieved their intended objectives. Expansions in physical infrastructure have not kept pace with the surge in enrollment triggered by free tuition policies.

Free secondary education has been a game-changer in opening opportunities for out-of-school youth, but it has not benefited everyone as planned, particularly girls, students with special needs, and those in rural communities. Gender stereotypes and harmful cultural practices and attitudes remain critical barriers to access to education for all, despite development and continuous awareness programs at national and community levels.

Despite physical expansions and enrollment increases in secondary education, the transition from lower to higher secondary and final completion rates remain low, attributable in part to facility constraints. Transition rates to lower secondary school vary widely among the study countries.

Ghana (over 93 percent) and Côte d'Ivoire (over 92 percent) surpass the SSA average of 76 percent, but in Ethiopia and Niger only about half of the students transition into secondary school. This reflects very high dropout rates, which are likely to increase unemployment and the number of working poor.

Other prevalent access issues in secondary education include:

- **Career guidance.** Countries acknowledge the importance of early exposure and alignment of competencies to the world of work. However, access to such services is constrained by a lack of personnel with the requisite skills and training in schools. Partnerships with the private sector are limited and poorly implemented.
- **Professionalized teacher training.** Several initiatives are active in the study countries but common gaps exist in the programs teachers receive, such as inadequate support to develop their skills to align with the changing curriculum and labor market demand.
- **Digital infrastructure.** Countries are making great efforts to provide schools with the necessary digital tools to prepare learners for the future of work. Nevertheless, financial challenges limit the availability of critical equipment and technology. And where infrastructure is in place, access does not necessarily translate into usage.
- **Lifelong learning.** The availability, scope, and nature of continuous skills development programs for students vary considerably. Governments are making efforts to encourage teachers to upskill.

### Access to TVET

Over the last decade, formal TVET has seen significant growth. As with secondary education, the challenge lies in improving physical access to TVET institutions, especially in rural areas, improving the quality of training, and alignment of training to the needs of the labor market. On the informal side, there is a proliferation of institutions and programs, all offering diverse training in a comparatively affordable and flexible manner to meet the demands of the job market. Some graduates of informal vocational schools enter the formal market, but most find work in the informal sector.

In all countries, the government does not fully regulate the private TVET curriculum and, in some instances, this leads to the swindling of unsuspecting students. Those in rural communities opt for informal TVET since other TVET institutions provide training at relatively high costs, leaving them with few options.

The participation of girls and persons with special needs in TVET remains low. Cultural and gender stereotypes dominate decisions on entry. For those with special needs, in addition to the stereotypes, the major challenges are inappropriate physical infrastructure and a lack of relevant equipment.

### Quality and relevance of secondary education

Many African countries have moved from a knowledge-based curriculum to a competency-based curriculum (CBC) with more practical application and experimentation. Curricula also increasingly place greater emphasis on STEM and TVET. Yet there is a disconnect between the content of the curricula and the demands of the labor market. The gap is partly attributable to a lack of relevant and adequate resources required for an effective transition to a CBC approach. Some of the key challenges include an inadequate supply of materials and equipment, poor

or limited internet connectivity, poor course content, limited teacher preparation, and weak and inconsistent implementation of policy changes. These gaps are particularly worrying given the rapid evolution of digitization and automation.

Policies, regulations, institutional arrangements, and curriculum development and implementation processes vary considerably. While the study countries all have standardized national curricula prepared by their ministries of education, the extent and nature of the involvement of external stakeholders vary considerably. The process remains largely governmental, and private sector involvement has been very weak. This explains, in a large measure, the misalignment between labor demand and supply.

Despite the CBC shift in secondary education, some schools have discontinued or cut back on soft skills activities because they are not evaluated at the end of the year. Teaching to test is still more prevalent than continuous assessment of skills acquisition, and summative evaluation, which many teachers dislike, continues to be the prevailing evaluation system in most countries. Holistic capability, creativity, and critical thinking—key factors for the jobs of the future—are not captured.

Having strong, qualified teachers is a natural precondition to improving the quality and relevance of secondary education. But the challenges are numerous. Pedagogy, competency, standards, materials, and support systems are weak and misaligned to the knowledge and skills required in the labor market. The inability of countries to comprehensively plan and implement strategies that consider critical needs and realities of the whole ecosystem is a major drawback. In general, teaching has lost its prestige and is no longer an admired profession that can attract the very best graduates. This has led to high teacher turnover as the profession is used as a stepping stone to other job opportunities.

### *Quality and relevance of TVET*

In most SSA countries, TVET education has always played second fiddle to formal secondary education. Despite a high demand for TVET graduates, TVET institutions struggle with the perception that vocational studies are only meant for those not able to meet entry requirements for secondary school. The low value associated with TVET training continues to be the main challenge for countries.

The desire of most parents to see their children attain a university degree—perceived as the ultimate educational achievement—and the design of secondary schools' university-aligned curriculum combine to reinforce the perceived inferior status of vocational education. Over the last decade, attempts by governments to promote TVET training and entrepreneurship, such as encouraging graduates to be self-employed, have had very limited success, as graduates from both universities and technical colleges still desire formal public sector employment.

Countries have made considerable efforts in designing TVET curricula and programs oriented to market and industrial demands. Some courses are directly dictated by industry, for example. But many others are still misaligned, falling short of providing the necessary skills required for employment. Readiness of TVET graduates to enter the job market has been a major concern expressed by both students and industry stakeholders.

Rwanda stands out regarding the role of the private sector in promoting youth employment and skills through public-private partnerships. This strategy has ensured that the country gains a better-skilled workforce, more reliable supply, and stronger distribution of networks for effective and efficient operations. By contrast, in countries such as Ghana and Côte d'Ivoire, TVET institutions are still focused on traditional courses—including carpentry, motor mechanics, fashion, and catering—using old technologies, which are not attracting young people.

For this study, industry stakeholders, particularly employers, were asked to identify the skills gaps and additional training programs they offered for new recruits. Almost 50 percent named technical skills as requiring more training, followed by communication and business and entrepreneurship.

In the informal and non-formal TVET sectors, there are interesting initiatives to build capacity and recognize experiential learning. For example, Ethiopia's government is working with NGOs, private agencies, and private schools to offer targeted training to people in the informal sector, including school leavers, the unemployed, school dropouts, and marginalized groups in the labor market. Uganda has combined informal and non-formal training systems into non-formal education programs, which are open to all and offer three-to-six-month TVET skills trainings based on competency-based education.

However, some countries are struggling with accreditation of informal learning and apprenticeships, even when they have national qualification frameworks. Most young people prefer informal sector education, which allows them to earn a basic income while learning on the job.

### **Demand side: Labor market dynamics**

The private sector landscapes among the study countries differ sharply. In some, less developed players are the norm. Others have a heavy government presence. And still others are characterized by a multitude of micro and informal sector operators. In general, the skills most in-demand by companies are technical skills, entrepreneurship, and practical, twenty-first century soft skills such as communication, teamwork, creativity, problem-solving, and non-cognitive thinking. Such labor market-ready skills, however, are in short supply, producing significant mismatches in what the labor markets need and what the available workforce can provide. For example:

- In Côte d'Ivoire, despite the willingness of companies to recruit local labor, employers face enormous difficulties filling jobs involving digital security, robotics, home automation, and computer and network maintenance. Recruiters are particularly looking out for technical, communication, ICT, business, and entrepreneurship literacy skills.
- In Ethiopia, the TVET institutions are unable to meet demand from both industry and the public sectors due to limited enrollment and a lack of relevant skills. In particular, employers look for foundational skills, soft skills, and work-oriented competencies in value chains and customer orientation, as well as interdisciplinary teamwork, critical thinking, and creativity.
- In Ghana, 61.5 percent of industry respondents consider a secondary school diploma the minimum requirement for employment; only eight percent of respondents require university education as the minimum recruitment level. Communication skills are among the skills most desired by Ghanaian employers, but graduates are often found lacking in this regard.
- In Rwanda, TVET graduates are highly sought-after because of their practical skills. One policymaker says that 80 percent of such graduates get jobs before graduation. The Rwanda Development Board (RDB) plays a key role in coordinating and implementing professional internships. The RDB advocates teaching soft skills from primary school onward to enhance and align the quality of education to the demands of the job market.

Policymakers in educational institutions appreciate the role of the private sector as partners or employers who need to participate in curriculum development. This realization has, however, not translated into any real commitment to involve the private sector in strategic planning and design of learning and training tools for education and training systems.

Youth, particularly young women, are most affected by the disconnect between labor demand and supply. Policy dialogues focusing on the challenges of rising youth unemployment in all six countries revealed that young people, especially young women, face greater barriers to gainful employment and decent jobs. Authorities in the study countries are making efforts to support young people, but with limited success.

The government of Niger leads the study countries in its response to youth unemployment by designing programs to guide young people to create microenterprises. These youth integration programs are aimed at helping young people acquire skills and initiate small businesses through on-the-job training. In Rwanda, entrepreneurs are hampered by unfavorable taxation policies that heighten operational costs and reduce profitability. In Ethiopia, the government introduced a cooperative training program with the private sector, but the program has not performed as well as expected due to low attention and weak commitment of leaders, high resistance, and failure of most industries to deliver the required skills to the trainees. Overall, cooperation between industries and training institutions is weak and ineffective.

Informal learning is a major contributor to skills development. However, in some countries progress is held back by the lack of formal mechanisms for recognizing experiential and on-the-job training skills. Likewise, gender inequalities continue to hamper labor markets. Though many countries are making good, albeit slow, progress in addressing the issue in the public sector—largely through political representation—the private sector has yet to acknowledge the strategic contributions and benefits brought about by involving women in their workforce as a number of companies have no operational gender policies.

## Recommendations and priorities for action

Challenges, opportunities, and best practices emerging from Côte d'Ivoire, Ghana, Ethiopia, Niger, Rwanda, and Uganda provide the basis for the following recommendations and priorities for action. Strong political will and solid institutional capacity in all countries is needed to translate education inputs into learning outcomes. In addition, both the private sector and civil society must be brought on board to support governments in realizing education and employment goals.

### Improve access to secondary education and TVET

Over the last five years, countries have improved physical infrastructure and lowered the cost of education. These policies have led to considerable improvements in secondary school enrollment and some improvements in TVET enrollment. However, the expansion in physical infrastructure, particularly for secondary schools, has not kept pace with the surge in enrollment triggered by free tuition policies. Free tuition fails to benefit all population segments, with girls, children with special needs, and rural communities often left out.

Priorities for action:

- Expand physical infrastructure in line with increased school enrollment.
- Ensure that equipment is available and expand physical infrastructure to ensure schools are physically accessible to all students, particularly those in rural areas.
- Adopt and implement targeted policies to encourage girls' enrollment in STEM courses.

## **Ensure the future readiness of TVET and secondary school curricula**

Countries are shifting from knowledge-based curricula to competency-based curricula, but the results have been unsatisfactory. Secondary and TVET curricula remain poorly aligned to labor market needs, in large part because of weak collaboration with the private sector. Relevant twenty-first century skills are insufficiently integrated into most curricula, and when they are, the quality of delivery is lacking.

Priorities for action:

- Integrate twenty-first century skills into TVET and secondary school curricula.
- Ensure complete and effective implementation of competency-based curricula in schools.
- Effect broader stakeholder participation in curriculum development.
- Adopt standardized approaches in the delivery of non-formal TVET.
- Initiate awareness campaigns and develop incentives to change public attitudes towards TVET.
- Improve the effectiveness of curriculum delivery.

## **Improve access to high-quality and relevant career guidance and early exposure to the world of work**

Countries acknowledge the importance of early exposure and alignment of competencies to the world of work. However, access to such services is constrained by a lack of personnel with requisite skills and school training. There are few partnerships and limited coordination with private sector actors. Insufficient gender sensitivity in career guidance sessions results in the perpetuation of restrictive gender roles and contributes to the low participation of women in parts of the labor market.

Priorities for action:

- Ensure that career guidance counselors are equipped with appropriate pedagogical skills and awareness of the most relevant labor market needs.
- Establish strong partnerships and coordination with the private sector.

## **Professionalize teacher training**

There are considerable differences in the scope and nature of teacher training among the countries, with varying levels of success and effectiveness. While pre-service teacher training opportunities are more systematic, continuous teacher training is neither compulsory nor institutionalized. Pedagogy, competency, standards, materials, and support systems are weak and misaligned to the knowledge and skills required in response to evolving digital technologies and the labor market.

Priorities for action:

- Establish clear and comprehensive teacher education and training policies and strategies.
- Establish strong and formalized cooperation with the private sector on teacher training.
- Increase the number of teachers trained in twenty-first century skills.
- Develop an overarching policy and strategy for lifelong learning for teachers and school administrators in secondary schools.

## **Improve access to high-quality and relevant digital skills and infrastructure**

Few institutions have full access to digital tools, electricity, internet connectivity, and facilities to prepare learners for the future of work. There is a pervasive urban-rural gap, which the COVID-19 pandemic has exacerbated. Financial limitations, one-off budgets for equipment purchases, and a low capacity to operationalize plans have marred countries' efforts to attain and maintain an adequate operational infrastructure.

Priorities for action:

- Ensure institutions have the appropriate equipment and technologies to prepare learners for the future world of work.
- Upgrade school facilities.
- Develop comprehensive digital and innovation policies and strategies to improve digital literacy.

## **Prioritize gender and vulnerable group considerations in education**

Many countries have awareness programs on skills development for all at the national and community levels, but gender stereotypes remain pervasive. Harmful cultural practices and stereotypes that maintain gender inequalities and the exclusion of students with special needs are firmly rooted at the community level. Girls are particularly underrepresented in STEM subjects and at TVET institutions.

Priorities for action:

- Pursue deliberate policies that ensure inclusivity in secondary and TVET institutions.
- Invest in gender-disaggregated data collection.
- Ensure that infrastructure for higher secondary and TVET institutions conforms to disability provisions.

## **Tackle youth unemployment on the supply side and demand side**

All countries have high youth unemployment and underemployment rates caused by mismatches between acquired and required skills. Soft skills and technical skills are in high demand but often in short supply. Entry requirements in the informal sector are high, and public and private sector employers do not widely recognize informal skills. Graduates also have trouble starting their own business, as few have entrepreneurial skills.

Priorities for action:

- Develop and improve labor market information systems.
- Establish and formalize a mechanism for recognizing experiential and on-the-job training skills.
- Impart labor market-ready skills to students in higher secondary and TVET institutions.
- Provide more entrepreneurship training.

## **Strengthen linkages between the public and private sectors**

The private sector is rarely engaged in developing education and training programs, particularly in Ghana, and Ethiopia. Rwanda and Côte d'Ivoire have made some progress on public-private partnerships in education, with promising initiatives such as industrial attachments. Even in countries with low private sector engagements, employers are willing to be more involved, as they see the benefits of having a more skilled graduate pool.

Priorities for action:

- Strengthen the interface between the public and private sectors in developing education and training programs.
- Develop strong, well-structured, and accountable public-private partnerships for mass industrial placements and transition-to-work schemes.

## **Address gender inequality and ensure equal opportunity in the labor market**

Very few companies have any measures in place to enhance the participation of women in the workplace, while others have no operational gender policies at all. And while all countries have ratified and adopted the UN Convention on the Rights of Persons with Disabilities, there is a distinct gap between policy and practice. Firms and education institutions struggle to comply with provisions of the convention, which emphasize access to and adequate preparation for the world of work for people with special needs.

Priorities for action:

- Offer incentives to employers to facilitate the integration of gender equity policies.
- Ensure that employers enhance coaching and mentoring opportunities to encourage more women to take up managerial roles.
- Ensure compliance with provisions of the UN Convention on the Rights of Persons with Disabilities.

## BACKGROUND AND CONTEXT

### 1.1 Background

One-fifth of the global population under the age of 25 now resides in rapidly growing Sub-Saharan Africa (SSA), the world's youngest region. The region's working-age population is expected to reach 600 million in 2030, with a youth share of 37 percent—larger than that of China. With the right education and training, coupled with well-defined national development strategies and employment policies, Africa's large and fast-growing youth population could be a great asset for development and provide a comparative advantage in world markets. However, Africa already faces high and rising unemployment rates, with young people particularly vulnerable. Across Africa, youth unemployment (10.9 percent) is essentially double that of adults (5.6 percent). According to the International Labour Organization (ILO, 2021), young people make up 23.5 percent of the working poor in SSA. As of 2017, the region has the highest working youth poverty rates worldwide at 69 percent (ILO, 2017). The employment situation has also been unfavorable for women, almost 90 percent of whom are employed informally. Gender differences tend to be more pronounced in countries with high levels of youth unemployment.

Governments face significant challenges in realizing the demographic dividend as growth in productive jobs has stalled and economic transformation has been slow. In most African countries, over 80 percent of workers are in the informal sector, either in traditional agriculture or in urban informal economic activities, where under-employment and low earnings are pervasive. A large share of the growth outside the agricultural sector in the past few decades has been in household enterprises—unincorporated, non-farm businesses owned by individuals—rather than modern, industrial, or services enterprises.

Increasingly, the face of the unemployed or informal sector worker in Africa is no longer only the uneducated man or woman, but also a secondary or tertiary school graduate. In Ghana, for example, only 10 percent of the 200,000 people entering the labor force each year find formal sector jobs. Similar trends can be found across SSA. There are two primary reasons for this development. First,

formal sector job creation has not kept pace with the increased number of secondary and tertiary school graduates—a rise fueled by a population surge and rapidly improved access to education. And second, where job demand in the formal sector does exist, necessary skills and training are in short supply. The lack of adequate skills is due to the overall poor quality of education and an oversupply of graduates specializing in subject areas different from those in greatest demand by employers such as science, technology, engineering, and mathematics (STEM).

Employment projections suggest the overall picture is not going to change soon. Until 2030, agriculture is expected to continue to dominate in the low and lower-middle-income economies, providing about two-thirds of total jobs. In contrast, the services sector will remain the most significant sector in upper-middle-income economies. Perhaps most troubling, the manufacturing sector is projected to provide only 6.5 percent of total employment across all income categories, raising additional questions about manufacturing-led industrialization in Africa.

The Fourth Industrial Revolution (4IR)—encompassing the rapid evolution of robotics, artificial intelligence, 3D printing and additive manufacturing technology, and the internet-of-things—is fundamentally disrupting manufacturing technology, with significant implications for the nature and growth of jobs in Africa. These new technologies lead to new business models, create remote or gig economy employment, and provide more jobs within the technology sector (ACET, 2018a). At the same time, these technologies are putting some jobs under threat as the presence of machines and robots continues to grow, with middle-income jobs most at risk. For the last two decades, many African countries have focused on reducing education costs, improving investment climates, and attracting labor-intensive manufacturing to capitalize on abundant labor, fuel growth, and provide productive jobs. The impact of 4IR on global production and trade means that the way forward is not so clear (ACET, 2018b).

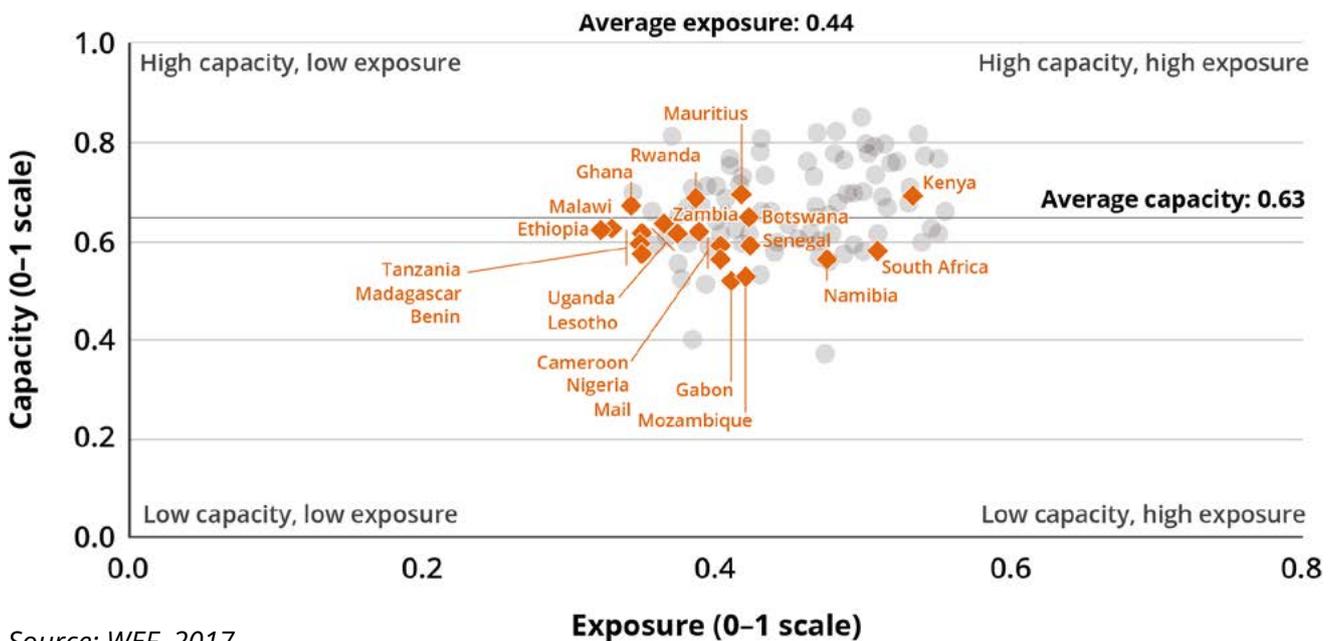
The pace at which economies can adapt to the changing technological innovations will determine the impacts of automation. As seen in [Figure 1](#), a large cluster of countries has low exposure to 4IR trends, including technologies and the jobs landscape of the future. Many formal sector employers in SSA state that young people are inadequately prepared for various workplace roles, as students entering secondary school tend to have diverse but low-level skills.

