**AFRICAN DEVELOPMENT BANK GROUP**

# FEASIBILITY STUDY FOR THE GAMBIA DIGITAL LITERACY AND SKILLS DEVELOPMENT

## FINAL REPORT

**Education and Skills Development Division (AHHD1)**

**May 2022**

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| AI | - | Artificial Intelligence |
| BCS | - | British Computer Society |
| CREDD | - | Curriculum Research, Evaluation and Development Directorate |
| DigComp | - | Digital Competence |
| ECD | - | Early Childhood Days |
| ECDL | - | European Computer Driving License |
| EU | - | European Union |
| GAMTEL | - | Gambia Telecommunications Company Limited |
| GDP | - | Gross Domestic Product |
| GICTA | - | Gambia ICT Agency |
| gmCSIRT | - | Gambia Computer Security and Incidence Response Team |
| GoTG | - | Government of The Gambia |
| GTTI | - | Gambia Technical Training Institute |
| HEI | - | Higher Education Institution |
| IC3 | - | Internet Core Competency Certification |
| ICT4D | - | ICT for Development |
| IFC | - | International Finance Corporation |
| IFMIS | - | Integrated Financial Management Information System |
| IoT | - | Internet of Things |
| ITAG | - | Information Technology Association of the Gambia |
| ITU | - | International Telecommunications Union |
| MDA | - | Ministries, Departments and Agencies |
| MICS | - | Multiple Indicator Cluster Survey |
| MOBSE | - | Ministry of Basic and Secondary Education |
| MOFEA | - | Ministry of Finance and Economic Affairs |
| MoHERST | - | Ministry of Higher Education, Research, Science and Technology |
| MOICI | - | Ministry of Information and Communication infrastructure |
| NAQAA | - | National Accreditation and Quality Assurance Authority |
| NDP | - | National Development Plan |
| NICI | - | National Information and Communications Infrastructure |
| PURA | - | Public Utilities Regulatory Authority |
| SOE | - | State Owned Enterprises |
| SSA | - | Sub-Saharan Africa |
| SSC | - | Sector Skills Council |
| TVET | - | Technical and Vocational Education and Training |
| UNESCO | - | United Nations Educational, Scientific, and Cultural Organisation |
| USF | - | Universal Service Fund |

# ACKNOWLEDGEMENT

We express our special thanks of gratitude to the Ministry of Information and Communication Infrastructure of the Republic of The Gambia and the Human Capital, Youth and Skills Development Department of the African Development Bank in taking the momentous decision towards addressing the need for Digital Literacy and Skills Development in The Gambia.

Foremost, the sponsoring of this Feasibility Study for the Gambia Digital Literacy and Skills Development by the African Development Bank earns the highest appreciation and gratitude of all stakeholders. Special thanks to Mme Hendrina Doroba the Manager of Education and Skills Development Division, the Task Manager of the Study, Mme Patience Ugonma Ekoh, Ms Keiko Takei and rest of the Team Members in Education and Skills Development Division for supporting and guiding us in the conduct of this study. We would also like to acknowledge and thank various stakeholders in the digital literacy value chains, training institutions, the youth of Gambia for participating in the study and sharing their valuable feedback with us and the Honourable Government Officials whose guidance and insights have helped shape the study in favour of the people of The Gambia.

# EXECUTIVE SUMMARY

1. **Digital literacy for economic development in Africa**: Technology has been at the forefront of economic development in the post-industrial revolution world and digital technologies lead the technology landscape today. To leverage upon the economic development potential from digital technologies, mass digital literacy is important to boost economic development, enable the emergence of new digital businesses, digitise traditional industries, enhance business management and reduce uncertainties to directly minimise the transaction cost of economic entities thereby increasing the overall economic performance. The COVID-19 pandemic has further catalysed how the world functions, illustrating the limitations of many existing systems and highlighting the need to reimagine the role of information technology as a lever for economic productivity and growth[1].

2. African economies are presented with a development opportunity to progress into the digital economic order and adapt to the new digital world, as digital literacy rates and the access to digital means go hand in hand. Despite the previous lag in the penetration of internet and digital services, recent growth numbers show a promising zeal and commitment towards embracing technological change and bridging the digital divide.

3. **The Gambian Context** - Since 2017, the online environment has improved in The Gambia. The country has one of the highest mobile phone penetration rates in Africa, standing at 141.2 per cent in 2017, although one individual may have more than one subscription.[2] The number of internet users stood at 580.2 thousand in January 2021, increasing by 108 thousand (+23 per cent) between 2020 and 2021. As of 2021, there were 430.0 thousand (17.5 per cent of the total population) social media users in The Gambia, the number of which increased by 60 thousand (+16 per cent) between 2020 and 2021. Mobile connections stood at 4.02 million (164.1 per cent of the total population) in January 2021, increasing by 174 thousand (+4.5 per cent) between January 2020 and January 2021.[3]

4. The Government of The Gambia (GoTG) has taken tremendous strides in this direction, including various infrastructure initiatives in the ICT sector like the ACE Submarine Cable and ECOWAS Wide Area Network (ECOWAN) Fibre Backbone for full connectivity across the length and breadth of the country. Additionally, disjointed efforts are being undertaken towards digital literacy and ICT skills development in The Gambia by various stakeholders both in the public and private sectors, though such efforts are at a very low scale. The idea of rolling out the National Digital Literacy and Skills Development Programme, is, therefore, fully in line with ensuring that The Gambia is equipped with the requisite capacity to support the realisation of the digital transformation agenda.

5. **Policies, Regulation, Plans and Institutional Framework** - The GoTG has identified ICT as a critical enabler for socio-economic transformation in the National Development Plan (NDP) 2018-2021. Aligned with the fifth objective to "Make The Gambia a Digital Nation and Create a Modern Information Society" by harnessing the benefits of ICT in all economic sectors of NDP Vision, the Gambia ICT for Development (ICT4D) Policy Statement 2018-2028 was developed that articulates strategic objectives pertaining to public digital platforms, a high priority for the GoTG. ICT4D Policy Statement fully recognises the country's digital transformation aspirations. The strategy to achieve this goal includes the rollout of a robust and aggressive national digital literacy and skills development programme which will be anchored on scaling up the digital literacy and skills development rate in the country in order

[1] Hendrina Doroba, Tochukwu Mbanugo & Uyoyo Edosio: The relevance of digital skills in the COVID-19 era, 17 June 2020 (https://www.afdb.org/fr/news-and-events/relevance-digital-skills-covid-19-era-36244)
[2] https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
[3] https://datareportal.com/reports/digital-2021-gambia

to ensure that no one is left behind in the digital transformation process. Furthermore, the country's ICT4D Policy has been formulated under the guidance of the NDP.

6. Referring to digital skills as a critical enabling factor, various policies and plans have been developed including Education Sector Strategic Plan (2016-2030), National Employment Policy and Implementation Plan (2019-2024), the Technical and Vocational Education and Training (TVET) Roadmap (2020-2024), ICT4D (2018-2028), and Cybersecurity Policy (2020- 2024). In view of various policies and initiatives towards the development of digital literacy, ICT skills and the overall digital economic development of Gambia clearly indicates that the GoTG recognizes the scope and importance of strengthening digital literacy and skills. However, GoTG is yet to develop a comprehensive National digital skills strategy and regulatory framework for further implementation.

7. The GoTG in its quest to ensure a leadership role in inter-sectoral coordination on the digital transformation agenda amongst others, the Gambia ICT Agency was established by an act of parliament in 2019.

8. **Digital literacy initiatives:** Digital literacy initiatives in The Gambia remain fractured and ad-hoc in nature, ranging from pilot interventions within some of the ministries to a handful of TVET and university programs, including a variety of smaller-scale training offered by various private and non-profit organizations. While these minor initiatives hold promise, the overall digital infrastructure including broadband connectivity, and a holistically integrated national framework and a broader vision for national skills development would be vital to evaluate, prioritise and scale such efforts on the long run. The Policy fronts also tend to cover the aspects of ICT integration into the education curriculum; creation, quality assurance, delivery, and accreditation of online courses, TVET skilling programs, Higher education programs, and private sector skills training among many, however, major initiatives towards realisation of the same remains largely absent.

9. **Digital literacy among Public Workforce**: In view of the growing demand for digital public services e-governance, the need for digital skills in the public workforce is becoming crucial for effective public administration. The KIIs with representatives of the public institutions indicate that some initiatives and efforts to enhance digital literacy among the public workforce are being planned and implemented at departmental levels. The Consultant's KIIs with representatives of MOICI, MOF, MOBSE, MOBS and NAQAA gives an indication that a significant portion of the public workforce, at least at the Ministerial level is digitally literate, and some of the key positions are filled with high technically skilled while, workforce with challenges related to the lack of digital literacy face problems with work efficiency and timely delivery. The discussions also highlight the need for enhanced training focused on digital skills at the departmental level, an improved share of digital training programs at HEIs responsible for training the public workforce and strengthening technical competency prerequisites for some of the key specialised positions in respective Ministries.

10. KIIs with MOICI informed that a sufficient number of the public workforce possess basic digital literacy. However, some of the staff within MOICI have low digital literacy levels and consequently face challenges related to their performance, quality of output and working timelines. Increased digital literacy among the public workforce can help in effective Governance and make the public employees more efficient in terms of their performance, work output and job satisfaction. The suggested way to increase digital literacy among the public workforce is to develop sector-wise and department wise digital training programs, aimed at the existing workforce and rising public recruitments and simultaneously roll out digital services to the public. Furthermore, during the KIIs and discussion with representatives of MOICI, it was concurred with the idea of strengthening and intensifying digital training at HEIs for producing/training the public workforce.

11. KII with the official of the Ministry of Finance (MOF) indicated that almost all the workforce in key positions are digitally literate in this Ministry, while 5% of the workforce have attained a high degree of digital literacy and 95% are digitally literate at the intermediate level. As digital literacy enhances the capabilities and efficiency levels for the execution of tasks, the same can be enhanced with the provision of the right type of environment and ICT facilities. MOF officials also indicated that more frequent intra-departmental training should be organized for enhancing the digital literacy in the departments with stronger digital skilling pre-requisites for some of the key positions and promotions to those positions.

12. KII with the Ministry of Basic and Secondary Education (MOBSE) reveals that a good number of the technical and professional staff are digitally literate with requisite skills in the execution of their duties. However, the performance of some staff is limited due to the deficiencies in the competency level related to the need for day to day use and application of digital technologies at work. The Ministry also aims at increasing digital literacy provision in schools and has taken steps towards the implementation of the same. Early initiatives include the provision of ICT infrastructures wherein internet services in schools have been ensured, though it has not been expanded to include schools nation-wide. I relation to this, MoBSE lists the main challenges faced in the implementation of the plan - inconsistency and poor connection of the internet services in school areas stand out to be the main problem in the implementation and operation of school services, while the Ministry has limited resources and authority to expand internet services in regions where such challenges persist. The discussions with representatives highlight their efforts to improve digital literacy within their departments and schools, while suggesting that digital literacy should be mandatory and set as prerequisites at the recruitment stage, including the teaching staff, and the necessity to enhance school curriculum by incorporating well-defined digital literacy content embedded in the curriculum along with provision for supporting schools with digital infrastructure and broadband connection.

