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Driving Digital and Green Skills: Cooperation with Private Sector in Africa

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for Economic Cooperation
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About this document

This report provides an overview of digital and green skills development offered across Africa. Using insights from private sector organisations in 25 countries, the report highlights the nature of digital and green skills provided, in addition to challenges and opportunities for scaling. The report provides strategic insights and recommendations for stakeholders looking to engage with private sector providers of digital and green skills in Africa.

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Executive Summary

This report provides an overview of digital and green skills development in Africa, with a particular focus on private sector provision across 25 countries.

The report begins with an introduction (*section 1*) and an explanation of the methodological approach that was used (*section 2*). It then provides an overview of the literature regarding digital skills in Africa and a summary of the digital operating context (*section 3*). The substantive findings of the review are presented through a stakeholder analysis which focuses on the key organisations involved in digital skills development, the opportunities and challenges in partnering with them, the main technologies that are being used, and the green skills being offered (*section 4*). The report concludes with a series of practical recommendations for consideration (*section 5*). The focus of the review is on potential opportunities for organisations to work effectively on digital skills in Africa.

There have been increasing efforts to understand the landscape of digital skills provision across Africa. However, this effort is hindered by a lack of robust data as demonstrated by the challenge of accessing specific country-level data for the sub-Saharan African region for many digital skills indicators. Much of the understanding of digital skills across the region has come from self-reported findings and proxy indicators. Despite the challenge, it is clear that basic and advanced digital skills are much lower across Africa when compared to other continents. In light of this, the report helps to build a better understanding of the digital skills landscape in two key areas. First, it harmonises self-reported findings with existing evidence and data points to detail a comprehensive overview of digital skills in 25 countries. Second, it maps the provision of green skills by digital skills organisations, which is crucial for facilitating effective digital and green transitions.

While a wide range of digital skills are being offered across the continent, private sector organisations are most commonly offering basic and foundational level digital skills training. Private sector organisations recognise that widespread foundational digital skills training is a key priority to better prepare the younger generations for current and future job markets, where digital competencies are becoming increasingly necessary. Across all countries surveyed for this study there is a wide presence of private sector digital skills providers. This demonstrates that the provision of digital skills is a well established remit within the private sector in Africa. Within this, there are particular clusters where private digital skills providers are more concentrated - in West Africa (notably Nigeria and Ghana) and East Africa (notably Kenya, Uganda and Rwanda).

In relation to scale, a large proportion of organisations that offer digital skills can be considered small enterprises with fewer than 25 employees. The large majority of these organisations expressed optimism that their provision of digital skills would expand in the coming years, both within the countries where they are currently working and expanding to new countries. Given the relatively well-established and settled operations of many private digital skills providers, there is a solid foundation for other stakeholders interested in digital skills to build long-term relationships with these organisations. Many digital skills providers are already well-connected to other stakeholders in the ecosystem, and leveraging these existing networks may be an appropriate entry point for organisations seeking

to build collaboration with digital skills providers. However, the competitive landscape of private digital skills provision and lack of funding means that organisations often struggle to secure reliable, multi-year funding opportunities, and are not always afforded the opportunity to build relationships with key stakeholders who can maximise their offering.

Just over half of the digital skills providers that the study engaged with also provide some kind of training in green skills. Most of these green skills are concentrated in the renewable energy, sustainable agriculture, and environmental education and advocacy sectors. In particular, organisations commonly offer education or capacity building for green skills in these areas to help local communities understand, address and build resilience to local environmental challenges. These organisations are motivated to offer green skills due to the perceived benefit in helping to tackle environmental issues where organisations are operating. In particular, many enterprises reported valuing environmental protection and recognise the need to support their local communities to build climate-resilient practices, identifying green skills provision as an appropriate way of achieving this objective. Green skills were also widely perceived to be both important to young people and essential for their participation in the future job market. Yet despite this focus on green actions, fewer organisations demonstrated clear processes or actions to reduce their own environmental impact. There appears to be a widespread belief amongst organisations that the use of digital systems, resources and platforms has a positive environmental impact compared to traditional tools, despite mixed current evidence.

The report concludes that there is significant, well established and diverse activity in the private sector provision of digital skills across Africa. Many organisations seem to have strong foundations from which to scale, and their operations are targeted towards addressing key digital skills gaps - particularly those targeting key employability skills deficits - that should give them the financial opportunities to scale. Although many digital skills providers are also working in green skills, this area is in its infancy and on the whole is a relatively minor but growing focus for organisations. Building on this, the report ends with a series of detailed recommendations for stakeholders interested in engaging with the private sector in the areas of digital and green skills development.

The first recommendation addresses what should be done to identify relevant digital skills organisations and focuses on: prioritising digital skills for marginalised groups, the delivery of early digital skills training for job readiness, the option of further exploring the landscape of digital skills providers in North Africa, and leveraging the growth potential of digital skills providers. The second recommendation addresses how linkages can be facilitated with the private sector and focuses on: leveraging existing collaborative networks as entry points, capitalising on the scarcity of funding, and considering working with governments to fund local enterprises. The third recommendation addresses how relevant EdTech can be scaled and focuses on: support for innovative climate-based digital solutions, technology for marginalised communities, partnership networks for digital green solutions, and engaging with wider networks and publications. The fourth recommendation addresses how to engage with green skills within digital skills and focuses on targeting climate resilience for high-risk livelihoods, and the alignment of green and digital skills for job market readiness.

Abbreviations and acronyms

AI	Artificial Intelligence
AU	African Union
AUC	African Union Commission
AU-EU	African Union and European Union Partnership
CMU	Carnegie Mellon University
D4D	Digital for Development
DE4A	Digital Economy for Africa
DRC	The Democratic Republic of Congo
DSM	Digital Single Market
EdTech	Educational Technology
EU	European Union
EYODS	Educating Youths on Digital Sustainability with Emphasis on the Girl Child
FEMGREEN	Females In Green And Digital Skills For Jobs And Enterprise Creation
GEM	Global Education Monitoring
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IFC	International Finance Corporation
iNGO	International Non-governmental Organisation
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PDAA	Partnership for Digital Access in Africa
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises

SMS	Short Messaging Service
STEM	Science, Technology, Engineering, and Mathematics
ToR	Terms of Reference
USAID	United States Agency for International Development

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Introduction

1.1 Context for the report

Digital skills represent an important prerequisite for employment, education and civic engagement across many African countries. Yet in many instances, there remains a significant gap between existing digital literacy and skills, and the required competencies to participate effectively in a rapidly digitising society, access essential services like healthcare and government resources, drive innovation and entrepreneurship and foster social inclusion across the continent.

For any organisation working in this context and seeking to facilitate effective digital skills development it is crucial to understand the key players involved across African countries and how to establish networks between them. Additionally, understanding how digital skills provision integrates green skills provision can position organisations at the forefront of driving the twin digital and green transitions, which are central to many of Africa's economic growth strategies.

This report supports this agenda by offering an overview of the digital skills provision within the private sector across 25 countries in Africa. It also, for the first time, highlights the integration of green skills alongside digital skills development.

1.2 Objectives of the report

This report is written in response to address the following key objectives:

- Provide information on contact persons, location, size as well as activities, technologies used, target groups and possible other relevant information of relevant private sector organisations
- Ensure that stakeholders included are of a decisive size and relevance so that cooperation with the project is possible and the technologies used are also applicable or scalable in a larger context.
- Identify opportunities for linkages between the project and the companies
- Provide an overview of organisations based in all 25 of the target countries, which are: Algeria, Benin, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Morocco, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia.

Based on these objectives, the study team developed four key research questions to shape the development of this report and ensure it addresses the listed objectives. The research questions that the report addresses through the analysis are:

1. Which private sector organisations working on digital skills development in the basic education sector in the 25 partner countries in Africa are of a decisive size and relevance to GenerationDigital! and similar projects?
2. What opportunities and challenges exist to facilitate linkages between the organisations and GenerationDigital! and similar projects?
3. What applicable and scalable technologies (both high and low tech) are being used in the EdTech sector in the 25 African partner countries?
4. What green skills development activities and trends offered by the private sector (more narrowly by EdTech SMEs, start ups, etc.) exist in the 25 partner countries?

1.3 Structure of the report

The report begins by providing the important definitions that are used throughout (*section 1.4*), and then gives an overview of the parameters and limitations of the study (*section 1.5*). This is followed by an outline of the methodological approach taken for the data collection exercises that provided the data that supports the analysis (chapter 2), and a summary of key publications in this area alongside the digital context in Africa (chapter 3).

The main section of the report, the stakeholder analysis, then follows (chapter 4). This begins with analysis theme 1 which provides an overview of the key organisations working in digital skills development, including a summary of the skills that they provide, the audiences they are targeted to, the geographical spread of these organisations and their potential to scale (*section 4.1*). Analysis theme 2 then details key challenges, opportunities, and considerations for organisations looking to engage in digital skills to be aware of (*section 4.2*). This is followed by analysis theme 3 which maps some of the most high potential and scalable forms of technology being used within digital and green skills provision (*section 4.3*). Analysis theme 4 provides an overview of the green skills being provided, including a summary of the skills, the sectors they are relevant to, the geographical spread of organisations providing green skills, their potential to scale, and the internal processes that underpin green skills development (*section 4.4*).

The report closes by providing recommendations in relation to future engagement in the area of digital skills across Africa (*chapter 5*). Following the main report is a series of annexes providing supplementary information linked to the study, including a list of contacts for relevant organisations.

1.4 Definitions

The nature of digital skills and green skills means that engaging with them is complex, varied and contested. Invariably, there are a wide range of categorisations and definitions that are used to describe the terms, with no particular universal standard. Through this report and associated research, the study team has sought to use programmatic definitions that are consistent and accessible to the variety of stakeholders engaged in producing this report.

In forming the definitions outlined below, the study team drew on established definitions provided by the World Bank (World Bank, 2021a; World Bank, 2021b), European Commission (Carretero Gomez et al., 2017) and the UK government (Simmonds and Lally, 2024). However, the decision was taken not to use any of these definitions in their entirety. Instead the study team drew on these pre-existing definitions in order to build new definitions that would be appropriately accessible to a wide range of stakeholders who were engaged in the data collection process. The definitions used in this research are provided below:

Digital skills: "the ability to use digital technologies (such as mobile phones and computers) to undertake specific tasks. It can include simple day-to-day tasks and transactions and use of the internet, use of technologies to engage in professional work, and use of technologies to undertake complex tasks like coding and programming and problem solving."

Green skills: "the knowledge, abilities, values, attitudes and practices that are needed in order to live in, develop and support societies which reduce the negative impact of human activity on the environment."

1.5 Parameters and limitations

It is important to highlight that there are a significant number of organisations working to categorise and map digital skills provision across Africa, particularly sub-Saharan Africa. The key publications of these organisations with respect to digital skills have been analysed and presented below, but the purpose of this report is to build on and add value to this existing body of work as opposed to replicate it.

While this report provides insights about the organisations engaged through the primary data collection and review of key publications, it cannot offer a fully comprehensive overview of all the 25 countries stated in the ToR. Therefore, exploring existing work published by other key organisations would be valuable for gaining additional detail and insights. Where this is the case, this report has highlighted those resources in order to try and provide as comprehensive a picture as possible with respect to the nature of digital skills provision across Africa.

Despite these inevitable limitations, the report provides a valuable high-level overview denoting the key trends, challenges, and opportunities with respect to the private provision of digital skills and green skills across these countries. In particular, it makes an important contribution as it represents the first green skills mapping amongst providers of digital skills across Africa.

2. Methodological approach

The methodological approach taken in this study is detailed by each of the data collection instruments below.

2.1 Review of publications

A review of publications was conducted, focused on seven important pre-existing contributions on digital skills and green skills development in Africa produced by significant organisations operating in the sector. These publications include policy papers, reports, and studies from multilateral institutions such as the African Union, the World Bank, the European Union and the OECD. The publications are presented as an annotated bibliography in the report Annex B. Each annotation summarises the publication's core themes and its relevance to projects such as GenerationDigital!. The intention is to provide insights into the perspectives of significant stakeholders regarding the most important strategies and challenges in implementing digital skills development across countries in Africa.

2.2 Key informant interviews with selected private enterprises

Thirteen key informant interviews with private sector providers of digital skills were held during the eLearning Africa conference in Kigali in May 2024. The interviews were semi-structured and followed the template outlined in Annex E. The interviews were designed to obtain detailed perspectives relating to the challenges and opportunities faced by private sector organisations with respect to delivering digital skills and connecting with other educational stakeholders. In addition, the interviews served as an entry point to discuss green skills provision and identify key providers of digital and green skills known to participants at the conference.

2.3 Online survey relating to private sector organisations

In August and September 2024 an online survey was administered pertaining to private sector organisations operating across the 25 focus countries outlined in the ToR. The survey was used to capture an overview of the digital skills and green skills being provided by private sector organisations. The survey instrument is outlined in full in Annex F. In total 280 organisations responded to the survey. English and French language versions of the survey were delivered, although participants were invited to complete the survey in any language of their choice.

2.4 Desk review of other relevant organisations

A desk review was conducted in August and September 2024 to identify between 5 and 10 organisations working in digital skills provision within each of the 25 countries, with an emphasis on highlighting organisations that provide green skills training, where possible. A full list of organisations included in the desk review is provided in Annex C. Additionally, the desk review includes not only private sector organisations but also a broader range of stakeholders engaged in digital and green skills provision, though the primary focus remained in the private sector. As a result of this distinct focus and purposive sampling approach, information from the desk review has been analysed separately from survey and interview responses throughout the key themes identified in Chapter 4.

3. Summary of the literature and digital context

Several reports from grey literature and academic sources have been produced on digital skills and green skills development in Africa. An annotated bibliography of seven significant publications is provided in Annex B. Collectively these reports provide a comprehensive overview of the current state of digital skills development in Africa, offering valuable insights into the key challenges, opportunities and potential entry points for the GeneralDigital! project. The reader is encouraged to explore the annotated bibliography in full, and what follows is a short summary of the key points.

The African Union's Digital Transformation Strategy for Africa (2020-2030) sets a framework for leveraging digital technologies to foster economic growth, job creation, and reduce poverty. It underscores foundational pillars such as policy reform, digital infrastructure, and capacity-building, alongside critical sectors like digital trade, education, and agriculture. The cross-cutting themes, including cybersecurity and emerging technologies, further support the ecosystem.

The Africa's Development Dynamics 2021 report by AUC and OECD highlights digital transformation as a means to create quality jobs, especially critical as economies recover from the COVID-19 pandemic. It advocates for spreading digital innovation beyond urban areas, preparing the workforce for the digital era, reducing barriers for small firms, and promoting continental collaboration. Similarly, the AU-EU Digital Economy Partnership outlines shared principles for a digital economy inclusive of marginalised groups, notably women and youth.

A key trend within the literature is the opportunity presented by digital transformation in the African continent and the sizable market (in the billions of

dollars) for digital skills provision needed to capitalise on this opportunity. The IFC's Digital Skills in Sub-Saharan Africa series and its follow-up study with the World Bank emphasise the immense need for digital skills, with 230 million jobs in Sub-Saharan Africa projected to require such skills by 2030, for example, in countries like Ghana, Côte d'Ivoire, Kenya, and Nigeria. The private sector is seen as a key player in unlocking a USD 130 billion opportunity for digital skills training in the region.

The World Bank's Digital Skills: The Why, What, and How part 1 and part 2 delves deeper into strategies for cultivating these skills, while the Boston Consulting Group's USAID report stresses that digital skills combined with climate analytics could transform development across Africa, helping the continent address both technological and environmental challenges.

3.1 Digital context in Africa

This sub-section of the report provides a brief overview of the potential ways in which technologies, ranging from high to low tech options, could be used to facilitate digital skills training across Africa. A summary of the broader technological infrastructure, a key component in determining the viability of these digital tools, is also outlined.

3.1.1 Overview of digital infrastructure

Before outlining the viability and functionality of different digital tools, it is first necessary to explore the nature of existing infrastructure that supports the use of digital technologies across Africa, to provide an examination of the constraints that any scalable implementation of digital tools will inevitably encounter. This is a complex and detailed topic and the content here only provides a broad overview as a starting point for further exploration.

Overall, a lack of access to quality digital infrastructure across the continent exacerbates issues of low digital literacy. There is uneven access to technology, limited access to devices and connectivity, and high costs for installing, monitoring and owning infrastructure and devices (Global Education Monitoring Report, 2023).

In 2022, just over half (51.4%) of the population in sub-Saharan Africa had access to electricity (World Bank, 2022). Urban areas are much better connected compared to rural areas, with 81% of the urban population having access to electricity in 2022 compared to 30.7% of the rural population (ibid.). For many, particularly those in rural areas, this means that low-tech options are often the only viable solution for consistent and reliable use, whereas there is generally much stronger infrastructure in urban areas to support high tech options.

Increasing access to electricity to more areas is also a significant challenge, with an estimated cost of providing universal access to electricity by 2030 of USD 413 billion (Global Education Monitoring Report, 2023). In the context of education in sub-Saharan Africa, only 32% of primary schools in the region have access to electricity, and their access rates have stagnated over recent years despite the upward trend of individual access to electricity (Global Education Monitoring Report, 2023). The challenge of technology infrastructure has implications for delivering digital skills initiatives (or other initiatives that use technology) within schools.

Alongside this, general access to the internet across Africa is limited. It is estimated that 37% of Africans used the internet in 2023, which is significantly below the world average of 67% (ITU, 2023). However usage increases with younger generations, with 53% of 15-24 year olds in Africa accessing the internet in 2023 (ibid.). But even amongst younger generations, access to the internet significantly lags behind other regions of the world. Even for users of the internet,

connectivity can be disproportionately challenging, as sub-Saharan Africa is the global region with the lowest fixed broadband download speeds (Broadband Commission, 2022a). This means that the challenge is not just about access, but the lack of high-speed connectivity which can limit the extent to which online or internet-using technologies can facilitate learning such as digital skills training.

As with electricity, there is also a significant disparity in access to connectivity between rural and urban populations. 57% of the urban population in Africa used the internet in 2023 compared to just 23% of the rural population (ITU, 2023), further highlighting the challenge of reaching rural areas with digital solutions. In addition, fewer females (32%) use the internet than men (42%) (ibid.), highlighting that there are large equity issues in accessing the kind of opportunities that require reliable internet connectivity.

The picture of mobile broadband further emphasises the relative lack of access in Africa to high-speed connections. While Africa has 93% total coverage of mobile broadband (of which most is 4G (58%), followed by 3G (19%), 2G (10%) and 5G (6%) (ITU, 2023), it remains the continent with the lowest 5G coverage. As with the other key variables, rural areas are much more restricted in their access to infrastructure. 93% of urban areas have 4G or 5G coverage, compared to just 43% in rural areas (ibid.).

There is optimism that the provision of quality broadband can be reasonably expected to expand significantly in the coming years. But widespread 5G adoption is likely to remain a significant challenge in sub-Saharan Africa – particularly as inflation, currency volatility, and high taxation and energy costs are seen as limiting the ability of the telecoms industry to expand its high-speed provisions (ibid.). Furthermore, the adoption of more 4G and 5G connections across the region will not be universal, and vary significantly depending on the country context. It is anticipated that more than half of the 5G connections will belong to just three countries (South Africa, Nigeria and Kenya) (ibid.) demonstrating that in most countries the lack of high-speed connectivity will remain a significant challenge.

Further exacerbating the issue is that even when high-speed connectivity is theoretically available, this does not mean that it is affordable for everyone. Africa is the continent with the most expensive broadband connections, represented as a % of gross national income per capita - estimated at 4.5% in 2023 which is well below the Broadband Commission's affordability target of 2% (ITU, 2023). Therefore, not only is Africa the continent with the lowest access to high-speed internet, it is also the continent where the user costs of connectivity are highest in relation to income. This exacerbates the challenge of accessing online content through digital tools. However, despite the challenges with mobile broadband, it is important to highlight that sub-Saharan Africa has higher mobile broadband speeds than fixed broadband speeds (Broadband Commission, 2022a). This means that for the majority of people mobile broadband will represent the best opportunity for engaging with the internet and online resources.

3.1.2 Overview of common digital tools

In light of the challenges outlined above, the section below provides an overview of tools, and the potential ways in which they can be used for delivery of digital skills development at scale.