SSA countries underutilize their human capital potential and are ill-equipped for the changing nature of work and the impact of 4IR. The ability of African countries to adapt depends heavily on how quickly the skills young people gain can be improved, mainly through strengthening education and training systems.

Education is one of the main drivers of economic transformation, and governments need to emphasize skills needed in high job growth sectors. High-quality and relevant learning is needed throughout the education system to produce a workforce with the advanced skills needed to make the most of 4IR. SSA has the lowest secondary education enrollment rates globally as access remains patchy. Furthermore, completion rates are low. Around 30 percent of lower secondary school children enroll, but only 35 percent of those enrolled complete this critical phase.

Education systems' curricula and pedagogy in SSA contribute to the skills challenge. Curricula tend not to reflect the changing nature of work, and reforms should incorporate practical elements. Teachers are also ill-equipped and do not have adequate training and tools to provide young people with relevant skills (ACET, 2014).

Figure 1: Capacity to adapt and exposure to the future of jobs<sup>1</sup>



Source: WEF, 2017

Informal and non-formal training systems impart skills to over 80 percent of youth in Africa. However, many African countries have focused education and training reforms on the formal system while neglecting informal and non-formal skills development systems. One result is that informal and non-formal technical and vocational education and training (TVET) systems lack funding and suffer from inadequate training mechanisms, affecting training outcomes. For example, there is unmet demand for lower and middle-level skilled workers in the construction industry across Africa, particularly in masonry, electricals, electronics, and machine operation. Some relevant technical skills are underdeveloped, and young people are ill-equipped to perform these activities. This is especially disadvantageous for women and girls who are often restricted to trades such as tailoring and catering.

Compared to other regions of the world, educational attainment in Africa is low. Less than a third of adults have completed primary education compared to nearly all adults in advanced economies. In recent years, access to primary education and completion rates in primary and lower secondary have improved substantially, yet rates for both remain low. Less than 60 percent of children in lower-income countries in SSA complete primary school, while the top 20 percent of countries worldwide have a completion rate of over 90 percent. UNESCO projects only four countries in SSA will achieve universal lower secondary education by 2030—and only if education progresses at the fastest rate the region has ever seen.

The poor quality of delivery results in the overall challenge of low educational attainment. Less than seven percent of students in late primary school in SSA are proficient in reading, and only 14 percent are proficient in mathematics. There is also a learning gap between students from poor

1. The World Economic Forum defines capacity as an assessment of “capacity to adapt to the requirements of future jobs measured by assessing the quality and extent of its education and staff training systems, post-basic education attainment and breadth of skills” and exposure as “exposure to future trends measured by the impact of latest technologies, local economic diversification and complexity, employee productivity, and unemployment.”

and rich families, which widens as children move up through education grades. Such low levels of attainment at primary school affect future learning outcomes and preparedness for future jobs. For example, according to the World Bank, nearly 80 percent of Ghana's working-age population cannot "integrate, evaluate, and interpret information from a variety of text materials" (World Bank, 2021). Yet most productive jobs and training programs require a high level of literacy—and increasingly so, as technological changes will necessitate a shift in focus towards more cognitive skills.

No other region has ever faced the magnitude of the education challenges most SSA countries will face over the next couple of decades. Strong institutions and the political will to make resource trade-offs between population groups and sectors will be needed. The good news is that increasingly, African countries are recognizing the urgent need for tailored strategies for the future of work even as the unfolding technological revolution is already impacting the present work environment. Addressing these challenges will require: (a) education and training that equips young people with the skills for productive and fulfilling work, and (b) transformative strategies that promote job creation and boost productivity in labor-intensive sectors.

SSA has the largest gender gap in the world of work (WEF, 2017). Gender differences are more pronounced in countries with high levels of youth unemployment, and young women often face different challenges compared to their male counterparts (ACET, 2018a). Three-quarters of employed women in SSA are in informal employment, compared to only 61 percent of employed men. Underemployment is also more prevalent among women (ACET, 2018a). Furthermore, policy dialogues on youth employment often exclude young women, whose needs are not adequately reflected in many policies

## 1.2 Country selection and local context

The study covers six African countries: Côte d'Ivoire, Ghana, Ethiopia, Niger, Rwanda, and Uganda. With the exception of Niger, these countries were selected because of the access to robust employment and educational attainment data from existing studies and demographic and labor force surveys. While Niger is an outlier, its environmental and security challenges in the Sahel offer a unique opportunity to assess issues around the youth, employment, and skills in the region.

The following summarizes key socio-economic trends in the six countries. More detailed employment statistics can be found in [Annex 3](#).

- ***The economic outlook for almost all the countries was relatively positive before COVID-19.*** Côte d'Ivoire and Ghana were among the fastest-growing economies in Sub-Saharan Africa. However, with the onset of the COVID-19 pandemic in 2020, growth slowed down considerably, with Niger and Ethiopia impacted most heavily.
- ***Employment increased over the period 2014-19.*** Growth was highest in Uganda (4.1 percent) and Niger (3.5 percent), followed by Ethiopia (3.3 percent), Ghana and Rwanda (both 2.9 percent), and Côte d'Ivoire (2 percent). Female and male employment both increased. Employment was higher for women than men in most countries during this period, except for Ghana and Niger, where the rate for women is slightly lower than that of men.
- ***Unemployment rates are below the SSA average and have remained stable.*** Gender disparities in unemployment rates are less pronounced and largely reflect the SSA average.

- **Youth employment greatly varies.** Côte d'Ivoire and Ghana have the lowest participation rates—below the SSA average. Ethiopia, Niger, and Rwanda have the highest number of young people in the labor market, with between two-thirds and close to three-fourths of the youth in employment. However, these figures are trending downwards, which reflects a rising trend in enrollment in secondary and tertiary education and training. Gender disparities in youth participation rates are low, except for Niger and Ethiopia, where male participation rates are almost a third and fifth higher than female rates, respectively. There has been some progress in narrowing the gender gap, particularly in Ghana and Rwanda, which achieved parity in youth participation rates. The proportion of youth not in employment, education or training (NEET) also increased over 2015-2019 compared to 2011-2014.
- **Labor force participation rates over 2014-19 were higher than the SSA average in all countries except Côte d'Ivoire.** Rwanda and Ethiopia had the highest percentage of the working-age population actively engaged in the labor market, at 83.7 percent and 79.7 percent, respectively. All countries recorded a slight decrease in labor force participation rates during this period compared to 2008-13. Gender disparities in participation rates persist, with men having higher participation rates than women. Rwanda and Côte d'Ivoire are outliers on opposite sides of the spectrum. Rwanda has nearly achieved gender parity, and Côte d'Ivoire has the highest gender gap with over 20 percent lower female labor participation.
- **The number of vulnerable workers is high.** Vulnerable workers, which include own-account workers and unpaid family members—many of whom work in the informal economy—make up a much larger proportion than the 67.7 percent average for the SSA region.
- **Working poverty rates are high.** With the exception of Ghana, at least 20 percent of the workforce in the countries subsists on less than US\$1.90 per day. Gender disparities in the incidence of working poverty are minor and difficult to determine, but in all countries except for Niger, women are more likely to be counted among the working poor.

### 1.3 Objective of the study

The study draws on findings of the Mastercard Foundation report *Secondary Education in Africa: Preparing the Youth for the Future of Work* (Mastercard Foundation, 2020) to closely investigate youth<sup>2</sup> employment and skills challenges and opportunities in the six selected African countries.

The study examines how education and training systems are adjusting to meet labor demands in light of the impact of 4IR on the changing nature of work. The study contains a survey of policies, regulations, and institutional arrangements to align education and training outcomes with labor market demands.

The study identifies opportunities to boost youth employment and ways to implement innovative education and training initiatives as it addresses four main questions:

1. How are education and training systems responding to the changing nature of work in the selected countries?
2. What is the nature of the mismatch between labor supply and the demand for skills, and what are the implications for employment?

---

2. For the purpose of this study, youth refer to those between 18 and 35 years as defined by the African Youth Charter (African Union, 2006).

3. How is labor demand changing in the face of digital technologies?
4. What role does the private sector play in ensuring that education and training systems are producing the right workforce?

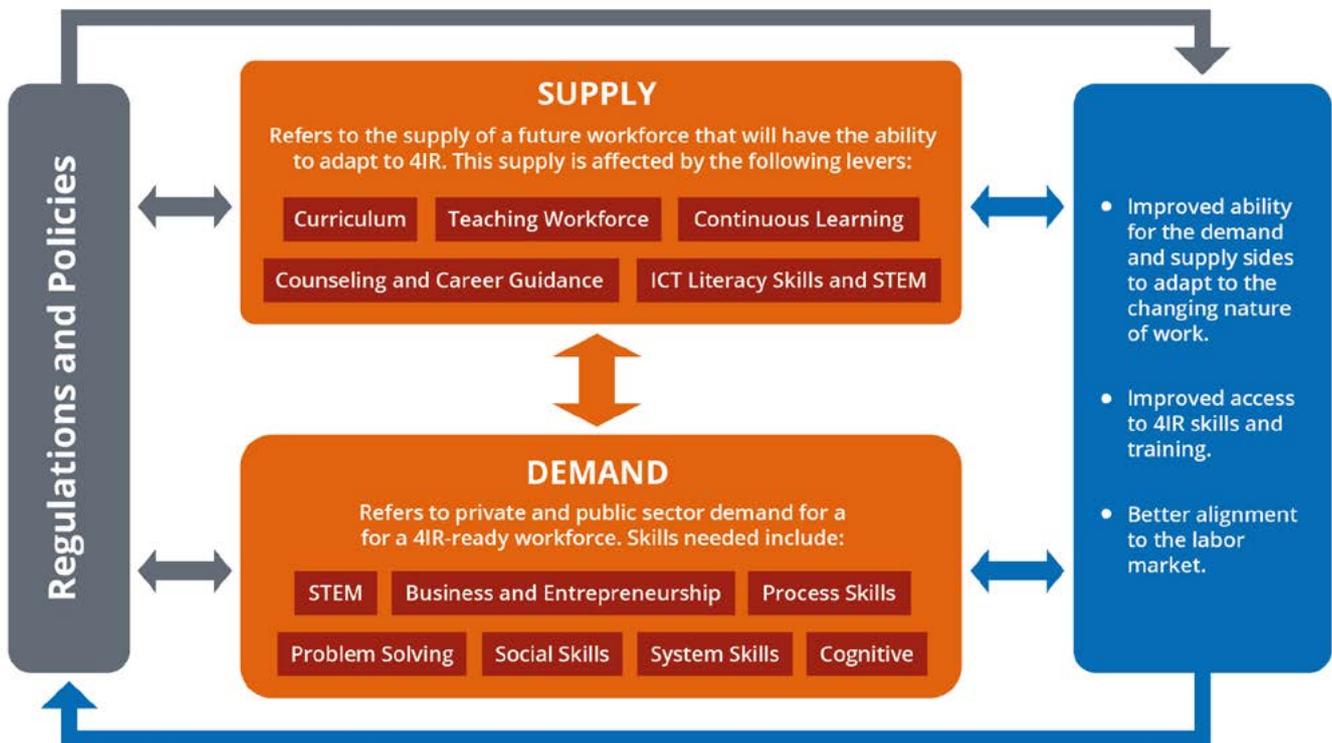
The scope of the study is limited to secondary education and TVET. These levels of education are crucial for the adoption of digital technologies, because that is when young people develop the higher-level thinking and technical skills needed to drive innovation, productivity, and jobs. Wage workers with more schooling are also more likely to work in the formal sector (Firmer and Fox, 2014). An increasing number of students will transition to secondary education as primary school completion rates rise and the youth population expands.

### 1.4 Analytical framework

The study uses a mixed methodology with primary and secondary data collection to examine the factors that drive supply and demand and their interactions.

Figure 2 shows the analytical framework that underpins the study. Policies and regulations align education and skills development systems to the changing world of work under 4IR. They drive the workforce’s supply, quality, and relevance in response to rapidly changing labor market demands.

**Figure 2: Analytical framework**



Through this analytical framework, the study assesses the educational system in the six selected countries on the supply side in terms of access to and quality of education and its relevance for the workforce, using five key education-related criteria.

1. Alignment of curricula: the extent to which curricula are aligned to the needs of the labor market and the future-readiness of graduating students.
2. Quality of the professional teaching workforce: the level of investment in the development and maintenance of the teaching workforce with regard to 4IR-relevant competencies and skills, pedagogical approaches, and subjects.
3. Career guidance: the presence and quality of career guidance, early exposure of students to the workplace through internships and apprenticeships, and career development tools, including counselors and career fairs.
4. ICT infrastructure: achievement on key ICT benchmarks, including computer-to-student ratio, internet access, and the frequency of ICT literacy classes.
5. Lifelong learning: readiness of the supply side for continuous adaptation to changing skills demands.

On the demand side, the study examines three critical areas:

1. The dynamics and mismatch in the employment and skills requirements in the labor market, with specific reference to three highly demanded skill sets:
  - A. Foundational skills: literacy, numeracy, and fluency in the language of instruction.
  - B. Twenty-first century skills: learning and innovation, communication, analytical thinking, problem-solving, creativity, initiative, perseverance-focus, adaptability, flexibility, and leadership.
  - C. Digital skills and STEM: STEM, entrepreneurship skills (including financial literacy and business management), and work-ready skills (including networking and information seeking).
2. The relationship between industry and training institutions.
3. Initiatives in the public sector and industry towards gender equality and the inclusion of vulnerable groups, particularly persons with special needs.

## 1.5 Methodology and approach

The approach for this study is based on the ACET Policy Engagement Model (APEM). This model uses research and policy dialogue to identify common problems and challenges faced by multiple countries in a specific issue area and to foster knowledge-sharing through shared examples and best practices.

ACET, working with national think tanks and research institutes, has developed a primary report for each of the study countries. Policymakers, the private sector, and other stakeholders have validated the findings, recommendations, and follow-up actions. This report is a synthesis that identifies overarching issues and key recommendations.

The study was conducted in three phases:

- Phase 1: country-level data collection and analysis, drafting of country reports, and validation by in-country think tanks.
- Phase 2: synthesis of the results of the country-level studies.
- Phase 3: policy learning event and establishment of a knowledge sharing and policy uptake platform.

The study was meant to be conducted between the last quarter of 2019 and the second quarter of 2020. The COVID-19 pandemic has affected the timeline and methodology, as the data collection stage was delayed by six months, and in-person surveys were conducted online.



## SUPPLY SIDE: SECONDARY EDUCATION AND TVET (ACCESS, QUALITY, AND RELEVANCE)

### 2.1 Overview

This chapter summarizes the findings on access, quality, and relevance of education and training in public and private institutions in the six selected study countries, as well as the way education and training systems are responding to the changing nature of work. Unless stated otherwise, “governments” and “countries” in this section refers to the six study countries.

Survey respondents from the supply side at the government level include policymakers (high-level government ministry officials) and those directly involved in curriculum development, monitoring, and assessment. Surveys at the school level targeted junior and senior high school students, teachers, administrators, and parents. The study also engaged students, graduates, teachers, and administrators in formal and informal TVET institutions. School leavers provided information on their transition to work experience. The survey and interview data were complemented with an in-depth literature review.

### 2.2 Secondary education systems

**Secondary education systems are undergoing reforms towards competency-based curricula that promote critical thinking, skills acquisition, and problem-solving attitudes in place of the traditional, more theoretical and examination-oriented approach.**

The education systems derive their origins from the colonial structure, with the exception of the Ethiopian system. Over the last decade, the systems in each of the six countries have moved towards a competency-based curriculum (CBC). Governments have made significant reforms to address access, quality, changing industry needs, youth unemployment, talent identification, and digitalization.

The countries have four levels of education: pre-primary, primary, lower and upper secondary, and tertiary. Basic education, which generally comprises primary and lower secondary education, is free and compulsory in all countries. The entry age for primary education is seven years for Ethiopia, Niger, and Rwanda, and six for Côte d'Ivoire, Ghana, and Uganda. Primary education lasts for six years in all countries except Uganda, where this phase lasts for seven years. Table 1 outlines the duration of each level of education in the six countries.

**Table 1:** Comparison of education systems in the study countries

	Côte d'Ivoire	Ethiopia	Ghana	Niger	Rwanda	Uganda
<b>Entry age, primary education</b>	6	7	6	7	7	6
<b>Number of years primary</b>	6	6	6	6	6	7
<b>Number of years lower secondary</b>	4	2	3	4	3	4
<b>Number of years upper secondary</b>	3	4	3	3	3	2

Source: Compiled from individual country reports

## 2.3 Access to secondary education

Access measures all factors that promote or impede access to secondary education and TVET:

- Physical access, including the distance from home to institutions
- The availability of facilities and human resources
- Costs, including tuition fees and associated expenses such as uniforms, transportation, and school feeding programs
- The impact of socio-cultural norms and values

### 2.3.1 Physical distance and financial costs as barriers for access to secondary education

Over the last five years, access to secondary education in most African countries has improved as physical infrastructure has expanded and costs of education and training reduced. These policies have led to considerable improvement in secondary enrollment. However, these interventions have not fully achieved their intended objectives. Expansions in physical infrastructure have not kept pace with the surge in enrollment triggered by free tuition policies, and free tuition has not benefited all segments of the target population, particularly girls, students with special needs, and those in rural communities.

In 2016, Côte d'Ivoire set the ambitious goal of providing schooling for all children aged 6 to 16. Enrollment rates at the secondary level increased from 34.7 percent to 40.2 percent between 2016 and 2018. The higher number of students resulted in class sizes of approximately 57 pupils, much higher than the international average of 40.

In Ethiopia, the gross enrollment rate in upper secondary school was 32 percent in 2019, despite free education being offered at the first stage of secondary education.

In 2021, four years into Ghana's free secondary school policy, 10-14 percent of all placed students failed to enroll. The country's existing physical infrastructure has been unable to absorb the 69 percent increase in enrollment, and in response, the government has implemented a dual-track system. Using a World Bank loan under the Secondary Education Improvement Project, 21 new senior secondary schools had been constructed and 125 rehabilitated as of May 2020, increasing the number of spaces available in targeted schools by about 43,000 between 2014 and May 2020 (World Bank, 2021). The dual-track system reduced the annual teacher/student contact hours and the number of school days, so the government has introduced weekend remedial classes for students to support them with English and mathematics.

In Rwanda, where gross enrollment increased from 40 percent in 2018 to 44 percent in 2019, overcrowding is also common. Free secondary schooling has resulted in large class sizes, making it difficult for teachers to monitor and guide students closely.

With few schools in many parts of the country, enrollment remains low in Niger, despite free schooling. The rate increased in secondary schools from 16.6 percent in 2015 to 20.1 percent in 2017. The country has the lowest literacy rate in West Africa.

In Uganda, free secondary education and decentralization policies expanded physical infrastructure for secondary schools. The decentralization policy requires primary schools to be located within five kilometers in a parish (each parish containing approximately five villages) and to have at least one secondary school per sub-county, so one secondary school will serve five parishes. The expansion in physical infrastructure remains inadequate to fill the demand in the sub-county, and the system remains exclusionary.

While physical expansion and fee-free policies have led to significant increases in enrollment in secondary education, the transition from lower to higher secondary and final completion rates remain low, attributable in part to facility constraints. As one respondent in Ghana expressed:

*"The transition from primary to junior high school poses a serious challenge to retention, as students in some rural communities without a junior high school commute for long distances of up to 10 kilometers."*

As **Table 2** indicates, transition rates to lower secondary school vary widely among the study countries. Ghana (over 93 percent) and Côte d'Ivoire (over 92 percent) are the best performers, surpassing the SSA average of 76 percent, followed by Rwanda (72 percent) and Uganda (69 percent). Ethiopia and Niger are the poorest performers, with only about half of the students transitioning into secondary school—a rate much below the SSA average. This reflects very high dropout rates, which are likely to increase unemployment and the number of working poor.