13. KII with the representative of the Ministry of Youth and Sports (MOYS) revealed that 99% of their staff are digitally literate among which 5% are having a higher level of digital literacy while almost 50% have just basic digital skills. The remaining 44% of the workforce have intermediate level digital literacy. About 40% of the digitally literate workforce know about technology basics while only about 10%, 14% and 9% know about content creation, information management and safety/security respectively. All 99% digitally literate workforce is familiar with the use of basic communication gadgets such as mobile phones. A low level of digital literacy among the workforce poses the challenge of high levels of time consumption in execution of tasks. Most employees cannot complete basic tasks without the intervention of the digital specialists, and this is adding onto their work burden. Enhanced digital literacy will help promote faster execution of employees' duties and reduce the workload on the Ministry's ICT technicians. Digital literacy among the public workforce can be increased by providing diverse areas of digital literacy training to the staff. For this, running of frequent training programmes to make employees more acquainted with digital skills is needed along with provision of more digital equipment with the MOYS to enable digital equipment access for every employee. This will enable the employees in doing their job more efficiently and provide support for running regular training programs.

14. Gambia Investment and Export Promotion Agency (GIEPA) has a digital literacy policy (Information Technology Policy) which is found to be lacking a comprehensive outlook to the ICT aspect which is only partly implemented. It also has a strategy for the continuous development of ICT skills among staff. The implementation of this strategy is in progress. Furthermore, the latest office applications (Office 365) and software and databases (HR Plus, Finex, Customer Relationship Management, Biometric Attendance System. etc.) is being utilized. However, the Agency is facing some challenges in terms of implementation wherein getting the staff available to attend training on ICT remains a constraint. Reportedly, the staff informed that the schedules for the training are not favourable to them and there is lack of motivation for attending the training. As a measure, the ICT

team introduced one-on-one training to mitigate the challenge. Further, it is observed that the limitations and obstacles in the involvement of the Central Government on digital literacy-related activities is still remains an ongoing challenge.

15. KII with NAQAA revealed that all their technical and professional employees hold certain level of competencies in digital literacy, but it has been found to be difficult to classify their levels. The increase in digital literacy is part of the strategy of NAQAA which is already instrumented in facilitating the development of quality standards and requirements for digital literacy in the country. The challenge faced by the Authority include the lack of enough trainers with high levels of competency in applying the standards and requirements of the institution. The few trainers that the Authority employs, have not regularly upgraded and adopted themselves to new challenges and requirements of the current era. Less qualified workforce, lack of infrastructure, inadequate number of computers and other digital gadgets with most of the digital literacy service providers are some of the outstanding challenges. Moreover, the lack of enabling infrastructure to deliver digital literacy programs is a challenge at the national level.

16. Digital literacy can be increased through the harmonisation of digital literacy programs. Institutions offering digital literacy programs should adapt same content and competencies for similar digital literacy levels which the NAQAA has already initiated.

17. **Digital literacy integration in education institutions** is found to be weak along with challenges such as the non-availability of equipped computer laboratories and electricity supply. Only 40 percent of lower basic education schools, 58 percent of upper basic education schools, and 67 percent of senior secondary schools have electricity. Furthermore, 57 percent of all senior secondary schools, 41 percent of upper basic education schools, and 22 percent of lower basic education schools are equipped with computer laboratories.

18. The KIIs with stakeholders in the TVET and tertiary education segments revealed that teachers use computers to submit grades and reports. However, the provision of computer labs of optimal level, free wifi with good bandwidth, computer devices (laptops or tablets) and projection devices are required to enable sharing of digital information with students. This will facilitate the exposure of all to more information. Additionally, other facilities needs are consistent power or inverter installations, interactive SMART boards, and printers. Also, there is a need for teachers in the field of technology to coach regular classroom teachers on the utilization of technology for education and to also assess teachers' performance on this aspect. Nevertheless, it is found that technicians required to set up the hardware and software as well as handle daily troubleshooting is a major necessity.

19. Additionally, the KIIs with private sector stakeholders reveal that the unsuitable qualifications and cost of additional training required to adapt and learn advanced digital skills are among the greatest barriers in employing young people. This clearly shows the advanced digital skills gap between the private sector's needs and the level of competence of young people looking for a job in the ICT sector.

20. **Diffusion of digital literacy in rural areas** – As a consequence of infrastructure deficiencies (erratic energy supply, Internet, ICT training centres) in the rural areas and relatively low economic activities, the ICT landscape in the rural Gambia varies significantly from the urban Gambia, while growing curiosity in digital literacy and ICT skills and technologies has been observed in the rural Gambia. On the other hand, there is a low demand for ICT and related services as few businesses have computers and internet connections. People are aware of the potential or opportunities that ICT presents. However, the awareness and exposure to the opportunities, utilities of skills and technologies have been very low. Studies find that the rural population is aware of topics such as digital connectivity, networking, graphic design etc., but are unaware of the content and opportunities.

21. The FGDs conducted in rural areas reveal that the reasons for the non-usage of digital services by rural dwellers are— unaffordable cost of devices, fear of scammers' intrusion into one's account, high cost of internet, poor and inconsistent internet connection, difficulty in charging mobile phones in communities without electricity supply, and non-availability of 4G.

22. All participants in FGDs were interested in increasing their level of digital literacy provided they have the opportunity and also suggested the need for improvement in internet connectivity, reduction in the cost of internet/data, provision of electricity in rural communities and training on digital literacy. However, participants in FDGs have no idea on the cost involved in increasing digital literacy.

23. **Digital literacy program for The Gambia** - The Gambian socio-economic, demographic and cultural factors indicate that The Gambia shows signs of digital readiness and is perceptive to digital knowledge and the digital economy. Considering these conditions as well as the findings from this study, a comprehensive and unified approach along with a respective set of strategic actions is needed for catalysing the increase in digital literacy in the country and ensuring the benefits emanating from the same. The proposed strategies and interventions/actions in this report reflect the needs of the market and various population segments and are aligned with the national digital literacy priorities spelt out in various sectoral policies and larger national development objectives.

24. Based on the current situation, the assessment of digital literacy levels in the Gambia, ICT market, digital readiness and overall national developmental, and digital objectives, the following strategic pillars are proposed:

**Strategy 1:** Structural reforms to create an enabling policy, regulatory and institutional environment that can catalyse the creation of demand and supply of digitally skilled, employable manpower in the Gambian market;

**Strategy 2:** Rolling out objective digital literacy programs aligned with the development objectives of the country as well as promoting digital innovations and entrepreneurship to benefit maximally from the increased digital literacy;

**Strategy 3:** Gradually migrating towards e-governance to improve the quality of governance, accountability, and transparency; and

**Strategy 4:** Kick starting overall digitisation of the economy and aligning it towards enabling the creation of a new-age digital society.

25. In line with the proposed strategies, actions aimed at enhancing digital literacy are listed in the table below.

**Proposed Action Plan**

| Strategic Pillars | Actions needed |
|---|---|
| Strategy 1 | 1. Based on the existing but fragmented sectoral policies that emphasize the need for enhanced digital literacy spelling out a comprehensive and objective national digital literacy strategy and plan; and<br>2. Setting up the institutional framework for implementing the digital literacy initiatives to institutionalize digital literacy in the economy. |
| Strategy 2 | 3. Initiating a digital literacy and skilling program from early childhood development (ECD) and enhancing digital learning readiness from schooling years;<br>4. Integrating digital literacy in TVET programs;<br>5. Producing graduate, post-graduate and above trained ICT workforce;<br>6. Fostering research, innovation and entrepreneurship development in ICT sector; |

| Strategic Pillars | Actions needed |
|---|---|
| | 7. Planning and rolling out an objective rural digital literacy program; and<br>8. Designing and implementing an awareness program on digital literacy in the country. |
| Strategy 3 | 9. Preparing and implementing a comprehensive e-governance plan for the country; and<br>10. Rolling out the digital literacy program for the public workforce; |
| Strategy 4 | 11. Catalysing the path towards advanced digital skills development through public private partnership; and<br>12. Promoting research and innovation in advanced digital technologies. |

26. **Implementation plan for the proposed digital literacy program** - The proposed digital literacy program is supposed to be implemented over a duration of five years with corresponding budget allocations. The proposed implementation plan is given in the figure below.

| Strategic Pillars | Actions and Components | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| Strategy 1 | 1. Based on the existing but fragmented sectoral policies that emphasize the need for enhanced digital literacy: spelling out a comprehensive and objective national digital literacy strategy and plan; and | | | | | |
| | 2. Setting up the institutional framework for implementing the digital literacy initiatives institutionalize the digital literacy in the economy. | | | | | |
| Strategy 2 | 3. Initiating a digital literacy and skilling program from early schooling and enhancing digital learning readiness from schooling years; | | | | | |
| | 4. Integrating digital literacy in TVET programs; | | | | | |
| | 5. Producing graduate, post-graduate and above trained ICT workforce; | | | | | |
| | 6. Fostering research, innovation and entrepreneurship development in ICT sector; | | | | | |
| | 7. Planning and rolling out an objective rural digital literacy program; and | | | | | |
| | 8. Designing and implementing an awareness program on digital literacy in the country. | | | | | |
| Strategy 3 | 9. Rolling out the digital literacy program for the public workforce. | | | | | |
| Strategy 4 | 10. Catalysing the path towards advanced digital skills development through public private partnership; and | | | | | |
| | 11. Promoting research and innovation in advanced digital technologies. | | | | | |

27. The Proposed digital literacy Strategies and Action Points are translated into 19 projects to be implemented over a duration of five years. The proposed projects along with project duration, implementation schedule and project costs are given in the figure below.

| Project No. | Projects | Years | | | | | Estimated Project Cost (USD) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 2.1 | Setting up of instutional framework for implementing project activities | | | | | | 3000000 |
| 3.1 | Development of Digital Curriculum | | | | | | 1000000 |
| 3.2 | Train the Educators | | | | | | 1822200 |
| 3.3 | Expansion of Digital broadband connectivity and ICT infrastructure to Gambian Schools | | | | | | 38857900 |
| 3.4 | Development of National LMS (Learning Management System) software | | | | | | 300000 |
| 4.1 | Development and Standardisation of TEVT certification and Accreditation system | | | | | | 1000000 |
| 4.2 | Development of role model TEVT Schools | | | | | | 920000 |
| 5.1 | Development and Introduction of new Graduate and Above Level Programs | | | | | | 1000000 |
| 5.2 | Developement of University Research and Development Labs and Facilities | | | | | | 250000 |
| 7.1 | Development of National Rural Digital Literacy Program and Curricilum | | | | | | 300000 |
| 7.2 | Implementation of National Rural Digital Literacy Program | | | | | | 4700000 |
| 7.3 | Information, Education and Communication Campaign on Digital Literacy for Rural Gambia | | | | | | 200000 |
| 8.1 | Development of National Digital Literacy Program and Curriculum (for Urban) | | | | | | 80000 |
| 8.2 | Implementation of National Digital Literacy Program (for Urban) | | | | | | 250000 |
| 8.3 | Information, Education and Communication Campaign on Digital Literacy (for Urban) | | | | | | 400000 |
| 9.1 | Development of Sector-wise Digital Training Program for Public workforce | | | | | | 350000 |
| 9.2 | Establishment of Digital training Centres for Public Workforce | | | | | | 1250000 |
| 10.1 | Executive Higher Education and Training Program for Public Workforce | | | | | | 200000 |
| 11.1 | Establishment of National ISRDCs and R&D Fund | | | | | | 2300000 |
| **Total Project Investment Costs(USD)** | | | | | | | **59580100** |
| **Total Project Investment Costs (USD million)** | | | | | | | **59.58** |

28. **Cost estimates and economic feasibility analysis** – The cost estimates of rolling out the digital literacy program in The Gambia is to the tune of USD 60 million. With this much-estimated investment over the next five years to enhance the digital literacy in The Gambia vis-à-vis the resulting economic benefits in terms of assumed 1% growth in GDP exclusively catalysed by enhanced digital literacy fetches an Economic Internal Rate of Return (EIRR) of well above 23%. Accounting for other tangible and intangible benefits of enhancing digital literacy, aggregate returns to the economy will get further boosted.