Handheld devices

Handheld devices, in particular mobile phones and tablets, represent the most viable entry point for delivering digital skills training through the use of technology. The use of mobile phones has expanded rapidly across Africa in recent years. As of 2023, 63% of Africans own a mobile phone (ITU, 2023), which translates as 527 million unique

mobile subscribers (GSMA, 2024). This growth is expected to continue to reach 751 million unique mobile subscribers by the end of the decade (ibid.)

These statistics encompass all mobile phone types, ranging from basic phones that lack internet connectivity to smartphones that support a much wider range of functions. It is important to differentiate between different types of mobile phones as they each have different capabilities for facilitating access to different forms of digital skills development.

Smartphones have an enhanced range of capabilities – such as internet browsing or supporting access and use of a wide range of applications – which enables the delivery of a wider and more advanced range of activities and tools to facilitate digital skills development. This means that smartphones are much more likely to support the provision of more advanced forms of digital skills compared to basic phones that primarily support calls and SMS which are much more limited in their scope to provide digital skills development to users.

Therefore, mobile phones represent a significant opportunity to reach users with both online and offline materials. As mentioned previously, mobile broadband represents the most accessible form of connectivity across the continent. Therefore, delivering any kind of online component within digital skills development (such as training sessions or online content) is best facilitated through mobile technologies that support internet access. However, this is within the context of the points above about the infrastructural constraints that limit mobile users access to good quality connectivity or electricity to charge devices.

Mobile technologies also represent a low-cost and user-friendly tool through which to deliver training (such as through downloading and using applications, file sharing and storage, or SMS messaging) that do not require a live internet connection. Mobile-based forms of delivery may also represent the most appropriate tool in even contexts of low or poor quality supporting digital infrastructure, due to the lack of reliance on fixed broadband or electricity supply to use mobile devices.

However, access to mobile phones is also highly unequal across the continent. In some countries (such as Chad, Central African Republic and Mozambique) less than 15% of the population is expected to have a mobile subscription in 2030, in contrast to others (such as South Africa) where this is well above 50% (GSMA, 2024). When considering the opportunities for digital skills training offered by phones it is important to consider these inequalities.

While tablets are being increasingly implemented into educational programming, their use at a personal level remains very limited across Africa when compared to mobile phones. In particular, the cost of tablets (estimated at US$260 per device) remains prohibitively expensive to a significant portion of the population (Statista, 2024). In 2024, there were only 0.02 devices per person on the market in 2024 (ibid.). As a result, while the functional possibilities with tablets are higher than mobile devices (particularly through longer battery life and higher processing specifications) it is unlikely that they will be in widespread personal use across Africa in the near future.

Desktop and laptop computers

Computers are a particularly important tool in the context of digital skills development. Skills such as coding, web development and graphic design are usually taught through computer-based tools and software. Given that these elements are a large part of the digital skills delivered by private sector organisations across Africa, there are lots of ways through which computers are being currently utilised to form the basis of digital skills development particularly for employability.

However, a key challenge is that this form of technology is less accessible to users at a household level. In sub-Saharan Africa only 11–12% of households have a computer at home (Broadband Commission, 2022a; Global Education Monitoring Report, 2023), with only 13% of those living in the region using a computer at all in 2020 (Broadband Commission, 2022a). Therefore, it is likely that across countries in Africa computer use at home will generally be restricted, but access will vary significantly on a country-by-country basis.

In the context of digital skills development in Africa, the lack of access to computers (and other non-mobile technologies more broadly) at a household level has seen the rise of innovation hubs or technology centres, that are shared public spaces where individuals can access digital resources and technical support. These hubs and centres provide noteworthy examples of how technologies such as computers that are hard to access can still be used for specific digital skills training purposes when targeted effectively.

Other advanced digital tools

This report also engages with the role of advanced digital technologies in facilitating intermediate and advanced level digital skills and green skills development. These are the kinds of technologies that are not owned at a household level, but belong to tertiary and vocational training institutions (such as in robotics laboratories), or companies that offer specific training to employees.

While these tools are essential in providing advanced and technically specific digital skills training, they are much less accessible than more basic tools. They tend to be expensive to procure, and require reliable supporting infrastructure (such as consistent electricity supply, reliable internet access, and secure physical environments). As a result, they tend to only be an option for larger organisations and institutions, particularly those in wealthier urban areas where digital infrastructure is more reliably maintained.

4. Stakeholder analysis

The main section of this report focuses on a stakeholder analysis of organisations captured within the data collection instruments described above. The four main themes correspond to the four questions outlined within the objectives section:

1. Which private sector organisations working on digital skills development in the basic education sector in the 25 partner countries in Africa are of a decisive size and relevance to projects such as GenerationDigital!? (*section 4.1*)
2. What opportunities and challenges exist to facilitate linkages between the organisations and projects such as GenerationDigital!? (*section 4.2*)
3. What applicable and scalable technologies (both high and low tech) are being used in the EdTech sector in the 25 African partner countries? (*section 4.3*)
4. What green skills development activities and trends offered by the private sector (more narrowly by EdTech SMEs, start ups, etc.) exist in the 25 partner countries? (*section 4.4*)

4.1 Key organisations involved in digital skills development to be aware of

A contact list (*Annex A*) of the most promising organisations engaged in digital and green skills provision across the 25 countries has been provided. In addition, attached as Annexes to this report (*Annex C* and *Annex D*) are all of the organisations included in the desk review as well as those identified by respondents as leading edge

providers of digital skills. Together, these offer a comprehensive overview of key organisations involved in digital skills development and green skills development to be aware of.

Table 1 on the following page outlines a 'top 10' list of promising organisations from across the continent working in the provision of digital skills. These are not the only organisations included in the Annexes worth highlighting, but serve as an illustrative example of the kind of organisations where it may be most impactful for external partner organisations to engage with them. In particular, organisations with an explicit focus on marginalised groups have been highlighted, as this focus was less prevalent across organisations. Engaging with organisations with this focus is essential to try to ensure that there is equitable access to the growing provision of digital skills development.

The remainder of this analysis theme provides an overview of the focus, scale, and location of these organisations with respect to their provision of digital skills. It does this by addressing a series of questions in turn:

What digital skills are provided by these organisations?

Who are the digital skills provisions targeted towards?

Where are these organisations located?

What is the potential scale of these organisations?

Organisation name	Location	Target user(s)	Summary of work and digital skills provision	Further information
Action for Development of Grassroots Communities (ADEGCO)	Uganda, Bukedea District	They work with local communities but especially marginalised groups such as; women (disabled, widows and HIV/AIDs victims) and (in and out of school youth.	ADEGCO is a community-based organisation established in 2015 that works in three primary domains: education and skills training, agriculture and climate justice. They aim to equip marginalised groups with the practical skills and knowledge they need to secure a sustainable income and maintain their livelihoods. This includes training in digital skills through an ICT centre, where they host activities to provide basic computer literacy skills to primarily young people, but also adults in the community. They also deliver basic digital skills training for teachers in partnership with local education departments, reaching up to 25 schools.	Link to website
Asikana Network	Zambia, Lusaka	Focuses on reaching young women and girls.	Asikana Network is a social enterprise established in 2013 that aims to enhance the participation of women in the ICT industry through free skills training and linking them to relevant employment opportunities. They have reached over 6000 people, including: reaching 5000 students with computer skills training in schools, providing one to one mentoring to 50 women, and providing over 100 free training sessions in web development, basic computer literacy, games development training, video production and editing.	Link to social media page

Digital Peers	Nigeria, Abuja	Focuses on reaching women and other marginalised groups.	Digital Peers is a nonprofit organisation established in 1999 that works to build basic digital and soft skills with marginalised groups, to promote digital skills amongst young and marginalised groups as a vehicle for their self development and for obtaining better livelihoods. They provide training and capacity building in digital skills related industries, such as graphical design, web design, digital marketing and photography to help turn these into livelihoods, as well as providing the competencies needed to independently manage these professions and solve technical challenges. As well as training, they run multiple programmes aimed at enhancing digital skills and the use of digital, such as the Teachers' Summit which provides practical ideas for how teachers could better leverage ICT as a tool in the learning process.	Link to website
Future for Future	Benin	Focuses on young people, women and people with disabilities.	Future for Future is a non-governmental organisation that champions sustainable development solutions to environmental damage and climate change that are experienced by local communities. They aim to provide skills development, education and research for practical solutions to climate challenges in order to reduce the vulnerability that those most at risk (including children, young people, women and people with disabilities) have. As part of this broader mission, basic digital skills training or the training of the use of digital tools is sometimes incorporated into their training on practical solutions to environmental challenges.	Link to website
Ghana Code Club	Ghana	Targets students aged 5-17 including some specific programmes	Ghana Code Club is an after-school programme established in 2015 that teaches students aged 5-17 computer programming skills. Children can join programmes which are run in schools, libraries and community	Link to website

		aimed at girls and children with disabilities.	centres. The programming course teaches children skills in learning to create computer games, animations, web development and app development. They also provide additional programmes tailored at target communities, such as the I Read I Code weekend school for 5-12 year olds aimed to improve their computational thinking and programming concepts. Additionally, they also provide teacher training to equip teachers with the necessary skills for the upcoming requirement to teach programming from kindergarten, which is part of the new basic school curriculum in Ghana.	
GoGreen Technologies	Cameroon, Buea	Work with people of all ages, although specific programmes tend to target particular groups (such as "Educating Youths on Digital Sustainability with Emphasis on the Girl Child (EYODS)" working with girls).	GoGreen Technologies is an NGO that is focused on sustainability. This encompasses multiple initiatives and strands of work, which encompasses eco-friendly agriculture, youth training in digital skills, entrepreneurship and leadership training. In the realm of digital skills, they have trained over 700 young people with digital skills (with a particular focus on girls) to enhance their job opportunities. There is a 70% job placement success rate for students engaged in their digital skills training. Alongside this, other programmes focus on using digital tools to foster sustainable development solutions that are tailored to the needs of local communities.	Link to website
Learning Lions	Kenya, Turkana county	Work with marginalised rural young adults	Learning Lions is a non-profit organisation established in 2015 that aims to enable young adults from marginalised communities in Kenya to become digital creatives, through providing opportunities to learn, earn and innovate. This takes the form of training courses (learning lions) ranging from 6 weeks to 1 year, and covering competencies in digital literacy and specialised track training (such as creative or autodidactic	Link to website

			training) as well as relevant soft professional development skills. They also provide support for accessing international markets (digital lions) and a campus (startup lions) to connect digital developers seeking to begin startups.	
Safer Rwanda	Rwanda	Work with women and economically marginalised groups	SaferRwanda is a non-governmental organisation founded in 2000 that delivers programmes and actions aimed at positively impacting the lives of women and girls, particularly through addressing poverty and alleviating some of the impacts of climate change. They aim to improve the livelihoods of women and girls, accompanying this with key environmental values related to reducing the environmental impact of practice as improving sustainability. Some of their programmes include a digital skills element, providing relevant foundational skills related to the use of digital solutions.	Link to website
SheCodes	Tanzania	Targets 'busy' women	The SheCodes Foundation, part of the SheCodes organisation, is providing free training 1,000 for Tanzanian women to code. More generally, SheCodes provides training packages (ranging from 1 week to 1 year) aimed at delivering self-paced coding workshops for women, particularly those with other existing commitments. All of the training offered are targeted towards absolute beginners, and delivers skills in python for those seeking to learn python, become a professional in tech, or become a professional developer.	Link to website

SheIsTheCode	Côte d'Ivoire, Abidjan	Targets women seeking employment	She Is The Code, established in 2016 aims to train young professional women to develop both their digital and entrepreneurial skills, in order to have more impact as agents of digital transformation within their profession. They have reached more than 2,300 graduates since 2016, with their training programme providing basic digital literacy as well as more advanced skills such as coding and digital management. They also provide soft skills, such as developing entrepreneurial approaches that pertain to the use of digital tools.	Link to website

Table 1: 10 recommended organisations to be aware of providing digital skills development.

4.1.1 What digital skills are provided by these organisations?

Highlight findings:

1. Private organisations most commonly offer basic level digital skills training, suggesting it is the area where the private sector currently feels they can address most appropriately.

2. Fewer organisations offer training in online safety related competencies compared to other competencies.

3. A key priority for digital skills providers is to prepare young people with the digital skills

4. needed in the current job market.

Data from the online survey categorised the competency areas and skill level (ranging from basic to advanced) of each organisation's digital skills provision. The DigComp2.1 framework developed by the European Commission defines five domains and 21 competency areas for digital skills. This was used as the basis for defining digital skills throughout data collection instruments. The digital skills offering of organisations within this framework is shown in *Figure 1*, with associated levels of response from the organisations that took part in the online survey.

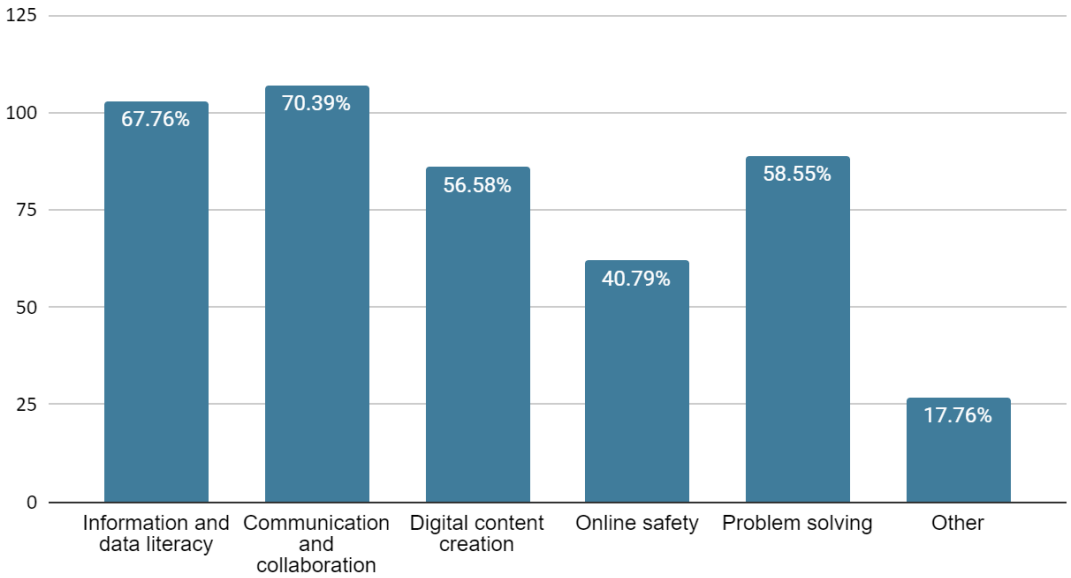

Figure 1: An overview of the number and percentage of surveyed organisations operating within each of the digital skill competency areas as defined by the DigComp 2.1 framework.

Among private sector organisations that responded to the survey, the most commonly offered digital skills were within the domain of communication and collaboration, which includes interacting, sharing and collaborating through digital technologies, which was provided by 70.4% of respondents. This was closely followed by 67.8% of organisations providing digital skills development within the domain of information and data literacy, which

includes browsing, searching, filtering, evaluating or managing digital data, information and content. These two domains comprised the dominant digital skills offering of private sector organisations.

More than half (58.6%) of organisations offered digital skills training related to problem solving (such as resolving technical issues, identifying digital competence gaps, computational thinking) and digital content creation (including developing digital content, programming and licence management) (56.6%). The skills offered by fewest organisations were related to online safety (such as protecting devices and personal data), which was only offered by 40.8% of organisations. Of the 17.8% of organisations that included a form of other digital skills provision, the most commonly cited responses were that they worked within software development, digital sales or marketing, e-learning, STEM-related education, and research or policy with a digital focus. Nonetheless, the results demonstrate that a comprehensive range of digital skills provision is embedded across the 25 countries.

An overview of the competency level and quality of skills provided is shown in *Figure 2*.

Organisations most commonly offered basic-level digital skills provision. In particular, organisations provided courses or training in foundational digital literacy (58.6%), using digital devices (54.6%) and using the internet (55.3%). Interestingly, out of the basic competencies fewest organisations reported offering basic digital skills provisions in online safety (42.8%) which reinforces that this constitutes a smaller offering of digital skills provision compared to other competencies pitched at a similar level. The widespread provision of basic skills indicates low levels of digital literacy and limited access to advanced digital tools or infrastructure in these countries. For instance, the Global Education Monitoring (GEM) Report (2023) noted that in 2021 sub-Saharan Africa remained the only global region where basic phone connections outnumbered 3G, 4G or 5G smartphone connections. Furthermore, a report looking at 5 out of 25 of the focus countries recognised that up to 70% of the demand for digital skills in the coming years is anticipated to be for foundational skills (World Bank, 2021). Many companies are therefore positioning themselves to address this demand, and view the provision of basic skills as either an opportunity to reach a broader client base or as a significant competence gap they can address.

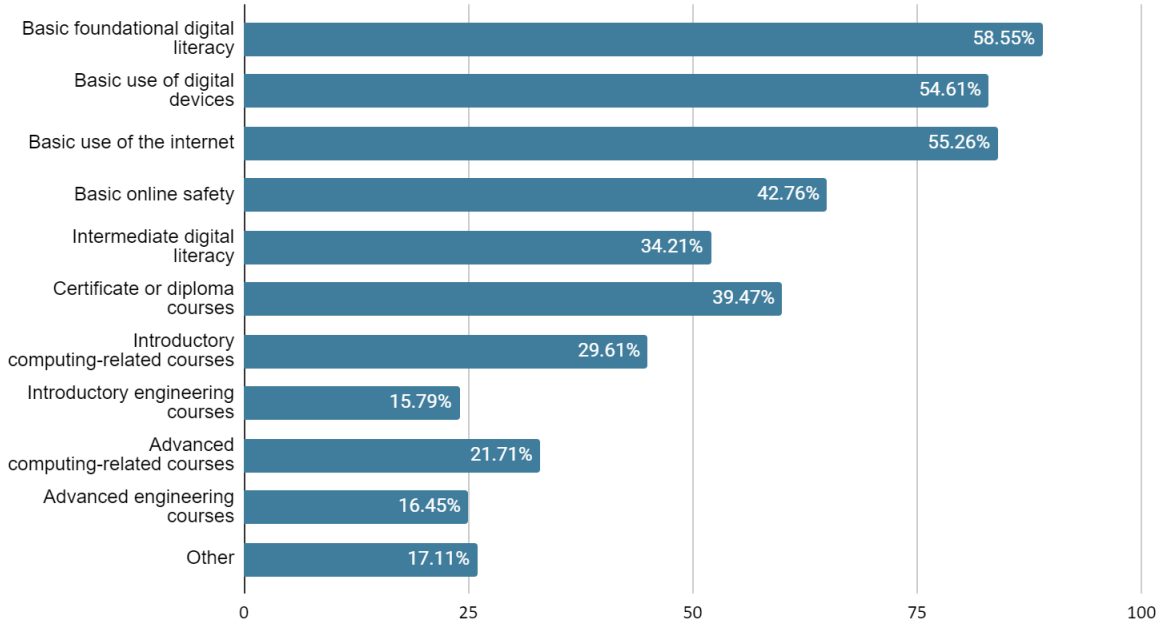

Figure 2: The quality of digital skills offered by organisations.

Following basic level courses or training, private sector organisations across the 25 countries most frequently offered digital skills focused on upskilling young adults with more specialised technical expertise. Among surveyed organisations, 39.5% provide training through certified courses in relevant areas of digital technology, while 34.2% offer digital literacy courses within TVET or higher education. Furthermore, some private organisations, particularly training institutions, also provided courses or training in electrical engineering, computer science, data science and related fields at both an introductory level (29.6%) and an advanced level (21.7%). For engineering courses (mechanical, civil etc.) that included a digital component, slightly more organisations reported offering advanced courses (16.5%) than introductory ones (15.8%), possibly reflecting the perception that engineering is more technical and less suited to an introductory course format.

Overall, this demonstrates that there is a wide range of private organisations offering digital skills training within specific technical courses in order to facilitate their transition into relevant job-markets. The breadth of organisations suggests that formal education is failing to adequately prepare young people for these job markets.

For the 17.1% of private organisations offering another form of digital skills provision, this most commonly revolved around using digitalisation as a way to improve the delivery of formal education, such as through online learning or digitalisation of pedagogical approaches or curricula. A small number of these organisations also provided training in navigating specific digital tools, platforms, or software that they were providers of.

4.1.2 Who are digital skills provisions targeted towards?

Highlight findings:

1. The large focus of delivering digital skills training towards young adults demonstrates the private sector has identified an important need to provide young people with the digital skills needed for the job market.