**Table 2: Gross enrollment, transition, and completion rates**

Percent	Côte d'Ivoire	Ethiopia	Ghana	Niger	Rwanda	Uganda	SSA average
<b>Gross enrollment rate, lower secondary</b>	68.9 (2019)*	43.3 (2017)*	86.1 (2018)	32.4 (2017)*	55.8 (2019)*	N/A	51.4 (2018)*
<b>Gross enrollment rate, upper secondary</b>	40.2 (2019)*	32 (2019)*	63.3 (2019)*	11.4 (2017)*	31.8 (2019)*	27.1 (2016)*	33.2 (2018)*
<b>Transition rate, primary to lower secondary</b>	92.0 (2015-16)++	48.5	93.1 (2015-16)++	58.3 (2015-16)++	72.0 (2015-16)++	69.2	76.0 (2016)
<b>Completion rate, upper secondary</b>	28.5 (2019)	13.1 (2016)**	38 (2018)	17.6 (2019)	42.5 (2019)	12.7 (2017)	30 (2017)
<b>Out of school adolescents, lower secondary</b>	44.4 (2019)	47.0 (2015)**	10.6 (2019)**	64.9 (2017)	25.3 (2017)	26.6 (2016)**	25.7 (2019)

Sources: Country reports

- \* (UIS, 2015-2019)

- \*\* (UIS, 2010-2020)

- ++ Mastercard Foundation (2018)

In Ethiopia, survey respondents attribute the low transition rate of 48.5 percent from primary to secondary to the infrastructure deficit and lack of classrooms in most secondary schools. This trend persists from lower to upper secondary, with only 14.8 percent of lower secondary school students transitioning to upper secondary. To address the much higher number of out-of-school children in rural regions at 19 percent—more than twice the national rate of 9 percent—the government has initiated a catch-up program for children of pastoralists.

The high transition rates have not continued to the upper secondary level for Ghana and Côte d'Ivoire, the top two performers in primary to lower secondary transition. For Ghana, of the 93 percent of primary school leavers transitioning to lower secondary, only 55.9 percent transition to upper secondary. Only 38 percent of children who enter primary school complete upper secondary.

### 2.3.2 Access to secondary education for girls and special needs students

**Free secondary education has been a game-changer in opening opportunities for out-of-school youth. However, it has not benefited everyone as planned, particularly vulnerable groups like girls, those with special needs, and those in rural communities.**

Gender stereotypes and harmful cultural practices and attitudes remain a critical barrier to access to education for all, despite continuous awareness programs at national and community levels.

The risk of neglect of persons with special needs remains an ongoing concern. Special needs students face stigma in the classroom and often have to travel long distances. Few schools, all in urban areas, are adequately equipped to deal with the 10 percent of the student population with special needs, as few investments are made in facilities and infrastructure for learners with special needs.

Efforts by the Rwandan government and several NGOs to promote gender parity in education and the workplace have paid off at the primary and secondary levels, where parity has almost been achieved. The Girls Educational Policy has successfully addressed the underrepresentation of girls in STEM up to the high school level (Rwanda Ministry of Education, 2008). There is, however, some pushback, as parents feel that the job opportunities available in the sciences would require girls to be away from the home environment. While 55 percent of female students take STEM subjects, this proportion declines as girls advance to tertiary level, just like at the teaching level, where women constitute only three percent of the academic staff in STEM fields.

In Côte d'Ivoire and Niger, girls were virtually absent in the streams with strong STEM subjects. This trend also manifested itself in the gender distribution of teaching staff, with low representation of women.

In Côte d'Ivoire, gender stereotypes clearly impact girls' participation in school and the job market. However, there are some positive initiatives, such as summer camps with STEM mentorships led by university tutors for the best performing female secondary school students.

In Uganda, the government has implemented policies to address inequality in access and inclusiveness of gender and disability (ISER, 2019). These include the Universal Primary Education and Universal Secondary Education policies. In addition, the Gender in Education policy has contributed highly to equal access to education. However, female students continue to be disproportionately underrepresented in STEM disciplines, despite overall STEM enrollment improvements. Most schools have installed ramps to improve wheelchair access, but otherwise, learners with special needs are not adequately supported.

Ghana has seen increased equality in access, reaching a gender ratio of 0.96 in 2016-17 at the secondary level. Transition rates for lower to upper secondary were higher for females than males at 69 percent and 65 percent, respectively, in 2015-16. Boys perform better than girls in STEM subjects, whilst girls perform better in English (Ghana Ministry of Education, 2018). There was an equal mix of female and male STEM teachers at the lower secondary level. At the upper secondary level, however, 95 percent of the teachers surveyed are male, and one of the schools visited in northern Ghana has no female teachers.

While gender-disaggregated data are not available for all countries, in Côte d'Ivoire, completion rates at the upper secondary level are much lower for girls at 24.4 percent and 25.2 percent in 2018 and 2019, respectively. Government efforts to reduce the percentage of out-of-school adolescents at lower secondary schools have resulted in a modest decline from 50.4 percent in 2014 to 44.4 percent in 2019. In Uganda, of those who completed lower secondary, only 29.2 percent transitioned to upper secondary, and only 24.2 percent of those who did were girls.

Rwanda and Uganda provide targeted scholarships that pay for fees, school uniforms, and books for the girl child to address this imbalance. The impact is significant, particularly in increasing the enrollment of girls at both the primary and secondary levels. However, a majority of girls still drop out at the upper secondary level rather than progress to tertiary education. High poverty levels force girls into either early marriage or work, contributing to high drop-out rates.

Côte d'Ivoire has implemented policies to ensure greater inclusion, targeting pregnant students and students facing classroom exclusion. There is also a program for learners with nutritional deficiencies through canteens, but the supply is insufficient.

Special targeted education is key to capturing the most vulnerable. Ethiopia has an Alternative Basic Education (ABE) system outside the formal school system for underserved children, mostly from pastoral communities. ABE offers the first-stage elementary curriculum on flexible class schedules adjusted to traditional ways of living. A special catch-up program for students who cannot keep pace with the formal system has allowed a community of otherwise excluded students access to education.

Niger faces the most serious insecurity challenges among the study countries. Security issues have caused frequent school closures over extended periods. Terrorists kidnap upper primary and secondary school girls and force them into marriage, leading to lower enrollment as parents prefer keeping their daughters at home.

In Côte d'Ivoire, students have sometimes been denied opportunities for continuous study because of teacher unrest, floods, pre- and post-election conflicts, inter-community tensions, cross-border attacks, and population displacements. In some instances, students go without teachers for more than three months.

### ***2.3.3 Access to career guidance in secondary education***

**Countries acknowledge the importance of early exposure and alignment of competencies to the world of work. However, access to such services in schools is constrained by a lack of personnel with the requisite skills and training. Additionally, partnerships with private sector actors are limited and poorly implemented.**

Côte d'Ivoire, Niger, and Uganda have integrated career guidance into the curriculum. However, it is in its infancy, and countries have to put in place systems that will monitor the impact.

In Côte d'Ivoire, every learning institution is required to have a counselor, and counselors undergo a two-year preparation program offered by the Information and Orientation Center (Centre d'Information et d'Orientation, CIO). The CIO organizes learners' information sessions through conferences, open days, career days, and classroom information sessions. There is also an elaborate internship program, but respondents note that gaining access to the program and the counselors is a difficult and frustrating process. There are, however, other programs targeting technical and professional institutions, including an Orientation to the World of Employment program supervised by the executive secretariat for training and employment relations. This program serves as an intermediary between training institutions and the world of work.

In Niger, over 80 percent of surveyed secondary schools have integrated career guidance in the curriculum, but 76 percent of student respondents indicate that parents offer the best career guidance, with only 19 percent mentioning teachers. About half (53 percent) of teachers do not discuss possible pathways at the end of apprenticeships, and hardly any industry practitioners visit schools to provide career guidance.

In 2008, Uganda created the Department of Guidance and Counseling within the Ministry of Education and Sports as an autonomous department with responsibility for career guidance in the curriculum. The department requires secondary schools to dedicate time throughout the year to career guidance and employ a full-time school counselor. However, the system is poorly formalized, and many schools face counselor shortages, resulting in many institutions resorting to using senior teachers and nurses to perform counselors' tasks.

In Ghana, almost 63 percent of teachers and secondary school administrators indicated the absence of career guidance and career counselors in the secondary school system.

In Rwanda, the Rwanda Education Board has a personality test kit that assists school leavers in setting goals for their desired career path. However, there is no one-on-one guidance during the school period.

### ***2.3.4 Access to professionalized teacher training in secondary education***

**Several professional teacher training initiatives are active in the study countries. However, there are gaps in the programs teachers receive, and inadequate support to take up opportunities that will develop their skills to align with the changing curriculum and labor market demands.**

While most qualified teachers in the six study countries undergo mandatory two- to three-year pre-service training in relevant subjects and teaching methodology, there are still considerable differences in the scope and nature of teacher training, with varying levels of success and effectiveness. Teachers and trainers also face inconsistencies in accessing available training opportunities, often exacerbated following the introduction of a new curriculum.

Rwanda has instituted various strategies and partnerships to enhance the skills of teachers, including ICT programs for teacher training colleges and universities designed by the International Computer Driving License (ICDL) agency. The African Institute for Mathematical Sciences (AIMS), in collaboration with ICDL, has also established smart labs in 14 districts across the country.

In Ghana, educational reforms mandate that all teachers must have completed a four-year Bachelor's degree.

In Uganda, 80 percent of respondents undergo teacher training at least once a year. Scholarships and paid leave with financial support are sometimes offered for retooling. Through the Active Teacher and Learning and Schoolteacher Innovations for Results program, the government organizes refresher training courses for teachers, especially when there is an update or change in curriculum.

In Côte d'Ivoire, the Directorate of Pedagogy and Continuing Education for general education and the Ivorian Center for the Development of Vocational Training (Centre Ivoirien pour le Développement de la Formation, CIDFOR) for technical and vocational education are in charge of teacher skills upgrading and capacity building. According to secondary education administrators, these courses take place once a year as the curricula are updated.

### 2.3.5 Access to digital infrastructure in secondary education

Countries are making great efforts to provide schools with the necessary infrastructure. Nevertheless, finance-related challenges persist, hampering the availability of appropriate equipment and technology to prepare learners for the future of work. Access does not necessarily translate into usage.

**Table 3: Access to digital infrastructure in secondary schools (2018-2019)**

	Côte d'Ivoire	Ethiopia	Ghana	Niger	Rwanda	Uganda	SSA average
<b>1. Class size</b>	57 (2019)	64 (2020)	N/A	52 (2018)	55 (2019)	53 (2016)	N/A
<b>2. Percent with computers for pedagogical purposes</b>	86	79	75	17	84	100	44
<b>3. Percent using digital tools for learning</b>	16	21	74	32	65	37	N/A
<b>4. Percent with electricity</b>	82	73	N/A	42	74	82	46
<b>5. Percent with internet connectivity for pedagogical purposes</b>	87	22	20 (2018)	7	61	29	26
<b>6. Percent with science laboratories</b>	78	N/A	N/A	19	22	100	N/A

Source: Country reports. SSA average from UIS, 2019.

Class sizes are larger than the global standard average for secondary school classes of 40 students per teacher (Hanushek, 1998). Large class sizes reflect the increasing demographic pressure on access to secondary education and quality of learning across all African countries. The Ethiopian average of 64 students per class is the highest among the study countries, followed by Côte d'Ivoire with 57, while Niger has the lowest class average of 52.

More than 60 percent of the respondents in Uganda have suitable digital infrastructure for learning in their schools. According to 77 percent of respondents, their secondary school buildings are adapted to digital infrastructure requirements.

In Ethiopia, Côte d'Ivoire, Rwanda, and Uganda, at least seven out of every 10 secondary schools have access to electricity; this is much higher than the SSA average of 46 percent. Coverage in Ghana and Niger is comparable to the SSA average. Urban communities in the six countries and throughout SSA have much better access to electricity than rural communities, reflecting the rural-urban disparities in infrastructure.

Access to computers in schools is high, with 75 percent of all secondary schools, except for those in Niger, having access to computers. In Niger, less than a fifth of institutions have access to a computer. This improved access to digital tools is a result of the growing recognition of the importance of aligning training to labor market needs. Rwanda's One Laptop Per Child policy instituted in 2010, of having laptops in all public primary schools in the country, reflects this vision.

However, access and usage are very often not the same. In Rwanda, 84 percent of schools have computers, but usage is only at 65 percent. The launch of a satellite in 2019 providing broadband internet to schools in remote areas has boosted connectivity in the country. In Ghana, where there is a close correlation between access and usage, surveyed schools do not have sufficient computers for students and teachers, and many schools that have broken computers cannot have them repaired. In Ethiopia, 23 percent of computers are not functional, although in Addis Ababa, 76 percent of the schools have internet connectivity (Ethiopia Ministry of Education, 2019).

Disparities in access and usage are even starker in Uganda and Côte d'Ivoire. Because of low connectivity rates (29 percent), Uganda has low usage rates, despite a high rate of access to digital tools (100 percent) and electricity (82 percent). The Ugandan government has ensured that ICT laboratories and server rooms are set up in each government-aided secondary school and in all formal TVET institutions. However, other complementary resources are lacking.

The low usage in schools in Côte d'Ivoire needs further probing, as almost all secondary schools are well-endowed with digital infrastructure, including computers (86 percent), electricity (82 percent), and connectivity (87 percent).

Access to STEM-related infrastructure varies among study countries. Of the four countries with available data, Côte d'Ivoire and Uganda have the highest percentage of schools with science laboratories, at 78 percent and 100 percent, respectively. Niger and Rwanda have significantly fewer schools with laboratories. However, in Rwanda, 64 percent of secondary schools do have science kits.

In Côte d'Ivoire, according to the Ministry of National Education, Technical Education and Vocational Training (Ministère de l'Education Nationale et de l'Alphabétisation, MENET-FP), 78 percent of the country's 2,337 secondary schools have at least one laboratory for STEM courses. However, less than 25 percent of them are functional, with many dilapidated, dusty, or poorly maintained rooms without equipment. In some cases, schools only use laboratory rooms as classrooms.

In Uganda, all schools visited by the research team have STEM laboratories and computer laboratories, but there is a lack of adequate equipment in these laboratories. The high percentage of computers, therefore, does not indicate their functionality or the usage by students. Rural schools in the country do not have computers, and often lack access to electricity.

The extent of the rural-urban divide is even more significant than the statistics indicate. In Ghana, Niger, and Ethiopia, many rural schools have poor quality infrastructure, where many schools organize sessions under trees, sheds, and dilapidated structures without adequate desks. This divide also reflects the private-public education divide, which is evident across all six countries.

### 2.3.6 Access to lifelong learning in secondary education

**Lifelong learning for students refers to learning taking place within life skills programs. For teachers, it is the continuous self-pursuit of knowledge and development. The availability, scope, and nature of continuous life skills programs for students vary considerably. While some countries have a coordinated approach, in others, sessions are influenced by individual teacher biases or determined by questions that learners bring forward.**

Côte d'Ivoire, Uganda, and Rwanda have well-established lifelong learning systems in schools. But in Ghana, Ethiopia, and Niger, the structures are not well established or institutionalized.

In Uganda, secondary schools dedicate between 40 minutes and one hour, twice a week, to building foundational skills and life skills. Foundational skills are taught through debates that provide avenues to harness communication skills and behavioral change and through school clubs, games, music, dance, and drama.

In Côte d'Ivoire, the Directorate of Orientation and Scholarships (Direction de l'Orientation et des Bourses, DOB) and the educational branch handle capacity building in public institutions. The DOB is also developing a national policy on in-service training and professional development for teachers. According to MENET-FP, in-service teacher training keeps teachers up-to-date on changing content and learning methods. However, the outcome has been unsatisfactory, as red tape is leading to higher costs of registration, which discourages uptake.

In Rwanda, motivated by the experience of the 1994 genocide, the government sees life skills as a cornerstone to its attainment of sustainable socio-economic development and excellence in education. The Rwanda Education Board conducts a continuous professional development (CPD) program for teachers through training seminars. The initiatives are considered insufficient in coverage and content.

Niger has legally recognized lifelong learning as a human right, meaning that government and private sector institutions have an obligation to offer employees the opportunity to continue learning. However, in 89 percent of the schools visited, and according to 85 percent of officials interviewed, there were no continuous learning courses for teachers.

Respondents in Ghana mentioned that the national qualifications framework (NQF), which focuses on enhancing formal learning outcomes, tends to neglect studies that take place in an informal setting.

In Ethiopia, the government has put in place a CPD program, but no deliberate steps have been taken to enforce the process of continuous capacity building of civil servants (in this case, teachers), reflecting a disconnect between policy statements and practice.

Although less prevalent, there are some private sector initiatives in upskilling in both technical and soft skills in two of the study countries. In Rwanda, private higher education institutions train teachers on selected days on research, documentation, and publication skills. In Côte d'Ivoire, 55.6 percent of employers said that they offered development opportunities to their employees.

## 2.4 Quality and relevance of secondary education

This section reviews stakeholder views on the quality and relevance of five aspects of secondary education:

1. Curriculum content, development and stakeholder participation, delivery, and evaluation
2. Professionalized teachers
3. Career guidance
4. ICT infrastructure
5. Lifelong learning

The section also includes an analysis of the extent to which public policy and programs are driving quality, alignment, and relevance of secondary education to labor market demands and the rapidly changing nature of work.

### 2.4.1 Quality and relevance of the secondary education curriculum

The future-readiness of curricula is reviewed through the lenses of content, development and stakeholder participation, delivery, and evaluation.

#### Curriculum content

**Lifelong learning for students refers to learning taking place within life skills programs. For teachers, it is the continuous pursuit of knowledge and development. The availability, scope, and nature of continuous life skills programs for students vary considerably. While some countries have a coordinated approach, in others, sessions are influenced by individual teacher biases or determined by questions that learners bring forward.**

There is a disconnect between the content of the curriculum and the demands of the labor market. The gap is partly attributable to a lack of relevant and adequate resources required for an effective transition to CBC, which requires more practical application and experimentation. Inadequate supply of materials and equipment, internet connectivity, poor course content, limited teacher preparation, and weak and inconsistent implementation of policy changes are some of the key challenges confronting the education systems in these countries. This is particularly worrying considering the rapid evolution of digitization and automation, exacerbated by the COVID-19 pandemic, which is further hastening the digital revolution.

Ethiopia revised its curriculum in 2010. At the time of this report, a New Education Roadmap had been launched by the Ethiopian Ministry of Education in 2021 with plans to roll out a new primary and secondary school curriculum soon thereafter (Ethiopian Monitor, 2021). According to 65 percent of teachers, the curriculum does not prepare students with the soft skills required by the job market, such as innovation, creativity, and critical thinking.

In Ghana, 61 percent of teachers and administrators indicate little or no connection between the curriculum and the work environment. Many believe that the problem mainly lies at the upper secondary level, where not enough practical training is provided.

Rwanda embarked on curriculum reforms in 2015, shifting from knowledge-based curriculum (KBC) to CBC. Teachers had between 25 and 32 student contact hours per week before the introduction of CBC. This number increased by up to 45 student contact hours per week under the CBC, but challenges related to relevance and time management persist.

In Uganda, a review from 2020 shows that the curriculum at the lower secondary level is well-aligned to current and future job market needs, but not well-aligned at the upper secondary level. At the higher level, the system is more examination-oriented, and jobseekers require further training before joining the job market, a sentiment also raised by survey respondents in Ethiopia.

Côte d'Ivoire adopted a new curriculum orientation framework in 2013 in which 90 percent of learning time is devoted to French, mathematics, and science. Discussions with key industry respondents, including institutional regulators and employers, reveal that current training programs are not adequately linked to the labor market. Respondents say that a major reform to the training programs is needed and advocated for greater participation of the private sector. Student respondents consider certain courses very theoretical, with no relevance to their area of training and specialty. In addition, respondents say that too much time is allocated to general disciplines, crowding out STEM subjects.

Niger's attempts to change the curriculum have faced major challenges at the level of teacher training and relevance of course content. The teaching staff is ill-prepared for the CBC orientation, where transmission of pedagogy does not correspond to the reforms initiated in the country. In addition, there are shortcomings in teaching materials and teacher qualifications. Some of the curriculum content is not adapted to current social changes, such as the opening of societies to democratization, lifelong learning, and changing labor market demands.