29. **Support by AfDB** - The support by the development partners, particularly the AfDB, will be needed to finance a number of the key proposed projects. Besides other priority actions, the Bank may take up the cause of enhancing the digital literacy in rural Gambia which may be synchronized with the Bank's existing programs such as Coding for Employment program. The sub-actions on the 'Skilling for employment program' with an estimated investment outlay of USD two million may be directly linked with the Coding for Employment Program along with other proposed sub-actions to enhance rural digital literacy.

# 1. INTRODUCTION

30. **Digital literacy for economic development in Africa**: The American Library Association (ALA) defines digital literacy as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills." It has four aspects - a. the ability to recognize when information is needed, b. the ability to locate the needed information, c. the ability to evaluate the suitability of retrieved information, and d. the ability to use effectively and appropriately the needed information.

31. Mankind is experiencing unprecedented change in the way work is done and technology is constantly reshaping the domain of human activities. Firms are adopting new ways of production, business development, market base and expansion, and societies are ever evolving. Besides the business part of digital literacy, it is also central to the education sector; now the online resources are richer in educational materials and increasingly more easily accessible than the physical libraries. Some of the laboratories and other experiment resources are now available in virtual versions so that they can be accessed all over the world efficiently and cost-effectively.

32. Digital literacy is important in terms of boosting economic development by reducing business uncertainty which directly reduces the transaction cost of economic entities and thereby increases economic performance. The COVID-19 pandemic has further catalysed how the World functions, demonstrating the limitations of many existing systems and highlighting the need to reimagine the role of information technology in augmenting economic productivity and growth[4].

33. African economies also need to adapt to digital life in order to be in sync with the digital world. The digital literacy rate and access to digital means go hand in hand. According to the Internet World Stats[5], internet penetration in Africa in 2020 is estimated to be 47.1%. At the end of 2019, 45% of the population in Sub-Saharan Africa subscribed to mobile services according to the Global System for Mobile Communications (GSMA)[6]. Despite the lag in Internet and mobile penetration in Africa, the curve of growth is increasing, and Africans are showing great zeal and commitment to embrace rapid technological change and its versatility to bridge the global digital divide.

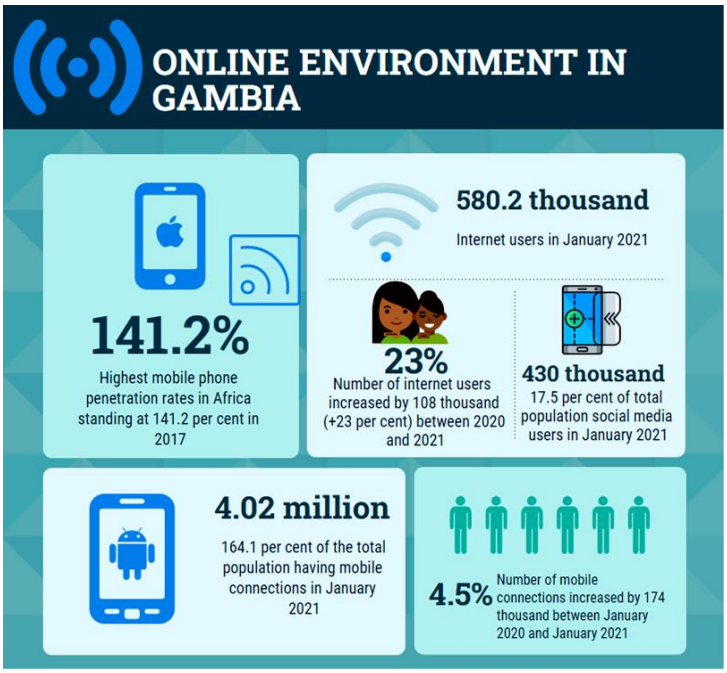
34. **Gambian context**: The Gambia has a low literacy rate in comparison with other countries (Box 1)[7]: The adjusted net enrolment rate in primary education (% of primary-school-age children) was at 90.45 per cent in 2018. In 2018, the pupil-teacher ratio in primary education was 36.138 students per teacher. Though The Gambia's pupil-teacher ratio in primary education fluctuated substantially in recent years, it tended to increase between 1996-2018.

**Box 1: Literacy in Gambia (2015)**

- Youth literacy rate - 73.19 per cent;
- Adult literacy rate - 50.78 per cent;
- Youth female illiteracy - 54.7 per cent;
- Adult female illiteracy - 60.5 per cent;
- Elderly literacy rate - 18.4 per cent;
- Elderly female illiteracy - 55.2 per cent.

[4] Hendrina Doroba, Tochukwu Mbanugo & Uyoyo Edosio: The relevance of digital skills in the COVID-19 era, 17 June 2020 (https://www.afdb.org/fr/news-and-events/relevance-digital-skills-covid-19-era-36244)
[5] https://www.internetworldstats.com/stats.htm
[6] https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/09/GSMA_MobileEconomy2020_SSA_Eng.pdf
[7] https://knoema.com/atlas/Gambia/topics/Education/Primary-Education/Gross-enrolment-ratio-in-primary-education

35. Since 2017, the online environment has improved in The Gambia. It has one of the highest mobile phone penetration rates in Africa, standing at 141.2 per cent in 2017, although one individual may have more than one subscription.[8] There were 580.2 thousand internet users in January 2021. The number of internet users in The Gambia increased by 108 thousand (+23 per cent) between 2020 and 2021. There were 430.0 thousand (17.5 per cent of the total population) social media users in January 2021. The number of social media users increased by 60 thousand (+16 per cent) between 2020 and 2021. There were 4.02 million (164.1 per cent of the total population) mobile connections in January 2021. The number of mobile connections in The Gambia increased by 174 thousand (+4.5 per cent) between January 2020 and January 2021.[9]




36. The Government of The Gambia (GoTG) has taken tremendous strides including infrastructure initiatives in the ICT sector like the ACE Submarine Cable and ECOWAS Wide Area Network (ECOWAN) Fibre Backbone for full connectivity across the length and breadth of the country. In The Gambia, disjointed efforts are being undertaken by various stakeholders both in the public and private sectors towards digital literacy and ICT skills development, but such efforts are at a very low scale. The idea of rolling out the National Digital Literacy and Skills Development Programme, is, therefore, fully in line with ensuring that The Gambia is equipped with the requisite capacity to support the realisation of the digital transformation agenda.

37. The GoTG has identified ICT as a critical enabler for socio-economic transformation in the National Development Plan (NDP) 2018-2021. Aligned with the fifth objective to "Make The Gambia a Digital Nation and Create a Modern Information Society" by harnessing the benefits of ICT in all economic sectors of NDP Vision, the Gambia ICT for Development (ICT4D) Policy Statement 2018-2028 was developed that articulates strategic objectives pertaining to public digital platforms, a high priority for the GoTG. ICT4D Policy Statement fully recognises the country's digital transformation aspirations. The strategy to achieve this goal includes the rollout of a robust and aggressive national digital literacy and skills development programme which will be anchored on scaling up the digital literacy and skills development rate in the country in order to ensure that no one is left behind in the digital transformation process. The country's ICT4D Policy has been formulated under the guidance of the NDP.

38. **Objectives of feasibility study:** The objective of the study is to prepare a feasibility assessment on digital literacy in the Gambia and facilitate stocktaking, assessment and evaluation that would ensure the achievement of the following:

i Establishing and strengthening the institutional and regulatory framework for digital literacy and the development of digital skills and literacy.

[8] https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
[9] https://datareportal.com/reports/digital-2021-gambia

ii Using the AfDB's Coding for Employment Programme to ensure an encouraged, developed and motivated next generation of digitally enabled youth that can transform The Gambia into a regional ICT hub.
iii Enhancing employability and access to decent employment opportunities among the youth and women through enhancing their digital literacy and skills.
iv Developing a pipeline of next-generation entrepreneurs, thereby, creating additional 10,000 businesses and 500,000 additional jobs by 2031.
v Increasing the ICT driven local content development and women's participation.
vi Developing tailor-made digital programmes for the local ICT industry/market.
vii Enhancing the efficiency and productivity of the national workforce.

39. **This report** contains the draft feasibility study and is composed of the following sections:

- Section 1 provides an introduction and an overview of the scope and structure of the report.
- Section 2 describes the research methodology and data collection methods used in the study.
- Section 3 contains a situation assessment of the digital literacy landscape in the Gambia.
- Section 4 spells out a digital literacy program for the country.
- Section 5 provides estimates of the investment needed to implement the digital literacy program.
- Section 6 contains the feasibility analysis of the digital literacy program.
- Section 7 reflects on the funding opportunities for the African Development Bank (AfDB) in the digital literacy landscape of Gambia.

40. The report is supported by relevant annexures.

# 2. RESEARCH METHODOLOGY

41. The study has been undertaken in two sequential phases. Phase 1 involved responding to the study objectives through a desk review and analysis of previous work, policy documents, and secondary data, among others; while Phase 2 focused on an empirical study involving a discussion with key stakeholders using tools such as Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs).

**LITERATURE REVIEW**

42. The desk review is an important part of the feasibility study for Gambia's Digital Literacy and Skills Development. By collecting, organising and synthesising available information, the Consultant gained an understanding of the previous work, policy documents and secondary data.

**EMPIRICAL STUDIES/PRIMARY DATA COLLECTION**

43. Leveraging upon the efforts and results coming out of the literature review, empirical insights on the digital literacy in the public workforce; basic, secondary TVET and Higher Education Institutions; private sector and rural areas were gathered for which the Consultant collected more qualitative data through objective Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) with relevant stakeholders. The different tools used to assess digital literacy among various stakeholder groups are listed in **Error! Reference source not found.**.

**Table 1: Different Tools to Assess Digital Literacy Among Various Stakeholder Groups**

| Different Stakeholder Groups | Mode to Assess the Digital Literacy |
|---|---|
| Private Sector Stakeholders | KIIs of Representatives of Each Key Stakeholder |
| Public Workforce | KIIs of Department Head |
| Basic, Secondary and TVET Schools | KIIs of Principals |
| Basic and Secondary School Students | By Secondary Data |
| Tertiary Institutions Competence | KIIs of Institution Head |
| Rural Areas | FGDs in all regions of the country |
| Students | FGDs |

44. The number of FGDs and KIIs conducted are compiled in **Error! Reference source not found.**.

**Table 2: Number of KIIs and FGDs Conducted Among Various Stakeholder Groups**

| Different Stakeholder Groups | Number of FGDs/KIIs |
|---|---|
| Private Sector Stakeholders | 2 KIIs |
| Public Workforce | 6 KIIs |
| Basic, Secondary and TVET Schools | 10 KIIs |
| Basic and Secondary School Students | 2 FGDs |
| Tertiary Institutions | 2 KIIs |
| Rural Areas | 5 FGDs |
| Female students | 2 FGDs |

45. After collecting and analysing the findings of KIIs and FGDs, the Consultant undertook thorough assessment and prepared this feasibility study.

46. The challenges faced while conducting the survey emanated from the situation of the COVID-19 pandemic and resulting constraints in having physical meetings with the stakeholders as well as elections in the country. A hybrid approach composed of physical and virtual meetings was adopted which resulted in gathering valuable insights. Members from the Consultant's team from The Gambia remained proactive wherever physical meetings were required.