2. Out-of-school students are much less of a focus than in-school students, suggesting that the most marginalised have less access to the digital skills provided by the private sector.

3. While organisations do not commonly have a specific focus on reaching marginalised groups, there are several organisations that support the provision of marginalised skills to women, refugees, and low-income groups who normally face greater issues in accessing digital skills.

The online survey, interviews and desk review helped to map the target audience for digital skills providers. Respondents of the survey were asked which group was the primary focus of their organisation, while the desk review captured all of the different user groups immediately visible from organisations' online presence. *Figure 3* provides an overview of the primary focus users for digital skills provisions. Given the focus of many organisations in providing digital skills in technical fields, it is unsurprising that just over a third (33.6%) of organisations specified that the particular primary audience where their digital skills provision was targeted was either tertiary-level students (17.8%), vocational training students (8.6%) or into-employment professionals (7.2%). In addition, another 23% of organisations suggested they worked across all user groups, and another 13.1% worked with professionals already in-employment, which further highlights the number of organisations working in some way to provide digital upskilling in order to support employability.

Furthermore, of the 10.5% of organisations that responded as 'other', over half of these (56.3%) indicated that they worked with multiple of these audiences without having one as a specific focus. This mostly included a combination of working across school-age students, vocational training students and professionals, or specifically working with a range of audiences aged 18+. The remaining 43.7% of organisations responding as 'other' indicated that their primary user was with a range of other businesses or specific professions.

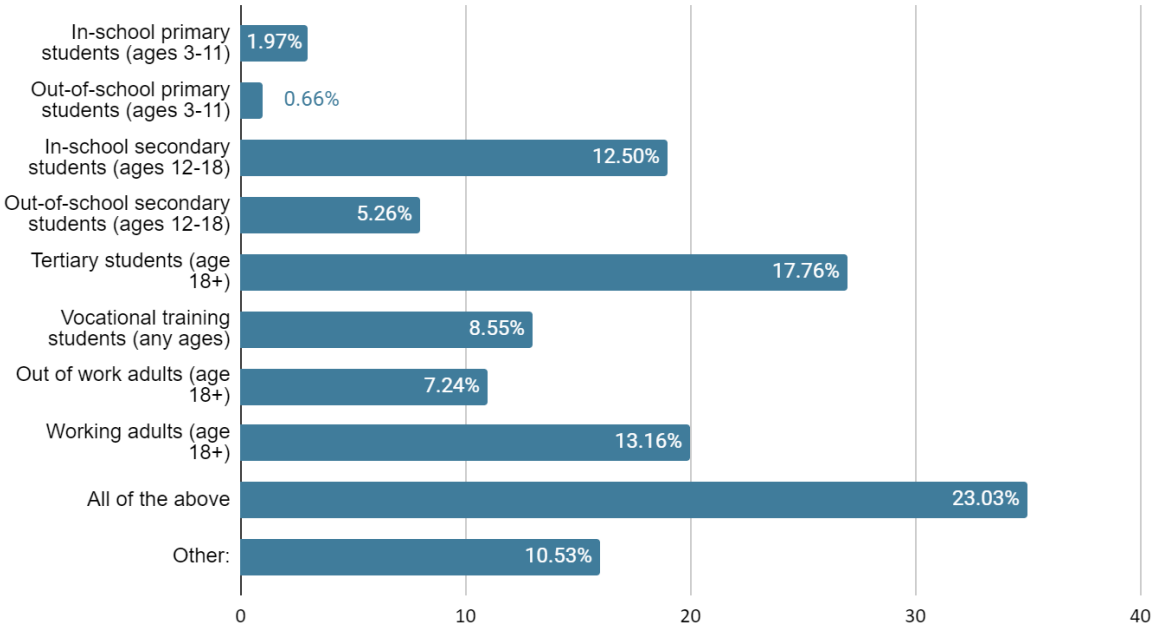

Figure 3: The primary users that are targeted by digital skills providers.

The widespread focus on job-specific digital skills provision among organisations highlights its importance. This likely stems from a recognised digital skills gap in many contexts, where the private sector has identified a pressing need to upskill young people, making their skillset more relevant to the job market they aim to enter, and providing access to digital skills they might not otherwise acquire.

This view was echoed in interviews at eLearning Africa, where many organisations providing digital skills training, particularly for young secondary school graduates and adults, emphasised the pressing need to upskill and provide "21st century skills." Many young professionals, they noted, lack these core competencies required for the modern workplace. For example, one vocational training centre in Nigeria highlighted that they view their role as addressing a significant skills gap, where there is a disconnect between the skills that students acquire through formal education and those required for job opportunities. The fact this organisation measures the success of its graduates by employment rates demonstrates its focus on employability, ensuring young people acquire the necessary skills – digital or otherwise – to align more closely with job market demands.

Literature further supported organisational recognition of a digital skills gap in relation to employment. It is estimated that 230 million jobs in sub-Saharan Africa will require digital skills by 2030 (IFC, 2018). However, employees are currently underskilled. 60% of African businesses reported a shortage of digital skills in 2020, and 70-80% of young people in sub-Saharan Africa lack basic digital skills that are needed to participate successfully in any digital economy (IFC, 2018). As a result, there is a significant opportunity for retraining for employability, with it being estimated that 650 million people will require digital skills training for this purpose by 2030 (IFC, 2018). Therefore, it is clear that the private sector has identified this gap and are widely prioritising operations to address this growing demand for digital skills in employment.

With regard to digital skills provision for in-school students, providers were much more focused on secondary level students (12.5%) than primary level students (2%). Additionally, there was significantly less emphasis on reaching out-of-school children at both primary and secondary levels. This suggests that the private sector may play a smaller role in providing basic digital skills to more marginalised or younger children, who often have lower baseline digital competencies. If the gap between in-school and out-of-school digital skills provision is not addressed, it could further marginalise out-of-school students, particularly as they attempt to enter the job market.

The desk review also recorded the target audiences for digital skills provision. However, since it was more challenging to identify the primary audience for each organisation in the desk review, all user groups that each organisation visibly focused on were categorised. Due to this change in method, the analysis is presented separately from the survey results, though some interesting points of comparison emerged. An overview of the findings is shown in *Figure 4.*

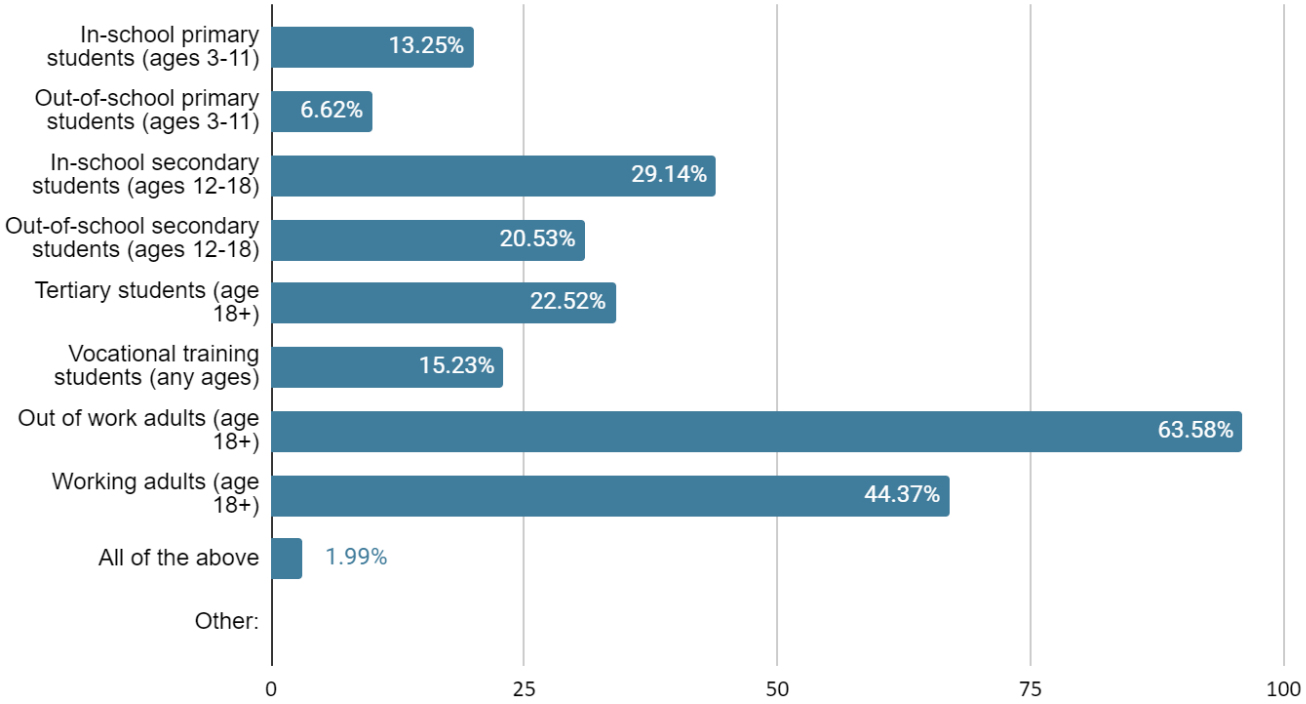

Figure 4: All of the users who were visibly targeted by digital skills providers within the desk review.

The desk review of key organisations revealed that most digital skills providers primarily focussed on young adults and entry into the job market. Notably, 63.6% of organisations worked with job seekers, while 44.4% supported individuals already employed or in business. This reinforces the idea that digital skills provision is largely centred on upskilling young professionals to meet job market demands, with tertiary and vocational training playing a key role in this process. A similar trend was observed for school-age audiences, where secondary school students were more frequently targeted than primary school students, and organisations worked more closely with in-school students than with those out-of-school.

Focus on marginalised groups

During the desk review, it was noted whether organisations had a clear focus on reaching specific marginalised groups. Out of the 151 organisations reviewed, 41 organisations highlighted this as a priority in their visible portfolio. The most common focus (61%) was on reaching rural or underserved communities with digital and green skills provision (see case study 1). Two organisations specifically targeted indigenous groups. For instance Environmental Defenders, an environmental conservation and human rights organisation, operates in the Albertine Rift region across the DRC and Uganda, supporting indigenous groups to build resilience to climate change, protect land rights and preserve cultural practices.

Case study 1: Shaqodoon, Somalia.

Shaqodoon implements a range of programmes aimed at addressing the needs of local, marginalised communities. These initiatives primarily focus on developing entrepreneurship, employability skills and market linkages, offering training in mobile-based innovations and solutions. For example, in response to the banning of radio across Northern Somalia (Somaliland), Shaqodoon launched a Mobile-Based Aggregation service that enables discreet communication and information sharing via SMS, providing users with access to uncensored and reliable information. Additionally, Shaqodoon's centres address critical issues such as gender-based violence and female genital mutilation.

Slightly fewer of the 41 organisations (46.3%) had a visible focus on supporting women and girls, often addressing the gendered digital skills gap by providing basic digital skills training. For example, GoGreen Technologies in Cameroon launched the "Educating Youths on Digital Sustainability with Emphasis on the Girl Child (EYODS)" project, which has equipped over 500 young girls in Buea-Cameroon with essential digital skills to enhance their employability. However, not all initiatives focus on basic digital skills – DigiFemmes in Côte d'Ivoire offers up to two years of training in digital and entrepreneurial skills, empowering women to start tech-based businesses.

Beyond these two groups, there was limited focus on other marginalisation. Only two of the 41 organisations specifically mentioned targeting users with disabilities, and just one aimed to support refugees (see case study 2). Additionally, only one organisation explicitly focused on reaching out-of-school children, consistent with findings from other data collection tools, which show that out-of-school youth are not a common primary target for most digital skills providers across Africa.

Case study 2: FEMGREEN, Ghana

The "Females In Green And Digital Skills For Jobs And Enterprise Creation (FEMGREEN)" project, led by SocialEnterprise Ghana, aims to establish a training centre to equip 200 women, including refugees and women with disabilities, with improved agricultural and digital skills. In addition to training, the project will provide financial and administrative support, with the goal of fostering business and social enterprise creation within marginalised communities. It will also facilitate cross-border knowledge and learning exchanges with social enterprise networks in Nigeria, Kenya and Ethiopia.

4.1.3 Where are these organisations located?

Highlight findings:

1. There is a wide presence of digital skills providers across all 25 focus countries.

2. There are particular clusters of organisations providing digital skills in West Africa (notably Nigeria and Ghana) and East Africa (notably Kenya, Uganda and Rwanda).

3. North Africa was less represented, suggesting either a lower presence of well-connected digital skills providers or this report was less able to reach relevant organisations in this region.

Figure 5 shows a map of the geographical distribution of organisations that responded to the survey and have established business operations. The exact number of responding organisations per country is outlined in *Table 2*. Both *Figure 5* and *Table 2* illustrate a wide presence of digital skills providers across all 25 countries, with only Algeria having fewer than 10 organisations offering digital skills provision. Figure 5 also highlights clusters where large numbers of organisations are concentrated, particularly, hubs in West Africa (notably in Nigeria and Ghana) and East Africa (notably Kenya, Uganda and Rwanda) where there are a large number of organisations offering digital skills provision. Additionally, there is a significant number of providers across Southern and Central Africa. While North Africa is still represented, it has the fewest responding organisations. This could suggest a lower presence of well-connected digital skills providers in the region, or it may reflect limitations in the report's reach, possibly due to the lack of Arabic communication and data collection instruments.

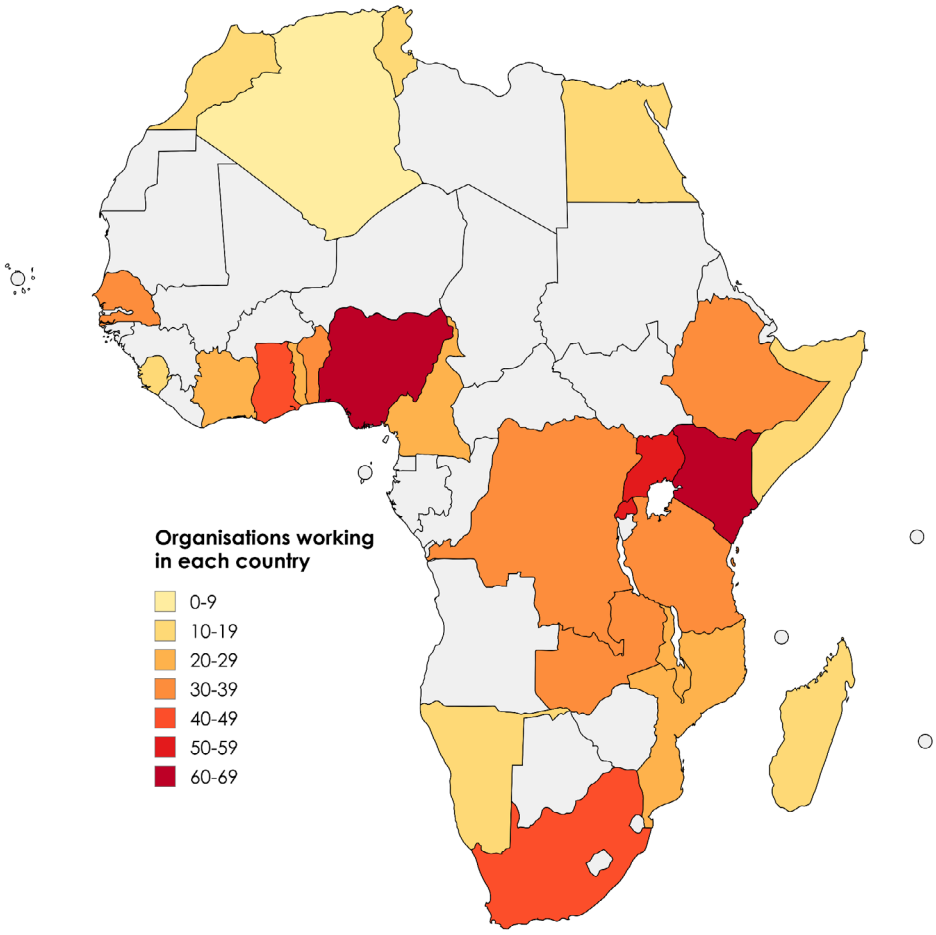

Figure 5: The geographical spread and concentration of digital skills providers across the 25 focus countries.

Country	Responding organisations working there
Algeria	9
Benin	31
Cameroon	22
Côte d'Ivoire	27
Democratic Republic of Congo	30
Egypt	14
Ethiopia	38

Ghana	41
Kenya	69
Madagascar	16
Malawi	29
Morocco	17
Mozambique	21
Namibia	18
Nigeria	65
Rwanda	54
Senegal	37
Sierra Leone	19
Somalia	11
South Africa	47
Tanzania	39
Togo	20
Tunisia	12
Uganda	59
Zambia	37

Table 2: A list of the number of digital skills providers who responded to the survey in each of the 25 focus countries.

4.1.4 What is the potential scale of these organisations?

Highlight findings:

1. Most organisations providing digital skills are small enterprises with 25 or fewer employees meaning there is significant potential for growth.

2. Almost 9/10 organisations felt positive that their provision of digital skills would expand over the next three years, both within the countries where they are working and to new countries.

3. This optimism seems well-founded, given a large number of these organisations have relatively established and successful operations.

With respect to the current size of these organisations, most of the private sector organisations were small enterprises (see *Figure 6* below). 40.8% of organisations indicated that they employed fewer than 10 employees, showcasing the small size of these organisations. As organisational size increased, the frequency of organisations decreased, suggesting that most private sector organisations engaged in digital skills are either small or medium enterprises. Only 10.5% of respondents said that their organisation employed more than 100 people. The small size of most organisations suggests that there is significant potential for growth amongst most organisations, if their model and offering can be sustained and scaled appropriately.

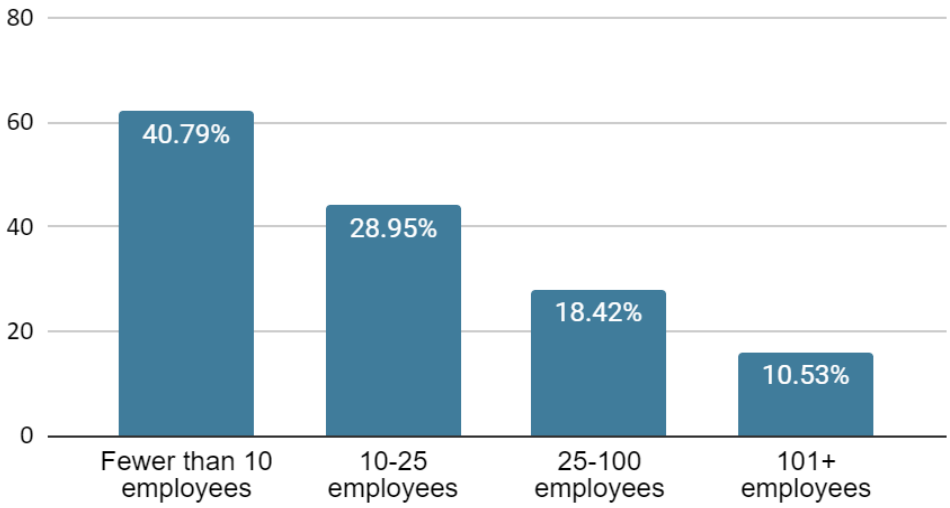

Figure 6: The size of responding organisations by number of full time paid employees.

Furthermore, most organisations seem to be well established in at least one of their countries of operation (see more detail in analysis theme 2). With 96.8% of organisations having been in operation for over two years, this indicates a solid presence in their respective regions and suggests a strong potential for scaling, as these organisations have already built a stable and established portfolio of work.

This potential for scaling was further reflected in the optimism among private sector respondents, with the vast majority (88.8%) believing their organisation would grow in the next three years. Of these, (40.8%) expected to expand within their current countries of operation, while (44%) anticipated expanding into new countries as well . However, this optimism was not universal: a small percentage (9.2%) of organisations felt that their operations would remain the same size, and a small minority (2%) believed they would reduce in size over the coming three years. Overall, this optimism seems well-founded, given these organisations' relatively established portfolios and typically small size, positioning them strongly for growth.