## **Curriculum development and stakeholder participation**

**Policies, regulations, institutional arrangements, curriculum development, and implementation processes vary considerably among the six selected countries. While they all have standardized national curricula prepared by their ministries of education, the extent and nature of the involvement of external stakeholders vary considerably. Outcomes have generally been less than satisfactory. The process remains largely governmental, and non-governmental involvement has been very weak. This explains, in a large measure, the misalignment between labor demand and supply.**

In Côte d'Ivoire, the government has an elaborate stakeholder participation arrangement for curriculum development, but governance issues have rendered the arrangement ineffective.

In contrast, while curriculum development in Ethiopia has been largely a government process, the outcome is similar, with considerable misalignment with industrial requirements.

Survey respondents in Ghana note similar skills and jobs mismatches. The government has made some efforts to expand participation to several government agencies and has consistently been reviewing the curriculum every five years. As in the other countries, in Ghana, private sector involvement has been very limited, and the engagement that does occur excludes the informal sector entirely.

There is no well-defined structure in Rwanda, and teacher involvement in the curriculum development process is limited.

In Uganda, the Ministry of Education and Sports is directly responsible for curriculum development, while the Ministry of Gender, Labor, and Social Development develops and implements policies for employment creation and decent work. The private sector has only been consulted during reforms in 2020, and the involvement of the private sector at the higher secondary level is minimal.

In Niger, the curriculum is developed by the Ministry of Education and sent to all schools for implementation. Only 16 percent of private sector respondents have participated in at least one curriculum development meeting. However, 61 percent of all survey respondents consider multi-stakeholder participation in curriculum development essential and will participate if invited.

## **Curriculum delivery**

**Curriculum delivery effectiveness and completion vary considerably and are challenges facing all study countries. While most claim that syllabi are regularly completed within the prescribed time, there are concerns about their effectiveness. The quality of delivery, involving appropriate time allocation, flexibility, and relevance to the labor market, is often weak.**

While government policies place greater emphasis on the delivery of STEM subjects, in practice, non-STEM subjects take the larger chunk of content delivery. Despite the syllabus being completed at the secondary levels in these countries, the transition to tertiary level, especially in STEM subjects, remains a challenge due to the quality of training.

Eighty-five percent of the instructors and trainers in Uganda easily complete their syllabus within the prescribed time, with secondary schools dedicating appropriate time to building foundational skills and life skills.

This contrasts with Rwanda, where language issues, curriculum overload, and the pressure of incorporating the latest emerging knowledge cause challenges for teachers in completing the syllabus.

In Ethiopia, a policy shift emphasizing greater attention to STEM, with a 30/70 split between theory and practicals, has not been fully successful because of resource constraints. With insufficient equipment available, more time is still devoted to theory than to practicals. Half the youth interviewed in Ethiopia indicate that they need more practical training to better prepare for work.

In Ghana, contact hours for skills acquisition in STEM subjects are less than half the allocation to non-STEM subjects. The dominance of non-STEM subjects is evidently not in line with the government's policy of a 60/40 split in favor of STEM subjects.

In Niger and Côte d'Ivoire, security issues and industrial action by teachers demanding better working conditions have hampered the effective delivery and completion of the syllabus. The two countries distribute curricula and guidelines to teachers at the beginning of each new school year. The rigid compartmentalization of disciplines makes it difficult to transfer knowledge from one discipline to another, which negatively affects students who would like to change careers.

Respondents in Côte d'Ivoire, Niger and Rwanda report gaps in mathematics and science syllabi. In addition, respondents from Rwanda shared shortcomings in the language of instruction that do not allow for adequate preparation for university studies.

## Curriculum evaluation

While most countries are shifting to effective and continuous CBC performance assessment, summative curriculum evaluation continues to be the prevailing evaluation system. Teaching to test is still more prevalent than continuous assessment of skills acquisition. Holistic capability, creativity, and critical thinking — key factors for the jobs of the future — are not captured. The countries all have nationally controlled evaluation systems, where assessments are undertaken at the end of prescribed cycles, and moderated and marked at the national level. School-based end-of-term examinations, oral quizzes, drama, and extracurricular activities do not contribute to overall student assessments.

Some schools have discontinued or cut back on soft skills activities because these are not evaluated at the end of the year. Many teachers dislike summative evaluation, which persists despite efforts to shift to continuous assessment of skills acquisition. A dissatisfied teacher in Rwanda notes:

*“Normally, a curriculum should be reviewed or modified after the completion of the first cohort (7-10 years), but the way curriculum keeps on changing in terms of adding relevant content, or removing irrelevant content, has directly negatively impacted both teachers (delivery) and students (learning).”*

Rwanda changed the language of instruction from French to English—a change that continues to impact teaching delivery negatively, as teachers who were taught in French have to teach in English.

As in Rwanda, students in Côte d’Ivoire undertake national assessments in the form of a transition exam after graduating from secondary school.

Ghana put a continuous assessment process in place. Students take the West African Examination Council (WAEC) Basic Education Certificate Examination (BECE) at the end of the third year of the lower secondary level. This examination is both for certification and selection into senior high schools and technical institutes in Ghana. The results of the examination are determined for 30 percent by continuous assessment ratings and for 70 percent by the results of the BECE. The assessment system, though operational, faces challenges associated with the high costs of continuous monitoring.

Until 2020, Uganda had a summative assessment process in place. Along with a new lower secondary curriculum, assessment modalities have been revisited in collaboration with the Uganda National Examinations Board (UNEB) and the Directorate of Industrial Training (DIT) to focus on both formative and summative assessment. The updated assessment will include learners’ achievements as assessed by their teachers. This component should contribute at least 20 percent to the final national examinations grade. The effectiveness of this new process will be determined by the end of 2024.

In Ethiopia, prior to the 2020 education roadmap reforms, students at lower secondary schools had to pass a national exam at grade 10 to enter the preparatory level (grade 11 and 12). Those with insufficient marks in the national exam could join TVET courses, and those who failed to meet TVET entry requirements were left to fend for themselves. This system enhanced the preference for academic excellence but failed to consider skills gained during the learning process. With the reforms, the grade 10 national exam has now been scrapped and students only take the national exam at grade 12. However, as before, students that have insufficient grades to proceed to university are the ones most likely to enroll in TVET.

There is no nationwide system of continuous assessment in Niger. The system is divided into lower and upper secondary. The examination at the end of the first cycle gives successful students the *brevet d'études du premier cycle* (BEP). Achievement of the *baccalaureate* marks the end of the upper secondary education, and both examinations are nationally controlled.

In Côte d'Ivoire, the existing assessment is not geared towards assessing competency-based training and objective-based pedagogy, despite the learning programs having adopted the competency-based approach. Thus, the evaluation system is still summative, focused on the end of the training cycle. This situation creates confusion and results in inefficiency in the education system.

### **2.4.2 Quality and relevance of professionalized secondary education teacher service**

Curriculum and assessment methods currently used for teacher training are not up to date—in Uganda, the teacher training curriculum has not been updated since 1993—and teacher preparation and upskilling of existing teachers to fully implement CBC and meet twenty-first century teaching needs is insufficient. In Ghana, for instance, assessment methods are highly exam-focused with little room for the development of good teaching skills. As a result, many teachers continue to teach the more familiar KBC method. Teachers of STEM, ICT, and soft skills subjects are also not adequately facilitated and supported to deliver on their mandate, as many teacher training institutions lack facilities such as laboratories and workshops, and technology is not well-utilized. As a consequence, few teachers—and particularly few female teachers—are qualified to deliver STEM subjects. Qualified teachers are overworked, and female students are missing out on role models in the STEM field.

A teacher in Rwanda remarked on the inadequate use of ICT in the education sector:

*"Teachers and students cannot cope with changes of ICT use in teaching and learning ... sometimes smart classrooms in secondary schools are not used because teachers are afraid to touch Rwanda Education Board property."*

In general, teaching has lost its prestige and is no longer an admired profession that can attract the very best graduates. This has led to high teacher turnover as the profession is used as a stepping stone to other job opportunities.

### **2.4.3 Quality and relevance of career guidance and early exposure in secondary education**

Côte d'Ivoire, Niger, Uganda, and Rwanda recognize career guidance as an important part of education. However, benefits are not fully realized due to competing curriculum requirements and poor implementation. Information and opportunities for internships are scant and limited, and private sector involvement in career guidance is minimal and uncoordinated.

Students receive career advice from their school, elders, parents, and siblings. Parents' advice influences students the most about their career choices, even though parents are not always well-educated or properly exposed to current issues. One teacher in Rwanda explains how the reliance on parents' guidance can have adverse effects, underscoring the importance of having professional career guidance as an integral part of the school curriculum:

*“Parents and guardians have a misconception that girls cannot do sciences such as engineering, construction, or mechanics, and instruct their daughters to take simpler courses such as accounting, nursing, or business administration.”*

The number of counselors is low in most countries. In Uganda, for instance, there are 75 students per counselor. The quality of counseling in the country is also low, with half of the survey respondents stating that counselors use their own experiences and personal opinions to advise on the job market. In institutions that do not have counselors, a senior teacher fills the gap. In other institutions, foster parents provide parental guidance, including career guidance and psychosocial support, to 50 students each. Sometimes, the dean of studies is responsible for guiding students.

There has been little investment in career guidance across the secondary education system in Ghana, with 63 percent of teachers and administrators from secondary schools reporting that career guidance is not embedded in the lower and upper secondary systems. Contributing factors are the low industry involvement and the lack of a structured career guidance framework in schools. Career fairs supported by industry take place just once a year.

#### **2.4.4 Quality and relevance of digital infrastructure in secondary education**

**Knowledge and appreciation of required physical and digital infrastructure relevant for the acquisition of skills are quite high. However, financial limitations and a low capacity to operationalize plans have marred countries' efforts to attain and maintain adequate operational infrastructure. Countries tend to have a one-off budget to purchase equipment, but no budgets for maintenance and limited funds for personnel to operate specialized equipment. There are serious inequalities within the countries in access and proper utilization of ICT, especially between rural and urban areas, and private and public institutions.**

Without a holistic approach, countries are not fully benefiting from digital technology investments. Several countries provide computers and other digital technologies, but this does not always translate to full access to digital infrastructure. ICT has not been used to expand access to education, but is an exclusive tool available mostly for the few who can afford it, reflecting spatial and gender divides and vulnerability issues.

In Uganda students have full access to a computer in 82 percent of schools with electricity, but less than a third of schools have internet access, and digital tools are only used in 40 percent of schools for lesson delivery (see [Table 3](#)).

Côte d'Ivoire (at 16 percent) and Niger (at 32 percent) have the lowest percentage of institutions using digital tools for learning. In these countries, most students enter the world of work with minimal digital skills, leaving them unprepared for the jobs of the future.

### 2.4.5 Quality and relevance of lifelong learning in secondary education

**Soft skills and continuous upskilling are key elements of lifelong learning considered essential for continuous alignment to the changing world of work. However, most learning institutions in African countries are yet to embrace the importance of this aspect of education and training as an integral part of preparing the future workforce.**

Few education systems have deliberate and systematic inclusion of lifelong learning in their curricula. Life skills are not an examinable subject in schools, and teachers are also not obliged to commit to any lifelong learning process. As long as life skills and lifelong learning are not anchored in the education systems' goals, they are unlikely to be recognized and will be unsustainable.

In some countries, workplace programs in both the public and private sectors offer courses that build the capacity of workers in a specific field of delivery. Some employee training courses in the private sector also incorporate soft skills such as team building. But evidence suggests that most initiatives are functioning poorly because of high service fees and a lack of recognition and certification.

Uganda and Rwanda have integrated life skills into the curriculum. Survey respondents in Uganda spend an hour twice a week on life skills education, with teachers free to determine the content. However, the freedom given to teachers means that lesson outcomes are difficult to determine. Respondents highlighted training courses in computer technology, professionalism, tailoring, customer management, and marketing but cited high costs and family commitments as impediments to accessing or continuing with upskilling opportunities.

Rwanda stands out among the study countries for connecting life skills to sustainable and peaceful national development. The government is keen on life skills being taught and monitors its implementation. However, the continuous professional development (CPD) program intended for all Rwandan teachers has been marred by access challenges and disinterest, resulting in few teachers completing the program.

In Ethiopia, life skills are not part of schools' and training institutions' curricula. The government has instituted a CPD program in the workplace, although implementation has been unsuccessful. Participants have to pay for the training, but many see no immediate rewards, leading to low uptake.

In Côte d'Ivoire, 55.6 percent of employers offer development opportunities to their employees for specific needs aligned with innovation and the strategic orientation of the company.

Niger has a government strategy for lifelong learning, but according to 89 percent of respondents, the strategy has not been operationalized, as there are no continuous learning courses in the lower and upper secondary levels.

In Ghana, the NQF focuses on enhancing formal learning outcomes, but it neglects non-formal and informal learning, particularly recognition, validation, and accreditation. Most (53 percent) university graduates are upgrading or plan to upgrade their knowledge and skills because they feel that the secondary and tertiary schools have inadequately prepared them for the changing nature of work.

## 2.5 TVET education systems

### Classification of TVET

We distinguish school- or college-based technical and vocational education and training, and work-based vocational training, to help define TVET. The African Union's 2015 Continental Strategy for Technical and Vocational Education and Training uses TVET in its broadest sense, covering all aspects of training and skills development of all cadres, whether formal, non-formal or informal.

**Formal TVET** refers to the whole system governed by precise, laid-down rules. This is essentially training in public or private schools with fixed-term cycles culminating in accreditation in the form of a state diploma or certificate. The process of identification and promotion of recognizable skill or product, with support for its development and marketing, is organized. Formal TVET programs are found in schools and colleges, normally last for a fixed term, are often supply-driven and have a high unit cost.

**Non-formal TVET** has a framework in which training obeys no rules, may be spontaneous, and involves significant learning that is not accredited. It includes on-the-job training for the benefit of daily practice on the ground. It is the most open and is subject to creativity and innovation.

**Informal TVET** refers to a less organized and less structured learning, usually occurring outside educational institutions, with rules of trade that often exist without necessarily being written or formalized. This type of training includes:

- Corporate training according to objectives and terms of reference that may vary depending on demand and including retraining, apprenticeship and continuing training.
- Training by mentoring, observation, and participation in workshops, often structured around a master craftsman with skilled workers and apprentices.
- Training in the crafts, whether traditional or modern.

Various institutions deliver TVET. In Côte d'Ivoire, 62 public institutions, mostly in urban areas, offer TVET classes. There has also been a considerable expansion of private TVET institutions in the country, from 433 in 2011 to 680 in 2017, with an intake of 67,879 students. As part of TVET reforms aimed at increasing access to vocational training, 18 public institutions were being constructed throughout the country.

Ethiopia and Rwanda have Technical Secondary Schools, Vocational Training Centers (VTCs) and technical tertiary institutions that provide training to various target groups in response to demands of the industry. The target groups vary from primary and secondary school graduates to employees and school dropouts. In Rwanda, there were 402 TVET institutions with 90,015 trainees (42.9 percent female) in 2014.

In Ethiopia, there were 1,672 TVET institutions in 2018 (670 governmental, 952 private and 50 non-governmental). Heavy investments in TVET in Ethiopia have increased enrollment, from 5,264 in 1999 to 387,792 in 2018. The government has adopted the German dual TVET system to encourage students to opt for technical subjects. This system incorporates cooperative training, with students and their trainers assigned to do practical training in the private sector for one semester to enhance their practical skills and ensure that teachers and trainers are in touch with market needs.

Ghana offers formal TVET programs at the secondary and pre-tertiary levels. The total enrollment across the sub-sector was 63,000 in 2017-18. In 2015-16, female enrollment in TVET was 26 percent, a decline from 31 percent in 2012-13. Private TVET institutions in Ghana make up one-third of all TVET institutions, but account for only eight percent of enrollment (Ghana Ministry of Education, 2018). The 2017 free senior high school (SHS) program in Ghana also covers students at Technical and Vocational Institutes (TVIs). The number of students at vocational schools increased from 38,459 in 2016 to 59,583 in 2019, constituting about five percent of the total free SHS enrollment.

Niger developed a public TVET system comprising several levels in the 1970s, intending to cover the entire country. In the 2000s, the private sector also began to open TVET institutions. In recent years, the number of learners in both formal and non-formal TVET has grown sharply from 68,486 in 2012-13 to 332,025 in 2016-17 a growth rate of 385 percent in five years (Republic of Niger Ministry of Vocational and Technical Teachers, 2018). The number of formal TVET institutions in Niger is 467, of which 377 are public and 90 are private. Of these institutions, 459 follow the day-schooling system, while eight have boarding facilities. The number of TVET institutions with a class size of 10 and a student-to-teacher ratio of five has grown since 2017. The success rates in technical and vocational education have also improved between 2013 and 2017, from 54 percent to 56 percent for the BEP, and from 27 percent to 32 percent for the technical and professional baccalaureates. (BAC Tech and BAC Pro). Besides increasing the number of TVET institutions and VTCs, the Nigerien government has provided scholarships through the National Institute of Youth and Sport to promote entry into TVET institutions.

Uganda has informal and formal Business, Technical and Vocational Education and Training (BTNET) institutions. In 2019, there were 163 public and private training institutions and firm-based training programs. While formal BTNET is delivered by formal training institutions (both public and private), multiple providers, including private training providers, private companies, and rural-based informal providers, deliver non-formal BTNET. Male students have persistently outnumbered girls in BTNET enrollment, in some instances outnumbering girls two-to-one. However, girls' enrollment increased by nine percent, from 14,650 in 2013 to 16,051 in 2017. Total BTNET enrollment in 2017 was 45,153. Although private TVET institutions are operating at full capacity, government TVET institutions with better facilities have stricter entry requirements and are operating below capacity as they accept fewer students. Many formal TVET learning institutions are boarding facilities, which is an advantage for some trainees, but an access barrier to others—especially trainees who want to take part-time courses as they attend their regular work.

## 2.6 Access to TVET

Over the last decade, formal TVET has seen significant growth. As with secondary education, the challenge lies in improving physical access to TVET institutions, especially in rural areas, improving the quality of training, and alignment of training to the needs of the labor market. On the informal side, there is a proliferation of institutions and programs, all offering diverse training in a comparatively affordable and flexible manner to meet the demands of the job market. Some graduates of informal vocational schools enter the formal market, but most find work in the informal sector.

In all countries, the government does not fully regulate the informal TVET curriculum and, in some instances, this leads to the swindling of unsuspecting students. Those in rural communities opt for informal TVET since other TVET institutions provide training at relatively high costs, leaving them with few options.

In Côte d'Ivoire, Rwanda, Niger, Ghana, and Uganda, proximity is a major barrier to access, with some students failing to attend TVET institutions due to long distances. Rwanda and Ghana survey respondents estimate that some students have to travel 10 kilometers to get to the nearest TVET, VTC, or Integrated Polytechnics Regional Centers institution.

Almost 50 percent (200 out of 416) of the geographic sectors in Rwanda have TVET schools. The Workforce Development Agency was aiming for 400 TVET schools country-wide by the end of 2021.

TVET institutions are much more accessible for urban students in all countries. Uganda specifically highlighted that most TVET institutions are in Kampala, a situation quite similar to Côte d'Ivoire, where TVET institutions are only present in major urban centers and unevenly spread throughout the country.

Vocational institutions also have limited spaces and are inequitably distributed in Ghana. Under the free SHS program, there are only 46 TVIs nationwide, compared to more than 600 senior high schools. Great distances and limited facilities significantly affect girls' access to technical training, particularly in deprived rural communities.

### 2.6.1 Access to TVET for girls and persons with special needs

The participation of girls and persons with special needs in TVET remains low. Cultural and gender stereotypes dominate decisions on entry. For those with special needs, in addition to the stereotypes, the major challenges are inappropriate physical infrastructure and a lack of relevant equipment.

In Rwanda and Ethiopia, the number of girls participating in TVET has increased, but males still make up a larger proportion of TVET students.<sup>3</sup> In both countries, the choice of subjects for girls is skewed towards traditional courses like tailoring and culinary training, while courses with STEM content such as construction, ICT, and engineering are reserved for boys. Rwanda is using campaigns to encourage girls to participate in TVET and take more STEM-related subjects.

3. The 2018 figures show that of the total TVET enrollment for Rwanda males made up 57.1 percent and females 42.9 percent and for Ethiopia, males made up 51.2 percent and females 48.7 percent.

Gender stereotypes affect both the learning environment and the job market. Respondents in Côte d'Ivoire, Ghana, and Uganda claim that parents and society at large believe technical education is for boys. For this reason, some young girls do not take technical subjects for fear of not gaining employment. Professional fields such as mechanics and electronics are seen as intended for men because of the perception that such jobs require traits such as virility, strength, and tenacity. Similarly, girls are steered towards non-STEM subjects in general education and secretarial training in technical education, which are perceived to require gentleness, care, and attention.