# 3. DIGITAL LITERACY IN GAMBIA

## 3.1 POLICIES, REGULATION, PLANS AND INSTITUTIONAL FRAMEWORK

47. The National Development Plan 2018-2021 recognised youth empowerment as one of its strategic priorities and ICT as a critical enabler. NDP aims to transform The Gambia into a digital nation, which demands a technologically literate population and sectoral policies supporting these strategic objectives. In this direction, various policies and plans have been developed including the Education Sector Strategic Plan (2016-2030), the National Employment Policy and Implementation Plan (2019-2024), the Technical and Vocational Education and Training (TVET) Roadmap (2020-2024), ICT4D (2018-2028), and Cybersecurity Policy (2020- 2024). Various policies and initiatives towards the development of digital literacy, ICT skills and the overall digital economic development of The Gambia indicates that the GoTG recognizes the scope and importance of strengthening digital literacy and skills. However, GoTG is yet to develop a comprehensive national digital skills strategy and regulatory framework for the deployment of the same. Other key policy and regulatory instruments in the country include Broadband Policy and Strategy 2020-2024, ICT Act of 2009, and Universal Access and Service Policy. The inclusion of ICT sector development and the mainstreaming of digital technologies in key policy documents is a clear manifestation of the importance of the ICT sector towards the attainment of the country's digital ambitions.

48. There are commitments in the Broadband policy and strategy 2020-2024 to expand broadband to all local government areas and districts and to have 75% digital literacy amongst the Government workforce and 65% of the total national workforce by 2024. In addition to this, the NDP 2018–21 has, under the Critical Enabler 5, "Making The Gambia a Digital Nation and Creating a Modern Information Society," outlined a framework to harness the benefits of ICT in all sectors of the economy for equitable development. Furthermore, the government has taken significant steps to liberalize the telecom sector, breaking the monopoly over the international voice gateway in August 2019. It is also planning to restructure, with potential divestiture, the two-deteriorating telecom SOEs, Gamtel and Gamcel, and the wholesale fibre-optic backbone network.

49. In October 2020, the Universal Access and Service (UAS) Policy was developed under the aegis of the Ministry of Information and Communication Infrastructure (MOICI) principally to promote universal access and service for full e-inclusion and effective digital participation. The key targets to be achieved in four years are as listed in **Error! Reference source not found.**.

**Table 3: Key Targets of Universal Access and Service Policy**

| Target | Deadline |
|---|---|
| 100% mobile broadband coverage | 2 years |
| 75% of households have access to broadband connection | 2 years |
| 85% of population covered with 4G network | 4 Years |
| Every public institution has access to broadband connection | 4 Years |
| All schools have access to broadband connection | 4 years |
| All clinics and hospitals will be connected through broadband | 4 years |
| Universal Access and Service Fund will be operational | 1 year |
| 100% of households have access to the Digital Terrestrial Transmission Infrastructure | 4 years |
| 75% of those working in the education sector and the school going are digital literates | 4 Years |
| 65% of the country workforce are digital literates | 4 years |

| Target | Deadline |
|---|---|
| 75% digital literacy among government workforce | 4 Years |
| Increase in the number of websites under .gm, from two thousand by 5-fold<br><br>Increase in the number of social media accounts related to Gambian nationals and SMMEs from half a million by 2-fold | 4 years |
| Increase in the number of locally developed applications and systems by 5-fold | 4 years |

50. In March 2020, MOICI presented a new ICT/digital roadmap "2020–2024 ICT4D" that incorporates the Broadband Strategic Plan 2020–2024 and includes critical objectives, such as upgrading last-mile network connectivity; improving regulatory policies; strengthening e-government and cybersecurity; accelerating the rollout of regional ICT centres for communities/schools; improving digital literacy both among civil servants and the entire population; and creating a conducive environment for digital local content creation.

51. The ICT4D2018-2028 is the ICT sector's overarching policy framework. Its development was preceded by the formulation of National Information and Communications Infrastructure Policy (NICI) and ICT4D 2010-2017. Through this policy statement and the developed strategies for the eight pillars, The Gambia Government seeks to leverage the development, deployment and exploitation of ICTs within the economy and society to accelerate development with a view of transforming the under-developed, low-income agricultural-based, technologically and industrially weak economy into a high-income information-rich and knowledge-based economy and society in the emerging information and knowledge age. The eight pillars of the ICT4D2018-2028 are:

- Human apital Development,
- Electronic Government Development,
- Promoting technology-enabled education and Science & Technology and Innovation (STI) development,
- Agriculture development and modernisation,
- Private sector development and empowerment,
- Promotion of technology-driven social and community services provision,
- Youth and women development and empowerment, and
- Promoting technology-neutral legal, regulatory regime, advanced broadband ICT infrastructure development, Universal Access and services (UAS) and Cybersecurity.

52. Earlier, in a bid to ensure diffusion and utilisation of ICT in all sectors of the economy, availability of requisite and relevant ICT skills as well as ensuring the use of ICT to facilitate teaching and learning, sub-plans for human resources, ICT in Education and ICT in Communities were developed. The country developed a Four-Year Action Plan (2014-2017) called ICT for Development Part II (ICT4D II), an extension of Part I. ICT4D II aimed to disseminate ICT more widely across the sectors of the economy, covering ICT in agriculture, health and tourism, etc.

53. Also, necessitated by the need to leverage ICT for socio-economic development, the Gambian Government with support from the UNECA formulated the **Gambia National Information and Communications Infrastructure (NICI) Policy**. The Policy and Plans under NICI were designed to address the areas where ICT could facilitate the achievement of the overall objective of the Vision 2020, to transform Gambia into a middle-income country by 2020 by enabling private sector development, restructuring economic and technology engagement, and developing the human capital base in areas of ICT. The overall objective of the NICI was to leapfrog stages of development, building new human resources and a conducive environment that utilises ICT as a platform to exchange data,

information, and knowledge, and as a tool to implement applications and provide services to achieve higher growth rates in all spheres of socio-economic activities. The policy addressed 10 priority focus areas or pillars, i.e., infrastructure, regulatory issues, local governance, education, health, trade and commerce, e-governance, agriculture, gender, and media.

54. Subsequent to the NICI formulation, a four-year ICT4D plan dubbed ICT4D 2012 was developed to implement provisions of the NICI Policy.

55. Gambian Public Education sector has also seen increasing realisation of ICT skills and digital literacy as a means for overall development, while the education sector policy 2004-2015 conceived ICT as a tool merely for efficient management and delivery of education, the education sector strategic plan 2016-2030 further extends the aims to include review of the education sector to imbibe digital literacy and ICT skills and strategizes to address the key challenges hindering ICT education such as lack of standardised ICT curriculum for all levels of schooling, tackle the high attrition rate among teachers with ICT skills, and ensure supply of ICT infrastructure and electricity supply to schools.

56. The Education Sector Policy 2016–2030 is the first sector-wide policy covering the mandates of both MoHERST and MoBSE. This provides a policy framework that sets out the national agenda for the delivery of quality education in The Gambia, including the education services in TVETs.

57. The National Tertiary and Higher Education Policy 2014–2023, under the mandate of MoHERST, specifically focuses on TVET and other models of tertiary and higher education. The policy indicates plans to establish modern skill centres in each of the regions in The Gambia to increase access to training opportunities. Furthermore, in the current Education Policy 2016–2030, ICT is not conceived as a discipline to be taught in itself but is rather a tool for efficient management of the education sector. The Gambia is yet to concretise 'ICT in Education Sector' Policy to guide the process of developing and deploying ICT sources at a much larger scale

58. The ICT4D 2018-2021 categorically discusses the need for human resources development in the ICT sector under the respective Action Plan which aims at achieving the following:

- Assessing the human resource landscape and skill needs for the country;
- Putting in place special ICT promotion packages and incentives to encourage the private and public sector organization to invest in the development of human resources to meet the needs of the economy;
- Implementing on a national level, a number of HRD initiatives to boast up ICT skills and other skill areas in the country;
- Developing the nation's human resource needs in critical skill areas in all key sectors of the economy;
- Developing the requisite pool of knowledgeable ICT workforce in critical skill areas and professions needed to support the development of The Gambia's information and knowledge economy;
- Developing the human resource development capacity of the nation's universities and colleges;
- Mobilizing and deploying the necessary financial and technological resources to facilitate the implementation of HRD programmes and initiatives;
- Developing the necessary standards, best practices and guidelines to guide the process of HRD in all key sectors of the economy and,
- Providing the necessary institutional support for facilitating HRD on a national basis.

59. The E-education (ICT-in-Education) Action Plan under the ICT4D 2018-2021 aims at the following:

- Implementing a number of national ICT applications relevant to the various levels of the Gambian educational system;
- Mobilising and deploying the necessary financial and technological resources for implementing the requisite educational programmes and specific ICT programmes and initiatives targeted at improving the educational delivery system;
- Computerization of the operations of the two Departments of State for Education and their respective organs;
- Developing the necessary standards, curriculum, best practices, and guidelines to guide and support the deployment, and the exploitation of ICTs in the schools, colleges and the universities; and
- Providing the necessary institutional set-up to support ICT exploitation and development within the educational system, the ICT training provision sector and the research institutions.

60. The overall review of the GoTG's approach in terms of policy, regulations, plan and the institutional framework mandated towards digital literacy and skilling development appears to be understanding and adequately considerate of the underlying socio-economic development needs and global digital trends to arrive at accurate policy, regulations, plans and institutional frameworks.

**INSTITUTIONS**

61. In its quest to ensure a leadership role in inter-sectoral coordination on the digital transformation agenda, the Gambia ICT Agency was established by an act of parliament in 2019. Since its establishment, the agency has not been operational. Some of its functions stipulated by the Act include accelerating The Gambia's transition to a sustainable e-government environment; ensuring high standards of digital public services; promoting standardization in the planning, acquisition, implementation and delivery of ICT equipment and services used by the government; supporting cooperation, coordination and rationalization of digital public initiatives; promoting local content and applications development; facilitating and encouraging innovation and entrepreneurship.

62. In order to ensure the diffusion and utilisation of ICT in the public sector, the Directorate of ICT was created within MOICI to coordinate all ICT activities within the Government.

63. The Gambian ICT sector is regulated by the Gambian Public Utilities Regulatory Authority (PURA). PURA was established by the PURA Act, 2001, as a multi-sector regulatory authority, to regulate the activities of providers of certain public utilities such as energy services (electricity, petroleum and gas), communications services (telecommunications, broadcasting and postal services), water and sewerage services and transport services.

**CHALLENGES**

64. **Broadband Market:** Despite recent progress on ICT infrastructure and policy front, there exists a persistent gap in the usage of mobile broadband, whilst access to fixed broadband remains meagre. In line with the broader African trends, the existing broadband market in The Gambia is overwhelmingly mobile, with fixed broadband penetration remaining at very low levels – 0.19 per 100 inhabitants (ITU, 2020), well below the global average of 13.664. Mobile penetration is high, with the country ranking 7th on the continent in terms of mobile tele-density. At the same time, the number of active sim cards per 100 inhabitants has reached 136 (ITU, Dec 2020), while only 66.5 percent of them use data (PURA, Q1 2021). GSMA estimates that there are only 580,000 unique internet subscribers in the country, against a background of 1.8 million active data sim cards. Broadband 3G+ covers 88 percent of the population but 63.5 percent of those covered do not appear to be using broadband services. This usage gap highlights the existence of underlying factors other than coverage, hindering people from using internet, such as broadband affordability, quality, content relevance and security

(on the supply side) as well as literacy and digital skills (on the demand side). Indeed, the 2020 Network Readiness Index ranked The Gambia 122nd out of 134 countries in terms of online content, which includes the mobile app development sub-indicator, where the country ranks 120th, reflecting the scope to improve local content, app development and hosting options.