Furthermore, existing evidence supports that there exists an opportunity for digital skills providers to grow. The expected growth in digital skills is estimated to represent a $130bn market until 2030, with the largest of opportunities will be for business-to-business and business-to-government basic skills training (IFC, 2018). Alongside this, there are also significant opportunities for business-to-consumer training focused on intermediate and advanced skills (IFC, 2018), which is an area where many businesses included in this report are already operating. The majority of this additional demand will be from occupations outside of ICT specialities, particularly from businesses adopting the use of digital technologies in their operations (World Bank, 2021). Therefore, it is clear the nature of the work of private sector organisations is well aligned to scale and capitalise on this significant opportunity for growth.

4.2 Opportunities and challenges for organisations to partner with digital skills providers

This second theme of analysis details key considerations for organisations looking to partner with digital skills providers to be aware of, presented in the form of key opportunities and challenges. The analysis is guided by the following series of questions:

1. What key opportunities exist for organisations looking to partner with digital skills providers?
2. What are the main challenges for organisations looking to partner with digital skills providers?
3. How can organisations looking to partner with digital skills providers align their work in this area?

4.2.1 What key opportunities exist for organisations looking to partner with digital skills providers?

Highlight findings:

1. Private sector organisations have relatively well-established and settled work in providing digital skills, meaning there is a solid foundation for long-term and stable partnerships.

2. Private sector organisations are already well-connected to other stakeholders in the ecosystem of digital skills provision. Leveraging these existing networks may be the most appropriate entry point for building deep collaboration between the private sector

and other relevant stakeholders.

3. Only around 1 in 10 organisations with knowledge of digital skills providers support in funding them. This suggests there is an opportunity for funding organisations to become a major financier in driving digital skills initiatives, particularly in working with governments to support small enterprises with localised funding opportunities.

Linked to the high-potential for scaling amongst most private sector respondents, an encouraging sign is that the vast majority (96.8%) of organisations have been engaged in digital skills provision for over 2 years (see *Figure 7*). A significant number of these organisations (37.5%) have been operating for over a decade, highlighting that these organisations are well-established and settled in their provision of digital skills. While highly variable, some estimates suggest that between 70–80% of startups in Africa fail within their first five years (AU Startups, 2024).

The fact that over half of the organisations surveyed have been operating for more than two years suggests significant opportunities for external stakeholders to build partnerships with well-established private sector organisations, even those that are relatively small. Such partnerships not only increase the likelihood of positive impacts on learning outcomes but also offer the potential for long-term and stable collaborations. This would enable partnering organisations to work towards establishing a comprehensive body of work in digital skills provision.

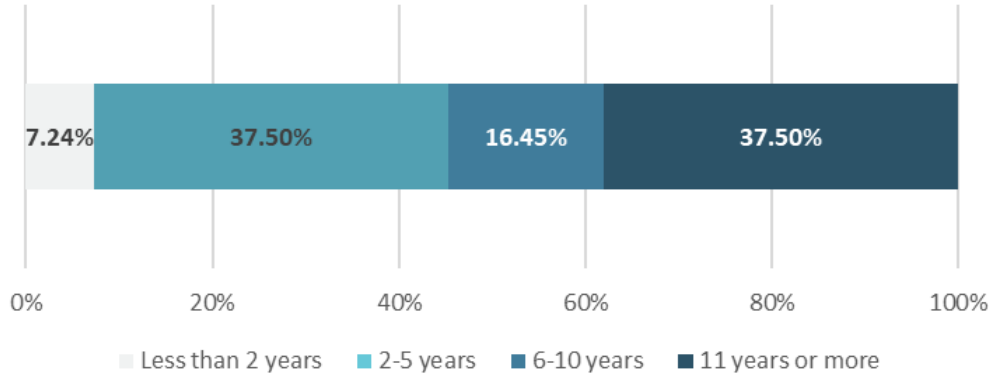

Figure 7: The length of time that organisations have been providing digital skills for.

Furthermore, private sector organisations are already well-connected to broader stakeholders within the ecosystem (see *Figure 8*). The survey gathered responses from numerous individuals not directly employed by private sector organisations, but who have strong working relationships with or knowledge of them. Of these, 75% work closely with digital skills providers, with nearly two thirds (66.4%) collaborating directly with private organisations offering digital skills. Additionally, a significant number (43%) are part of shared networks with

these providers, while a smaller percentage (10.1%) contribute to funding private digital skills providers. This demonstrates that partnerships between private providers and other organisations are already in place, creating an opportunity for other development organisations to leverage existing networks.

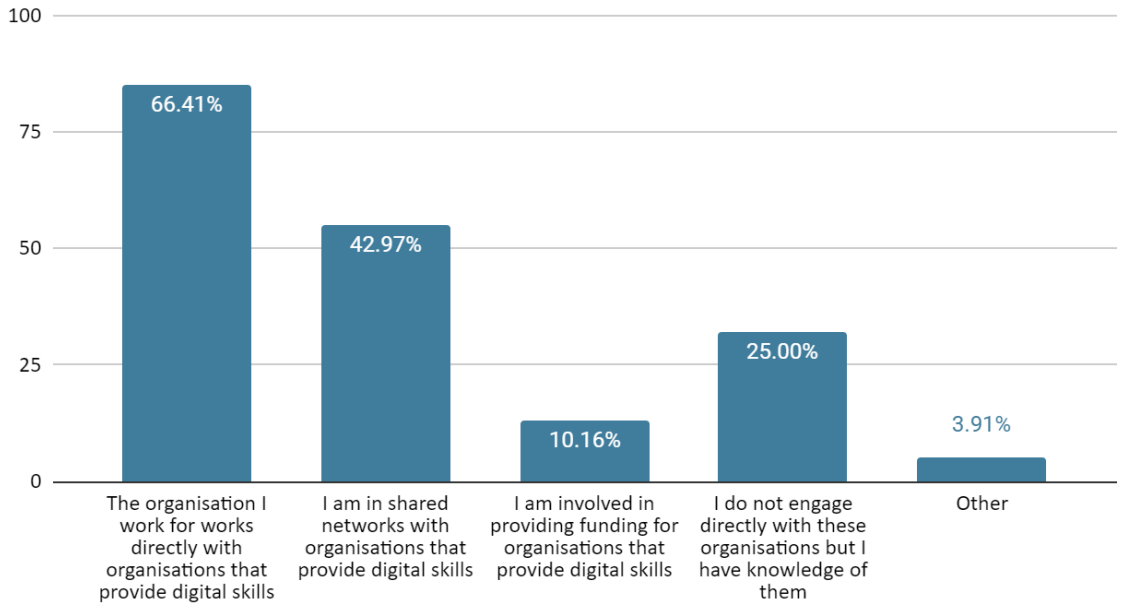

Figure 8: How organisations reported they collaborated with private providers of digital skills.

Interviews also elicited the ways in which private organisations had established complex networks with other partners. One organisation spoke about the importance of maintaining connections with other organisations and stakeholders working at addressing similar areas, so that they could avoid overlap in the services provided by their organisation, particularly because they worked with marginalised groups where it is essential to support them as holistically as possible. This demonstrates that some organisations already collaborate extensively with other partners, and that this self-organisation can be quite complex. If international organisations can support these networks of organisations addressing similar challenges, but providing complementary services, they can help to support existing networks that achieve holistic impact when it comes to digital skills development for a range of users.

A diverse range of organisations work closely with private sector digital skills providers, including other businesses, NGOs, government, and training and research organisations (see *Figure 9*).

However, education, training and research organisations are by far the most commonly connected (59,4%), which aligns with the private sector's focus on training and upskilling young adults. Other types of organisations, such as NGOs and government bodies, are less well connected, suggesting an opportunity for other organisations with the appropriate connections

to facilitate stronger linkages between the private sector, NGOs and government stakeholders.

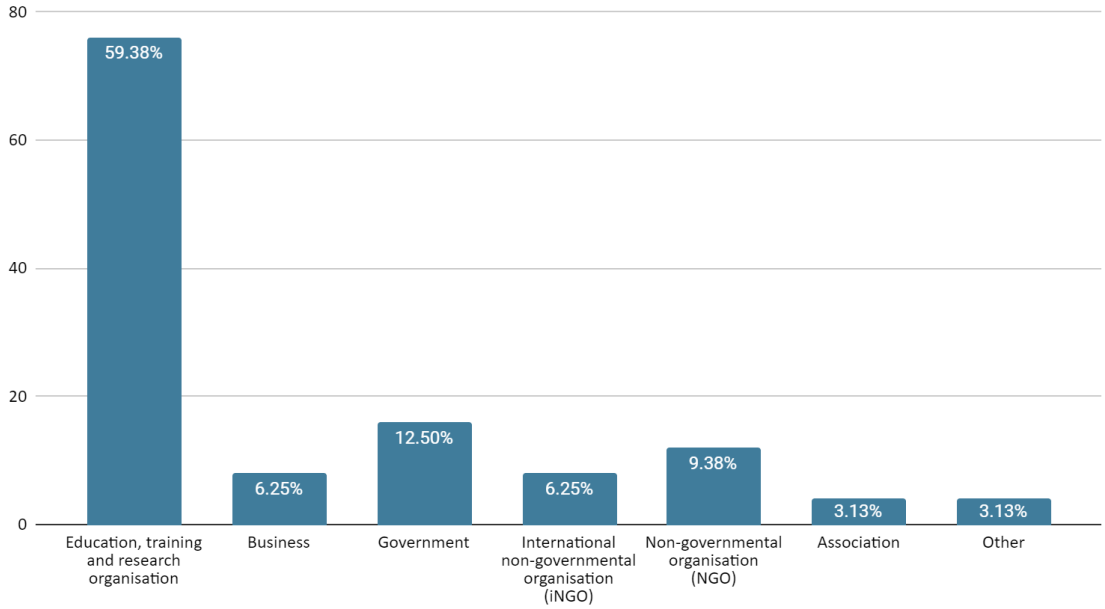

Figure 9: Representation of various organisation types with knowledge of private sector digital skills providers.

As highlighted in analysis theme 1, fewer private digital skills providers work with out-of-school children compared to in-school students at both the primary and secondary levels. This presents a clear opportunity for funding organisations to help expand the reach of private digital skills providers working with students to include out-of-school youth. Such efforts would ensure that the most marginalised youth gain digital skills in line with their in-school peers, while also supporting small private sector organisations in broadening the scope of their work.

One organisation based in South Africa, interviewed at eLearning Africa, emphasised the challenges they faced in the early years of their establishment. One significant challenge was the lack of government funding in the EdTech sector in South Africa. Despite being a relatively wealthy country, funding for startups was scarce – a challenge echoed across many of the 25 countries. Access to local government funding is extremely important for new startups, as this kind of national government funding is much more obtainable through local ecosystems and networks compared to funding from international donors.

4.2.2 What are the main challenges for organisations looking to partner with digital skills providers?

Highlight findings:

1. Most private organisations find it challenging to access funding, particularly due to the competitive nature of the sector and perceived

onerous requirements when bidding for funding.

2. There is often a significant disconnect between donor expectations of an appropriate proof of concept and the proof of concept that small and particularly young organisations are capable of demonstrating.

3. Small enterprises find it challenging to build meaningful relationships with donors that are essential to securing long-term and stable financing due to the role of word-of-mouth reputation building for such organisations.

Despite these opportunities, several challenges were identified. First, private sector organisations often struggle to access funding from donor organisations that aim to support digital skills initiatives (see *Figure 10*). Only 2.6% of surveyed organisations found it easy to access such funding, compared to 67.8% who reported that it was quite difficult or very hard.

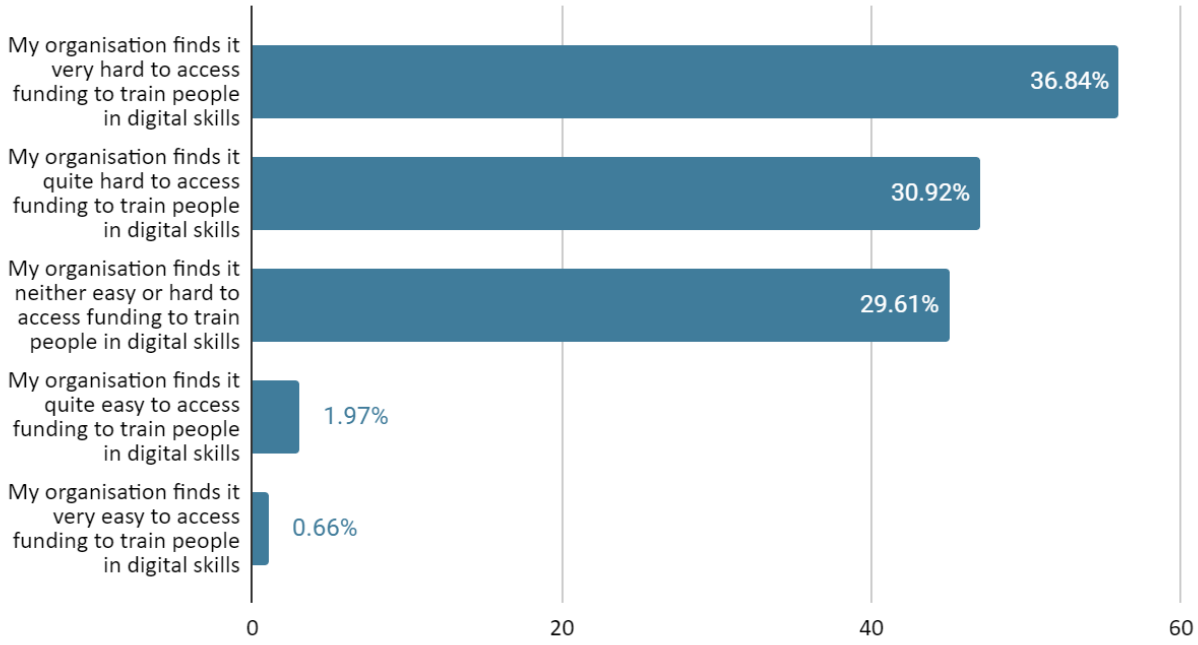

Figure 10: Responses indicating how easy or hard organisations felt it was to access funding to provide digital skills.

Interviews conducted at eLearning Africa shed light on why accessing appropriate funding is a significant challenge. Organisations felt that there was a particular challenge in accessing funding of an amount that would represent long-term sustainable financing for these organisations.

One reason cited for difficulty in accessing funding was the competitive nature of work. Several organisations cited the competitive nature, and that many private enterprises and similar organisations worked within the same space and competed to secure funding, making the bidding process highly competitive. As a result of this competition, organisations often felt that companies with existing networks or who are already known within the donor community often prevail. It was this jump to becoming a known enterprise that many organisations found challenging, highlighting how it was particularly difficult to access funding during the early stages of their business.

One private teacher training organisation has been operating for over seven years but reported that they were not well known to donors due to a perceived lack of exposure or access to decision-makers of a significant level within these organisations. However once these initial contacts have been made, several organisations reported that accessing funding became much easier. For example, one organisation at eLearning Africa mentioned how participating in testimonials for the Tony Blair Foundation provided visibility, which led to word-of-mouth promotion within the donor community.

Another challenge was the difficulty in demonstrating an adequate proof of concept for their business towards the donor community. Not only does a lack of access to funding limit the extent to which their proof of concept can be known, but several organisations spoke about the disconnect between the standards that donors expect as a demonstration of proof

of concept versus the extent of data to support the proof of concept that small start-ups are able to actually develop. Donors were seen as having very rigid and onerous expectations with respect to proof of concept for potentially scalable ideas, and these expectations were not seen as translating appropriately to the context of African start-ups which are very dynamic and fast moving. Therefore, a key challenge for donor organisations to be aware of when looking for organisations to partner with is how their expectations for reliable proof of concepts may be misaligned with proof of concepts being offered by private organisations, even if their model is successful by shared definition.

Another reason cited for difficulty in accessing funding was that many organisations felt uncertain or uncomfortable with the funding application process. One training institution suggested that funding organisations should provide clearer guidance on the expectations for submitting bids, helping applicants to better understand what is required. Several organisations familiar with applying for bilateral donor funding noted that the bidding process was perceived as onerous.

Furthermore, several organisations expressed frustration that much of the available funding - especially from grants and foundations - was harder to access for for-profit private organisations compared to NGOs or other non-profit organisations, due to conditions attached to a lot of available funding within the digital skills space. One training school in Kenya noted that these restrictions still apply even if the applications for these funds were for philanthropic purposes, such as providing scholarships, and that these blanket restrictions were a significant hindrance.

Lastly, one community based organisation in Uganda mentioned that even when they had been able to access funding, their relationship with donors was not direct and was always facilitated through a middle partner often based in a high-income country. This arrangement prevented them from building direct relationships with donors, which they believed would help them secure future funding more easily and gain valuable experience in understanding donors and their expectations.

4.2.3 How can organisations looking to partner with digital skills providers align their work in this area?

Highlight findings:

1. Continuing to align work with relevant policies, strategies and frameworks will ensure projects such as GenerationDigital! can maximise its impact and opportunities for collaboration.

2. Coordinating with other initiatives being implemented in the digital skills space will enhance collaborative opportunities and increase the reach of projects such as GenerationDigital!

3. Emphasise the unique role of projects such as GenerationDigital! in targeting local private digital skills providers to accentuate its particular value within the broader scope of relevant interventions.

Secondary analysis conducted to produce the annexed annotated bibliography has identified three broad themes relevant to projects such as GenerationDigital!. Firstly, it is important to align with existing strategies across the continent. Secondly, there is a need for coordination with other relevant initiatives. Lastly, there is an opportunity to showcase the niche that such projects GenerationDigital! fill in digital skills development across the continent.

Each of these themes are explained in more detail below.

1. Align with existing strategies on the continent:

Digital skills development is an important priority for Africa. The AU's Digital Transformation Strategy serves as the overarching policy framework, aimed at creating a unified Digital Single Market (DSM) across the continent. In addition, various digital transformation strategies and initiatives exist at the Regional Economic Community level (for example, SADC's draft digital transformation strategy.) Most countries also have their own national digital transformation strategies often led by government departments (sometimes at Ministerial level) dedicated to this area. These strategies provide the overarching framework within which digital skills development takes place. Continental bodies such as Smart Africa also play a critical role in shaping digital skills initiatives.

To ensure the greatest impact, projects such as GenerationDigital! can continue to align its work with these continental, regional, and national policies, strategies and frameworks. Strengthening engagement with key stakeholders, such as the African Union Commission, Regional Economic Communities, relevant government ministries, and organisations such as Smart Africa, throughout the project's life cycle will help reinforce synergies and maximise opportunities for collaboration.

2. Coordinate with other initiatives:

There are several high-level initiatives focused on digital skills development that projects such as GenerationDigital! can further align with and leverage. The World Bank and IFC's Digital Economy for Africa (DE4A) initiative, for example, presents a key opportunity. Similarly, digital transformation is a central pillar of the EU-AU partnership, with significant funding flowing through the Africa-Europe Investment Package to accelerate Africa's sustainable digital transformation. The EU also engages with African states and the AU Commission through the Digital for Development (D4D) platform, offering further avenues for synergy.

The MasterCard Foundation launched the Partnership for Digital Access in Africa (PDAA) this year (2024) with the goal of doubling internet connectivity and usage across Africa - from 40% to 80% - thereby connecting one billion people - by 2030. This initiative also aims to increase connectivity for women and girls from 30% to 80%. A key pillar of PDAA is digital skills development implemented in partnership with organisations such as the African Leadership Group, Emobilis, Moringa schools, Harambee, and Carnegie Mellon University (CMU) Africa. PDAA also collaborates with EdTech hubs and entrepreneurs across the continent, having supported more than 40 EdTech ventures to date.

3. Emphasise the niche of projects such as GenerationDigital!:

Projects such as GenerationDigital! can fill a unique role by targeting local and regional private sector digital skills providers to collaborate with the formal education and training sector in developing digital skills across 25 countries. This complements initiatives from organisations like the World Bank and the EU, making a significant contribution to the AU's Digital Transformation Strategy and other strategies and frameworks on the continent. To maximise this opportunity, the project should develop a stakeholder engagement and communication strategy that highlights its unique value in the digital skills ecosystem.

4.3 The technologies that are being used

Highlight findings:

1. Existing and upcoming publications, such as the 2023 GEM report, should be consulted for a full appraisal of relevant and scalable forms of EdTech being utilised across digital skills providers.

2. There are several examples of high-potential scalable technologies currently being implemented by small enterprises within the area of green skills.

3. Focusing on these technologies could represent a unique opportunity for international organisations to position themselves as a leader for innovation in green skills solutions that build climate resilience.