In Côte d'Ivoire, TVET uptake is low at 6.1 percent, especially among girls. Girls only make up 10.9 percent of students in vocational agriculture courses, despite this being the main economic sector in the country. The Directorate of Apprenticeship and Vocational Integration encourages girls to take up technical subjects by providing more scholarships.

In Niger, the situation is similar to the other study countries, with low participation of girls and persons with special needs. The main causes are poor infrastructure, a low number of female role models, sociocultural burdens, and insufficient teacher training on gender and other emerging issues.

## 2.7 Quality and relevance of TVET curriculum

**In most SSA countries, TVET education has always been held in lower regard than formal secondary education. Despite a high demand for TVET graduates, TVET institutions struggle with the perception that vocational studies are only meant for those not able to meet entry requirements for secondary school. The low perceived value of TVET continues to be a major challenge for countries.**

TVET curricula are diverse, with private sector institutions offering courses on behalf of governments. Respondents note that the curricula are dynamic and takes on board emerging issues, with the challenge mostly being the slow pace of government response, compared to private sector actors.

The desire of most parents to see their children attain a university degree—perceived as the ultimate educational achievement—and secondary schools' more academically oriented, university-aligned curriculum reinforces the perceived inferior status of vocational education. Over the last decade, attempts by governments to promote TVET and self-employed entrepreneurship have had very limited success, as graduates from both universities and technical colleges still desire formal public sector employment.

According to respondents in Rwanda, most graduates from technical institutions easily find job placements despite their relatively weak technical skills base. Nonetheless, most parents believe that students attending TVET institutions do so as a last resort after failing to secure a university placement. Survey respondents in Côte d'Ivoire, Ethiopia, Ghana, Niger, and Uganda hold similar views. Although respondents acknowledge that internal returns on TVET are high, parents still see TVET as a fallback option for those not successful in general academic education.

In Ghana, despite the government's push for increased uptake of TVET to provide the country with a workforce equipped with practical skills, the sector still suffers from the same poor public perception as a place for academically weak students. Vocational schools are also plagued by outdated machinery and curricula, lack of standardization, insufficient investment, and a fragmented landscape.

A strategy that has produced good results in Ghana, Rwanda, and Uganda is to target courses to specific employers—for example, those in the electronics field. Private companies have not only participated in the training, but they have also employed the graduates.

### 2.7.1 Quality and relevance of formal TVET

**Countries have made considerable efforts in designing TVET curricula and programs oriented to market and industrial demands. Some courses are directly dictated by industry while others are still misaligned, falling short of providing necessary skills. This is attributed to the ever-changing needs of the market, and the high transition costs associated with modern technology to keep up with labor market demands.**

School-to-work transition, particularly the readiness of TVET graduates to enter the job market, has been a major concern expressed by both students and industry stakeholders.

Rwanda stands out regarding the role of the private sector in promoting youth employment and skills through public-private partnerships (PPP). This strategy has ensured that the country gains a better-skilled workforce, more reliable supply, and stronger distribution of networks for effective and efficient operations. Large formal sector firms, including manufacturers and service providers, are involved in training initiatives to upskill the labor force and provide job placement services. Additionally, the PPP model ensures skills align with current and future labor market demands and are linked to the Ministry of Education's NQF, which enhances labor market functioning for youth by coordinating signals from employers about their required standards in terms of knowledge acquisition.

In Uganda, 71 percent of the stakeholders interviewed indicate that the Business, Technical and Vocational Education and Training (BTNET) curriculum, the revised curriculum from the BTNET strategic plan 2011-2020, is future-ready and well-aligned with current and future job market needs. The revised curriculum has equal time dedicated to practical and theory sessions at the formal BTNET level, while students in non-formal TVET spend more time in practical training than theory. Efforts to target specific employers with specific courses are reaping benefits. Uganda has an NQF in place, with a guided curriculum. Despite challenges associated with uneven implementation due to limited resources and capacity in the institutions, respondents are confident that the strategy is pointed in the right direction.

In Ghana and Côte d'Ivoire, TVIs are still focused on traditional courses using old technologies, such as carpentry, motor mechanics, fashion, and catering, which are not attracting young people. As noted in other studies (e.g. Mohammed, 2020), TVET institutions in Ghana are operating below capacity because of limited demand. The quality of TVET provision is poor, as providers often use outdated equipment and lack qualified trainers. The government acknowledges these challenges, and, like Uganda and Rwanda, it has introduced targeted courses by industry directly into the training institutions. The outcomes have not been evaluated as the initiatives are still in their infancy.

Ethiopia moved technical and skills-based subjects from secondary education to TVET in 1995, borrowing from the German model of a dual system. Stakeholders claim that the micro-splitting has led to inefficient resource utilization, resulting in poorly equipped institutions that are not preparing students for the future world of work. In 2008, the country established Centers of Competency to conduct independent assessments and ensure TVET graduates possess the required competencies. However, more than 50 percent of the interviewed youth in Ethiopia indicate that they need

more training to better prepare for work. The TVET curriculum is prepared by TVET institutions and teachers, contrasting with the PPP arrangement in Rwanda. The Ethiopian government has also developed about 800 occupational standards for TVET. Based on each occupational standard, TVET trainers and colleges have prepared the curriculum for different fields of study in the country. Respondents find these standards confusing, rendering formal accreditation of the informal training difficult, reinforcing a parallel system, and alienating the informal private sector.

Côte d'Ivoire is developing an NQF for TVET. The current curriculum development structure is well-organized, but the partnership between the government and the private sector is limited, and thus potential synergies are not being realized. The result is that the curriculum is partially reflective of the current job market, with limits in practical skills.

In Niger, the *"Répertoire national des certifications professionnelles"* is the NQF that brings together vocational, technical, university, and on-the-job training qualifications. However, while the Ministry of Education is charged with curriculum development and transmits its developed curriculum to all schools for execution, the extent to which the NQF is taken into consideration is unclear. Private sector involvement is patently absent as only 16 percent of employers confirmed having participated in at least one meeting on curriculum development, whereas 61 percent of respondents consider it necessary for the private sector to participate in curriculum development.

In Rwanda, Côte d'Ivoire, and Ethiopia, respondents express concerns about the quality of the curriculum, which devotes much more time to theory than practical training. One respondent from a TVET school in Rwanda cites instances of two months of classroom instruction concentrating on theory without any practical sessions. Other TVET students note their biggest challenge as the "constant change of the curriculum and its content," requiring a higher level of effort without effective results. A TVET student explains how time constraints affect the quality of the curriculum, with teachers having to rush through many modules in the new curriculum to complete course content within the stipulated timeframe:

*"In the beauty industry, there are some missing courses in the curriculum for vocational students [that] are very important ... in masonry trade, in particular technical drawing, the course used to be taught over three years, but the allotted time has been reduced to four months."*

Close to three-quarters (72 percent) of respondents in Niger believe that the curriculum prepares them for the labor market.

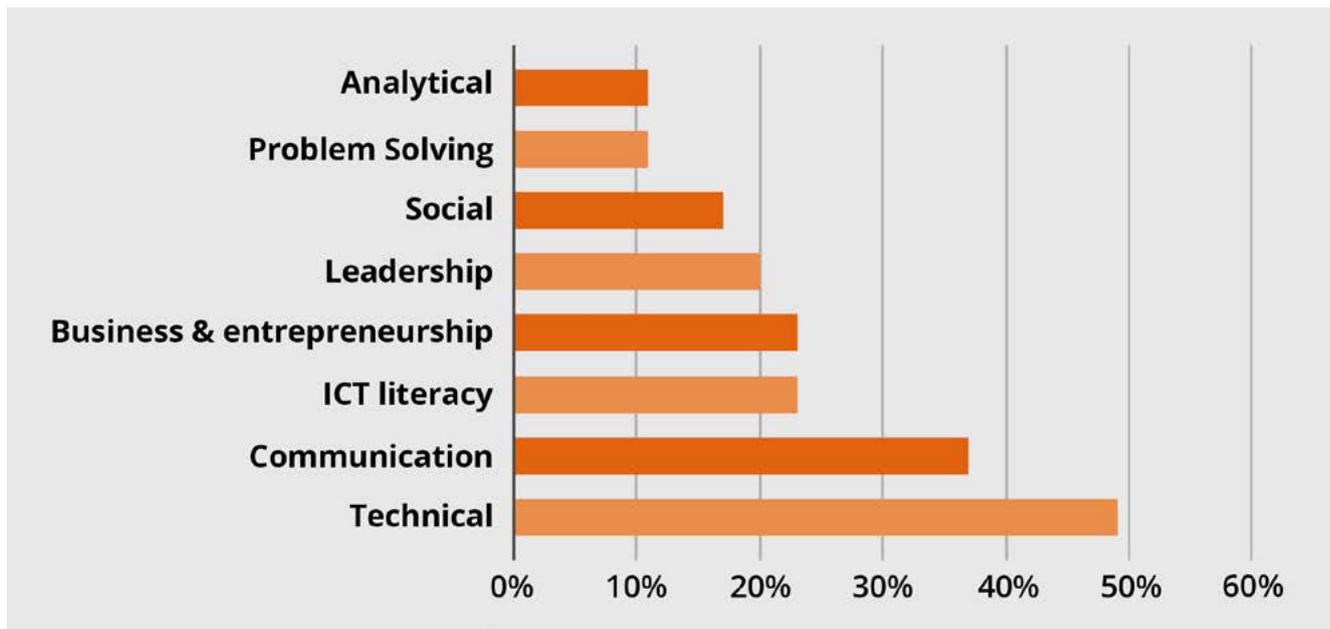
Like those in Ethiopia, graduates entering the workplace in Côte d'Ivoire state that they have to undergo additional training in ICT and upgrading in subjects already undertaken during their initial training. However, according to a TVET learner, while machines are used frequently, the levels of equipment are inadequate. And according to administrative TVET staff:

*"The curricula are defined by the state, but the course content is defined by the teachers themselves, so the course is poor in content compared to what is required by companies."*

Industry stakeholders, particularly employers, were asked to identify the skills gaps and additional training programs they offered for new recruits. They identified the areas shown in

**Figure 3.**

Figure 3: Graduate skillsets requiring additional training



Source: Country reports

### 2.7.2 Quality and relevance of informal and non-formal TVET

There are interesting initiatives to build capacity and recognize experiential learning in the informal sector. However, some countries are struggling with accreditation of informal learning and apprenticeships, even when they have national qualification frameworks. Most young people prefer informal sector education, which allows them to earn a basic income while learning on the job.

Uganda has combined informal and non-formal training systems into Non-Formal Education (NFE) programs. The programs, open to all, offer three-to-six-month modular vocational and technical skills trainings based on competency-based education and training. The NFE programs aim to fulfill the educational needs of people who are not in the regular education system by using tailor-made approaches to cover literacy, life skills, continuing education, equity education, and income generation. They also recognize prior learning. Prominent NFE programs include the Functional Adult Literacy (FAL) program initiated in 1997 by the Ministry of Gender, Labor, and Social Development; the Non-Formal Education and Livelihood Skills Training Program; the Uganda Youth Development Link, implemented in 2004; Alternative Basic Education for Karamoja; and the Skilling Uganda Project (2011-2020). NFE programs have been critical in reaching those excluded from formal education by enhancing their skills and knowledge. The projects have increased literacy rates, engagement in income-generating activities, and individual empowerment through marketable skills. A case in point is the FAL program, which by 2008 had improved literacy for more than two million adults.

The Council for Technical and Vocational Education and Training (COTVET) regulates, coordinates, and supervises TVET interventions in Ghana. With close to 90 percent of the workforce in the informal sector, there is a heavy reliance on unregulated training. According to the Ministry of Education, the quality of vocational training varies significantly, with basic and obsolete equipment at the lower end of the market and modern and sophisticated equipment in more expensive

institutions. To ensure higher quality training, the government has set up the Ghana TVET Voucher Project, which provides competency-based training in technological and digital skills to master craftspersons, workers, and apprentices in the informal sector. Several master craftspersons have benefited from the initiative. The Support Fund for Vocational Training and Apprenticeship under COTVET is also supporting skilling and upskilling in the informal sector.

The TVET system does not accredit learning outside formal training. However, attitudes towards upskilling are very positive, with 71 percent of survey respondents expressing willingness to upgrade their skills, or that of their employees, to match the needs of the labor market.

Ethiopia's government is working with NGOs, private agencies, and private schools to offer targeted training to people in the informal sector, including school leavers, the unemployed, school dropouts, and marginalized groups in the labor market. In 2008, the government started recognizing non-formal and informal training courses. The federal TVET agency and regional TVET agencies examine informal training courses and provide certification through the Units of Competency (UC).

In Niger, the National Agency for Employment Promotion and the Support Fund for Vocational Training and Apprenticeship implement integration programs for young people that help them acquire small trades through on-the-job training apprenticeships. The National Employment Policy supports training for young entrepreneurs and provides startup tools.

In Rwanda, most young people acquire their skills through day-to-day work and informal TVET. However, they do not have an opportunity to practice in the formal system professionally due to the lack of a standard certification system that recognizes experience. As expressed by one respondent in Rwanda:

*"We train youth in different trades such as hairdressing, culinary, welding, carpentry, vehicle mechanics, construction, and many others. Trainees get what they want to know because they are better than the graduates in TVET schools in terms of physical functioning and application of skills attained ... But to our surprise, the Workforce Development Authority does not recognize them, so no exit award is given at the end of training."*

Côte d'Ivoire has a variety of informal training structures, including traditional apprenticeship and vocational training, where apprentices work in a workshop or company under a master apprentice. Although about a third (10 out of 29) of interviewed craftspersons have benefited from training initiatives in areas of skills that include both the sector of activity and the integration of digital technology in work facilitation, most (27 out of 29) interviewees lament the lack of institutional training initiatives. This contradiction brings to the fore the lack of awareness of existing programs and inadequate communication channels. These include training programs initiated by their supervisory structure, in this case the *Chambre des Métiers de Côte d'Ivoire*, and very often financed by the *Fonds de Développement de la Formation Professionnelle* (FDFP) or development partners.

### 2.7.3 Quality and relevance of professionalized teacher training in TVET

**Governments have made various efforts to improve the quality and relevance of TVET programs in study countries, but the quality of teachers remains a challenge. Three qualifications are fundamental for teachers in TVET: technical knowledge, pedagogical skills, and industry experience. Unfortunately, teachers often lack these fundamentals, and TVET graduates are consequently ill-prepared for the labor market.**

Strong institutional frameworks are important for the planning, standardization, tracking, and continuous upskilling of teachers. TVET teachers are generally not held in high esteem, leading to poor performance in TVET institutions and high attrition.

TVET teachers in Côte d'Ivoire and Uganda have relevant technical qualifications, but continuous retooling is weak in both countries.

Côte d'Ivoire offers an example close to good practice. The strong institutional framework improves planning, standardization, tracking, and continuous upskilling of trainers. Respondents attribute the high quality of trainers in Côte d'Ivoire to the investments made in one particular institution, the National Pedagogical Institute for Technical and Vocational Education, that offers and regulates the training curriculum. The institution gets support from other bodies but remains in control of the overall process.

In Uganda, private BTVET institutions lack sufficient funding for continuous capacity-building initiatives. The situation is better in public institutions, where 65 percent of respondents indicate that there is continuous training for instructors and interaction with the labor market. More than half of respondents state that upskilling of trainers occurs once a year. Incentives and professional progression receive little attention, leading to low retention, as teachers are constantly exploring other opportunities.

Respondents in Ethiopia and Rwanda say that TVET trainers lack technical and practical skills. About 65 percent of respondents in Ethiopia, including policymakers, regulators, students, and employers, confirm that most TVET teachers do not have enough technical and practical skills and that their lessons are not aligned to the needs of the labor market. The technical policy requirements for TVET in vocational centers and polytechnics are also not being met, as most teachers lack appropriate technical and pedagogical qualifications and have minimal industrial experience. Thus, they cannot provide relevant training to students. The limited technical knowledge in Rwanda can be attributed to an inadequate interface between training institutions and industry. Rwandan respondents also state that the new CBC has placed a heavy workload on TVET teachers without a commensurate increase in remuneration.

Ghana has four TVET teacher training programs that lead to recognized qualifications. Almost three-quarters (71 percent) of teachers in the country's public TVET institutions have teaching qualifications, and only 52 percent have technical qualifications (Ghana Ministry of Education, 2017). There are fewer qualified teachers in private TVET institutions, where 40 percent hold teaching qualifications, and only 25 percent are technically qualified. Poor working conditions lead to high absenteeism and attrition rates.

In Niger, 62 percent of the TVET trainees and administrators interviewed said that the contractual nature of TVET trainers contributes to low remuneration and low motivation. Only 12 percent of

the TVET teachers have the required qualifications. ICT skills are also limited, with the majority (85 percent) of TVET institutions failing to provide ICT training to teachers, and just 63 percent using digital tools such as video projectors and PowerPoint in courses. Overall, funding has been the main challenge, resulting in the inability to provide pedagogical training, the lack of human capacity, and limited means to implement practical training. Most survey respondents also lamented the rarity of continuous training, stating that upskilling takes place every two to five years and only when the program is updated.

Poor motivation has contributed to a high turnover of TVET teachers in Ethiopia, where teachers are poorly recognized and receive low remuneration, irrespective of the number of years served. A lack of facilities such as classrooms, laboratories, and workshops in training institutions compounds this situation.

#### 2.7.4 Quality and relevance of career guidance in TVET

**The scope, nature, and impact of career guidance vary considerably among the selected study countries, with each offering a uniquely different approach. Career guidance through internships works well where the government has a formalized partnership agreement with the private sector.**

The University of Rwanda's College of Education runs a Masters' degree program in career guidance and counseling that is expected to solve challenges faced by the department of career guidance. Unlike in secondary schools, every TVET school in Rwanda has a career guidance department, and students can access support. As one respondent attests:

*"When students first arrive here, they seem to be unaware of what they really want to do ... For example, in mechanics, students join the department with the belief that they will only be fixing cars or driving them without knowing that there is so much to know."*

In Côte d'Ivoire, TVET students undertake various internships, including immersion courses and internship-school or qualification courses. The internship-school course is compulsory for students preparing for certification. A trainee-school contract was instituted in 2018 to validate diplomas. It is a professional practice situation during which the student experiences the professional environment, acquires professional skills, and implements the knowledge gained from their training. The goal of the internship is to promote integration into the professional field. Forty-three percent of survey respondents state that industry participates in the acquisition of job market information; this participation includes experience-sharing events such as conferences, job fairs, internship opportunities, and company visits.

The Ghana Education Service has a guidance and counseling unit. However, its services are not effective due to limited outreach and the absence of continuous coaching and mentoring.

There is no well-organized career guidance and counseling system in TVET institutions in Ethiopia. According to respondents, teachers and parents are students' primary and only "career counselors," and there is hardly any interaction with industry practitioners.

In Uganda, access to counselors is less than 50 percent for TVET students. Most Ugandans perceive technical schools and TVET education to be a failure. In addition, there is community bias against girls taking on technical careers, which are seen as "reserved for boys."

Niger has a policy that encourages enrollment in TVET institutions and has tried implementing the German dual system, but the impact is yet to be assessed. Despite these efforts, respondents point to a lack of partnership and collaboration between schools and businesses, with 78 percent of young respondents stating that their career choices were most influenced by their parents, 18 percent by teachers, and only 4 percent by school counselors.

### *2.7.5 Quality and relevance of digital infrastructure in TVET*

**Governments have tried to invest in digital infrastructure in TVET institutions. Such investments are yet to reach optimum levels in terms of funding and value. Poor quality of training facilities and equipment is a major challenge in providing good quality TVET, and programs do not respond to industry demands. Lessons can be drawn from thriving PPPs, where accessing equipment and human resources is much easier and sustainable compared to “one-off” budget allocations.**

In Rwanda, TVET institutions lack suitable equipment and appropriate facilities as many Vocational Training Centers (VTCs) and Technical Secondary Schools cannot purchase the materials and equipment necessary for quality TVET program delivery. Institutions lack steel for welding courses, electrical wires for electricity, timber for carpentry, chemical reagents, and laboratory equipment. However, Rwanda has made commendable progress in expanding digital technology in TVET institutions, as the ICT sector is increasingly occupying an essential space in the country's economic transformation agenda. Out of every 10 TVET schools, only two schools do not have a smart classroom. In Uganda, government BTNET institutions are better equipped than private institutions. Further, only one-fifth of TVET institutions in Uganda have internet connectivity.

Côte d'Ivoire lacks digital infrastructure, and the use of ICT for educational purposes is very limited in the absence of a national policy and strategy for ICT implementation. Respondents from TVET institutions attribute this weakness to the non-formal nature of ICT learning in training institutions. Funding does not include digital equipment or teaching materials adapted to 4IR technologies. Only 16.4 percent of vocational and technical institutions had at least one multimedia room in the 2018-2019 school year.