65. **Lack of a comprehensive strategy framework:** Despite the progress made on the policy front and early crucial advances on the infrastructure front, The Gambia like most African countries lags in a comprehensive strategy or framework for scaling digital literacy at a national level, and the state-capacity and resources to implement the same. Digital skills initiatives in The Gambia remains fractured and ad-hoc in nature, ranging from a few pilot interventions within some of the ministries, and limited TEVT and university programs to small-scale digital literacy programs operated by a handful of private and non-profit organizations[10].

66. While multiple policies and plans focus on improved coverage of ICT infrastructure, ICT skills development and digital literacy, insufficiently implemented government capacity and lack of a dedicated strategic framework have hindered the diffusion of the same.

67. The learning experiences from peer countries that have successfully implemented large scale digital literacy programs highlight the importance of a dedicated framework (based on the examples of the e-Education Framework of Botswana or National Digital Skills Framework adopted in Rwanda and Cabo Verde). The framework, based on the categorical identification of national digital competency levels at various sections of society and economy, can guide the implementation process.

68. **Entrepreneurship Development:** Despite the ongoing efforts to boost entrepreneurship in The Gambia, the implementation of entrepreneurship promotion policies has fallen short, while no policy explicitly targets promotion of digital entrepreneurship. Since the adoption of Vision 2020, entrepreneurship development has been put at the centre of a long-term strategy for a more inclusive and sustainable private-sector-led growth in The Gambia. The NDP gives a priority to programs supporting high skilled and entrepreneurial young Gambians. Moreover, as part of the operationalization of the National Entrepreneurship Policy (NEP) adopted in 2016, and in cooperation with UNCTAD, the GoTG developed the National Entrepreneurship Strategy Framework in 2017, soon to be updated.

69. Although the Gambia Investment and Export Promotion Agency (GIEPA) is the main implementing agency for the NEP, with support and supervision from the Ministry of Trade, Industry, Regional Integration, and Employment (MOTIE), coordination with other stakeholders, including the private sector, has been limited. Implementation difficulties are further compounded by limited budgets allocated for entrepreneurship programs within the GoTG, with most resources coming from donors. The Empretec program, funded by UNCTAD and led by GIEPA, and EU-funded YEP are among a few donor-funded initiatives put in place to support entrepreneurship and have activities specifically targeting tech companies and start-ups.

70. The private sector development strategy for Vision 2020 is considering innovation related exclusively to tourism and the need to develop other forms of 'sustainable' tourism (ecotourism, inland, cultural, and community-based tourism). The Gambia National Agricultural Investment Plan (2011–2015) is also calling for innovative practices in the agriculture sector. Aligned with NDP, the National Export Strategy considers the establishment of a national innovation park (GIEPA, 2013). There is, therefore, a need for the provision of more support to foster innovation and establish a national innovation system.

[10] Digital Economy Diagnostic - The Gambia, Digital Economy for Africa Initiative, The World Bank

71. All in all, the necessary enabling environment in terms of well spelt out digital literacy framework, and capacity to support related initiatives is a major obstacle for The Gambia. Despite a strong commitment from the GoTG, there is a need to reinvigorate efforts to foster an enabling environment for The Gambia's digital transformation. Lack of leadership and coordination has contributed to a landscape wherein public digital platforms are limited in number, developed mainly in silos and are most often present in the pockets of strong leadership, budgets, and skills.

## 3.2 DIGITAL LITERACY INITIATIVES

### 3.2.1 Initiatives by Government Institutions

72. The Gambia has seen encouraging developments in ICT over the past few years, especially in the expansion of national ICT infrastructure. These developments relate to the operationalisation of the ACE Submarine Cable and ECOWAN fibre, which boost the much-needed international bandwidth and extends the availability of telecommunications services to rural and underserved areas. The ACE project culminated in the liberalisation of the international data gateway. Prior to the development of these projects, The Gambia lacked a complete optical fibre backbone and relied on terrestrial fibre optic connection from neighbouring country Senegal for internet connection.

73. While the expansion of ICT infrastructure has secured internet services and enabled penetration of digital and communication services in The Gambia, the GoTG has also taken the following policy interventions, categorically focusing on scaling digital literacy programs:

**Table 4: Digital Literacy Initiatives by GoTG**

| Digital Literacy Initiatives | Period |
|---|---|
| Connect a School, Connect a Community Project | 2012-15 |
| ICT4D-2012 Action Plan | 2012-2016 |
| ICT4D 2020-2024 | 2020-2024 |
| The National Development Plan (NDP) 2018–2021 | 2018-2021 |
| Education sector Policy 2016-2030 | 2016-2030 |

74. The GoTG, through the Ministry of Education, has initiated various programs through partnerships to encourage ICT use in primary and secondary schools. Majority of other initiatives in digital literacy and ICT skill development are government-led in coordination with global and regional development organisations, some of those initiatives include:

- In 2011, UNDP funded public sector reform and institutional capacity development projects and accorded different ICT training to different categories of government employees.
- Various public sector institutions such as the Gambia Revenue Authority are continuously providing exposure to their staff in various digital literacy courses offered by local IT training institutions.
- Connect a School, Connect a Community Project: This project was funded by the ITU and implemented by MOICI in collaboration with MoBSE. It was designed to promote broadband connectivity in schools in remote, rural or underserved areas of The Gambia so that schools can be used as community ICT centres (CICs). The project was implemented in three (3) senior secondary schools in rural Gambia, i.e., in Basse, Farafenni, and Brikamaba. Under the West Africa Regional Communications Infrastructure Project (WARCIP), a rural community information centre was implemented in the Lower River region.
- Pan-African e-network Project: Under the Pan African e-Network project, the Government of India set up a fibre optic network to provide satellite connectivity, telemedicine, tele-education to Africa. Through the project, The Gambia benefited from tele-education and

telemedicine, thus, making available the facilities, and expertise of some of the best universities and super-speciality hospitals in India to Africa.

- e-Government Support Project: Under this, the MOICI designed, developed and hosted a government web portal and websites for all government ministries. Further to the web presence, training on content management systems was accorded to the MDAs.
- Distance education elements are installed at the University of Gambia, and Indian professors teach at Indian universities and institutions[11].

75. In line with the GoTG's overarching strategic vision, in March 2020 the Ministry of Information and Communication Infrastructure (MOICI) has presented a new ICT/digital roadmap "2020–2024 ICT4D" that incorporates the Broadband Strategic Plan 2020–2024, that aims at expanding critical ICT infrastructure nation-wide along with improved regulation of telecommunication services, cyber security, data regulations and overall strengthening of e-governance. The ICT4D 2020-2024 also includes measures on accelerating the rollout of regional ICT centres for communities/schools; improving digital literacy among civil servants and general public, and promoting and creating a conducive environment for local digital content creation. It would be important for The Gambia to build on this progress made as a strategic guidance and ensure the effective implementation of identified priorities under ICT4D while closing any impending regulatory and legal gaps[12].

76. Education Sector Policy 2016-2030 states, in partnership with the national, regional and international bodies, pedagogical practices for accelerating learning outcomes and for engendering positive actions on the environment will be adopted and institutionalised in schools, including Madrassah. To this end, the use of the new ICT, the development of environment-friendly infrastructure and learning materials will be prioritised.

### 3.2.2 Initiatives by Private Sector

77. Majority of ICT companies provide on-the-job training to overcome the skills gap, while 50 per cent of companies use online training courses. The most common method regularly used by ICT companies to upgrade their employees' skills is to call on experienced staff (close to 55% of companies) to deliver on-the-job training. It is important to highlight that no other form of training is provided regularly besides online training. It is surprising to note that only 50% of ICT companies reinforce staff skills through online training given the vast amount of free quality educational material accessible online. On the contrary, 50% of ICT companies use external trainers or experts, but only 20% call on the services of foreign experts. With regard to the use of other external training providers, a bigger proportion of ICT companies use the training services of TVET compared to universities. Less than half of the companies employ interns and facilitate mentorship.

78. A detailed look at the data shows that approximately 40% of the Gambian companies employ interns coming from technical schools, TVETs and universities. While only 44% of the companies in the ICT sector employ interns from TVET, and 56% of the employees in the sector are trained in TVETs. Given the low level of preparedness of students following TVET education, it is important that more companies provide internship opportunities to TVET graduates. This would be a way to improve the overall competency level in the sector.

79. The data also suggests that less than half of the companies promote mentoring of their employees with vocational schools or universities. The share of companies allowing employees to mentor high school, university, technical and vocational school students on company time represents only 37%; the percentage increases to 48% when it comes to companies encouraging employees to

[11] Ministry of Basic Education and Secondary Education, 2019

[12] The Gambia Digital Economy Diagnostic, Digital Economy for Africa Initiative, The World Bank, 2021

mentor on their own time. This demonstrates room to improve the collaboration between the private sector and training providers to find a way to better match the needs of businesses and reduce the skills gap in youth employment.[13]

80. Considering the infancy and underfunded conditions of TVET schools leading to inadequate outcomes from Gambian TVET and HEIs, most ICT companies resort to on-the-job training, with half using online training courses or relying on external expertise. Less than half of ICT companies employ interns, facilitate mentorships, or promote training of their employees at vocational schools or universities.

81. At the same time, several organizations aimed at providing support for entrepreneurs also offer or facilitate access to a range of digital skills courses, and work to fill some critical gaps in digital skills provision. For example, *Jokkolabs Banjul* offers courses on computer literacy and information technology, software applications, web authoring, IT support, multimedia, etc., as well as diploma courses in computer science, and business management. An organisation named *The Woman Boss* aimed at empowering women and girls in entrepreneurship, leadership, and innovation, offers training opportunities to female entrepreneurs, while the Girls/Women in Tech Series offers computer coding courses for women in collaboration with The Disruptive Lab. Some private sector companies also offer targeted training – for example, Insist Global (a sister company of the InsistNet ISP) established in 2016 an Insist Academy to provide specialized ICT competence training for individuals and organizations.

### 3.2.3 Lessons Learned

82. **Ad-hoc Interventions:** The review of Digital skills initiatives from the government and private sector shows increasing awareness of digital literacy needs in The Gambia. The government initiatives on the ICT infrastructure front have improved the availability of broadband and apt policy developments, however, the materialization of any policy into digital skilling initiatives remains fractured and ad-hoc in nature, ranging from a few pilot interventions within some of the ministries and handful of TVET and other skilling programs. The private sector in ICT appears to be largely inactive on the skill development front, most likely due to slow growth and low demand for ICT skilled workforce, limiting to internship/apprenticeship programs and in-house mentoring of their workforce. While these initiatives, especially from the government's end are promising, but GoTG lacks sufficient infrastructure, market demand for ICT skilled workforce, as well as a dedicated national framework and a broader vision for national skills development. Policies related to ICT integration into the higher education curriculum, private sector role in digital skilling, regulation and accreditation of online education courses are also largely absent.

83. **Skills requirements**: Knowledge and technical competencies are reported to be major constraints for private companies. Most firms complain about the skills gap. Employees' competency in the ICT sector varies significantly between occupations. On one hand, lower-level occupations, or elementary occupations face competency level problems; on the other hand, professionals involved in higher levels of task complexity are rated competent but are few in numbers and thus quite difficult to find in the job market.

84. **Innovation requirements**: Most firms in the sector do not engage in research and development (R&D) activities given their limited human and financial resources capacities. There is very limited collaboration between Gambian companies to innovate or to develop collaboration with foreign tech hubs, suppliers or networks that promote innovation.

[13]https://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/YEP/Gambia%20ICT_final_web.pdf

85. **Skills requirements**: Skills gap is a major factor affecting MSMEs' capacity to change and provide improved services. ICT training is mostly concentrated on basic IT skills. Various training providers offer different levels, from basic training on how to use a computer and basic office software to some advanced training on specific topics. However, the quality of the training is very heterogeneous between TVET and even between courses. There is no standardized quality assurance mechanism established by the National Accreditation and Quality Assurance Authority (NAQAA) or between TVET carrying out ICT related courses. Additionally, specific topics like graphic design or multimedia production are in high demand, but with a very limited offer. In the same way, software and website development, while offered by different TVETs, are ranked as being of poor quality by the private sector. In these areas, ICT companies mentioned that they have to train their new recruits themselves or eventually recruit from abroad.