For a comprehensive mapping of EdTech being used across Africa, including the 25 countries, it is recommended that organisations consult existing reports which explain in detail important trends and provision of digital technologies across this scale (most notably the 2023 Global Education Monitoring report offers significant detail on the state of EdTech and supporting infrastructure across Africa and how it compares to the rest of the world). Additionally, an upcoming report titled "The State of EdTech Across Africa" led by the World Bank and Mastercard Foundation should be consulted when it is realised, as it will provide a comprehensive and up-to-date overview of the use of digital technology and prevalence of digital infrastructure across Africa.

In terms of technology used, most organisations featured in this report primarily engage with standard personal digital devices, such as smartphones and computers. This is expected given that many focus on basic digital skills training, as well as coding, programming, and web design and development, all of which rely on these devices. Organisations offering more specialised technical vocational or certified training often use advanced or specialised digital tools that are relatively high-tech (such as for robotics). However, these technologies are less scalable due to their focus on specific technical specialisms and institutions, potentially limiting their broader applicability.

While this report cannot provide a comprehensive overview of all the technologies used across focus countries, there is evidence that numerous small enterprises are developing their own digital tools and solutions to address key issues, often in priority areas such as sustainable agriculture or renewable energy. These innovations present significant opportunities to scale new technologies that promote sustainability and support marginalised groups. Several high-potential case studies illustrating these efforts are highlighted throughout this subchapter.

There are many organisations included in the desk review that provide innovative digital learning solutions particularly within the green skills space that may represent high-potential scalable technologies of interest to organisations looking to engage with EdTech. Several interviewees at eLearning Africa recognised that there are a large number of innovative ideas across the African EdTech space. While not all of these ideas succeed, the sector remains a high potential context for EdTech innovation. However, interviewees also highlighted a lack of funding to support these efforts. By staying informed about digital innovations within the green skills sector, donor organisations could be uniquely positioned to provide crucial support to these organisations.

Case study 3 – Kivu Green, Democratic Republic of Congo

Kivu Green, based in the North Kivu area of the DRC, offers digital solutions to address the challenges faced by small-scale farmers. Through their e-commerce platform, farmers can access up-to-date market pricing information via SMS technology. The platform also provides sustainable farming tips, climate change adaptation advice, and weather forecasts to help farmers plan their activities around natural rainfall. Looking ahead, Kivu Green aims to introduce smart greenhouses equipped with automated systems that monitor plant conditions, control watering, and regulate the temperature using machine learning and AI models.

Case study 4 – Shamsina Solar, Egypt

Shamsina Solar, a social enterprise based in Egypt, designs and manufactures affordable solar technologies for energy-poor communities. The organisation also provides training to marginalised groups, equipping them with the skills to build innovative and clean energy solutions. At the heart of their model is the commitment to making energy as accessible as possible. One of their key innovations, a solar-powered water heater, offers decentralised access to hot water for individuals who cannot afford or access national electricity supplies.

Case study 5 – Wecyclers, Nigeria

Wecyclers, based in Nigeria, is dedicated to improving waste management and recycling across the country. The organisation has developed a mobile application to help low-income households collect recyclable waste in exchange for additional income. Along with providing basic digital skills training for using the app, Wecyclers has also established recycling drop-off locations, reaching over 60,000 users to date. They run a franchise programme that supports others in creating recycling enterprises by offering assistance in logistics, financial education, environmental education, business planning and management support.

Case studies 3–5 illustrate a few examples of enterprise-led digital solutions in various green-skills sectors across Africa. While not an exhaustive overview of all the technology being used in digital skills provision, they reflect the types of offerings developed by small private enterprises. A strong network of organisations is emerging to provide localised and contextual digital solutions to critical environmental issues, such as waste management, renewable energy, and sustainable agriculture. Focusing on these enterprises and building networks of similar organisations could offer an opportunity for donor or international organisations to position themselves as a leader in fostering innovation for localised digital green skills solutions aimed at enhancing climate resilience for marginalised or low-income communities that often lack access to such technologies.

4.4 The green skills being offered by providers of digital skills

The final analysis theme presents an overview of the green skills being offered by digital skills providers in Africa. This subchapter is structured on the following key questions:

1. What green skills are being offered by digital skills providers?
2. Where are organisations providing green skills located?
3. How are green skills provisions expected to scale?
4. Why do digital skills providers also offer green skills?
5. What environmentally conscious decisions do these organisations make?

4.4.1 What green skills are being offered by digital skills providers?

Highlight findings:

1. Just over half of the surveyed organisations and organisations included in the desk review that develop digital skills also provide some offering in green skills, meaning it is a relatively widespread practice.

2. While there are a range of green skills offered by digital skills providers, they are most concentrated in the renewable energy, sustainable agriculture, and environmental education and advocacy sectors.

3. Looking across all sectors, the most common form of green skills provision (offered by just under half of surveyed organisations) related to some kind of education or capacity building in green skills, particularly skills relating to understanding or addressing environmental challenges.

Just over half (56.6%) of the private digital skills providers surveyed for this report indicated that they offered some form of green skills training within their offerings. Similarly, half of the respondents with knowledge of private sector organisations noted that at least one leading edge digital skills provider they are familiar with offers green skills training. This points to the fact that a growing number of private sector organisations across all 25 countries incorporate green skills into their digital skills training. This suggests a significant opportunity for organisations looking to engage in this area to take a leading role in supporting the further expansion of green skills provision.

Among private sector organisations, there is a broad range of green skills being across various sectors. The most commonly provided green skills are in the areas of environmental education and advocacy (56.7%), renewable energy (51.3%) and sustainable agriculture (50.7%).

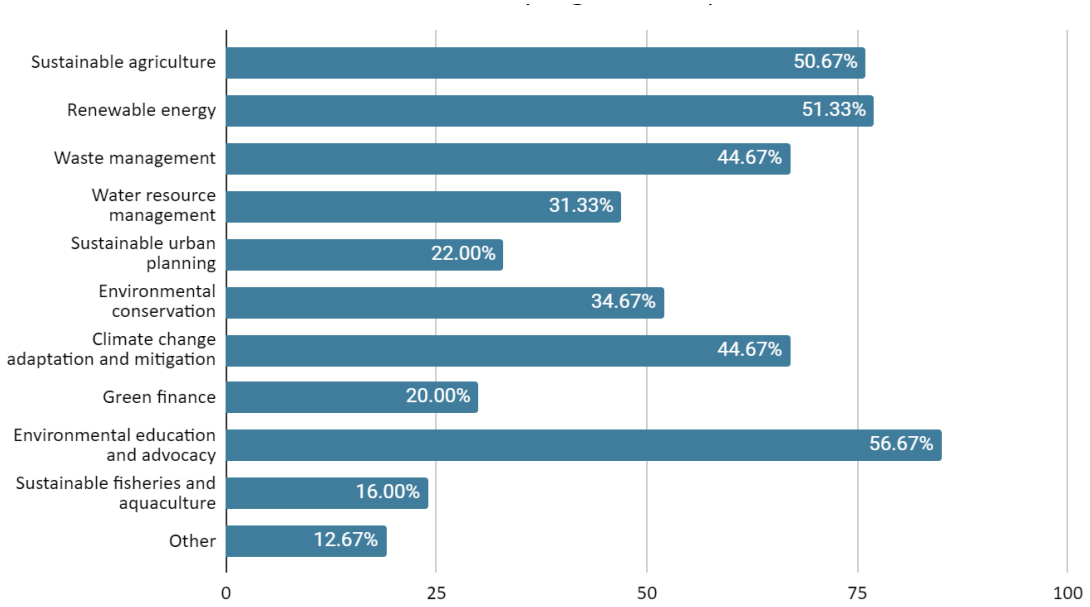

Figure 11: The range of green skills integrated within digital skills provided by private organisations.

In the desk review, 51% of organisations also provided green skills. However, due to the purposive sampling used to capture organisations engaged in green skills – and the inclusion of non-private entities – the analysis is presented separately. This is because it offers a less organic overview of the types of skills being offered, highlighting instead those that are more prominent or visible.

Among the organisations in the desk review, while all key green skills categories were represented, the distribution was less balanced compared to the private sector organisations surveyed. Green skills were more heavily concentrated in areas such as sustainable agriculture, renewable energy, and environmental education and advocacy skills.

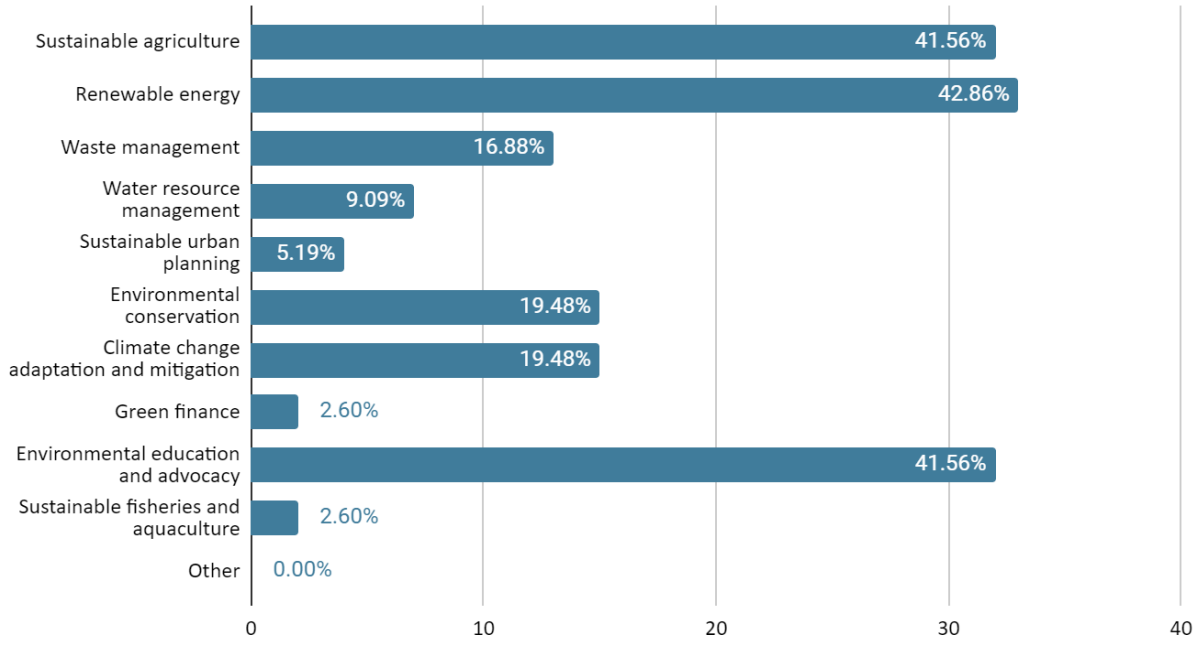

Figure 12: The range of green skills offered by digital skills providers included in the desk review.

It is noteworthy that the top three most common green skills across all stakeholders – sustainable agriculture, renewable energy, and environmental education and advocacy – are consistent. This suggests that these areas are the current priorities for both private and non-private organisations engaged in green skills within digital skills provision, and likely represent the most established sectors for green skills training. These thematic areas also offer the most suitable entry points for interested organisations to foster partnerships with organisations in this space. Furthermore, the desk review's identification of numerous NGOs and foundations providing training in rural areas for agricultural livelihoods, environmental education, and renewable energy highlights several potential partnership networks that organisations could explore to support green skills development.

Given that many organisations operate across multiple sectors (see case study below), it is more practical to consider the type of green skills being provided within the sectors mentioned above. Among the 86 organisations in the survey offering green skills, 46.5% focused on education or capacity building embedded within digital skills training or tools, particularly in understanding and addressing environmental challenges. A significant portion of these organisations championed environmental education or advocacy to build climate resilience, especially in key sectors outlined in the previous section such as agriculture. It is important to note that this capacity building integrated into digital skills training serves a wide range of users, from primary-age students to corporations and businesses.

Case study 6: The Needy Today, Sierra Leone

The Needy Today, an NGO based in Sierra Leone, demonstrated that their wide range of programmes enables them to deliver green skills across various key

sectors. They emphasised their commitment to empowering communities through sustainable development initiatives:

"In sustainable agriculture, we train farmers in organic farming techniques, agroforestry, and water-efficient irrigation to enhance food security and environmental stewardship. Our water resource management initiatives include rainwater harvesting, water purification, and watershed management to ensure equitable access to clean water. We promote environmental conservation through wildlife and forestry management and ecotourism, fostering biodiversity and sustainable livelihoods. To address the climate crisis, we focus on climate change adaptation and mitigation by developing climate-resilient infrastructure, disaster risk management, and carbon management strategies. Additionally, we lead environmental education and advocacy programs, offering environmental awareness initiatives and science courses to build community knowledge and advocate for environmental justice."

The second most common type of green skill offered by 25.6% of organisations involved in the development or provision of digital materials and content in relevant green skills areas: in particular, vocational and tertiary-level training institutes integrated key green skills into their curriculum. For example, GTopic in Morocco, which operates in the geospatial technology sector, incorporates sustainable land governance into their training for urban and peri-urban areas. Additionally, 14% of organisations focused on promoting recycling and the sustainable use of digital materials, including e-waste recycling and training in energy-efficient, eco-friendly digital practices.

Other key green skills that emerged include the 9.3% of organisations that helped link local communities or businesses to green financing and market opportunities in various sectors. Meanwhile, 8.1% of organisations were involved in the design, installation and provision of green digital materials, particularly solar-powered tools aimed at promoting sustainable energy sources (see case study 7 below).

Case study 7: Silver Bolt, Uganda

Silver Bolt, an NGO based in Uganda, supports young graduates and entrepreneurs in entering employment in the engineering and computing sectors, while also equipping 6–18 year olds with essential digital skills. As outlined in their response to the survey, a key part of this work focuses on championing ed sustainable energy solutions:

"In our efforts to promote the use of solar power and renewables, especially in off-grid locations, we introduce the EmPowerPak – a low-cost, portable, integrated solar-power and communications platform. This innovative tool not only powers digital learning but also provides vital connectivity in areas without reliable electricity. By integrating renewable energy into our programs, we empower youth to explore and implement sustainable solutions, preparing them to be the change-makers of the future."

Beyond direct green skills training, 5.8% of organisations reported that while they do not provide specific digital solutions themselves, they support other businesses in developing their own solutions, thereby indirectly contributing to the sustainable use of digital technologies or development of environmentally friendly technologies. Another

5.8% of organisations indicated that they implement their own green skills projects across various sectors, such as waste management or food security.

4.4.2 Where are organisations providing green skills located?

Highlight findings:

1. The geographical distribution of digital skills providers also offering green skills follows a similar frequency pattern to those offering digital skills (see *Figure 5*).

2. Green skills providers in North Africa appear to be relatively underrepresented.

3. There is a higher concentration of organisations in Eastern Africa, which may be due to the region's heightened vulnerability to severe climate events in recent years.

Figure 13 and *Table 3* on the following page show the geographical distribution of survey respondents offering digital training in green skills. In line with Figure 5 above, the provision of green skills follows a similar frequency pattern to digital skills provisions, with a relatively low number of organisations providing green skills in North Africa, and a relatively even spread across the rest of the continent. However, there is a notably higher concentration of organisations providing digital skills training in green skills in Eastern Africa. This may be attributed to the region's heightened vulnerability to climate change, emphasised by significant recent events (such as a regional drought in 2022).

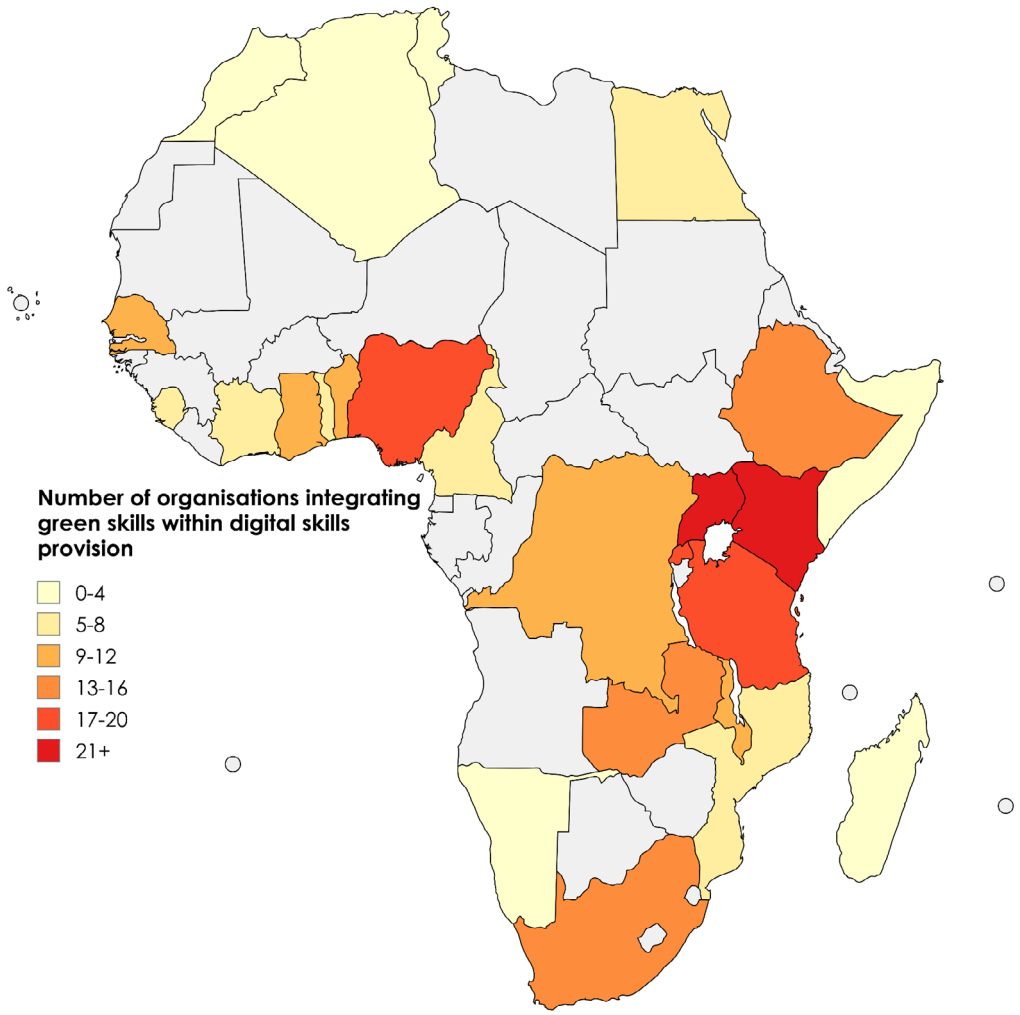

Figure 13: The geographical spread of surveyed digital skills providers that also offer provisions in green skills.

Country	Responding organisations working there
Algeria	2
Benin	10
Cameroon	7
Côte d'Ivoire	8
Democratic Republic of Congo	11

Egypt	5
Ethiopia	13
Ghana	10
Kenya	21
Madagascar	3
Malawi	10
Morocco	4
Mozambique	5
Namibia	3
Nigeria	20
Rwanda	19
Senegal	11
Sierra Leone	8
Somalia	3
South Africa	14
Tanzania	18
Togo	6
Tunisia	2
Uganda	21
Zambia	14

Table 3: A list of the number of surveyed digital skills providers that also offer green skills provisions.

4.4.3 How are green skills provisions expected to scale?

Highlight findings:

1. A large number of digital skills providers also provide green skills, but for nearly three quarters of these organisations their work in green skills is only a small part of their overall portfolio.

2. Almost all organisations indicated that they expect their green skills work to expand over the coming years, suggesting there is significant potential and optimism for scaling in this area.

3. As a result, green skills are likely to be an increasingly important focus for digital skills providers in the years ahead.

There is significant optimism among private sector organisations about the growth of their work in green skills. While over two thirds (72.1%) of organisations indicated that green skills currently comprise a small portion of their portfolio, the large majority (95.2%) of these organisations expect their provision of green skills to expand over the coming years. This indicates a strong appetite for scaling green skills among nearly all private stakeholders engaged in the area, presenting a valuable opportunity for organisations looking to expand their work in green skills to form partnerships and networks to support this growth across Africa.

Of the 27.9% of organisations that stated green skills make up a large part of their work, 91.7% expect this to continue, although 8.3% mentioned they anticipate a relative decrease in green skills focus, either due to a reduction in provision or growth in other areas of their operations. Nevertheless, this reinforces the broad consensus that whether their green skills offering is currently minimal or significant, most organisations expect green skills to grow or remain an important focus in the coming years.