Only a quarter of the TVET institutions in Ghana have internet connectivity, and because of the inadequate physical infrastructure of TVET institutions, few graduates from junior high school get admitted into public and private TVET institutions (Ghana Ministry of Education, 2018)

In Niger, the number of TVET institutions has been on the rise since 2017. Close to 80 percent of the institutions have suitable buildings, while 56 percent have ICT facilities such as laboratories and other equipment. Half the schools have no computers and, of those who have, the number of students per computer is very high, limiting access for most students. Despite government efforts to equip institutions, the continuing rapid growth in the eligible cohort of students aged 15-19 has negatively impacted the capacity of the government to keep pace with demand.

In Ethiopia, TVET graduates looking for work still have to undergo further training in ICT and communication skills to meet market demands, which reflects inadequacies in TVET institutions. While some TVET institutions have good provisions, many others have a shortage of workshops or have old workshops that lack safety features, basic sanitary facilities, and essential equipment. Classrooms and libraries are in poor condition or non-existent. Where TVET institutions have

machinery and equipment, they are insufficient for the number of students, making it difficult for students to meet the 70 percent to 80 percent practice requirement. Consequently, students have difficulties meeting assessment criteria, with only 23 percent of students found competent (Ethiopia Ministry of Education, 2018).

### *2.7.6 Quality and relevance of lifelong learning among teachers and trainers in TVET institutions*

**Governments continue to offer continuous learning opportunities, but outreach is limited. The private sector is a key player in promoting continuous learning, particularly on technical subject areas, but less on soft skills. Private institutions are keener to upgrade their teaching staff based on their institutional requirements.**

In Côte d'Ivoire, 40 percent of teachers and trainers working in TVET attended in-service training for trainers. However, this type of training is only provided when curricula are updated, and the training institutions are seen as insufficient and low-capacity. Only the heads of TVET institutions organize training for their teachers through CIDFOR and the Centre for the Promotion of New Information and Communication Technologies.

In Ethiopia, the federal TVET Training Institute upgrades trainers, but their courses do not sufficiently update trainers in line with current trends.

In Niger, a labor code (Republic of Niger, 2012) regulation guarantees workers the right and duty to improve and complete their vocational training during their careers. A multi-stakeholder approach has been adopted, which involves the central government, local authorities, public and private institutions, associations, professional organizations, and enterprises all working together to provide workers with further training, on-the-job training, or specialization. Nevertheless, 74 percent of TVET respondents say there are no systematic opportunities or forums for public servants within the government and public sector to learn and develop on an ongoing basis.

In Ghana, those in the informal sector, such as traditional apprenticeship trainees, see value in upskilling. Seventy percent of respondents are willing to upgrade their skills or those of their employees to match the needs of the labor market.



## DEMAND SIDE: LABOR MARKET DYNAMICS (EMPLOYMENT AND SKILLS)

### 3.1 Overview

This chapter explores employment and skills requirements in the labor market in the six study countries. It assesses challenges and opportunities facing the private sector in accessing quality and relevant skills and talent in response to the changing world of work. It outlines the skills that are in highest demand in the labor market, reviews existing coordination and networking systems between industry and training institutions, and evaluates their effectiveness regarding learning. It highlights ways in which demand-side actors like public and private sector businesses and formal and informal employers are currently involved in the design and development of education and skills training programs, particularly in curriculum development, teacher training, and career guidance and reforms.

The chapter also explores opportunities for industry and public and private sector employers to bridge the gap between supply and demand. Lastly, the chapter reviews ongoing and planned initiatives undertaken by the public sector and industry towards gender equality and inclusiveness of other vulnerable groups, particularly persons with special needs.

Key respondents in the formal and informal sector include sector-specific associations, captains of industry, relevant government ministries of labor and manpower development, and labor recruitment institutions.

### 3.2 Private sector landscape and labor market requirements

There are sharp contrasts among the countries' private sector landscapes. In some, less developed players are the norm, others have a heavy government presence, and the remaining landscapes are characterized by a multitude of micro and informal sector operators.

Industry respondents in all countries seek graduates with technical skills and practical, twenty-first century soft skills such as communication, teamwork, creativity, and problem-solving.

However, training institutions across the board are not adequately imparting labor market-ready skills to the students. This lack of technical and practical skills among graduates is attributable to a lack of modern equipment and qualified teachers in secondary and TVET institutions.

The formal and informal private sector is the largest employer in five study countries, constituting over 80 percent of the labor force. The only exception is Ethiopia, where there is almost parity in employment between the public (48 percent) and private sector (52 percent). According to ILOSTAT 2020, the informal sector in Côte d'Ivoire in 2017 had 87.6 percent of the workforce, in Ghana it had 67.5 percent in 2015, in Niger 73.4 percent in 2017, in Rwanda 68.9 percent in 2019, and in Uganda 85 percent in 2017. Many private sector workers are unskilled, with most employees having completed primary and lower secondary education or informal technical and vocational training.

In Ghana, 62 percent of industry respondents consider a secondary school diploma the minimum requirement for employment, and 31 percent accept applicants who only completed a primary education. Only eight percent of respondents require university education as the minimum recruitment level. Communication skills are among the most desired skills by Ghanaian employers, but graduates are often found lacking in this regard.

In Rwanda, the Rwanda Development Board (RDB) plays a key role in coordinating and implementing professional internships. The RDB advocates teaching soft skills from primary school onward to enhance and align the quality of education to the demands of the job market. Soft skills include self-expression, and communication and writing skills.

In Uganda, industry respondents are of the view that in addition to technical knowledge, the current job market requires basic computer knowledge, and more soft skills such as interpersonal and communication skills.

In Ethiopia, employers are looking for soft skills and work-oriented competencies in communication, understanding value chains, customer orientation, as well as interdisciplinary teamwork, foundational skills, problem-solving skills, systems thinking skills, non-cognitive skills, critical thinking, and creativity.

In Côte d'Ivoire, despite the willingness of companies to recruit local labor, employers still face enormous difficulties filling jobs like digital security, robotics, home automation, and computer and network maintenance. Recruiters are particularly in need of technical (48 percent), communication (37 percent), ICT, business, and entrepreneurship literacy skills (23 percent).

Respondents in Niger expressed similar views as those in the other study countries, with the most in-demand skills being technical (21 percent), teamwork (17 percent), communication (16 percent), entrepreneurship (12 percent), ICT (10 percent), problem-solving (9 percent), leadership (5 percent), social (4 percent), and analytical (4 percent). The respondents also state that these skills are missing among recruits.

In Côte d'Ivoire, Ghana, Niger, and Uganda, the skills most in-demand by companies are technical skills, teamwork, communication, and entrepreneurship. Such skills, however, are in short supply. In Ethiopia, for example, the TVET institutions are unable to meet demands from both industry and the public sectors due to limited enrollment and a lack of relevant skills. In Rwanda, TVET graduates are highly sought-after because of their practical skills. One policymaker says that 80 percent of such graduates get jobs before graduation.

Respondents note the lack of equipped laboratories for STEM subjects, inadequate internet connectivity for research purposes, and a lack of digital technologies such as projectors, smart classrooms, and libraries that enable student access to electronic resources. A respondent in Rwanda says:

*“A graduate in building construction should be able to practically do things as directed by the supervisor, but, to our surprise, they struggle, and most of the time we do not have time to have close supervision. When they are approached by their immediate supervisors on how they are doing, interns admit that they theoretically know things, but cannot physically apply what they studied.”*

In a survey carried out to determine ICT literacy among employees in the National Bank of Rwanda, the prime minister’s office, ICT institutions, and savings and credit cooperatives societies, employees of these institutions claimed that they were ICT literate. However, only 30 out of the 400 workers passed an ICT literacy test. The low levels of ICT literacy contribute to the considerable gap between demand and supply of quality and relevant skills.

In Côte d’Ivoire, respondents say that companies and training institutions do not collaborate on networking, mentoring, and tutoring systems. Only a few reference institutions have access to partnership models that enable them to remain relevant, leaving trainers out of touch with labor market requirements.

Six of every ten employees interviewed in Niger said they were well skilled to undertake assignments upon completing secondary education and TVET, even though 62 percent of industry employees have primary education, 37 percent secondary education, and only one percent tertiary education. These figures indicate low skills, just as in the other five countries, where graduates are poorly equipped with the technical skills required in the labor market.

The report, *Ethiopia Job Creation Through Off-Grid Energy Access*, (Job Creation Commission Ethiopia, 2019) aligns with these findings:

*“There are substantial skills mismatches in different sectors, especially in the manufacturing and service sectors ... the reasons for skills mismatch include poor linkages between education institutions and industries, inadequate and poorly designed curricula, insufficient physical and digital infrastructure, a lack of competent teachers, and TVET trainers, and low participation of the private sector.”*

### **3.3 Public-private engagements: Education and skills training**

**Policymakers in educational institutions appreciate the role of the private sector as partners or employers who need to participate in curriculum development. This realization has, however, not translated into any real commitment to involve the private sector in strategic planning and design of learning and training tools for education and training systems.**

Respondents in each country identify communication skills as the skill that most new employees lack. Despite the weak interface between public and private sectors in developing education and training programs, there is some strengthening of partnerships.

Employers in Ghana and Rwanda state that their participation in curriculum development is superficial. A respondent from Rwanda knows of no clear mechanisms for engagement with the education system. Another industry respondent in Rwanda says:

*“The Ministry of Education invites us to a one-day workshop to give our views on what should be integrated in the curriculum, but we cannot exhaust everything in one day ... the ministry should engage all actors in the needs assessment to the fullest so that our contribution can significantly feature in designing the curriculum.”*

Similarly, in Ethiopia, there are limited contributions and little or no participation of industry actors in any of the key levers of education. There is no involvement in curriculum development, practical skills delivery, employment opportunities, career guidance, or competency testing. Although government respondents believe that the private sector is only interested in preparing young people for the needs of their companies, there have been recent efforts to facilitate the participation of employers through internships. However, arranging the internships is difficult because the cooperation and relationship between industries and training institutions are weak.

Close to 80 percent of surveyed private sector employers in Ghana want to be involved in developing secondary education and TVET curricula. They argue that influencing the skills taught to young people would ensure that education and training systems are better aligned and more relevant to the rapidly evolving labor market. However, opportunities for employers to engage with the education system are limited, as only 27 percent of companies and entrepreneurs have been invited to or have participated in career fairs—and those who have were either contacted by schools or through stakeholders, but not by government officials. And, although there are government interventions to train young people, several organizations have stepped in to help fill the skills gap in the informal sector. They include the National Association of Beauticians and Hairdressers and the Ghana Cooperative Fashion Designers Association.

Employers in Côte d'Ivoire play a significant role in demand-driven capacity and skills-building programs for newly recruited employees and contribute significantly to learner internships and career guidance through job fairs and visits to training institutions. There is, however, a lack of capacity-building initiatives for teachers. The challenge is to promote the same efforts in learning institutions to maximize benefits across the board to include those who may not get a chance to join well-established companies.

In Côte d'Ivoire, public sector respondents confirm industry involvement in training programs through activities to increase knowledge of the labor market and professional orientation for students. Since 2016, stakeholders from the private sector have been included in the development and implementation of training curricula for learners in TVET institutions. However, industry respondents contend that the level of collaboration is woefully inadequate, with 81 percent of employers not engaged in either curriculum development, revisions, or reform. There is a disconnect between stated intentions by public sector officials and delivery.

In Rwanda, participation of the private sector in skills training is done through internships and industrial attachments. Some higher learning and technical institutions have partnerships with private sector employers and civil society organizations. Students take internships that last between two and four months. Some companies demand internship fees of between 10,000 and 60,000 Rwandan francs (equivalent to US\$10 and US\$60, respectively) for the entire internship period. Despite the substantial mutual benefits of cooperation, interactions between higher education, TVET schools, and companies remain low, threatening education and industry development.

Similarly, in Niger and Ethiopia, industry and TVET training centers do not maintain any significant collaborations. In Niger, respondents acknowledge the importance of the private sector in curriculum development, but bridging the gap between training institutions and business has not been successful. However, in 2012, some training and skills development reforms partially succeeded in bridging the gap between training outputs and industry needs. But the Ministry of Employment, whose mission is to design, implement, and evaluate the national employment and social protection policies, is neither directly nor indirectly involved in curriculum development. Initiatives to bridge the gap between the private sector and the curriculum development agency take place under different bodies, but these efforts have had very limited success. For example, there are enormous difficulties in internship placement.

Uganda provides an example of public-private collaboration in education and training. But this partnership, which has been mainly in curriculum development, has largely been with Business, Technical and Vocational Education and Training (BTJET) institutions. Little collaboration took place at the secondary level until 2020, with reforms to make the lower secondary curriculum more practical, competency-based, and responsive to technological changes. Employers and other stakeholders are now involved in designing, evaluating, refining, and implementing programs that enhance uptake of 4IR technologies through workshops and seminars. There is also an intern program for final-year students, who are attached to formal sector firms for a three-month paid formal internship. Although this program is good, firms are not willing to pay the internship salaries, which has held the program back. Lastly, some employers participate in career guidance, but such participation is ad-hoc and not yet systematic or institutionalized.

### **3.4 Labor market information systems (LMIS)**

Among the study countries, Niger demonstrated the highest level of LMIS utilization. In 2012, the country created a job market information system under the National Observatory for Employment and Vocational Training (l'Observatoire National de l'Emploi et de la Formation Professionnelle, ONEF). The system's mission is to make data available to public and private decision-makers to improve their understanding of job creation and to align education to the current and future possibilities of the job market. The system collaborates with the National Institute for Statistics. ONEF is regularly called upon to produce job market data about jobs created, market trends, and other employment-related indicators. Based on this information, the government initiated the work-linked training strategy, which allows students to combine school instruction and practical workplace training. Two-thirds of companies interviewed for this study support teachers and the education system, with a fairly large number of companies offering internship opportunities to students.

In Rwanda, the RDB started a number of initiatives to bridge the gap between job demand and supply through labor analysis and forecasting to enable the government to create jobs at different stages. The RDB also initiated a skills database to track the skill sets of Rwandan students studying abroad. The Kora Jobportal is a platform that helps job applicants access vacancies.

In Ethiopia, both the public and private sectors are governed by weak regulatory frameworks, and social dialogue between public and private institutions is limited. The existing LMIS does not include the informal and self-employment sectors, which constitute a majority of the workforce. In 2017, however, the private sector, with support from Mondial FNV and the Danish Trade Union Development Agency, produced a labor market profile that provides an overview of the structures, developments, and challenges in the labor market (Danish Trade Union Development Agency & Mondiaal FNV, 2020).

Uganda designed its LMIS to meet the critical information needs of the country's labor market. There is, however, no clear system for tracking employers and available skills in the market, compelling most industries to seek other means to address their labor demands. For example, the Kampala Capital City Employment Bureau outsources employment data mainly through private employment agencies, talent registers, advertising, direct recruitment, head-hunters, and the use of free government platforms such as the National Job Matching Platform. Through individual industry partnerships with training institutions and through internship and attachment opportunities for learners, they get to know market demands.

There is no formal LMIS in Côte d'Ivoire, but there are various initiatives that support information flow. These include the coordination of orientation in the technical and vocational institutions towards the world of work by the Directorate of Apprenticeship and Vocational Integration at the national level and the Executive Secretariat for Training and Employment Relations (SERFE) for the vocational training institutions. SERFE acts as an intermediary between vocational training institutions and the world of work. It collects information on the needs of companies and the internships and jobs they have, ensures that internships match the skills of learners and graduates, signs partnerships with the companies, and keeps a report on the integration rate of graduates.

In Ghana, LMIS development is underway, spearheaded by the Ministry of Employment and Labor Relations. The country's LMIS will be an upgrade from the previous sector-based analysis, presented as a yearly social and economic outlook. The most comprehensive labor analysis survey was conducted by the Ghana Statistical Service in 2015, within the Ghana Statistics Development Plan framework. The survey collected labor force statistics and made them available to the government, the private sector, and the public to improve their decision-making process.

### 3.5 Government initiatives to support youth employment

**The youth, particularly young women, are most affected by the disconnect between labor demand and supply. Policy dialogues focusing on the challenges of rising youth unemployment in all six countries revealed that young people, especially young women, face greater barriers to gainful employment and decent jobs.**

Authorities in the study countries are making efforts to support young people, but with limited success. Survey respondents present various reasons, ranging from supply outstretching demand, skills mismatches, challenging entry requirements, and limited resources and capacity among youth to start a business.

The government of Niger leads the study countries in its response to youth unemployment by designing programs to help young people to create microenterprises. These youth integration programs, implemented by the country's National Agency for Employment Promotion and the Support Fund for Training and Apprenticeship, are aimed at helping young people acquire skills and set up small businesses through on-the-job training. These strategies are reinforced by the initiatives of young people, with 56 percent of those going through the programs starting a business and 76 percent adopting new ICT tools.

In Ethiopia, 33 percent of formal TVET graduates do not obtain employment post-graduation due to a lack of requisite skills. In response, the government introduced a cooperative training program with the private sector. The program assigns students to the private sector for one semester to do practical training, while TVET teachers provide their professional service to private sector institutions. The program has not performed as well as expected due to low attention and weak commitment of leaders, high resistance, and neglect of most industries to deliver the required skills to the trainees. Overall, cooperation among industries and training institutions is weak and ineffective.

In Rwanda, entrepreneurs are hampered by unfavorable taxation policies that heighten operational costs and reduce profitability. Respondents noted the limited access to credit and lack of information on joint ventures and cooperatives as key impediments for young people to engage in gainful employment. The Ministry of Public Service and Labor initiated different job creation policies, such as the National Employment Policy, in collaboration with the private sector. Another relevant initiative is the Knowledge Lab, a technology innovation hub and a meeting point for innovators and entrepreneurs, investors, students, programmers, coders, and tech engineers.

The government of Côte d'Ivoire set up the Youth Employment Agency in 2015 to strengthen youth employability. Despite this effort, the productive sector is struggling to absorb graduates from the public education system. To fill this gap, companies recruit foreign workers or solicit private firms to take on the assignment.

In Ghana, 37.5 percent of youth operating in the formal sector are likely to receive some government support, compared to just 9.1 percent in the informal sector. Only 7.7 percent of informal business owners, compared to over 80 percent of formal business owners, predict they will be doing the same business in the next 5-10 years, an indication of the high failure rates of informal enterprises.

In July 2017, Ghana launched the Coordinated Programme of Economic and Social Development Policies (2017–2024) and the medium-term development framework, An Agenda for Jobs: Creating Prosperity and Equal Opportunity for All (2018–2021). These two frameworks define Ghana's strategic direction for job creation. The two policies are the culmination of a long history of trying to address youth unemployment that started with the National Youth Employment Programme (NYEP) in 2006. These programs' challenges include irregular and inadequate funding, lack of youth ownership, and weak commercial and financial fundamentals. The small-scale programs also fail to reach most youths in need of employment. Unfortunately, as follow-up studies have not been conducted, it is difficult to ascertain the direct impact of the various interventions.

There is limited government support in Uganda in relation to credit and tax holidays available for young people seeking to set up a business.

### 3.6 Recognition and certification of informal learning

**Informal learning is a major contributor to skills development in the six countries. However, in some countries progress is held back by the lack of formal mechanisms for recognizing experiential and on-the-job training skills.**

Ghana, Ethiopia, and Rwanda recognize that most of their workforce is in the informal sector, where workers acquire their skills while on the job in informal learning systems. Ghana is trying to retrain informal sector workers and award them formal certificates. The training has mainly focused on managerial and ICT skills to strengthen worker capacity to run a business.

Even though Ethiopia does not have a formal upskilling program, it does award skills certificates to people in the informal sector. Rwanda, on the other hand, has an upskilling program but does not recognize informal skills.

Côte d'Ivoire and Niger fall in the same category as Rwanda, where the informal sector absorbs most young people looking for employment. Unfortunately, these countries do not have a system to recognize the skills gained. For example, in Côte d'Ivoire, the number of people leaving the education system is more than four times greater than the economy's absorptive capacity. Out of 76,300 school leavers, 66,400 join the informal sector, and the remaining 9,900 join the formal sector.

In Niger, the public and para-public services employ about 120,000 workers, while the active working population is more than 5.4 million. Despite the experience gained in the informal sector, the government has no system that officially recognizes the skills developed and qualifications acquired in day-to-day activities.

### 3.7 Gender inequalities in the labor market

**Even though gender inequalities persist in the world of work, good progress is being made to address this issue in the public and formal sectors of the countries' economies. Much of the progress, albeit slow, is in the public sector, and largely in political representation in countries like Uganda and Rwanda. The private sector has yet to acknowledge the strategic contributions and benefits brought about by involving women in their workforce, as a number of companies have no operational gender policies. Adherence to gender policy requirements is more pronounced in the public sector.**

Rwanda has made strides in enacting good policies on gender mainstreaming and equal access to employment opportunities. However, the impact of these policies is more evident at the level of political representation than in other sectors of the economy, where the government does not have direct control. There are uneven employment opportunities between women and men in the formal and informal sectors. As observed in most African countries, this imbalance is primarily driven by traditional stereotypes in the gender division of labor. For example, Rwanda's transportation and logistics businesses are male-dominated, with women constituting less than 10 percent of the workforce, mainly in the administration and sales sections.