### 3.3 DIGITAL LITERACY IN THE PUBLIC WORKFORCE

86. The population of The Gambia stands at 2.5 million persons, of which, 1.0 million are children aged 0-14 years and 1.3 million are aged 15 years and over. Urban areas have the highest proportion of the population with 54.6 per cent compared to the rural areas (45.3%). Of the total working age population aged 15-64 **(1,256,589 persons)** 431,168 persons are in employment, 234,724 persons in unemployment and 590,977 persons outside the labour force.

**Table 5: Employed Persons Aged Age 15-64 Years by Age Group and Sex, 2018**

| Sex | Age Group | | | |
|---|---|---|---|---|
| | 15-24 | 25-35 | 36-64 | The Gambia |
| Male | 38,515 | 94,907 | 142,517 | 275,939 |
| Female | 24,203 | 62,991 | 68,035 | 155,229 |
| **The Gambia** | **62,718** | **157,898** | **210,552** | **431,168** |

*Source: Gambia Labour Force Survey 2018*

87. The public sector is comprised of an estimated 41,958 personnel including 18,572 (46 percent) personnel in the security sector, across 23 Ministries. This number excludes employees in the more than 60 sub-vented agencies and state-owned enterprises that have proliferated across the public sector. Due to uncontrolled hiring, weak establishment and political interference in HR and payroll systems, the number of public servants on an average increased by 11.5 percent per annum (**Error! Reference source not found.**).

**Table 6: Annual % Growth in Civil Service Employees, 2013-2017 (as at May 2017)**

| Grade | Dec-13 | Dec-14 | Dec-15 | Dec-16 | May-17 | Total | Average |
|---|---|---|---|---|---|---|---|
| One | 16.5% | 22.0% | 11.05% | 12.63% | 14.84% | **77.02%** | **15.40%** |
| Two | -5.1% | 11.6% | 11.13% | 12.31% | 13.53% | **43.47%** | **8.69%** |
| Three | -1.6% | 22.8% | 15.62% | 14.72% | 14.19% | **65.73%** | **13.15%** |
| Four | -2.8% | 6.5% | 9.34% | 8.92% | 8.57% | **30.53%** | **6.11%** |
| Five | -7.0% | 6.1% | 5.83% | 5.33% | 5.06% | **15.32%** | **3.06%** |
| Six | -1.2% | 25.5% | 20.99% | 19.47% | 18.51% | **83.27%** | **16.65%** |
| Seven | 1.2% | 21.2% | 14.26% | 15.68% | 14.96% | **67.30%** | **13.46%** |
| Eight | 21.6% | 7.6% | 5.63% | 5.45% | 5.12% | **45.40%** | **9.08%** |
| Nine | 10.5% | 4.3% | 2.82% | 2.55% | 2.40% | **22.57%** | **4.51%** |
| Ten | 10.4% | 1.6% | 1.77% | 1.60% | 1.52% | **16.89%** | **3.38%** |
| Eleven | -12.8% | 11.0% | 0.80% | 0.71% | 0.69% | **0.40%** | **0.08%** |
| Twelve | -4.7% | 9.9% | 0.54% | 0.44% | 0.41% | **6.59%** | **1.32%** |
| Aggregate | 5.0% | 19.2% | 6.8% | 17.5% | 9.0% | **57%** | **11.5%** |

88. According to a recent study by the International Finance Corporation (IFC), 230 million jobs in Sub-Saharan Africa will require digital skills by 2030, resulting in almost 650 million training opportunities and an estimated $130 billion market. The study further revealed that there is a huge digital skills gap diluting economic opportunities and development in Sub-Saharan Africa. With regards to digital skills among the population in Sub-Saharan Africa, The Gambia experienced a year-on-year average growth rate of 5.8% for the period 2017 to 2019. Among the selected countries, The Gambia has the highest year-on-year average growth rate at 5.8% whereas Senegal has the lowest year-on-year average growth rate at 4.13%[14].

**Table 7: Digital Skills among population**

| Country | 2017 | 2018 | 2019 | Global Ranking |
|---|---|---|---|---|
| The Gambia | 3.60 | 3.81 | 4.03 | 79 |
| Ghana | 3.99 | 4.06 | 4.21 | 69 |
| Nigeria | 3.38 | 3.30 | 3.42 | 124 |
| Senegal | 4.58 | 4.38 | 4.21 | 71 |
| Measure of the extent of digital skills among population (1 = not at all skilled; 7 = skilled to a great extent) | | | | |

89. Digital literacy and skills among the general population is considered weak given that ICT constitutes only 1.5 percent of the employed population (Gambia Labour Force Survey, 2018). This has to some extent contributed to the low usage rates of existing digital platforms. There are many intertwined reasons for the low uptake of the country's existing digital platforms and public services but the two most important factors appear to be insufficient ICT literacy among the population on the demand side and absence of a holistic, whole-of-government change management plan aimed at promoting the uptake of the e-Government agenda on the supply side. Such a plan could start by building a shared understanding, among users and public servants, of the need for reform and include regular, well-designed communication campaigns and capacity building activities.

90. KIIs with representatives of the institutions employing the public workforce revealed that some initiatives and efforts to enhance digital literacy are being planned and implemented. Discussions with MOICI informed that a good number of the workforce have digital literacy. However, some of the staff with this Ministry has low digital literacy and it poses challenges related to their performance, the quality of output and the timeline for the completion of tasks. Increased digital literacy can help a lot in terms of doing the required work on time and improving work output. The suggested way to increase digital literacy is to develop a national digital literacy strategy. This requires funding for strategizing and capacity building activities. The need is to have a streamlined and well-coordinated digital literacy programme for the whole workforce. The MOICI representative concurred with the idea of making digital literacy mandatory for new recruitments as well as promotions.

91. KII with the official of the Ministry of Finance (MOF) indicated that almost all the workforce on key positions are digitally literate in this Ministry with 5% of the workforce having a high level of digital literacy while 95% are digitally literate at the intermediate level. As digital literacy enhances the capabilities for the efficient execution of tasks, the same can be enhanced with the provision of the right type of environment and the requisite type of equipment/ gadgets. MOF official feels that internal training should be organized for enhancing the digital literacy of the public workforce as well as it can be made a mandatory requirement for recruitment in specific cases and necessary for promotions.

92. KII with the Ministry of Basic and Secondary Education (MoBSE) reveals that a good number of technical and professional staff are digitally literate. They have the required skills in the execution of their duties. However, performance of some staff is compromised due to their limited level of digital

[14] Global Competitiveness Report 2019

literacy. Increasing digital literacy in schools is part of the Ministry's plan and they have started the implementation. They have built some ICT infrastructures in some schools and provided internet services. This is used for both digital training and e-learning sessions. The main challenge faced by MoBSE in the implementation of the plan is inconsistency and poor internet connection. This is an infrastructure-related challenge and, since MoBSE is not the service provider, the Ministry feel helpless to do much about it. The strategy to increase digital literacy in the public workforce, as per this KII, should start from the recruitment stage. It should be a requirement that staff should be digitally well-versed before they are hired. If Lower Basic Secondary and Tertiary Institutions have well-defined digital literacy content embedded in their curriculum, the recruitment will be easy. Funding to increase the digital literacy infrastructures in schools is much needed.

93. KII with the representative of the Ministry of Youth and Sports (MOYS) revealed that 99% of their staff are digitally literate among which 5% are having a higher level of digital literacy while almost 50% have just basic digital skills. The remaining 44% of the workforce have intermediate level digital literacy. About 40% of the digitally literate workforce know about technology basics while only about 10%, 14% and 9% know about content creation, information management and safety/security respectively. All 99% digitally literate workforce is familiar with the use of basic communication gadgets such as mobile phones. A low level of digital literacy among the workforce poses the challenge of low speed of the execution of tasks. Most of the employees cannot complete simple tasks without the intervention of digital specialists and this is overloading the digital technicians with work. Enhanced digital literacy will support to promote fast execution of employees' duties and reduce the workload of the technicians. Digital literacy among the public workforce can be increased by running frequent training programmes. MOYS needs the provision of more digital equipment as it will enable employees to do their job as well as provide support for running regular training programs.

94. Gambia Investment and Export Promotion Agency (GIEPA) has a digital literacy policy (Information Technology Policy) but not a very comprehensive one. The policy is partly implemented. It also has a strategy for the continuous development of ICT skills among staff. The implementation of this strategy is in progress. They are also using the latest office applications (Office 365), software and databases (HR Plus, Finex, Customer Relationship Management, Biometric Attendance System. etc.). However, the Agency is facing some challenges in its implementation mainly in getting the staff available to attend the training on ICT. The staff revealed that the schedules for the training are not favourable to them and there is no motivation attached to attending the training. The ICT team introduced one-on-one training to mitigate this challenge. Further, the limited involvement by the Central Government on digital literacy-related activities is an ongoing challenge.

95. KII with NAQAA revealed that all the technical and professional employees of NAQAA have competencies in digital literacy that is enabling them to do their work, but it will be difficult to establish their individual levels of digital literacy. The increase in digital literacy is part of the strategy of NAQAA and it is already working for facilitating the development of quality standards and requirements for digital literacy in the country. The challenge faced by the Authority includes lack of enough competent trainers in applying the standards and requirements of the institution. The few trainers that the Authority has, are not regularly upgrading themselves to new challenges. Less qualified workforce, lack of infrastructure, inadequate number of computers and other digital gadgets with most of the digital literacy service providers are other challenges. The lack of enabling infrastructure to deliver digital literacy programs is a challenge at the national level.

96. Digital literacy can be increased through harmonisation of various digital literacy programs. Institutions offering such programs should have the same content and competencies for the same digital literacy level and NAQAA has already started this process. ''Digital program contents of Institutions are very different and a content with minimum competencies should be instituted across the board to align'' as a part of the harmonisation to develop content for each level. It is suggested that national legislation or law to make digital literacy skills a requirement for internal promotion and

new recruitments should be instituted. ''NAQAA has made it mandatory that one must have at least a bachelor's degree in ICT before becoming a digital literacy centre manager'', the Authority representative said.

97. KII with the representative of Kanifing Municipality Council revealed that there is no strategic initiative on how to increase digital literacy available for the Municipality Council per se, but within its units and projects, there are plans to increase digital literacy amongst their employees. They also have a project with the European Union that has a digital literacy component. The project will support the institution of a digital library that will facilitate online learning for students of different categories. The students of the Municipality will endeavour on interactive learning activities with the students of Peterborough. It also includes a hardwire training component (Maintenance of digital items).

98. The initiatives currently being planned for implementation includes, introducing a biometric attendance system, a conferencing system, and a platform for sharing information within different units and levels of the Municipality. The main challenges the Municipality Council is facing relates to poor connectivity and inconsistency in the internet connection (Infrastructure problems). The introduction of a digital vehicle tracker to monitor movement of the vehicles and their fuel consumption rate is in the pipeline. This will also reduce the cost of vehicle maintenance and fuel. Digital literacy initiatives help the Municipality Council to reduce financial leakages within the municipality, e.g., the introduction of electronic ticketing for the waste collection project reduces the physical contact of cash and subsequently leakages. Further, it facilitates and improves the reporting of activities to the ward representative as well as saves time and cost on printing, posting and stationeries.