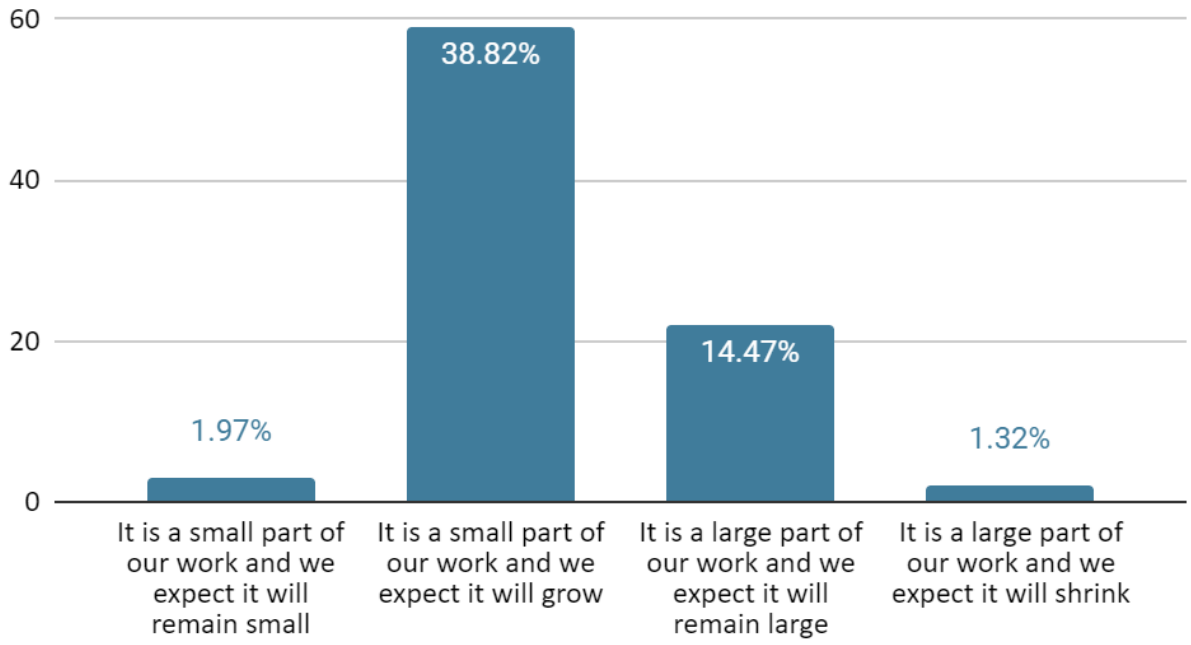

Figure 14: How digital skills providers expect their provision in green skills to scale

4.4.4 Why do digital skills providers also offer green skills?

Highlight findings:

1. Providers of digital skills are widely motivated to offer green skills due to their role in addressing the negative impacts of ongoing environmental change. This was either through organisations valuing environmental protection and stewardship, or recognising the need to support local communities to build more climate-resilient practices.

2. Many organisations had strategic motivations for green skills provisions, such as to align with global policies and priorities (e.g. the Sustainable Development Goals), and the opportunity for business growth within the green skills sector.

3. Green skills were often provided because they are seen as highly relevant to young people who are commonly targeted by private sector organisations. This was either through green skills being seen as intrinsically important to young people, or being essential for young people to enter the job market and be able to lead the transition to more sustainable industries.

Of the private sector organisations offering green skills training, 65.1% cited addressing climate change and its effects as a primary motivation. This rationale was generally framed within two broad paradigms.

First, many organisations recognised that green skills play a crucial role in environmental preservation and sustainability. They expressed a strong commitment to fighting climate change, promoting sustainable development and encouraging environmental stewardship. A

number of organisations highlighted the importance of working with young people as central to driving sustainability efforts, with one organisation suggesting that:

> "Our decision to integrate green skills into our programmes is driven by the urgent need to produce graduates who can lead in transforming industries."

Many organisations acknowledged that their green skills training could support the transition of various industries and sectors towards greater environmental sustainability. This aligns with the fact that many of these organisations already focus on job-market-driven digital skills training. The importance of this service was often linked to the observation of the local impacts of climate change, with one organisation stating that they provided green skills training "due to the escalating effects of climate change in our communities."

The second way organisations emphasised the importance of environmental change as a motivating factor for engaging in green skills was by recognising communities they worked with as key agents of change or as needing critical support to combat environmental degradation and build climate resilience locally. They particularly stressed the importance of capacity building through education as a vital tool for strengthening climate resilience in vulnerable communities. For example, one organisation highlighted that:

> "Very often we've found that training, especially for people in rural areas of Africa, fails to make learning that is deeply impactful and relevant, accessible in a language or cultural nuance that they can understand. Green skills development is such a critical focus area that we cannot afford to 'mess it up' with inappropriate learning material."

Several organisations highlighted the importance of green skills in the agricultural sector to build resilience to climate change. One organisation stated:

> "Agriculture is threatened largely by climate change; it will affect food production, access to nutrition and food security; there is [a] need for farmers to embrace and adopt climate change adaptation and mitigation practices".

However, not all green skills provision is motivated purely by environmental concerns. One vocational training centre in Nigeria, interviewed at eLearning Africa, noted that their renewable technology training, particularly in solar panel installation, was highly successful and profitable. They reported that 60% of trainees saw their income double or triple due to the strong market for solar energy. This indicates that, for some organisations, green skills provision may be driven by practical market opportunities rather than purely environmental values.

This practical approach is also reflected in organisations whose motivations for providing green skills extends beyond environmental stewardship, addressing climate change, and building climate resilience. A small number of organisations (14%) highlighted that their green skills initiatives were specifically developed to align with national or global regulations, policies or curricula. Most commonly, organisations cited that green skills aligned their work more closely with the Sustainable Development Goals

(SDGs) goals, a crucial factor for their organisational growth. Additionally, some organisations (10.5%) noted that green skills were part of their organisational mandate, often due to a primary focus on climate issues rather than digital skills. Others (7%) felt that green skills were particularly relevant to the current employment market (7%), making it an important component of their efforts to upskill young adults. A smaller group (4.7%) saw green skills as a business growth opportunity, with one organisation stating that "companies that comply [with SDGs and green frameworks] are more likely to generate profitability and long term locality".

4.4.5 What environmentally conscious decisions do organisations make?

Highlight findings:

1. While many organisations offered green skills provisions due to motivations around protecting the environment, fewer organisations demonstrated clear actionable decisions that they took internally to reduce their own environmental impact.

2. There is a widespread belief amongst many organisations that the use of digital systems, resources and platforms for their business over traditional alternatives has a positive environmental impact.

3. Organisations most commonly took steps to use energy-efficient materials or renewable energy, or consciously manage their e-waste, in order to reduce their environmental impact.

Responding organisations were asked to detail any environmentally conscious decisions they had made regarding the set-up and delivery of their operations in either digital or green skills provision. Interestingly, the most prominent theme was the prioritisation of digital operating systems, resources and platforms over traditional alternatives (such as delivering remote training instead of in-person sessions, or using cloud services to develop, store and share organisational content over paper-based forms). This highlights a common belief that digital methods have a positive net impact on the environment compared to non-digital approaches, despite the fact that digital technologies themselves can have significant environmental impacts, particularly in the context of EdTech (e.g. Selwyn, 2021).

Other significant themes that emerged related to how organisations approached energy provision and waste management. Regarding energy, many organisations indicated that they prioritised the use of energy-efficient materials and renewable energy sources, particularly solar, to meet their electric needs. One organisation, linking to the previous theme, noted that they "prioritise energy-efficient technologies and cloud-based services that reduce our carbon footprint." Additionally, two organisations mentioned making conscious efforts to reduce their energy consumption for lighting, either through staff training on energy reduction or by modifying their office spaces to maximise natural lighting.

In terms of waste management, many organisations highlighted their focus on recycling and reducing waste. A significant number especially mentioned efforts to manage e-waste sustainably. Notably, one organisation developed an innovative recycling method that converts plastic waste into eco-friendly bricks, which can then be re-used in construction.

Beyond these main themes, several less common practices were noted. Some organisations reported prioritising the use of digital resources and platforms that meet specific green credentials, such as procuring green label devices. A few organisations mentioned efforts to reduce employee transportation, further minimising their environmental footprint. Additionally,several organisations highlighted the importance of making their digital tools and training as inclusive and accessible as possible for marginalised and remote groups, recognising that this broadens the reach of their green or digital skills provision and has a positive environmental impact.

5. Recommendations

The following recommendations are provided for general consideration, based on the analysis above. They aim to position organisations operating in this sector to make a strategic contribution to the future of digital skills provision, with a particular focus on green skills, across the target countries in Africa. To maintain consistency, the recommendations are aligned with the four analysis themes corresponding to the key research questions.

5.1 Recommendations for identifying relevant digital skills organisations

Prioritise digital skills for marginalised groups. Currently, there is comparatively little focus on out-of-school children and marginalised groups in the private sector, leaving them without access to the digital skills needed to participate in the job market and causing them to fall further behind. Identifying and partnering with organisations that prioritise these marginalised populations will ensure more equitable access to digital skills, providing everyone with an equal opportunity to access job opportunities that require digital competencies.

Deliver early digital skills training for job readiness. Support the private sector in delivering digital skills training to younger individuals to better prepare them for the job market before they reach the point of entry. Many organisations focus on upskilling young adults already seeking employment but there would be benefits to starting this training earlier. Targeting in-school students or young adults who will be employment seeking in the intermediate-term (as opposed to short or immediate term) can help ensure a smoother transition into employment with the relevant skills.

Consider further exploration of the landscape of digital skills providers in North Africa. This report was less able to provide a comprehensive categorisation of the work of private digital skills providers in North Africa. This is not to say that there is less activity happening here, but that it is less outwardly visible compared to other regions. Given the challenges in identifying these providers, organisations working in this sector may need to invest additional time and resources to appropriately identify relevant opportunities in this region.

Leverage the growth potential of digital skills providers. Capitalise on the small scale and optimism for growth among existing digital skills providers. Many providers are poised for expansion and are optimistic about growing their operations in the short to intermediate term. This presents a valuable opportunity for organisations to support and scale digital skills initiatives by engaging with these enterprises effectively. Their optimism appears well founded, as many have established and stable portfolios in the digital skills sector.

5.2 Recommendations for facilitating private sector linkages

Leverage existing collaborative networks as entry points. Many digital skills providers appear to operate with stable, well-developed ecosystems involving a range of other stakeholders. Building on these established networks may offer the most promising entry point for projects to engage with the private sector and other key players.

Capitalise on the scarcity of funding. As many organisations struggle to access funding, and few funders are directly engaged with digital skills providers, donor organisations have an opportunity to become a significant financial partner in driving digital and green skills development across Africa.

Consider working with governments to fund local enterprises. Local, regional and national governments are often best positioned to reach local digital skills providers who struggle to access global funding. Collaborating with governments - at this range of levels - could help organisations support small enterprises more effectively with high scaling potential.

5.3 Recommendations for scaling relevant EdTech

Support innovative climate-based digital solutions. This report highlights several innovative technological solutions being developed by small private enterprises that support climate-resilient and sustainable livelihoods. Organisations operating in this sector should explore ways to help scale the most promising of these innovations to strengthen climate resilience effectively.

Prioritise technology for marginalised communities. Marginalised communities often face the harshest impacts of climate change, making it essential to prioritise technologies that are designed to build climate resilience for low-income and underserved populations.

Build partnership networks for digital green solutions. While promising, these technologies and enterprises are often less connected than traditional providers. Organisations operating in this sector can utilise the opportunity to position themselves as a leader by fostering collaborative networks that focus on digital solutions for green skills development and innovative green technologies.

Continue to engage with wider networks and publications to identify scalable EdTech. Preexisting research can provide organisations operating in the sector with a clearer understanding of the most scalable and contextually appropriate EdTech solutions across Africa and ensure they are operating at the leading-edge of practice. Continuing to prioritise this research, particularly with those organisations highlighted in this report, will be crucial for identifying high-potential providers and the most most appropriate ways of engaging with them for maximum impact.

5.4 Recommendations for engaging with green skills projects

Position green skills at the core of project mandates. With fewer organisations supporting green skills compared to digital skills, emphasising this focus will allow projects that are doing this as leaders in the twin digital and green transitions in Africa.

Target climate resilience for high-risk livelihoods. Many digital skills providers are motivated by the need to build climate

resilience in vulnerable communities. Projects should therefore prioritise identifying high-risk areas and supporting digital and green skills initiatives that protect livelihoods.

Focus on agriculture, renewable energy, and environmental education for partnerships with relevant green skills organisations. Focusing on these areas provides organisations with strong partnership opportunities to establish niche offerings.

Align green and digital skills job market readiness. Many organisations view green skills as crucial for the current job market. Aligning digital and green skills provision, especially when focussed on young people, will maximise impact and create synergy, rather than treating two areas separately.

Annexes

Annex A: Contact list

The relevant country cited in the contact list is not necessarily the primary country where each organisation works, but it was used as a reference to ensure that each of the 25 countries were evenly represented in the contact list. Organisations providing green skills training within digital skills were prioritised, alongside smaller enterprises who reported finding accessing funding difficult, as these were identified as being likely to have increased value from being more visible.

Organisation	Relevant country
Starlight Africa	Rwanda
PROTEGE QV	Cameroon
SOS CV	Rwanda
Farmideas Nigeria	Egypt
ISP Tabarka	Tunisia
Sunbooks/ World Literacy foundation	South Africa
Youth Mentorship and Empowerment Program-YMEP	Kenya
Action Le Vert	DRC

eNgoma	Zambia
Africa ICT Right	Ghana
Afriwealthend	South Africa
The Needy Today	Sierra Leone
Blossom Academy	Ghana
ISPHE ISHECIME INSTITUT	Senegal
Plateforme Nationale des organisations Paysannes et de Producteurs Agricoles du Bénin (PNOPPA-BENIN)	Benin
Centre de formation des inspecteurs de l'enseignement - Maroc	Morocco
Teach For Nigeria	Nigeria
Computers for Enhanced Education	Malawi
Human AI	Togo
Manobi Africa	Senegal
Computers for Enhanced Education	Malawi

Elman Technologies	South Africa
Mara Academy	Côte d'Ivoire
Ecole Nationale d'Ingénieurs de Monastir, Université de Monastir	Tunisia
Limina	Namibia
Fantsuam Foundation	Nigeria
Pybot Tech	Zambia
Action for Development of Grassroots Communities	Uganda
Itot Africa	DRC
ADC	Uganda
ONG Women Be Free	Benin
YASHATEC	Côte d'Ivoire
Right To Play	Mozambique
IUCN Papaco	Cameroon

Mefthe Consultancy Services for Food Security PLC	Ethiopia
Karakana Consulting	Tanzania
Centre for Partnership Initiatives (CPI)	Sierra Leone
GTOPIC	Morocco
Al-Azhar Academy, Zaria.	Egypt
Don Bosco Tech Africa	Madagascar
Eco-Stewardship Generation	Rwanda
Farmerline Group	Togo
Karatina University	Kenya
EHEA	Algeria
ICDL Africa	Algeria
Trõcaire	Somalia
EAFF	Tanzania

USTM	Mozambique
Brainiac Tech Academy	Nigeria
SIlverBolt	Uganda

Annex B: Annotated bibliography

Reference	Summary	Relevance
African Union (2020). The Digital Transformation Strategy for Africa (2020–2030). Available at: https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf (Accessed: 27 August 2024)	A Digital Transformation Strategy developed by the African Union Commission with the overall objective of harnessing digital technologies and innovation to transform African societies and economies to promote Africa's integration, generate inclusive economic growth, stimulate job creation, break the digital divide, and eradicate poverty for the continent's socio-economic development and ensure Africa's ownership of modern tools of digital management. The Strategy for Africa is based on foundation pillars (Enabling Environment, Policy and Regulation, Digital Infrastructure, Digital Skills and Human Capacity, Digital Innovation and Entrepreneurship), critical sectors (Digital Industry, Digital Trade and Financial Services, Digital Government, Digital Education, Digital Health,	It is important that any initiative working in this sector is cognisance of overarching policies, frameworks and strategies such as the AUC's Digital Transformation Strategy, and clearly articulates how it comes in support of their fulfilment.

	Digital Agriculture) to drive the digital transformation and cross cutting themes (Digital Content & Applications, Digital ID, Emerging Technologies, Cybersecurity, Privacy and Personal Data Protection, Research and Development) to support the digital ecosystem. It also includes policy recommendations and actions under each foundational pillar, critical sector and cross-cutting theme.	
AUC/OECD (2021), Africa's Development Dynamics 2021: Digital Transformation for Quality Jobs, AUC, Addis Ababa/OECD Publishing, Paris, https://doi.org/10.1787/0a5c9314-en. (Accessed: 2 September 2024)	This third edition of Africa's Development Dynamics explores how digital transformation creates quality jobs and contributes to achieving Agenda 2063, thereby making African economies more resilient to the global recession triggered by the COVID-19 pandemic. The report makes four strategic recommendations to governments in the region to drive digital transformation and trigger large scale job creation. These include: promote the dissemination of digital innovations beyond large cities through place based policies; prepare Africa's workforce to embrace digital transformation and guarantee social protection; remove barriers to innovation that prevent smaller firms from competing in the digital age; and deepen regional and continental co-operation for digital transformation.	This is a comprehensive analytical report on the digital sector in the continent.It also provides a link to an online statistical annex at the end of the report which contains the latest economic, social and institutional indicators across African countries for which data are comparable. The list of summary tables appears in the last pages of the report. The data are presented by country, region, Regional Economic Communities and other relevant groups of African countries.
AU-EU Digital Economy Task Force (AU-EU DETF).	A report produced by the EU-AU Digital Education	The report and generally the Africa-Europe

(2020). New Africa-Europe Digital Economy Partnership: Accelerating Achievement of the Sustainable Development Goals, Available at: https://ec.europa.eu/international-partnerships/system/fles/new-africa -eu-digital-economy_en_0.pdf (Accessed: 28 August 2024).	Task Force to lay out a shared vision, a set of common agreed principles and a list of policy recommendations to guide the AU and EU in their shared vision of creating an inclusive digital economy and society in which every citizen—notably women and young people—has the opportunity to participate in the digital world.	partnership on digital transformation which it comes out of are an important context for all organisations working in the sector. Digital transformation is an important pillar of the EU-AU partnership. At the 6th European Union – African Union Summit in 2022, a EUR 150 billion Africa-Europe Investment Package was announced to accelerate Africa's sustainable digital transformation. The Digital for Development (D4D) Hub is a strategic platform that aims to strengthen digital cooperation between the European Union and its Member States (Team Europe) and partners in Africa, Asia-Pacific, Latin America and the Caribbean, and the EU neighbouring countries.
IFC (2020). Digital Skills in Sub-Saharan Africa: Spotlight on Ghana, Available at: https://www.ifc.org/wps/wcm/connect/ed6362b3-aa34-42ac-ae9f-c739904951b1 /Digital+Skills_Final_WEB_5-7-19.pdf?MOD=AJPERES (Accessed: 27 August 2024).	This report by the IFC shines a light on the crucial need for digital skills in Sub-Saharan Africa with a particular focus on Ghana. The report identifies why and how demand for digital skills is expected to evolve, the scale of and opportunity presented by that demand, and how different stakeholders — particularly the private sector—can play a role. The study finds that over 230 million jobs in Sub-Saharan Africa will require digital skills by 2030, resulting in almost 650 million training opportunities. An estimated $130 billion opportunity exists to provide digital skills across Sub-Saharan Africa until 2030, with nearly $4 billion of this in Ghana. The report demonstrates that new and thoughtful ways of	This report is helpful in setting out both the demand for and the size of the opportunity for digital skills provision in Sub-Saharan Africa with a focus on Ghana. It provides detailed recommendations for (would be) private sector digital skills providers in the continent. It also sets out how education systems need to change to cater for the rapidly growing demand for digital skills. It has case studies of large scale digital skills providers and some helpful contextual information on Ghana specifically.