In Ethiopia, despite the commitment by the government to advance gender equality and women's rights, 59 percent of formal sector industry respondents do not have a gender policy in their companies. Meanwhile, the country has seen an increase in women's participation in political and public life, with the country achieving gender parity in the cabinet. Industry respondents attribute the absence of a gender policy or failure to achieve gender parity in their companies to their small size; gender issues are secondary to productivity and quality concerns. A third of formal sector respondents state that at least 20 percent of their employees are women, although most occupy low-level positions. On average, women's earnings are only about 63 percent of men's earnings. The wage gap is the largest in agriculture, where over half of all women receive no payment at all, and the smallest in the public sector. Inequalities stem from socio-cultural attitudes perpetuated by a patriarchal system that inhibits girls from birth from fully attaining their potential. Girls have low completion rates, at 59.7 percent for grade eight female students, compared to 64.4 percent for their male counterparts (Ethiopia Ministry of Education, 2019).

Formal sector industry respondents in Uganda claim they offer equal opportunities to young men and women. About two-thirds (68 percent) of respondents have a gender policy in their companies, even though gender job stereotypes continue to exist for some jobs as more men are hired. However, respondents claim that the situation in the private sector is one of open competition.

In Côte d'Ivoire, private companies hire about four times more men than women. According to some entrepreneurs, the absence of women in certain sectors is linked to gender stereotypes. Recruiters in Abidjan said they hire only on the basis of applicants' skills and not by reference to gender, even though technical and financial partners strongly recommend affirmative action in favor of women and girls.

In Ghana, 70 percent of those interviewed in the private sector indicate that they offer equal opportunities for young men and women to thrive in the work environment. However, the informal sector is dominated by women, while the most lucrative trades like construction are male-dominated.

Similarly, in Niger, women are poorly represented in both the public and private sectors (12 percent compared to men (88 percent)). Only 21 percent of formal companies and firms surveyed have gender equity recruitment policies in place. Although still low, the female labor force participation rate in Niger has tripled since the adoption of the National Gender Policy in 2009.

### 3.8 Persons with special needs in the labor market

**While all six countries have ratified and adopted the UN Convention on the Rights of Persons with Disabilities, both industry and education systems are struggling to comply with provisions of the convention to provide access and adequately prepare persons with special needs for the world of work.**

Persons with special needs constitute about 10-15 percent of the global population, yet they represent less than two percent of the workforce in the six study countries. Respondents in every country mention the high costs of training persons with special needs as a significant impediment to access to employment. None of the organizations interviewed in this study fully adheres to the recommended government policies, e.g., to engage a particular percentage of persons with special needs.

Niger has made the most progress in addressing the education and employment needs of persons with special needs or disabilities. The country has adopted the national strategy for the education of children with disabilities, and 58 integration classes are established in 25 mainstream schools, with over 2,500 persons with disabilities trained in crafts and various vocations. Niger's labor code and public sector regulations have strengthened the access of persons with disabilities to employment. At the same time, the national social welfare and social security funds provide retirement, invalidity, and other benefits to employees with disabilities in the public sector. Despite all the progress, challenges to the full and effective implementation of the Convention on the Rights of Persons with Disabilities remain, specifically in access to basic services, dissemination of the Convention, accessibility, reintegration programs, and eliminating prejudices against persons with disabilities (Office of the United Nations High Commissioner for Human Rights, 2019)

In Uganda, data disaggregated by disability shows that only 1.3 percent of the formal sector workforce are persons with disabilities, with the remainder operating in the informal sector (Uganda Manpower Survey, 2016/2017). The limited access to formal sector employment is exacerbated by stigma and discrimination—attributable to limited awareness about disability within communities—

limiting their participation in all aspects of life (NUDIPU, 2014). Women and girls with disabilities face double discrimination and are at a higher risk of abuse, violence, neglect, maltreatment, and exploitation (United Nations, 2016).

In Ghana and Rwanda, most persons living with disabilities are unemployed, with the majority being women, because they lack the skills and education required in the labor market (Naami, 2015). In Rwanda, training institutions say that the scarcity of qualified special needs teachers results in few disabled learners receiving an appropriate education, reducing their chances of being employed.

In Côte d'Ivoire, the government has developed measures to reduce discrimination and facilitate the social integration of disabled persons into school life. These include the construction of community colleges that consider requirements of people with physical disabilities, and the establishment of specialized training structures at the primary level for people with visual and hearing disabilities. There is, however, virtually no initiative or regulatory framework for people with visual and hearing disabilities at the secondary level. This results in a gap between the end of primary school and the integration of these persons in the world of work, since secondary education offers the best prospects for employment. Indeed, there is an absence of policies for including people with disabilities in technical and secondary education. This situation is not unique to Côte d'Ivoire, as there is an absence of specialized institutions, pedagogy, and materials adapted to special learning needs in the other countries as well.

In Ethiopia, 95 percent of all persons with disabilities live in poverty due to lack of gainful employment, despite the government having adopted and implemented a number of laws, policies, and standards pertaining to persons with disabilities. Two key policies that the government has ratified are the ILO Convention concerning Vocational Rehabilitation and Employment (Disabled Persons) No. 159 (1983), ratified in 1991, and the UN Convention on the Rights of Persons with Disabilities in 2010, through Proclamation No. 676/2010. Just as in the other study countries, there is evidence that people with disabilities are more likely than non-disabled persons to experience exclusion and discrimination in the labor market and elsewhere due to limited education and the lack of relevant skill sets. Public institutions and large international companies make an effort to include disabled persons in some sectors, but small businesses and operators in the informal sector explain that they cannot take on board persons with disabilities.



## RECOMMENDATIONS AND PRIORITIES FOR ACTION

### 4.1 Overview

This study maps the progress of six African countries—Côte d'Ivoire, Ethiopia, Ghana, Niger, Rwanda, and Uganda—in strengthening secondary education and technical and vocational education and training (TVET) to deliver a workforce prepared for the Fourth Industrial Revolution (4IR).

This study captures the nature and scope of the mismatch between labor supply and demand for skills and the implications for employment through a supply and demand framework. The supply side covers the present and near-term supply of the labor force, which includes students, graduates, young employees, and those not in employment, education, or training (NEET). The demand side comprises employers of future-ready workers.

On the supply side, the study explores how education and training provided by public and private institutions are responding to the changing nature of work through the lenses of access, quality, and relevance. On the demand side, the study explores how labor demand is changing in the face of digital technologies and the role industry plays in ensuring that education and training systems produce a future-ready workforce.

Based on extensive literature review and in-depth surveys using structured questionnaires and qualitative focus group discussions, the six country-level studies cover a good cross-section of the diverse characteristics of youth, employment, and skills in Sub-Saharan African countries.

Challenges, opportunities, and best practices emerging from the studies provide the basis for the following recommendations and priorities for action. There are nine overarching recommendations, divided into two categories: supply side and demand side.

## 4.2 Supply-side recommendations for Africa's education sector

### Improve access to secondary education and TVET

Over the last five years, countries have improved physical infrastructure and lowered the cost of education. These policies have led to considerable improvements in secondary school enrollment and some improvements in TVET enrolment. However, the expansion in physical infrastructure, particularly for secondary schools, has not kept pace with the surge in enrollment triggered by free tuition policies. Free tuition fails to benefit all population segments, with girls, children with special needs, and rural communities often left out.

Priorities for action:

- **Expand physical infrastructure in line with increased school enrollment.** Target physical infrastructure expansions at remote communities and girls. This will ensure improved access to schools for the especially disadvantaged, and reduce the cost of commuting to school for those who face the most significant safety and security concerns.
- **Ensure that equipment is available and expand physical infrastructure to ensure schools are physically accessible to all students, particularly those in rural areas.** In many countries, the influx of students triggered by free secondary and TVET education has resulted in a shortage of equipment. Improving access to schools and equipment, particularly for girls, will positively impact transition and completion rates.
- **Adopt and implement targeted policies to encourage girls' enrollment in STEM courses.** Targeted affirmative action programs and policies can increase the enrollment of girls and women in STEM. Successful policies include targeted scholarships covering fees, equipment, tools, and books for female students in Rwanda and Uganda.

### Ensure the future readiness of TVET and secondary school curricula

Countries have shifted from knowledge-based curricula to competency-based curricula, but the results have been unsatisfactory. Secondary and TVET curricula remain poorly aligned to labor market needs, in large part because of weak collaborations with the private sector. Relevant twenty-first century skills are insufficiently integrated into most curricula, and when they are, the quality of delivery is lacking.

Priorities for action:

- **Integrate twenty-first century skills into the content of TVET and secondary school curricula.** Curricula should have a stronger focus on STEM subjects, soft skills, and practical applications tailored to relevant issues. For instance, by including agriculture modernization in curricula, countries such as Uganda and Ethiopia could protect against fragility and absorb large numbers of out-of-school youth into decent work.
- **Ensure a complete and effective implementation of competency-based curricula in schools.** School-based end-of-term examinations, oral quizzes, drama, and extracurricular activities should contribute to overall student assessments and final evaluations. This shift is occurring, but implementation remains weak.

- **Effect broader stakeholder participation in curriculum development.** The curriculum development process remains primarily government-driven. Governance arrangements that fully integrate employers and other relevant stakeholders into the curriculum development process will ensure more relevant content.
- **Adopt standardized approaches in the delivery of non-formal TVET education.** Provide opportunities for non-formal TVET institutions to standardize their approach to teaching and assessment of learners. Standardize accreditation of skills gained in the informal sector.
- **Initiate awareness campaigns and develop incentives to change public attitudes towards TVET education.** Countries should adopt policies and processes to change the culture and attitude towards TVET education.
- **Improve the effectiveness of curriculum delivery.** The quality of delivery is affected by insufficient time allocation, limited levels of flexibility, and an inadequate focus on labor market preparation. While government policies often emphasize the delivery of STEM subjects, non-STEM subjects remain more prevalent in practice.

### **Improve access to high-quality and relevant career guidance and early exposure to the world of work**

Countries acknowledge the importance of early exposure and alignment of competencies to the world of work. However, access to such services is constrained by a lack of personnel with requisite skills and school training. There are few partnerships and limited coordination with private sector actors. Insufficient gender sensitivity in career guidance sessions results in the perpetuation of restrictive gender roles and contributes to the low participation of women in parts of the labor market.

Priorities for action:

- **Ensure that career guidance counselors are equipped with appropriate pedagogical skills and awareness of the most relevant labor market needs.** Many programs confuse career guidance with psycho-social support, resulting in weak and unclear support. Guidance counselors should also be sensitized to avoid entrenching gender stereotypes and excluding girls from career opportunities.
- **Establish strong partnerships and coordination with the private sector.** Few effectively functioning structures exist for industrial attachments that allow learners to be acquainted with the world of work. Formalize partnerships between private sector employers and training institutions on curriculum development and internship programs, with clear delineations of the role and involvement of the private sector.

## Professionalize teacher training

There are considerable differences in the scope and nature of teacher training among the countries, with varying levels of success and effectiveness. While pre-service teacher training opportunities are more systematic, continuous teacher training is neither compulsory nor institutionalized. Pedagogy, competency, standards, materials, and support systems are weak and misaligned to the knowledge and skills required in response to the evolving digital technologies and the labor market.

Priorities for action:

- **Establish clear and comprehensive teacher education and training policies and strategies.** Policies should enable continuous upskilling of teachers in line with labor market requirements. Teacher training should be compulsory, standardized, and accessible.
- **Establish strong and formalized cooperation with the private sector on teacher training.** Engage the private sector to ensure teachers are equipped with knowledge of fast-changing labor market requirements.
- **Increase the number of teachers trained in twenty-first century skills.** The teacher training curriculum should focus more on teaching STEM subjects, TVET training, career guidance, and soft skills.
- **Develop an overarching policy and strategy for lifelong learning for teachers and school administrators in secondary schools.** Rwanda's continuous development program for teachers is worth noting. The program, primarily conducted through training seminars, uses life skills as a cornerstone to attaining sustainable socio-economic development and excellence in education.

## Improve access to high-quality and relevant digital skills and infrastructure

Few institutions have full access to digital tools, electricity, internet connectivity, and facilities to prepare learners for the future of work. There is a pervasive urban-rural gap, which the COVID-19 pandemic has exacerbated. Financial limitations, one-off budgets for equipment purchases, and a low capacity to operationalize plans have marred countries' efforts to attain and maintain an adequate operational infrastructure.

Priorities for action:

- **Ensure institutions have the appropriate equipment and technologies to prepare learners for the future of work.** Countries have to expand the geographic coverage of institutions with digital tools. The Rwandan public-private partnership to deliver satellite broadband connections offers a good model for other countries. Off-grid renewable energy provision to rural and remote communities can help overcome electricity and internet connectivity gaps.
- **Upgrade school facilities.** There is an urgent need for additional smart classrooms, modern laboratories, and digital workshop equipment in secondary and TVET institutions. This is critical in ensuring students are well-equipped to transition to higher education or work.
- **Develop comprehensive digital and innovation policies and strategies to improve digital literacy.** Policies should ensure that digital requirements are integrated into education and training systems' resource allocations and budgetary allowances. Direct more resources towards the training and recruitment of teachers with relevant digital skills.

## Prioritize gender and vulnerable group considerations in education

Many countries have awareness programs on skills development for all at the national and community levels, but gender stereotypes remain pervasive. Harmful cultural practices and stereotypes that maintain gender inequalities and the exclusion of students with special needs are firmly rooted at the community level. Girls are particularly underrepresented in STEM subjects and at TVET institutions.

Priorities for action:

- **Pursue deliberate policies that ensure inclusivity in secondary and TVET institutions.** Targeted measures to enroll more girls and students from other disadvantaged groups are necessary to overcome pervasive harmful cultural practices and gender stereotypes.
- **Invest in gender-disaggregated data collection.** More accurate data will provide the real picture of issues affecting students, especially girls. This will also help the development of new and innovative policies to increase the number of girls and young women in STEM fields.
- **Ensure that infrastructure for higher secondary and TVET institutions conforms to disability provisions.** National building codes should take the needs of people with disabilities into account.

## 4.3 Demand-side recommendations for Africa's labor markets

### Tackle youth unemployment on the supply side and demand side

All countries have high youth unemployment and underemployment rates caused by mismatches between acquired and required skills. Soft skills and technical skills are in high demand but often in short supply. Entry requirements in the informal sector are high, and public and private sector employers do not widely recognize informal skills. Graduates also have trouble starting their own business, as few have entrepreneurial skills.

Priorities for action:

- **Develop and improve labor market information systems (LMIS).** Detailed labor market information, including job market forecasts, can significantly improve labor market efficiency. Niger's LMIS is a good model for other countries of a system that reduces transaction costs and is easily accessible.
- **Establish and formalize a mechanism for recognizing experiential and on-the-job training skills.** The recognition of non-formal and informal learning is an important means for making the "lifelong learning for all" theme a reality and to reshape learning to better match the needs of the Fourth Industrial Revolution. Non-formal and informal learning must be at the top of countries' policy agendas.
- **Impart labor market-ready skills to students in higher secondary and TVET institutions.** Schools and TVET institutions should train more students in technical and soft skills to solve the mismatch between acquired and required skills.
- **Provide more entrepreneurship training.** It is essential to expand the number of well-trained entrepreneurs that can operate in the informal sector and engage with the formal sector. Training should be provided in partnership with the private sector.

## Strengthen linkages between the public and private sectors

The private sector is rarely engaged in developing education and training programs, particularly in Ghana and Ethiopia. Rwanda and Côte d'Ivoire have made some progress on public-private partnerships in education, with promising initiatives such as industrial attachments. Even in countries with low private sector engagements, employers are willing to be more involved, as they see the benefits of having a more skilled graduate pool.

Priorities for action:

- **Strengthen the interface between the public and private sectors in developing education and training programs.** Fully involve the private sector at all stages of education and training programs, and incorporate private sector views and inputs.
- **Develop strong, well-structured, and accountable public-private partnerships for mass industrial placements and transition-to-work schemes.** Governments and the private sector should work together to develop schemes that provide work experience for students and graduates.

## Address gender inequality and ensure equal opportunity in the labor market

Gender biases remain common in the workplace. Several companies affirmed that they have a non-discrimination policy. Still, very few have any measures in place to enhance the participation of women, and other companies have no operational gender policies at all. And while all countries have ratified and adopted the UN Convention on the Rights of Persons with Disabilities, there is a distinct gap between policy and practice. Firms and education institutions struggle to comply with provisions of the convention, which emphasize access and adequate preparation for persons with special needs for the world of work.

Priorities for action:

- **Offer incentives to employers to facilitate the integration of gender equity policies.** While companies state that their non-discrimination policies allow equal opportunities for all, very few employers have any measures in place to enhance women's participation.
- **Ensure that employers enhance coaching and mentoring opportunities to encourage more women to take up managerial roles.** Employers must cultivate a favorable work culture and offer women opportunities for continuous professional development.
- **Ensure compliance with provisions of the UN Convention on the Rights of Persons with Disabilities.** All countries have ratified and adopted the convention, but there is a gap between policy and practice.

These recommendations and priorities for action represent the major conclusions of this study. However, it is important to note that data was collected both before and at the onset of the COVID-19 pandemic. Thus, some figures—such as school dropout rates and unemployment rates—may have increased as a direct consequence of the pandemic. Nevertheless, the evidence from the study calls for strong political will and solid institutional capacity to translate education inputs into learning outcomes. Both the private sector and civil society must be brought on board to support governments in realizing the education and employment goals.

# REFERENCES

## Country study reports:

ACET (2021a). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Côte d'Ivoire Country Report*. ACET Youth, Employment and Skills (YES) Program.

..... (2021b). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Ethiopia Country Report*. ACET Youth, Employment and Skills (YES) Program.

..... (2021c). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Ghana Country Report*. ACET Youth, Employment and Skills (YES) Program.

..... (2021d). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Niger Country Report*. ACET Youth, Employment and Skills (YES) Program.

..... (2021e). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Rwanda Country Report*. ACET Youth, Employment and Skills (YES) Program.

..... (2021f). *Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce: Uganda Country Report*. ACET Youth, Employment and Skills (YES) Program.

ACET. (2014). *African Transformation Report 2014*. Accra, Republic of Ghana.

ACET. (2018a). *The Future of Work in Africa: The Impact of the Fourth Industrial Revolution on Job Creation and Skill Development in Africa*. Accra, Republic of Ghana.

ACET. (2018b). *The Future of Work in Africa: Implications for Secondary Education and TVET systems*. Accra, Republic of Ghana.

AfDB. (2013). *Annual Report 2013*. ADB-ADF/BG/AR/2013. Department of Development Research, African Development Bank. Tunis, Tunisia.

African Union. (2006). *African Youth Charter*. Addis Ababa, Ethiopia.

Danish Trade Union Development Agency & Mondiaal FNV (2020). *Ethiopia Labour Market Profile 2020*. [https://www.ulandssekretariatet.dk/wp-content/uploads/2020/03/Etiopien\\_Imp\\_2020.pdf](https://www.ulandssekretariatet.dk/wp-content/uploads/2020/03/Etiopien_Imp_2020.pdf).

Ethiopia Monitor. (2021). *Ministry to Enact New Education Roadmap Starting 2020/21 Academic Year*. Retrieved in November 2021 at <https://ethiopianmonitor.com/2021/08/30/ministry-to-enact-new-education-roadmap-starting-2020-21-academic-year/>.

Filmer, D. and Fox, L. (2014). *Youth Employment in Sub-Saharan Africa*. Africa Development Forum; Washington, DC: World Bank and Agence Française de Développement. World Bank. <https://openknowledge.worldbank.org/handle/10986/16608>.

Ghana Statistical Service (GSS). Ghana Health Service (GHS) and ICF International. (2015). *Demographic and Health Survey*. Accra, Ghana.

GPE. (2020). *Ghana COVID-19 Accelerated Funding Application*. Additional Financing to Ghana Accountability for Learning Outcomes Project (GALOP). Washington, DC.

Hanushek, EA. (1998). *The evidence on class size*. Occasional Paper Number 98-1. W. Allen Wallis Institute of Political Economy, University of Rochester. Rochester, New York.

ILO. (n.d.) *Youth employment in Africa*. Retrieved in July 2021 from <https://www.ilo.org/africa/areas-of-work/youth-employment/lang--en/index.htm>.