99. One of the strategic objectives of the Civil Service Reform Strategy (CSR 2018-2027), accelerating improvements in service delivery through business process re-engineering and transformation using ICT, has not only been hindered by Covid-19, but the lack of ICT skills and infrastructure have also made public administration more vulnerable and exposed to disruption, accelerating the demand for ICT skills and infrastructure within the sector.

100. With an agenda to coordinate the public sector workforce and digital transformation, and to ensure a leadership role to anchor such transformation, GoTG has established an ICT Agency by an Act of Parliament in 2019. However, the agency has been inactive since its inception. Some of its functions stipulated by the Act include accelerating The Gambia's transition to a sustainable e-government environment; ensuring high standards of digital public services; promoting standardisation in the planning, acquisition, implementation and delivery of ICT equipment and services used by the government; supporting cooperation, coordination and rationalisation of digital public initiatives; promoting local content and applications development; facilitating and encouraging innovation and entrepreneurship.

101. ICT4D 2018-2028, GoTG has envisioned an e-Government Strategy 2021-2024 to attain the developmental objectives of The Gambia in terms of governance as enshrined in the NDP and ICT 2018-2028 Policy Statement. The strategy outlines the objectives and processes for the modernisation of government service delivery to the citizens by enhancing transparency, accountability, and good governance with a focus on result-oriented government service delivery. Through the outlined strategic objectives, the citizens and businesses will be further facilitated to access government services and information as efficiently and effectively as possible using internet and other defined channels of communication.

## 3.4 DIGITAL LITERACY INTEGRATION IN THE BASIC, SECONDARY AND TVET SCHOOLS

### 3.4.1 Digital Literacy Integration in Basic and Secondary Schools

102. In the context of weak human capital and insufficient basic foundational skills, The Gambia is facing significant challenges to ensure the development of a digitally competent workforce with adequate digital skills. Digital competencies, apart from the most basic skills (such as using a mobile phone for voice calls or simple messages) cannot be developed without foundational literacy and numeracy skills, which are deemed weak in The Gambia. While expected years of schooling are 9.5, factoring in what children learn (learning-adjusted years of schooling) decreases this value to 5.4 years. This gap is more prominent for boys than for girls.

103. Regional data demonstrates that 80 percent of 10-year-olds cannot read and understand a simple text by the end of primary school, and the results of the most recent Early Grade Reading Assessment (EGRA) in The Gambia completed in 2016 show that on an average in grades 1-3, students answer only one out of five reading comprehension questions correctly. The analysis of older groups reveals significant disparities based on socioeconomic background, with the proportion of youth not in education, employment, or training (NEET) differing significantly between urban and rural areas. According to the GBOS, a NEET rate in Banjul is just 1 percent, compared to 43 percent in Brikama - an area in direct proximity to the capital with the highest concentration of the country's poor. Overall, deficits in educational attainment and the quality of education contributes to around 35 percent of multidimensional poverty in The Gambia. In this context, more than 60 percent of the Gambian workforce remains without formal schooling, and 46 percent continues to be employed by the informal sector[15].

104. **Total Spending on Education is comparatively low**: The government has made significant efforts to increase enrolment numbers at all levels of education and has been partially successful. It has also made significant efforts to address quality challenges and has made progress in areas such as teacher qualification and deployment, integrating public school curriculum in madrassas, and piloting technology-enabled teaching approaches. Total spending on all levels of education represented only 3.2 percent of GDP, compared with the Sub-Saharan Africa average of 4.5 percent[16].

105. Digital literacy and skills remain underdeveloped with persistent gender disparities. Data from the Multiple Indicator Cluster Survey (MICS 2018) conducted by the Gambia Bureau of Statistics indicates that only 10 percent of adolescent boys and 6 percent of adolescent girls (aged 15-18 years) in The Gambia are considered to have ICT skills. Adolescents who are not equipped with these skills will have difficulties navigating online learning platforms and are at a risk of not being able to fully leverage online services as adults. It is vital to close these skill gaps, including the digital gender divide, particularly given the importance of remote learning during the COVID-19 pandemic. During the lockdown, alternative education through radio and television programming was provided by the government. Learning through mobile or computer-based applications was not found to be possible given the absence of reliable internet and the lack of access to devices.

106. More importantly, while the prevalence of ICT skills is normally higher among adolescents who attend school than among those who do not, the association between ICT skills and school attendance is weaker for girls than for boys. In The Gambia, 15 percent of in-school adolescent boys have ICT skills compared to 2 percent for those out-of-school (a 13-percentage points difference), while for adolescent girls the figure is 8 percent for those in-school versus 2 percent for those out-of-school (a 6 percentage points difference). Data suggests that ICT skills are facilitated by schooling, but there may

[15] Youth and trade roadmap of the Gambia information and communication technologies sector 2018-2022

[16] Republic of The Gambia: Overcoming a No-Growth Legacy, Systematic Country Diagnostic, the World Bank, 2020, https://openknowledge.worldbank.org/handle/10986/33810 License: CC BY 3.0 IGO.

be gender-related barriers such as digital access and resource constraints that prevent adolescent girls from developing these skills to the same extent as boys[17].

107. **Initiatives**: Despite the lack of a digital skills framework, MoBSE with support from the World Bank and UNESCO has embarked on curricular reforms at basic and secondary education levels (Grades 1-9). This opens a window of opportunity to explicitly integrate basic digital skills as well as computer science, particularly at the upper basic levels (grades 6 and above) into the school curriculum. These objectives of the reform agenda include introducing ICT and coding in grade four, digitising school curriculum, developing a National ICT Education Policy, providing access to ICT resources and facilities in schools, enhancing distance learning programmes at the tertiary level, enhancing the role of educational broadcasting services and strengthening pre-vocational and vocational courses. Some of the ongoing initiatives to support the above-mentioned objectives are as follows:

(i) **iLearn Gambia Platform:** Launched in May 2021, it is an online distance learning platform that seeks to digitalise the school curriculum to ensure access to equitable and quality education for all in the country. Through the project, the curriculum for core subjects for lower basic, upper basic and senior secondary (grades 1 to 12) has been digitalised.

(ii) **Progressive Science Initiative and Progressive Maths Initiative (PSI - PMI):** In 2012, the World Bank piloted the PSI-PMI model in 24 upper basic and senior secondary schools in The Gambia - the first country in SSA to implement the program. The initiative provided computers for teachers, customized software, and relevant textbooks. Student-centred environments were promoted through interactive teaching and learning methods, group discussions, Interactive White Board Software (IWB), and a hand-held student polling device. The initiative aimed to alter the way science and mathematics subjects are traditionally taught. Enhanced digital literacy was not considered a central objective, but the model itself necessitated improved digital literacy skills among both teachers and students. Evaluations show that the PSI-PMI program has significantly improved student performance – up to 9 p.p. in mathematics, 4 p.p. in English, and 15 p.p. (a threefold increase) among students obtaining credit in both mathematics and English (a criterion for college admission in The Gambia). This suggests that technology and a student-centred approach has influenced the efficacy of the overall learning. The PSI-PMI program is now scaled with an additional 48 senior secondary schools currently being equipped, bringing the total number of beneficiary schools to 72. While MoBSE aims to expand the program to all public upper basic and senior secondary schools in the country, challenges that need to be addressed include timely maintenance of equipment, access to reliable electricity and internet, physical classroom environments that are more conducive to participatory learning, and better alignment with the official school curriculum. Beyond The Gambia, Gambian trainers have trained Ministries of Education in Nigeria, Niger, and Rwanda to deliver the same program

(iii) **Leap Learning:** The project objective is to boost the literacy and numeracy skills for grades 1-4. The project which is being piloted in eighteen (18) schools provided tablets preloaded with digital content to students in grades 1- 4.

108. **Enabling Infrastructure**: As per **Error! Reference source not found.**, only 40 percent of lower basic education schools, 58 percent of upper basic education schools, and 67 percent of senior secondary schools have electricity. Furthermore, 57 percent of all senior secondary schools, 41 percent of upper basic education schools, and 22 percent of lower basic education schools are equipped with

[17] What we know about the gender digital divide for girls: A literature review. Evidence briefs - Insights into the gender digital divide for girls

computer laboratories. In 2015, UNESCO reported a computer-to-child ratio of 277:1 for primary school learners in The Gambia, 66:1 in lower secondary, and 37:1 in upper secondary schools. At that time, The Gambia only included ICT education in upper secondary schools, 40 percent of which were reported to have no internet access[18].

**Table 8: Computer Labs and Electrification of Schools**

| Management of Schools | Number of Schools | | | % of Schools with Computer Lab | | | % of Schools with Electricity | | |
|---|---|---|---|---|---|---|---|---|---|
| | Lower Basic | Upper Basic | Senior Secondary | Lower Basic | Upper Basic | Senior Secondary | Lower Basic | Upper Basic | Senior Secondary |
| Government | 557 | 199 | 67 | 19 | 48 | 51 | 22 | 44 | 46 |
| Grant-Aided | 47 | 41 | 45 | 36 | 61 | 93 | 57 | 76 | 84 |
| Total Public | 604 | 240 | 112 | 20 | 50 | 68 | 25 | 50 | 62 |
| Private | 223 | 86 | 41 | 58 | 90 | 73 | 81 | 90 | 83 |
| Madrassa | 402 | 198 | 60 | 6 | 09 | 25 | 39 | 54 | 65 |
| Total Private | 625 | 284 | 101 | 25 | 33 | 45 | 54 | 65 | 72 |
| Total National | 1229 | 524 | 213 | 22 | 41 | 57 | 40 | 58 | 67 |

*Source: Ministry of Basic & Secondary Education Year Book 2020/2021*

109. To address some of these issues, MoBSE contracted GAMTEL in 2014-16 to provide fibre connections to all regional offices and establish video conferencing amongst the regions, but the delivered bandwidth was lower than expected and the service contract was aborted. Challenges with connectivity also extend to higher education, with bandwidth needs per 1,000 students expected to increase 100-fold by 2030[19].

110. The lack of infrastructure made the pivot for basic and secondary schools to online learning during the COVID-19 related school closures, all but impossible, while at the higher education level there were some limited successes in transitioning to online learning. For basic and secondary levels, the GoTG was able to provide alternative education through radio and television programming but learning through mobile or computer-based applications was not found to be possible given the absence of reliable internet and the lack of access to devices.

111. **Digital literacy among teachers**: Teacher training and professional development, and promotion strategies are regarded as essential. However, in the Gambia, the current training standards do not satisfy teachers. Teachers who have received pre-service training feel that after qualification, there are no opportunities for further development. Unqualified teachers hope that training and professional standards can be improved. A slow and inefficient promotion system is hampering professional development that demotivates teachers who work over a long time (Wyatt & Ončevska Ager, 2017).