	operating are required to access this opportunity, particularly by the private sector.	
IFC & WB (2021). Demand for Digital Skills in Sub-Saharan Africa Key Findings from a Five-Country Study: Côte d'Ivoire, Kenya, Mozambique, Nigeria, and Rwanda. International Financial Cooperation, Available at https://www.datocms-assets.com/37703/1623797656 -demand-for-digital-skills-in-sub-saharan-africa.pdf (Accessed: 28 August 2024)	The study was conducted jointly by IFC and the World Bank as part of the Digital Economy for Africa (DE4A) initiative under the broader umbrella of the Human Capital Project (HCP) framework. It follows on from the above mentioned IFC study on Ghana with deeper analysis for Côte d'Ivoire, Kenya, Mozambique, Nigeria, and Rwanda. It provides a detailed picture of the scale of demand for digital skills and the reasons for those demands. In Côte d'Ivoire, the ICT sector is one of the key pillars of the economy, contributing to 8 percent of its GDP. Kenya's thriving ICT sector is home to the continent's most cutting-edge startups, which is expected to drive digital adoption. In Mozambique, growth in the oil and gas and services sector is expected to increase digital skill adoption in the country whereas in Nigeria, a higher tertiary gross enrolment ratio coupled with extensive penetration by global tech firms is driving up digital skills demand and adoption. Finally, Rwanda's long-term vision to be a tech hub and have strong ICT infrastructure will be a significant driver for demand for digital skills. As with the previous report on Ghana, the report lays out the models that can be used to provide digital skills provision in the case study countries and in the	This report, as with the one on Ghana summarised above, is helpful in setting out both the demand for and the size of the opportunity for digital skills provision in Sub-Saharan Africa with a focus on Cote d'Ivoire, Kenya, Mozambique, Nigeria and Rwanda. It provides detailed analysis and recommendations for private sector digital skills providers in the continent. Moreover, it provides a snapshot of the kind of priorities and projects that are carried out by the World Bank and IFC as part of their Digital Economy for Africa (DE4A) initiative.

	wider region.	
WB (World Bank) (2021). Digital skills: The Why, the What and the How, https://thedocs.worldbank.org/en/doc/0a4174d70030f27cc66099e862b3ba79-0200022021/ original/DSCAP-MethodGuidebook-Part1.pdf	This Methodological Guidebook is a resource to help countries in Africa prepare a Digital Skills Country Action Plan for higher education and technical vocational education (TVET), which focuses on the rapid development of Digital Skills amongst young people through coordinated strategies on several fronts. While the focus is on developing digital skills proficiency at the intermediate and advanced levels for students in higher education and TVET, its approach can also be adapted to school education. It has been prepared as a follow up to the conclusions of the 5th Forum of the Partnership for Skills in Applied Sciences, Engineering and Technology (PASET) in May 2019 under the theme of Destination Digital Africa: Preparing our Youth for the Future and as part of the World Bank led Digital Economy for Africa initiative, which supports the Digital Transformation Strategy of the African Union.	The guidebook was prepared as part of the Digital Economy for Africa (DE4A) initiative of the World Bank Group, with funding from the Digital Development Partnership (DDP), a multi-donor trust fund facility hosted in the Digital Development Global Practice, and under the overall guidance of the Partnership for Skills in Applied Sciences, Engineering & Technology (PASET).
Boston Consulting Group 2022. Transformational development in Africa: Pathways for unlocking the power of digital skills and climate analytics.USAID, https://pdf.usaid.gov/pdf_docs/PA00ZHQJ.pdf (Accessed 25 Sep 2024).	This report, commissioned by the USAID Mission to the African Union and prepared by Boston Consulting Group (BCG), articulates how digital skills and climate analytics could prove to be game-changing for development in Africa during the next decade and beyond.	The report helpfully situates digital skills and climate change / climate analytics within an overarching analysis of dominant trends in Africa. These include population growth, rapid urbanisation, and effects of climate change among others. It is also one of only a few relevant publications to connect digital skills and

		climate change via climate analytics.

Annex C: Desk review organisations

This annex contains the name, location and key link to all of the organisations included as part of the desk review.

Organisation name	Location	Website / source
Injaz El Djazir	Algeria	https://www.injaz-eldjazair.org/
Khad Money	Algeria	https://khadmoneyacademy.com/
DZSkillup	Algeria	https://dzskillup.com/
World Learning Algeria	Algeria	https://algeria.worldlearning.org/youth-employment-project/
Adservio	Algeria	https://adservio.dz/
PTC Algeria	Algeria	https://ptc-dz.com/formations/
Competencies DZ	Algeria	https://www.competences.dz/
Code 213	Algeria	https://code213.tech/
Etri Labs	Benin	https://etrilabs.com/our-offices/
EcoBenin	Benin	https://www.ecobenin.org/mission-et-vision/
Future for Future	Benin	https://futureforfuture.org/index.php/contacts-us/

Sèmè City	Benin	https://semecity.bj/
Ecole Numerique	Benin	https://ecolenumerique.bj/
TITA Digital Skills	Benin	https://www.facebook.com/photo.php?fbid=777132257918089&id=100068639666459&set=a.560884016209582&locale=eo_EO https://digitalvalley.bj/portfolio/ https://titabymtn.bj/
Ecole229	Benin	https://ecole229.bj/
GoGreen Technologies	Cameroon	https://gogreentechnologies.org/
ActivSpaces	Cameroon	https://www.activspaces.com/services/
Protege QV	Cameroon	https://www.protegeqv.org/
UCAC Institute	Cameroon	https://ucac-icam.com/
Cecosada Formation	Cameroon	https://www.cecosdaformation.com/web/ https://www.facebook.com/photo/?fbid=488925473249517&set=ecnf.100063962043866
Digital Transformation Alliance	Cameroon	https://dta-alliance.com/index_en.php
Green People's Energy For Africa	Côte d'Ivoire	https://gruene-buergerenergie.org/en/countries/cote-divoire/
Improtech	Côte d'Ivoire	https://improtech.edu.gh/about-us
SheIsTheCode	Côte d'Ivoire	https://sheisthecode.co/home

DigiFemmes	Côte d'Ivoire	https://www.digifemmes.com/
Africa Digital Academy	Côte d'Ivoire	https://ci.linkedin.com/company/africa-digital-academy
Kadea Software	Democratic Republic of Congo	https://kadea.co/a-propos/qui-sommes-nous
Nuru	Democratic Republic of Congo	https://nuru.cd/
Green Congo	Democratic Republic of Congo	https://greencongo.org/our-solutions/
GoShop Academy	Democratic Republic of Congo	https://www.goshop.cd/slides https://www.afsiasolar.com/goshop-academy-a-springboard-for-renewable-energy-technicians/
KivuGreen	Democratic Republic of Congo	https://kivugreen.cd/?lang=en https://gca.org/youth-led-enterprise-uses-ai-to-build-climate-resilience-in-the-democratic-republic-of-the-congo/
ITOT Africa	Democratic Republic of Congo	https://www.itot.africa/
Greenish	Egypt	https://www.facebook.com/GreenishEg/ https://environmentalpaper.org/2022/09/featured-member-greenish/
Banlastic	Egypt	https://banlasticegypt.com/
Shamsina Solar	Egypt	https://shamsinasolar.com/about-us/ https://www.facebook.com/shamsina.solar/

CleanTech Arabia	Egypt	https://cleantecharabia.com/
Eduvation	Egypt	https://eduvation.org/ https://eg.linkedin.com/company/eduvationegypt?trk=public_post_main-feed-card-text
iSchool	Egypt	https://www.ischooltech.com/
Amhara Digital Skills project	Ethiopia	https://www.computeraid.org/case-study/ethiopia-digital-schools-equipping-teachers-with-21st-century-skills/
Fidel Tutoring	Ethiopia	https://fideltutorial.com/service/
Haleta Tutors	Ethiopia	https://www.haletatutors.com/
KurazTech	Ethiopia	https://kuraztech.com/
Elev-8 Digital SkillsAcademy	Ethiopia	https://elev-8.academy/
Ghana Code Club	Ghana	https://ghanacodeclub.org/
DreamOval	Ghana	https://www.dreamoval.org/
Soronko Academy	Ghana	https://soronkoacademy.com/
CodeTrain	Ghana	https://codetraingh.com/
FEMGREEN	Ghana	https://seghana.net/project/females-in-green-and-digital-skills-for-jobs-and-enterprise-creation-femgreen/
Solar Green Academy	Ghana	https://solar-training.org/ghana/

ToolKit Africa	Kenya	https://www.facebook.com/toolkitafrica/
Rift Valley Technical Training Institute	Kenya	https://rvti.ac.ke/new/
Environmental Institute of Kenya	Kenya	https://eik.co.ke/
Ol'lessos technical training institute	Kenya	https://otti.ac.ke/
Learning Lions	Kenya	https://www.learninglions.org/
Kuza Biashara	Kenya	https://www.kuza.one/
Moringa School	Kenya	https://moringaschool.com/
Lewa Wildlife Conservancy	Kenya	https://www.lewa.org/impact/education-2/education/
Green and Digital Innovation Hub	Kenya	https://www.gdih.org/about-gdih/
Wima Youth Organisation	Kenya	https://thewimayouthorganization.org/
Passerelles Numériques Madagascar	Madagascar	https://www.passerellesnumeriques.org/en/our-actions/madagascar/
Sayna	Madagascar	https://sayna.io/
Youth First Madagascar	Madagascar	https://youthfirstmadagascar.org/en/
Green Madag	Madagascar	https://www.greenmadag.mg/activity
Jirogasy	Madagascar	https://jirogasy.com/nos-projets

INSI	Madagascar	https://www.insi.mg/
mHub Malawi	Malawi	https://mhubmw.com/
Nxtgen Labs	Malawi	https://nxtgenlabs.mw/
Mzuzu eHub	Malawi	https://mzuzuehub.org/programs/bizcubation/
Dzuka Africa	Malawi	https://mw.linkedin.com/company/dzuka-africa-organization
Ntha Foundation	Malawi	https://nthafoundation.org/updates/
Rydberg Stark Limited	Malawi	https://mw.linkedin.com/company/rydberg-starck
Green Impact Technologies	Malawi	https://gitmw.org/programmes/
EcoGen Malawi	Malawi	https://mw.linkedin.com/company/ecogen-malawi?trk=public_post_feed-actor-name
Tiyeni	Malawi	https://www.tiyeni.org/what-is-tiyeni
Raqmya academy	Morocco	https://academiaraqmya.gov.ma/
Phosboucraa Foundation	Morocco	https://www.phosboucraafoundation.org/dakhla-learning-center-skills-acquisition-program
Injaz Al Maghrib	Morocco	https://injazmorocco.org/
Tibu Africa	Morocco	https://sportencommun.org/en/projets/tibu-maroc-promoting-inclusive-basketball/ https://tibuafrica.org/
1337 Coding Academy	Morocco	https://1337.ma/en/

AMEE	Morocco	https://www.amee.ma/fr/formation-specialisee
Centrale Casablanca	Morocco	https://centrale-casablanca.ma/
MozDevs	Mozambique	https://www.mozdevz.org/
AgriTech Mozambique	Mozambique	https://agritechmoz.com/
Yopipila	Mozambique	https://azul.org.mz/facilitacao/
Coversu Mozambique	Mozambique	https://www.conversu.co.mz/servicos/educacao-e-treinamento
BioFund	Mozambique	https://www.biofund.org.mz/projects/programa-de-lideranca-para-a-conservacao-de-mocambique-plcm/
EduVentures	Namibia	https://eduventures-africa.org/
Green Enterprise Namibia	Namibia	https://green.com.na/
Green Earth Namibia	Namibia	https://www.greenearthnamibia.com/
World Skills Namibia	Namibia	https://www.worldskillsnamibia.na/
Elyambala	Namibia	https://elyambala.glowdom.com/ https://economist.com.na/78903/education/bridging-the-digital-skills-gap-in-africa/
Tech4Dev	Nigeria	https://tech4dev.com/
Digital Skills Nigeria	Nigeria	https://digitalskillsnigeria.gov.ng/
Ingressive	Nigeria	https://ingressive.org/

HiiT PLC	Nigeria	https://www.hiitplc.com/
DreamCode	Nigeria	https://www.dreamcode.africa/index.html
Digital Peers	Nigeria	https://digitalpeers.org/home/
Wecyclers	Nigeria	https://wecyclers.com/
Paradigm	Nigeria	https://paradigmhq.org/
WeDTC	Rwanda	https://wedtc.rw/
Akazi Kanoze	Rwanda	https://www.akazikanoze.org/projects
We Do Green	Rwanda	https://wedogreenrw.org/
DOT Trust Rwanda	Rwanda	https://rwanda.dotrust.org/
SaferRwanda	Rwanda	https://saferrwanda.org/
Enabel Senegal	Senegal	https://www.enabel.be/country/senegal/
SIMPLON	Senegal	https://en.simplon.co/simplon-senegal.html
ISEP Mbacke	Senegal	https://isepmbacke.sn/
Ishecime Institute	Senegal	https://www.ishecime.sn/formations-cps
Institute of Digital Technologies	Senegal	https://itd-hub.com/admission
Children's Foundation of Technology	Sierra Leone	https://cfotsl.weebly.com/

Sustainable Communities Network	Sierra Leone	https://sustaincommunitiesnet.org/what-we-do/
Sierra Leone Environment Matters	Sierra Leone	https://sierraleoneenviron.wixsite.com/website
Aurora Foundation	Sierra Leone	https://www.aurorafoundation.is/en/frettir/nr/empowering-sierra-leonean-youth-through-ict-beginner-trainings-a-step-towards-a-digital-future/
Tacugama	Sierra Leone	https://www.tacugama.com/education/ https://medium.com/frontier-technologies-hub/determining-digital-literacy-for-reforestation-in-the-mansonia-community-sierra-leone-e79e082d74
Golis Energy	Somalia	https://golisenergy.com/index.php/about/
Green Hope	Somalia	https://greenhope.be/?page_id=198
Shaqodoon	Somalia	https://shaqodoon.org/what-we-do-somaliland-somalia
SOMTAC	Somalia	https://www.facebook.com/Somtac.org/
SomaliLifeline	Somalia	https://somalilifeline.org/education/
WeThinkCode	South Africa	https://wethinkcode.co.za/
GirlCode	South Africa	https://www.girlcode.co.za/
Umuzi Academy	South Africa	https://www.umuzi.org/
DigifyAfrica	South Africa	https://digifyafrica.com/academy/
GreenMatter	South Africa	http://www.greenmatter.co.za/

NepoWorx	South Africa	https://www.nepoworx.com/
GreenSkills Company	South Africa	https://www.greenskills.co.za/
Rotai (Mkulima Hub)	Tanzania	https://rotai.co.tz/
BRITEN	Tanzania	https://www.briten.or.tz/our-projects/
Simusolar	Tanzania	https://simusolar.com/services/
SheCodes Foundation	Tanzania	https://www.shecodesfoundation.org/tanzania
Digital Opportunity Trust	Tanzania	https://tanzania.dotrust.org/what-we-do/?lang=
TDev	Togo	https://ourtdev.com/
Farmerline	Togo	https://farmerline.co/
InitiativesClimate	Togo	http://www.initiativesclimat.org/Toutes-les-initiatives
NanaTech	Togo	https://nanatech.gouv.tg/
CMET Togo	Togo	https://cmet-togo.com/#
Greenstep	Tunisia	https://ufmsecretariat.org/project/greenstep/
Tek-Up	Tunisia	https://tek-up.de/
Injaz Tunisia	Tunisia	https://injaz-tunisia.org/
RedStart	Tunisia	https://redstart.tn/

GoMyCode	Tunisia	https://gomycode.com/dz/
Environmental Defenders	Uganda	https://watetezi.org/about/
GreenEmpowerment	Uganda	https://greenempowerment.org/our-work/
EnerGrow	Uganda	https://ener-grow.com/
Women InTechnology Uganda	Uganda	https://witu.org/
Kreative Campus	Uganda	https://kreativecampus.org/ https://www.connectingafrica.com/author.asp?section_id=768&doc_id=787013
Gr2A	Zambia	https://gr2a.org/
Worldview Institute	Zambia	https://www.worldviewinstitute.org/
Prospero Zambia	Zambia	https://prospero.co.zm/
Asikana Network	Zambia	https://zm.linkedin.com/company/asikana-network
Lubuto Library Partners	Zambia	https://www.lubuto.org/

Annex D: Noteworthy organisations

This Annex contains organisations identified as leading edge providers of digital skills by survey respondents, that they have knowledge of. The country listed does not mean that the organisation works only or primarily in that country, but it is the country cited by respondents for where they are recommending their work.

Organisation name	Country	Link (if relevant)
Addis Ababa University	Ethiopia	https://www.aau.edu.et/
Africa Centre for Women in ICT (ACWICT)	Kenya	https://www.acwict.org/
Afrika Tikkun Services	South Africa	https://afrikatikkunservices.com/
Agence universitaire de la Francophonie (AUF)	Senegal	https://www.auf.org/
Airtel	Zambia	https://www.airtel.co.zm/
Ajira Digital	Kenya	https://ajiradigital.go.ke/
ALX Africa	Malawi	https://www.alxafrica.com/
Andela	Nigeria	https://www.andela.com/
Arusha Technical College	Tanzania	https://www.atc.ac.tz/

Ashesi University	Ghana	https://ashesi.edu.gh/
Bartimaeus Initiative	Zambia	https://www.facebook.com/groups/336186942308438/
Blobus	Benin	https://www.blobus.bj/
BongoHive	Zambia	https://bongohive.co.zm/
Briatek Computers	Nigeria	https://briatek.com.ng/site/
Centre for Virtual Learning (CVL)	Tanzania	https://cvl.udsm.ac.tz/
Cisco	Nigeria	https://www.cisco.com/
Co-creation Hub Africa (CcHub)	Nigeria	https://cchub.africa/
The Copperbelt University	Zambia	https://www.cbu.ac.zm/
CreativeWox	Nigeria	https://creativewox.com/
Creativity Lab	Rwanda	https://creativity.rw/
CTIC Dakar	Senegal	https://www.cticdakar.com/
Cyber School Technology Solutions	Uganda	https://cyberschooltech.co.ug/

Dar es Salaam Institute of Technology (DIT)	Tanzania	https://www.dit.ac.tz/
Digital Bridge Institute (DBI)	Nigeria	https://dbi.edu.ng/
Digital Footprints	Nigeria	https://digitalfootprints.ng/
Digital Safe	Zambia	https://www.digitalsafezm.com/
Digital Skills and Employment Advancement Program (DSEAP)	Kenya	https://dseap.kepsa.or.ke/
Digital Skills Foundation	Rwanda	https://www.dsf.global/
École des Métiers du Numérique	Benin	https://ecolenumerique.bj/
École Nationale des Sciences et Techniques de l'Information et de la Communication (ENSTIC)	Benin	https://bonjourbachelier.bj/etablissements/ecole-nationale-des-sciences-et-techniques-de-linformation-et-de-la-communication-enstic/
École Polytechnique d'Abomey-Calavi (EPAC)	Benin	http://epac.marquette.pe.hu/
EdTech East Africa	Kenya	https://www.linkedin.com/company/edtech-east-africa/?originalSubdomain=ke
Educare	Nigeria	https://www.educare.school/

Edunova	South Africa	https://www.edunova.org/
Electronic Information for Libraries (EiFL)	Uganda	https://www.eifl.net/
eMobilis	Kenya	https://www.emobilis.ac.ke/
Enabel	Uganda	https://www.enabel.be/country/uganda/
Epitech	Benin	https://epitech.bj/
Erastus Group SAS	Senegal	https://www.linkedin.com/company/erastus-group/?originalSubdomain=sn
Evelyn Hone College	Zambia	https://www.evelynhone.ac.zm/
Federal University of Technology Minna	Nigeria	https://futminna.edu.ng/home/
Fondation Follereau Luxembourg	Togo	https://ffl.lu/
Force-N	Senegal	https://force-n.sn/
Forsa Academy	Morocco	https://www.forsa.ma/forsa-academy
Fundi Bots	Uganda	https://fundibots.org/
Geo Business Solutions	Namibia	https://www.geosol.com.na/

Geocarta	Namibia	https://geocarta.com.na/
GeoTech Solutions	Uganda	https://geotechsolutionsug.com/
Ghana Digital Centres Limited	Ghana	https://www.gdcl.gov.gh/
Ghana-India Kofi Annan Centre of Excellence in ICT (AITI-KACE)	Ghana	https://moc.gov.gh/aiti-kace/
Ghana Tech Lab	Ghana	https://www.ghanatechlab.com/
Graph Technologies	Kenya	https://graph.co.ke/
Greenbridge School of Open Technologies	Uganda	https://greenbridge.ug/
Green Solar Academy	South Africa	https://solar-training.org/
The GYM	Rwanda	https://www.the-gym.rw/
ICDL Foundation	Uganda	https://icdl.org/
ICT Association of Malawi (ICTAM)	Malawi	https://www.ictam.org.mw/
iDeveloper Technologies	Kenya	https://idevelopertechnologies.co.ke/
Information and Communication Technology	Kenya	https://www.icta.go.ke/