ILO. (2012). *Youth Employment Interventions in Africa 2011: A Mapping Report of the Employment and Labour Sub-Cluster of the Regional Coordination Mechanism (RCM) for Africa*. International Labour Organization Regional Office for Africa. Addis Ababa, Ethiopia.

ILO. (2017). *Global Employment Trends for Youth 2017: Paths to a better working future*. International Labour Office. Geneva, Switzerland.

ILO. (2020). *Report on employment in Africa (Re-Africa): Tackling the youth employment challenge*. ILO regional office for Africa. Geneva, Switzerland.

- ILO. (nd). *Decent Work*. Retrieved in May 2021 from <https://www.ilo.org/global/topics/decent-work/lang-en/index.htm>.
- ILO. (2020). ILOSTAT 2020. Geneva, Switzerland.
- ILO (2021). *Vulnerable employment and poverty on the rise, Interview with ILO chief of Employment Trends Unit*. Retrieved in November 2021 from [https://www.ilo.org/global/about-the-ilo/mission-and-objectives/features/WCMS\\_120470/lang-en/index.htm](https://www.ilo.org/global/about-the-ilo/mission-and-objectives/features/WCMS_120470/lang-en/index.htm).
- ILO. (2021). *An update on the youth labour market impact of the COVID-19 crisis*. Statistical Brief. Geneva, Switzerland.
- IPA. (2020). *Informing Policy on COVID-19 with Rapid Data: Results and Responses from the RECOVR Survey in Ghana*. Presentation, RECOVR Webinar Series. Retrieved in July 2021 from <https://www.poverty-action.org/sites/default/files/presentation/IPA-Ghana-RECOVR-Survey-Webinar-July-2-2020-Presentation.pdf>.
- Job Creation Commission Ethiopia, Precise Consult's Ethiopia Market Accelerator Programme (EMA), Africa Clean Energy Technical Assistance Facility, and Open Capital Advisors. (2019). *Ethiopia Job Creation Through Off-Grid Energy Access*. Addis Ababa, Ethiopia.
- Jones, P et al. (2019). *Sources of Manufacturing Productivity Growth in Africa*. Policy Research Working Paper 8980. World Bank Group, Africa Region.
- Mastercard Foundation. (2020). *Secondary Education in Africa: Preparing the Youth for the Future of Work*. Montreal, Canada.
- Mbaye A. M. and Gueye, F. (2018). *Labor Markets and Jobs in West Africa*. Working Paper Series N° 297, African Development Bank. Abidjan, Côte d'Ivoire.
- Ministry of Education, Ethiopia. (2018). *Ethiopia Education Sector Analysis*. Addis Ababa, Ethiopia.
- Ministry of Education, Ethiopia. (2019). *Education Statistics Annual Abstracts (2018-19)*. Addis Ababa, Ethiopia.
- Ministry of Education, Ghana. (2017). *Ghana Education statistics 2016-17*. Accra, Ghana.
- Ministry of Education, Ghana. (2018). *Education Sector Analysis 2018*. Accra, Republic of Ghana. Retrieved in October 2020 at <https://sapghana.com/data/documents/Ghana-Education-Sector-Analysis-2018.pdf>.
- Ministry of Education, Ghana. (2020). *COVID-19 Coordinated Education Response Plan for Ghana*. Accra, Ghana. Retrieved in October 2020 from <https://ges.gov.gh/2020/04/29/covid-19-coordinated-education-response-plan-for-ghana/>.
- Ministry of Education, Rwanda (2008). *Girls' Education Policy*. <https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/94008/110190/F-1833244927/RWA-94008.pdf>.
- Ministry of Technical Education and Vocational Training, Cote d'Ivoire. (2016). *Reforms of Technical Education and Vocational Training 2016-2025: Diagnostic and Strategic Orientation Document*. Working Paper. 117p. Abidjan, Cote d'Ivoire.
- Ministry of Vocational and Technical Teachers, Niger /Ministère des Enseignements professionnels et techniques (MEP-T). (2018). *Annuaire statistique : année scolaire 2016-2017* (Niamey, MEP-T), septembre, 77 p.
- Mohammed, B. (2020). *Challenges TVET Graduates Face During School to Work Transition in Selected Technical Universities in Ghana*. Case Study. Vol. 9 No. 6 (2020). Beijing Normal University. <https://doi.org/10.18533/journal.v9i6.1928>.
- Naami, A. (2015). *Disability, gender, and employment relationships in Africa: The case of Ghana*. *African Journal of Disability* 4(1), Art. #95, 11 pages. Retrieved in October 2020 from <http://dx.doi.org/10.4102/ajod.v4i1.95>.
- National Institute of Statistics Rwanda. (2018). *Education Statistics Report*. Kigali, Rwanda.
- NUDIPU. (2014). *National Union of Disabled Persons of Uganda on 26. Availability of Assistive Devices and Technology*. Zero Project. Retrieved in May 2021 from <https://zeroproject.org/report/national-union-of-disabled-persons-of-uganda-nudipu-on-26-availability-of-assistive-devices-and-technology/>.

- Office of the United Nations High Commissioner for Human Rights. (2019). *Committee on the Rights of Persons with Disabilities examines the report of Niger*. UNIS Geneva. Retrieved in March 2021 from <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24325&LangID=E>.
- OIT. (2019). *Niger: L'état des lieux du système de formation professionnelle*. Service des compétences et de l'employabilité. Geneva, Switzerland.
- Republic of Niger. (2012). *Act No. 2012-45 of 25 September 2012 on the Labor Code*. Art. 24, paragraphs 2 and 3. Niamey, Niger.
- Republic du Niger. (2019). *Direction des Enquêtes et des Recensements. Enquête Régionale Intégrée sur l'Emploi et le Secteur Informel (ERI-ESI), Niger, 2017. Rapport Final*. Ministère du Plan Institut National de la Statistique. Niger, Niamey.
- Uganda Bureau of Statistics (UBOS). (2018). *Manpower Survey Uganda - 2016/2017 Report*. Kampala, Uganda.
- UIS. (2019). *SDG 4 Data Book: Global Education Indicators 2019*. Montreal, Canada.
- UN. (2016). *Women and girls with disabilities: Gender perspectives on disability and the disability perspective on the situation of women and girls with disabilities*. Department of Economic and Social Affairs. Retrieved in February 2021 from <https://www.un.org/development/desa/disabilities/issues/women-and-girls-with-disabilities.html>.
- UNDP. (2020). *Socio-Economic Assessment of the Impact of COVID-19 in Ethiopia*. One UN, United Nations Country Team. Addis Ababa, Ethiopia.
- UNESCO. (2021). *International Standard Classification of Education*.
- ISCED 2011. Retrieved in November 2021 from <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>.
- World Bank. (2015). *Poverty Reduction in Ghana: Progress and Challenges*. Retrieved in March 2020 from <https://www.worldbank.org/en/country/ghana/publication/poverty-reduction-ghana-progress-challenges>.
- World Bank. (2019). *Ethiopia Gender Diagnostic Report: Priorities for Promoting Equity*. Gender Innovation Policy Initiative for Ethiopia, Africa Gender Innovation Lab (GIL). World Bank Ethiopia Country Office, Addis Ababa.
- World Bank. (2021). *Increasing Access to Quality Secondary Education to the Poorest Districts: Ghana's Experience with Results Based Financing in Education*. Retrieved in November 2021. <https://www.worldbank.org/en/results/2021/01/05/increasing-access-to-quality-secondary-education-to-the-poorest-districts-ghanas-experience-with-results-based-financing-in-education>.
- World Bank. (2021). *Skills Development*. Retrieved January 2021 from <https://www.worldbank.org/en/topic/skillsdevelopment>.
- World Bank. (2021). *The World Bank in Rwanda*. Retrieved in April 2021 from <https://www.worldbank.org/en/country/rwanda/overview>.
- World Economic Forum. (2017). *The Future of Jobs and Skills in Africa: Preparing the Region for the Fourth Industrial Revolution*. Executive Briefing. Cologny/Geneva, Switzerland. Accessed at [https://www3.weforum.org/docs/WEF\\_EGW\\_FOJ\\_Africa.pdf](https://www3.weforum.org/docs/WEF_EGW_FOJ_Africa.pdf).

# ANNEX 1

## Key elements of access, quality, and relevance

Levers\Lens	Access	Quality	Relevance to workforce
<p><b>Curricula</b></p> <p>Ensuring future-readiness of curricula</p>	<ul style="list-style-type: none"> <li>• Institutional arrangement, policies and regulations and processes in curriculum development and implementation.</li> <li>• Adequacy of secondary education and skills training curricula in addressing issues of preparedness for the changing nature of work.</li> <li>• Assessment of nuances/ peculiarities or patterns in the system, particularly gender biases and general attitude towards STEM and TVET education.</li> </ul>	<ul style="list-style-type: none"> <li>• What are the quality-enhancement features of the curriculum at the lower and upper secondary level and for teacher training? (around pedagogy, competence, standards, qualification).</li> </ul>	<ul style="list-style-type: none"> <li>• How aligned are curricula to the knowledge and skills needed in the labor market and evolving digital technologies?</li> <li>• How is it developed?</li> <li>• What is the role of industry in curriculum development?</li> </ul>
<p><b>Professionalized teachers</b></p> <p>Investment in developing and maintaining a professionalized teaching workforce</p>	<ul style="list-style-type: none"> <li>• The size and scope of the teaching training programs &amp; institutions and systems offering training.</li> <li>• Adequacy of the institutions in meeting the demands of secondary and technical training.</li> <li>• Processes and systems in accessing teacher training and upgrading skills. E.g., is it routine or do teachers have to seek training and upskilling on their own?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the key quality enhancement features of teachers' education (around pedagogy, competency, standards, materials and support systems)?</li> </ul>	<ul style="list-style-type: none"> <li>• How aligned are the knowledge and skills being imparted to needs in the labor market and evolving digital technologies?</li> <li>• Do teachers make use of practitioners from the industry in their teaching and training endeavors?</li> </ul>
<p><b>Career guidance and early exposure</b></p> <p>Early exposure to the workplace (internships, apprenticeships etc.) and career guidance (counselors, in-class, fairs etc.)</p>	<ul style="list-style-type: none"> <li>• Assess the adequacy of access.</li> <li>• What ways do students/teachers and administrators access career guidance: access to internships, apprenticeships; access to tools such as counselors and career fairs?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the key quality enhancement features of career guidance (around pedagogy, competency, standards, materials and support systems)?</li> </ul>	<ul style="list-style-type: none"> <li>• How aligned are the knowledge and skills being imparted to needs in the labor market and evolving digital technologies?</li> </ul>

Levers\Lens	Access	Quality	Relevance to workforce
<p><b>ICT Infrastructure</b></p>	<ul style="list-style-type: none"> <li>Review policies, regulations, and ongoing programs providing physical and digital infrastructure.</li> <li>How well equipped are institutions to deliver learning outcomes – in terms of suitable buildings, availability of desks, chairs, classrooms, and ICT tools such as computers, internet, laboratories?</li> <li>What policies exist to ensure learners have equal access (physical and digital) to education? The adequacy in relation to demand, taking into consideration access for vulnerable groups, including those with special needs.</li> <li>Document issues of access to relevant technologies.</li> </ul>	<ul style="list-style-type: none"> <li>What are the key quality features of the ICT infrastructure?</li> <li>How do the schools fare on metrics such as computer/student ratio, access to and quality of internet, frequency of ICT classes etc.?</li> </ul>	<ul style="list-style-type: none"> <li>How relevant are the facilities/equipment provided at schools for enabling learning and for responding to the evolving needs of the labor market?</li> </ul>
<p><b>Lifelong Learning</b> Creating a culture of lifelong learning</p>	<ul style="list-style-type: none"> <li>Provide an overview of the nature and scope of lifelong learning in the country as it relates to access, through a gender disaggregated lens, and opportunities to increase access.</li> </ul>	<ul style="list-style-type: none"> <li>What are the key quality enhancement features of lifelong learning (around pedagogy, competency, standards, materials, and support systems)?</li> </ul>	<ul style="list-style-type: none"> <li>How aligned are the knowledge and skills being imparted to the needs in the labor market and evolving digital technologies?</li> </ul>

# ANNEX 2

## Labor Market Indicators and Trends

### ● Labor force participation (youth) %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	45.6	55.2	36.0	38.3	46.2	30.6	31.7	36.4	27.0
Ethiopia	75.7	81.1	70.2	75.4	80.0	70.8	72.1	75.9	68.2
Ghana	47.7	47.9	47.5	42.8	44.6	41.0	41.8	44.5	39.0
Niger	69.3	81.8	57.9	70.2	82.1	58.1	61.8	72.4	50.8
Rwanda	74.0	74.1	73.8	68.8	69.2	68.3	64.4	64.6	64.2
Uganda	55.3	58.0	52.7	55.2	58.3	52.3	52.9	55.2	50.6
Sub-Saharan Africa	52.0	54.2	49.7	50.0	52.3	47.6	48.5	50.8	46.2

### ● Labor force participation (total) %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	63.1	77.9	46.9	58.8	71.6	45.3	54.9	65.0	44.5
Ethiopia	81.4	89.9	73.2	81.2	88.8	73.7	79.8	86.4	73.3
Ghana	72.8	75.0	70.6	69.9	73.2	66.5	68.0	72.2	63.8
Niger	79.5	90.7	68.8	78.5	90.1	67.4	72.4	84.1	60.9
Rwanda	85.1	86.1	84.3	84.4	84.8	84.1	83.8	83.7	83.9
Uganda	70.5	76.6	64.8	71.0	76.3	66.1	70.5	74.6	66.8
Sub-Saharan Africa	70.2	76.0	64.5	69.1	74.7	63.7	67.8	73.2	62.5

### ● Unemployment rate (youth) %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	7.1	7.5	6.4	8.7	8.9	8.4	4.9	4.1	6.1
Ethiopia	4.1	3.0	5.4	3.4	2.6	4.4	3.3	2.4	4.2
Ghana	12.4	12.4	12.4	11.5	11.0	12.2	10.9	11.2	10.5
Niger	3.9	5.0	2.5	1.7	1.8	1.6	0.6	0.8	0.4
Rwanda	1.2	1.4	1.1	1.7	1.4	1.9	1.8	1.3	2.3
Uganda	4.8	4.2	5.3	4.9	4.4	5.5	2.6	2.0	3.2
Sub-Saharan Africa	9.8	9.8	9.7	8.9	8.7	9.2	8.9	8.5	9.4

### ● Unemployment rate %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	5.2	5.3	5.0	6.2	6.2	6.3	3.2	2.7	3.9
Ethiopia	2.8	2.1	3.8	2.3	1.7	3.0	2.1	1.6	2.8
Ghana	7.1	6.9	7.3	5.5	5.2	5.8	5.2	5.2	5.2
Niger	2.1	2.5	1.7	1.1	1.0	1.2	0.5	0.6	0.4
Rwanda	0.9	1.1	0.7	1.1	1.1	1.0	1.1	1.0	1.1
Uganda	2.8	2.3	3.3	3.2	2.6	3.8	1.8	1.3	2.3
Sub-Saharan Africa	6.1	5.8	6.4	5.4	5.2	5.7	5.8	5.5	6.1

### ● Employment growth %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	1.0	0.6	1.6	1.9	1.5	2.5	2.1	1.3	3.3
Ethiopia	3.4	3.1	3.9	3.5	3.5	3.5	3.3	3.1	3.6
Ghana	3.3	3.4	3.1	2.1	2.5	1.7	2.7	2.8	2.7
Niger	3.4	3.7	3.1	2.8	3.3	2.3	3.5	3.6	3.4
Rwanda	2.7	2.7	2.7	2.7	2.7	2.7	2.9	2.8	3.0
Uganda	3.4	3.2	3.6	3.8	3.5	4.0	4.1	3.8	4.4
Sub-Saharan Africa	2.8	2.8	2.9	2.5	2.5	2.4	2.9	2.9	3.0

### ● Employment-to-population ratio %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	60.4	73.9	45.7	56.3	67.2	44.8	55.5	64.7	46.1
Ethiopia	79.1	88.0	70.4	79.3	87.3	71.5	78.1	85.1	71.3
Ghana	67.6	69.8	65.5	66.1	69.4	62.7	64.5	68.4	60.4
Niger	77.8	88.5	67.7	78.0	89.5	67.0	72.0	83.6	60.6
Rwanda	84.4	85.1	83.7	83.5	83.9	83.2	82.9	82.8	82.9
Uganda	68.5	74.8	62.6	68.7	74.3	63.6	69.3	73.7	65.2
Sub-Saharan Africa	62.8	70.3	55.6	62.5	69.6	55.6	62.1	68.7	55.7

### ● Vulnerable employment %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	77.7	70.9	89.5	76.9	69.5	88.6	72.7	65.0	84.0
Ethiopia	90.0	88.1	92.5	88.7	86.3	91.5	86.7	84.0	89.8
Ghana	76.7	68.9	85.0	74.0	66.0	83.0	69.6	61.4	79.0
Niger	90.0	88.3	92.1	90.3	88.4	92.8	93.8	91.1	97.5
Rwanda	86.7	80.9	92.1	75.9	67.2	84.1	68.6	58.6	78.0
Uganda	84.3	77.5	91.9	78.2	71.5	85.5	75.6	68.7	82.8
Sub-Saharan Africa	70.5	64.4	78.1	69.1	62.9	76.7	67.7	61.4	75.3

### ● Working poverty (less than \$1.90 per day) %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	26.8	25.1	29.7	32.2	30.3	35.4	24.8	23.0	27.6
Ethiopia	47.3	46.7	48.0	34.5	34.0	35.1	26.8	26.5	27.1
Ghana	24.5	23.4	25.6	13.3	12.4	14.3	9.1	8.3	10.0
Niger	72.7	73.1	72.4	51.1	51.2	50.9	41.2	41.4	41.0
Rwanda	71.6	70.2	72.9	59.6	58.1	60.9	50.2	49.1	51.2
Uganda	57.3	55.0	59.8	37.5	35.3	39.9	35.9	33.6	38.2

### ● Productivity growth %

	2000-2007			2008-2013			2014-2019		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Côte d'Ivoire	-0.9	-1.3	-0.2	5.1	4.7	5.7	6.8	5.9	8.1
Ethiopia	3.8	3.4	4.2	7.0	7.1	7.0	6.1	5.9	6.3
Ghana	1.5	1.7	1.4	7.3	7.8	6.9	2.0	1.9	1.8
Niger	0.5	0.8	0.2	4.4	4.9	3.8	1.3	1.4	1.2
Rwanda	4.8	4.7	4.8	4.3	4.3	4.4	3.7	3.6	3.8
Uganda	2.8	2.6	3.0	2.1	1.9	2.4	1.9	1.7	2.2
Sub-Saharan Africa	2.7	2.7	2.8	2.8	2.8	2.8	0.2	0.2	0.2

Source: ILOSTAT 2020 and WDI 2020

# ANNEX 3

## Sectoral composition of employment 2019

### ● Sectoral composition of employment in 2019 %

	Côte d'Ivoire	Ethiopia	Ghana	Niger	Rwanda	Uganda	SSA
Agriculture; forestry and fishing	40.1	66.6	29.7	72.5	62.3	72.1	53.2
Mining and quarrying	0.4	0.6	0.9	0.3	1.0	0.4	1.4
Manufacturing	9.4	5.2	16.3	5.5	1.8	3.9	6.0
Utilities	0.3	0.6	0.4	0.1	0.2	0.1	0.3
Construction	2.9	2.9	3.4	0.8	5.5	2.1	2.8
Wholesale and retail trade; repair of motor vehicles and motorcycles	23.0	7.0	20.2	8.4	13.5	8.9	14.7
Transport; storage and communication	5.7	1.4	3.3	2.1	2.9	2.2	3.1
Accommodation and food service activities	4.6	1.6	5.1	0.8	0.8	2.0	2.4
Financial and insurance activities	0.6	0.4	0.8	0.2	0.4	0.2	0.6
Real estate; business and administrative activities	2.6	1.3	2.5	0.6	2.3	0.7	2.1
Public administration and defense; compulsory social security	0.8	0.7	2.5	0.7	0.6	0.8	2.1
Education	3.3	2.3	6.5	3.5	1.3	2.9	3.4
Human health and social work activities	1.4	0.7	3.1	0.9	0.7	0.9	1.5
Other services	5.0	8.7	5.2	3.5	6.6	2.8	6.5

Source: ILOSTAT 2020

Youth Employment and Skills (YES) Multi-Country Study

# Strengthening Education and Learning Systems to Deliver a 4IR-Ready Workforce

## Synthesis Report

January 2022



 [www.acetforafrica.org](http://www.acetforafrica.org)

 [@fb.com/acetforafrica](https://fb.com/acetforafrica)

 [@acetforafrica](https://twitter.com/acetforafrica)