Authority (ICTA)		
Ingryd Academy	Nigeria	https://www.ingrydacademy.com/
Institute for Digital Market and Communication (IDMC)	Ghana	https://idmcghana.com/
Institut Français des Relations Internationales (IFRI)	Benin	https://www.ifri.org/en
Instituto Nacional de Tecnologias de Informação e Comunicação (INTIC)	Mozambique	https://www.intic.gov.mz/
International Training Centre of the International Labour Organization (ITCILO)	Uganda	https://www.itcilo.org/
International University of Management (IUM)	Namibia	https://ium.edu.na/
Irembo	Rwanda	https://irembo.com/
Jacaranda Hub	Zambia	https://jacarandahub.org/home/
Jiggen Tech	Senegal	https://www.facebook.com/jiggentech/?locale=en_GB
Jomo Kenyatta University of Agriculture and	Kenya	https://www.jkuat.ac.ke/

Technology (JKUAT)		
Kampala International University (KIU)	Uganda	https://www.kiu.ac.ug/
Kenya Education Network Trust (KENET)	Kenya	https://www.kenet.or.ke/
Kenyatta University	Kenya	https://www.ku.ac.ke/
Kepler College	Rwanda	https://keplercollege.ac.rw/
Konza Technopolis	Kenya	https://konza.go.ke/
Kyambogo University	Uganda	https://kyu.ac.ug/
Makerere University	Uganda	https://www.mak.ac.ug/
Malawi Communications Regulatory Authority (MACRA)	Malawi	https://macra.mw/
Malawi University of Business and Applied Sciences (MUBAS)	Malawi	https://www.mubas.ac.mw/
McKinsey Digital	Egypt	https://www.mckinsey.com/middle-east/cairo
Media and Digital Skills Centre, Idaban	Nigeria	https://www.facebook.com/p/Media-and-Digital-Skills-Centre-Nigeria-100082215177845/

Media Information and Communication Technologies Sector Education and Training Authority (MICTSETA)	South Africa	https://www.mict.org.za/
mHub	Malawi	https://mhubmw.com/
Ministère du Cadre de Vie et du Développement Durable Benin	Benin	https://www.gouv.bj/article/2117/communique-ministre-cadre-developpement-durable-attention-cabinets-geometre-urbaniste/
Ministère du Numérique et de la Digitalisation Bénin	Benin	https://numerique.gouv.bj/
Ministério da Ciência, Tecnologia e Ensino Superior	Mozambique	https://mctes.gov.mz/
Ministry of Communications and Information Technology	Egypt	https://mcit.gov.eg/
Mobile Telecommunications Company (MTC)	Namibia	https://www.mtc.com.na/
Moi University	Kenya	https://www.mu.ac.ke/
Mondo	Uganda	https://mondo.org.ee/en/countries/uganda/
Moringa School	Kenya	https://moringaschool.com/

MTN	Uganda, Ghana, Zambia	https://www.mtn.co.ug/
Muraho Technology	Rwanda	https://muraho.tech/
Mzuzu E-Hub	Malawi	https://mzuzuehub.org/
Mzuzu University (MZUNI)	Malawi	https://www.mzuni.ac.mw/
Namibia University of Science and Technology (NUST)	Namibia	https://www.nust.na/
N@tcom Training Centre	Rwanda	https://www.linkedin.com/company/n-tcom-training-centre/
National Electronic Media Institute of South Africa (NEMISA)	South Africa	https://nemisa2.co.za/
National Information Technology Authority Uganda (NITA-U)	Uganda	https://www.nita.go.ug/
National Information Technology Development Agency (NITDA)	Nigeria	https://nitda.gov.ng/
National Open University of Nigeria (NOUN)	Nigeria	https://nou.edu.ng/
The Nelson Mandela African Institute of Science	Tanzania	https://nm-aist.ac.tz/

and Technology (NM-AIST)		
NIIT	Nigeria	https://www.niit.com/NIGERIA
Nkumba University	Uganda	https://nkumbauniversity.ac.ug/
Northlink College	South Africa	https://www.northlink.co.za/
NxtGen Labs	Malawi	https://nxtgenlabs.mw/
Obafemi Awolowo University (OAU)	Nigeria	https://oauife.edu.ng/
The Open University	Togo	https://www.open.edu/openlearncreate/course/index.php?categoryid=550
The Open University of Tanzania (OUT)	Tanzania	https://www.out.ac.tz/
PACE Career Centre	Zambia	https://www.pacecareers.com/about https://www.zambiamonitor.com/govt-in-partnership-with-corporates-moves-to-address-skills-digital-gap-among-youths/
Pisquare	Rwanda	https://www.pisquare.rw/
The Public Service Education and Training Authority (PSETA) - The Batho Pele Digital Skills	South Africa	https://pseta.org.za/

Platform		
Renewables Academy (RENAC)	Ethiopia	https://www.renac.de/
Regional Training and Research Institute for Distance and Open Learning (RETRIDOL)	Nigeria	https://www.col.org/what-we-do/regional-support/retridol/
Robotics and Artificial Intelligence Nigeria (RAIN)	Nigeria	https://rainigeria.com/
RWA Tech Hub	Rwanda	https://www.linkedin.com/company/rwa-tech-hub/?originalSubdomain=rw
Rwanda Basic Education Board (REB)	Rwanda	https://www.reb.gov.rw/home
SchoolNet SA	South Africa	https://www.schoolnet.org.za/
Sénégal Numérique (SENUM)	Senegal	https://senegalnumeriquesa.sn/en/
Simplon	Senegal	https://en.simplon.co/simplon-senegal.html
SMART Zambia Institute	Zambia	https://www.szi.gov.zm/
Sonatel Academy	Senegal	https://www.facebook.com/SonatelAcademy/?locale=fr_FR
Sparc Systems	Malawi	https://www.sparcsystems.africa/

Systeme d'information et de Management de l'education Nationale (SIMEN)	Senegal	https://www.education.sn/organisation/systeme-dinformation-et-de-management-de-leducation-nationale-simen
Teacher Education Support Project (TESP)	Tanzania	https://w05.international.gc.ca/projectbrowser-banqueprojets/project-projet/details/d000252001
Tech Era	Ghana	https://www.linkedin.com/company/techeraafrica/?originalSubdomain=gh
Techdom Academy	Uganda	https://techdom.ac.ug/
Telecel Ghana	Ghana	https://telecel.com.gh/
Tenece	Nigeria	https://www.tenece.com/
Tertiary Education Trust Fund (TETFund)	Nigeria	https://tetfund.gov.ng/
Udemy	Nigeria	https://www.udemy.com/
Uganda Communications Commission (UCC)	Uganda	https://www.ucc.co.ug/
Uganda Institute of Information and Communication Technology (UICT)	Uganda	https://www.uict.ac.ug/
uLesson	Nigeria	https://ulesson.com/

L'Université numérique Cheikh Hamidou Kane (UN-CHK)	Senegal	https://www.unchk.sn/
University of Cape Town (UCT)	South Africa	https://uct.ac.za/
University of Dar es Salaam Computing Centre (UCC)	Tanzania	http://www.ucc.co.tz/
University of Energy and Renewable Natural Resources	Ghana	https://uenr.edu.gh/
University of Johannesburg	South Africa	https://www.uj.ac.za/
University of Lagos	Nigeria	https://unilag.edu.ng/
University of Malawi (UNIMA)	Malawi	https://www.unima.ac.mw/
University of Nairobi	Kenya	https://www.uonbi.ac.ke/
University of Namibia (UNAM)	Namibia	https://www.unam.edu.na/
University of Nigeria Nsukka	Nigeria	https://www.unn.edu.ng/
University of Rwanda	Rwanda	https://ur.ac.rw/
University of Zambia	Zambia	https://www.unza.zm/

Upschool Africa	Nigeria	https://upschoolafrica.com/
USAID Let's Read Programme	Zambia	https://www.usaid.gov/zambia/fact-sheet/lets-read
Varsity College	South Africa	https://www.varsitycollege.co.za/
Volkeno	Senegal	https://volkeno.com/
VVOB	Zambia	https://www.vvob.org/en/vvob-in-zambia
Xarala Academy	Senegal	https://www.xarala.co/
Yeesal AgriHub	Senegal	https://yeesalhub.org/
Zambia Centre for Accountancy Studies (ZCAS)	Zambia	www.zcas.ac.zm
Zambia Environmental Management Agency (ZEMA)	Zambia	https://www.zema.org.zm/
Zambia Information and Communications Technology Authority (ZICTA)	Zambia	https://www.zicta.zm/
Zamtel	Zambia	https://www.zamtel.zm/

Annex E: Interview template

The interviews conducted at eLearning Africa used the following semi-structured questions as an initial template. Additional questions were asked or some questions were not asked contextually depending on the interviewees responses.

1. Could you provide a brief summary of how your organisation engages with EdTech, specifically the provision of *digital skills*?
2. How does your organisation deliver digital skills within the basic education sector?
    a. How do you engage with the Ministry of Education and /or other government stakeholders from district to national level to facilitate this?
    b. Are there any barriers your organisation faces in this respect?
3. What opportunities exist for your organisation to connect with other partners, namely EdTech providers, governments and civil society at either a regional or national level?
    a. What value do you see in these opportunities?
    b. What challenges does your organisation face in accessing these networks and partnerships?
    c. Is there any particular type of partnership your organisation would find most useful?
    d. Is your organisation able to access sufficient funding opportunities?
4. Does your organisation engage with green skills?
    a. **Note: green skills meaning the knowledge, abilities, values and attitudes needed to live in, develop and support an environmentally sustainable and resource-efficient society**.
    b. Do you know of any other organisations working within green skills?
5. Is there any organisation providing digital skills working in your country, or that you know of, that you think is promising but is not involved in the e-learning Africa conference or network?

Annex F: Survey template

The online survey, distributed in French and English, used the following structure and questions.

Preface:

The following survey is designed to be completed by individuals working in private sector organisations engaged in digital skills provision, or people working outside but with knowledge of private sector organisations engaged in digital skills provision. This includes digital skills provision for any group or person.

We recognise that defining 'digital skills' is not simple. For the purpose of this survey, when we are asking about 'digital skills' we mean: "**the ability to use digital technologies (such as mobile phones and computers) to undertake specific tasks. It can include simple day-to-day tasks and transactions and use of the internet, use of technologies to engage in professional work, and use of technologies to undertake complex tasks like coding and programming and problem solving.**"

1. Please can you confirm that you are the intended respondent for this survey?
    a. Yes I am engaged in digital skills provision or know of organisations engaged in digital skills provision as described above
    b. No I am not engaged in digital skills provision or know of organisations engaged in digital skills provision as described above (**skips to end**)

Section 3 - Background (all respondents)

2. What is your name?
    a. Open response
3. What is the name of your organisation?
    a. Open response
4. Please provide an email address that can be used to contact your organisation if necessary.
    a. Open response
5. What is the website that best explains the work of your organisation? (Please put N/A if there is no website).
    a. Open response
6. Which of the following countries does your organisation work in? (Please tick all that apply). Please note that the survey is limited to these 25 countries and we cannot take responses regarding work on digital skills taking places in countries outside of this list.
    a. Algeria
    b. Benin
    c. Cameroon
    d. Côte d'Ivoire
    e. Democratic Republic of Congo
    f. Egypt
    g. Ethiopia
    h. Ghana
    i. Kenya
    j. Madagascar
    k. Malawi
    l. Morocco
    m. Mozambique
    n. Namibia
    o. Nigeria
    p. Rwanda
    q. Senegal
    r. Sierra Leone
    s. Somalia
    t. South Africa
    u. Tanzania
    v. Togo
    w. Tunisia

x. Uganda
y. Zambia

7. For the purposes of the remaining questions in the survey, please base your answers on one country where your organisation does most work in relation to digital skills. If you would like to complete the survey for more than one country, then please complete a separate survey for each country. Please choose the country that you do most of your work in and that your responses in the remainder of the survey will apply to:
    a. Algeria
    b. Benin
    c. Cameroon
    d. Côte d'Ivoire
    e. Democratic Republic of Congo
    f. Egypt
    g. Ethiopia
    h. Ghana
    i. Kenya
    j. Madagascar
    k. Malawi
    l. Morocco
    m. Mozambique
    n. Namibia
    o. Nigeria
    p. Rwanda
    q. Senegal
    r. Sierra Leone
    s. Somalia
    t. South Africa
    u. Tanzania
    v. Togo
    w. Tunisia
    x. Uganda
    y. Zambia
8. Which of the following describes how you are responding to the survey?
    a. I am answering as part of a private sector organisation that is engaged in providing digital skills training or development (**continues on track 1 to section 4**)
    b. I am answering not as part of a private sector organisation that is engaged in providing digital skills training or development, but as someone who has knowledge of private sector organisations engaged in digital skills provision (**sends respondents onto track 2, starting at section 7**)
    c. None of the above (**skips to end**)

Section 4 (Track 1): Private sector organisations - digital skills

9. How many years has your organisation worked in providing digital skills? (single answer)
    a. Fewer than 2 years
    b. 2-5 years

c. 6-10 years
d. More than 11 years

10. How many staff does your organisation employ in relation to its work in digital skills? Please note that these are paid employees at full time equivalent rates. (single answer)
    a. Fewer than 10 employees
    b. 10-25 employees
    c. 25-100 employees
    d. 101+ employees
11. What is the primary target group for your organisation in relation to digital skills provision? (single answer)
    a. In-school pre-primary or primary level students (ages 3-11)
    b. Out-of-school pre-primary or primary level students (ages 3-11)
    c. In-school secondary level students (ages 12-18)
    d. Out-of-school secondary level students (ages 12-18)
    e. Tertiary students (age 18+)
    f. Vocational training students (any age)
    g. Into-employment professional training for out of work adults (age 18+)
    h. In-employment professional training for working adults (age 18+)
    i. All of the above
    j. Other (open)
12. What form(s) of digital skills provision does your company engage in? Please note that includes digital skills provision for any group or person. (Select all that apply)
    a. Information and data literacy (such as browsing, searching, filtering, evaluating or managing digital data, information and content)
    b. Communication and collaboration (such as interacting, sharing and collaborating through digital technologies)
    c. Digital content creation (such as developing digital content, programming, licence management)
    d. Online safety (such as protecting devices and personal data)
    e. Problem solving (such as resolving technical issues, identifying digital competence gaps, computational thinking)
    f. Other
13. Which of the following approaches does your organisation use in relation to the provision of digital skills training? Please note that this includes digital skills training for any group or person. (Please select all that apply)
    a. Basic level courses or training in foundational digital literacy
    b. Basic level courses or training in using digital devices
    c. Basic level courses or training in using the internet
    d. Basic level courses or training in online safety
    e. Digital literacy courses in TVET and higher education institutions for students enrolled in non-ICT courses
    f. Certificate and diploma courses in relevant areas of digital technology
    g. Introductory courses or training in electrical engineering, computer science, data science and related fields

h. Introductory courses or training in other fields of engineering (mechanical, civil etc.) that include a digital component
i. Advanced courses or training in electrical engineering, computer science, data science and related fields
j. Advanced courses or training in other fields of engineering (mechanical, civil etc.) that include a digital component
k. Other

14. Over the next three years, do you anticipate that the work of your organisation in relation to the provision of digital skills will (single answer):
    a. Reduce in size?
    b. Stay a consistent size?
    c. Increasing in size but staying within current countries of operation?
    d. Increasing in size and expanding to new countries of operation?
15. Which of the following statements best describes your organisation's ability to access funding in relation to training people in digital skills (single answer):
    a. My organisation finds it very hard to access funding to train people in digital skills.
    b. My organisation finds it quite hard to access funding to train people in digital skills.
    c. My organisation finds it neither easy nor hard to access funding to train people in digital skills.
    d. My organisation finds it quite easy to access funding to train people in digital skills.
    e. My organisation finds it very easy to access funding to train people in digital skills.

Section 5 (Track 1): Private sector organisations - Green skills

16. In this study, the research is interested in better understanding how environmentally-friendly knowledge, skills and attitudes are being developed within the remit of digital skills training. We recognise that defining 'green skills' is not simple. For the purpose of this survey, when we are asking about 'green skills' we mean: "**the knowledge, abilities, values, attitudes and practices that are needed in order to live in, develop and support societies which reduce the negative impact of human activity on the environment.**"Does your organisation provide digital skills training in green skills?
    a. Yes (**continues with survey**)
    b. No (**skips to end**)

Section 6 (Track 1): Private sector organisations - Green skills continued

17. Which statement best describes the volume of work that your organisation does on green skills? (single answer)
    a. It is a small part of our work and we expect it will remain small
    b. It is a small part of our work and we expect it will grow
    c. It is a large part of our work and we expect it will remain large
    d. It is a large part of our work and we expect it will shrink
18. What area of green skills does your organisation work within? (Select all that apply)
    a. Sustainable agriculture (e.g. organic farming techniques, agroforestry, water-efficient irrigation)

b. Renewable energy (e.g. solar or wind energy installation, operation and maintenance)
c. Waste management (e.g. recycling, composting, waste collection)
d. Water resource management (e.g. rainwater harvesting, water purification, watershed management)
e. Sustainable urban planning (e.g. sustainable building materials, public transit planning, urban greening).
f. Climate change adaptation and mitigation (e.g. climate-resilient infrastructure, disaster risk management, carbon management)
g. Green finance (e.g. sustainable and microfinance for green initiatives)
h. Environmental education and advocacy (e.g. environmental awareness programmes, environmental science courses)
i. Sustainable fisheries and aquaculture (e.g. fish farming, marine conservation)
j. Other (please specify)

19. Please provide a short description of the work your organisation does in providing green skills:
    a. Open question
20. Please provide a short description of why your organisation decided to work in providing green skills:
    a. Open question
21. Please provide a short description of any environmentally conscious decisions your organisation makes when using digital tools or delivering digital skills training.
    a. Open question
22. **Goes to the end**

Section 7 (Track 2): Knowledge of organisations - digital skills

1. Which category best describes your organisation? (single answer)
    a. Education, training and research organisation
    b. Business
    c. Government
    d. International non-governmental organisation (iNGO)
    e. Non-governmental organisation (NGO)
    f. Association
    g. Other (please specify)
2. How do you engage with organisations that provide digital skills training? (Please select all that apply).
    a. The organisation I work for works directly with organisations that provide digital skills
    b. I am in shared networks with organisations that provide digital skills
    c. I am involved in providing funding for organisations that provide digital skills
    d. I do not engage directly with these organisations but I have knowledge of them
    e. Other
3. What organisations do you think are the leading edge providers of digital skills training within your country? (Please list a maximum of three organisations and provide a website if you are able to).
    a. Open answer

4. Of the organisations you have listed above, do you know if any provide digital skills training in green skills? We recognise that defining 'green skills' is not simple. For the purpose of this survey, when we are asking about 'green skills' we mean: "**the knowledge, abilities, values, attitudes and practices that are needed in order to live in, develop and support societies which reduce the negative impact of human activity on the environment.**"
    a. Yes (**continues with survey**)
    b. No (**skips to the end**).

Section 8 (Track 2): Knowledge of organisations - green skills

5. Which of the following areas of green skills training do these organisations provide? (Please select all that apply).
    a. Sustainable agriculture (e.g. organic farming techniques, agroforestry, water-efficient irrigation)
    b. Renewable energy (e.g. solar or wind energy installation, operation and maintenance)
    c. Waste management (e.g. recycling, composting, waste collection)
    d. Water resource management (e.g. rainwater harvesting, water purification, watershed management)
    e. Sustainable urban planning (e.g. sustainable building materials, public transit planning, urban greening).
    f. Climate change adaptation and mitigation (e.g. climate-resilient infrastructure, disaster risk management, carbon management)
    g. Green finance (e.g. sustainable and micro finance for green initiatives)
    h. Environmental education and advocacy (e.g. environmental awareness programmes, environmental science courses)
    i. Sustainable fisheries and aquaculture (e.g. fish farming, marine conservation)
    j. Other (please specify)
6. Please provide a short summary of how these organisations provide digital skills training in green skills.
    a. Open question