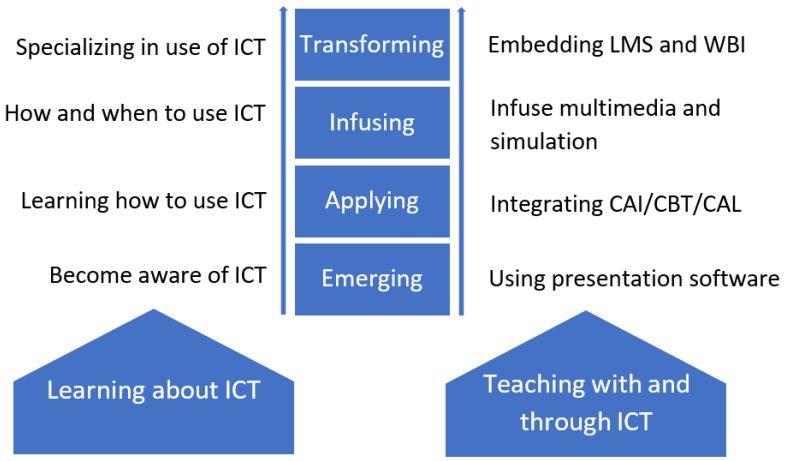



**Figure 1: Mapped ICT Integration Stages in Teaching and Learning**

[18] UNESCO, 2015. ICT in Education in Sub-Saharan Africa: A Comparative Analysis of Basic E-readiness in Schools
[19] The Gambia Digital Economy Diagnostic, Digital Economy for Africa Initiative, The World Bank, 2021

112. Teachers do not often use ICT tools such as Microsoft Office and multimedia presentations to engage and inspire students. The infrequent use of PowerPoint for presentations is common in classrooms, rather than integrating ICT. Besides, ICT resources such as social media, and email are not widely used for enabling the chat to carry learning outside the classroom. Teachers do not have a strong commitment to learning for the successful integration of ICT use. Teachers' lacking skills in understanding ICT in the classroom, lack of resources, and the absence of desire for educational reform by schools and policymakers seem to be major obstacles to the introduction of ICT in schools (Kristiawan & Muhaimin, 2019).

113. A study investigated the integration of ICT teachers' competencies and use of ICT at the School of Education, Gambia College, and found that the use of ICT platforms for teaching is inadequate. The impediments being inadequate ICT infrastructure, access to resources and supply of power, as perceived by most teachers. Furthermore, the opinion of teachers signifies that fluctuation in the College's internet connection jeopardizes the integration and interest in using ICT platforms for teaching, and those incompatible classroom environments make it difficult to use ICT in some situations by lecturers. These results are in consistence with other prior studies in The Gambia and in the region which ascribe barriers to ICT integration to poor equipment, lack of skills, inadequate support, time constraints, lack of interest, or teachers' computer knowledge.

114. In addition to school, the home environment can be a critical space for developing and practising digital skills, however, gender gaps permeate there too. In all countries covered by UNICEF MICS analysis, both adolescent girls' and boys' ICT skills are greater among individuals who have computers at home. In The Gambia, 42 percent of adolescent boys and 36 percent of adolescent girls report having a computer at home and using it at least once over the week. The presence of a computer in the home doesn't erase the digital gender divide. Among households with computers in The Gambia, girls have lower levels of ICT skills than boys. Gender norms that limit girls' use of digital technologies may contribute to this gap. Parental restrictions are among the most common barriers to digital access for children, and in The Gambia like in many other countries, concerns about girls' online safety and the fear that girls will become exposed to content that goes against their community's values, mean girls are discouraged from using the internet.

115. The apex institution responsible for the training of lower basic schoolteachers, The Gambia College of Education is being reformed by MoBSE and MoHERST. The reform includes, among others, the revision of the teacher training curriculum and support for technology upgrades. This presents a window of opportunity for the inclusion of digital skills competencies in teacher education as well as exposing teachers to computer science and other technological tools to aid teaching and learning.

116. **The Education Sector Policy 2016-2030** emphasises on the assessment of training needs, integration of ICT into literacy and numeracy programmes, teacher deployment, and monitoring and evaluation of literacy and numeracy programmes along with the following proposed interventions:

- At the level of pre-service training, the teacher training curricula will be reviewed to cater for improved content knowledge and modern pedagogical practices. This will take into account the use of ICT in education, training in ICT, distance learning modes and augment learning;

- ICT is recognised an essential tool to better facilitate effective and efficient management of the sector. This policy will ensure, through the use of ICTs that quality education is accessible to one and all;

- An integrated ICT strategy, within a sound ICT infrastructure, vital for the successful achievement of the sector's main priorities will be developed. This ICT strategy will be driven

by the need to invest in ICTs in a way that will achieve the greatest benefit at the lowest cost for the greater good of the society;

- In addition to the local area network (LAN) set up in the buildings of the Education Sector, additional networking facilities will be provided for the regional offices, given their anticipated responsibilities under the decentralisation process. A wide area network (WAN) linking all the directorates and units of the Education Sector and schools will also be strengthened;

- All staff of the education sector, including the ancillary, will be facilitated to have varying degrees of computer literacy. At least, every staff member will be able to send and receive e-mail in a timely manner. E-mail accounts provided will be easily identifiable from private accounts. Appropriate ICT training will continue to be provided to all the staff depending on rank and need;

- Strategic partnerships will be built with all stakeholders, including the private sector and donor organisations. The sector will coordinate the implementation of all such interventions while taking into account the need to build local capacity and sustainability mechanisms;

- All public educational institutions will progressively be provided through public-private partnership ventures, with networked computers, computer peripherals and Internet access during the policy period. Private institutions will be required to include ICT as part of the educational curriculum;

- Training workshops and other professional development activities will continue to be conducted for school heads, teachers, and students to ensure that every teacher and student in the country is computer and information literate. A website as well as school-net programmes will be set up for every school and both students and teachers will be encouraged to participate in projects and other educational activities;

- In collaboration with other stakeholders, such as WAEC and USPC, a national ICT policy for educational institutions will be developed. ICT will be offered at the GABECE and WASSCE including tertiary and higher education levels and will include programming, database design, website and administration, maintenance and repair and network and systems administration;

- Access to ICT resources and facilities in schools will be made available to out of school youth and other members of the community. Communities in which public education institutions are located will be encouraged to use the ICT resources and facilities to communicate and also improve their numeracy and literacy skills. Cyber cafés and computer resource centres will be established in every region to enhance the Open and Distance Learning (ODL) programme of both the University and the Gambia College.

### 3.4.2 Digital Literacy Integration in TVET Schools

117. The TVET landscape in The Gambia comprises public and non-state training institutions. The public TVET institutions registered by NAQAA include GTTI, Gambia Tourism and Hospitality Institute (GTHI), Management Development Institute (MDI), Gambia Telecommunications and Multimedia Institute (GTMI), The Gambia College, the Rural Development Institute (RDI)6 in Mansa Konko, the Rural Skills Training Centre (RSTC) of GTTI, Gambia Press Union School of Journalism, School for enrolled nurses and midwives, and West African Insurance Institute. Most tertiary institutions offer courses both at certificate level and diploma level. There are more than eight public higher education institutions in the country, of which University of The Gambia (UTG) is the most important[20]. The

[20] Feasibility Study on Inactive Youth and Interventions, Draft report, April 2017 –World Bank and MoHERST

Ministry of Youth and Sports further coordinates tertiary training centres such as the President's International Award (PIA), The Gambia Songhai Initiative (GSI) and the National Youth Service Scheme (NYSS).

118. When looking at the spread of the 92 accredited TVET institutions throughout the country, an acute geographical concentration emerges. Approximately 75% of accredited TVET providers are in Banjul and Kanifing local government areas (LGAs). Another 16% of TVET institutions are in the Brikama LGA, which is adjacent to the Kanifing LGA. In rest of the country, four institutions operate in Kerewan LGA (Gaye Njoro Hair Plus, Njawara Agricultural Training Centre, Alwafa Skills Training Centre and Future in Salikenni Computer Training Centre), and one in Mansa Konko (Gaye Njoro Hair Plus) and three in Basse LGA (Chigambas Skills Training Centre, Starfish Skills Centre and GTMI).

119. When looking at the TVET landscape in The Gambia, the ICT sector's small size mirrors a limited range and scale of the offer for ICT-related training and education. The ICT related skills acquired by the young population (aged 15 and older, based on the 2012 Labour Force Survey), including computing and phone repair, amount to less than 2% of all skills, with respectively 1,887 claiming to have received these training through a TVET institution in 2012.

120. Employees' level of education in ICT is spread between TVET and university education. The results of the ITC SME Competitiveness Survey show that the level of education in ICT is higher than in the rest of the economy, with university and TVET-educated employees representing close to 81% of the workforce. Surprisingly, the share of employees with vocational training is slightly higher than for university education, whereas the level of competency required in the ICT sector is usually at the university level. The lack of diversified ICT education at the university level is one of the main reasons for this and is further analysed in the TVET section. Additionally, 16% of employees only have a secondary education.

121. The KIIs with stakeholders in the TVET segment revealed that teachers use computers to submit grades and reports. However, the provision of good computer labs, free wifi with good bandwidth, computer devices (laptops or tablets) and projection devices are needed so that they immediately begin to project and share digital information with students. This will facilitate the exposure of all to more information. Other facilities needed are consistent power or inverter installations, interactive SMART boards, and printers. With this, there is a need for technology teachers to train classroom teachers in its use. Technicians are needed to set up the hardware and software as well as handle daily troubleshooting.

122. During the consultative process that led to the design of the Youth and Trade ICT Roadmap, ITC surveyed TVET institutions in order to assess the overall performance of the TVET system and to identify bottlenecks. The survey covered a sample of 25 TVET providers and the University of The Gambia, out of which 12 provide ICT related subject matter. Graduates from private TVET represent the largest share compared to graduates from public TVET and the university. This is because the sectors development is fairly recent and the public work has struggled to adjust to the fast-paced technological evolution while delivering quality training, but also because there is a large demand stemming from the youth to be trained in ICT, equally in the rural or urban areas. The TVET survey highlights positive progress in a number of areas, compared to the previous assessments carried out in 2010, notably by the World Bank. These areas are detailed below:

- Most ICT training providers have reported a significant increase in total trainee enrolment over the past five years (approximately 30%), which demonstrates the young generation's growing interest in the sector. Indeed, the very low level of computer literacy, especially in rural areas, creates an appetite for basic ICT skills. This is the reason that regional TVET institutions do not provide courses other than basic computer literacy. The University of The Gambia and

Microtech Institute of Multimedia & Technology seem to be the ICT-education providers to have experienced the highest growth, as their focus is oriented toward a more advanced level.

- Links between TVET and the ICT private sector are well developed and effective. All the training institutions providing ICT courses have reported interaction with the local private sector. This interaction goes both ways. On the private sector side, apprenticeships or internship positions are offered to trainees, and through technical assistance or technical training, companies can gain access to specific expertise delivered by TVET. It is important to highlight that all TVETs report to be providing internships or apprenticeship schemes (besides Microtech Institute of Multimedia & Technology).

- Widespread geographical dispersion of ICT-based training providers throughout the country: Licensed training institutions focusing on only IT user skills, which provide basic computer literacy, are covering all local government areas (LGAs) in the country. It is important to stress that advanced ICT courses are only available in the Kanifing and Brikama areas, which is in line with the concentration of the population and economic activity around the coastal area. Access to ICT education for girls and women is better than in other sectors but could be improved: Girls represent a significant proportion of ICT students (based on the TVET mapping, they represent approximately 40%). Few TVETs provide incentive measures to encourage young women to study ICT, among which GTTI and Smart Technologies offer respectively 30% and 50% discounts on tuition fees for female students. Insight Training Centre provides scholarships to young women.

- Majority of ICT institutions report that their staff members possess appropriate qualifications and experience to teach the courses assigned to them. Institutions also claim to provide capacity building courses to their staff. This is a very positive sign compared to the situation with other TVETs. The course content of most of the ICT TVET has revised annually, which demonstrates the dynamism of the TVET management to adapt to the constant change of technologies, also taking into account TVET policy changes, the market demand and student preferences.

- E-learning is widely used by TVET: In terms of teaching methods, surveyed institutions report to be using various formats such as weekly classes, workshops, experiments, and group discussions. It is important to highlight that 75% of the surveyed TVET have initiated online teaching methods through e-learning or mobile-based platforms.

- Collaboration among TVET is common practice: Two-thirds of ICT TVETs report to be having formal partnerships or other collaboration mechanisms with local TVET institutions. This collaboration is usually geared toward curriculum design consultation, sharing teaching resources or knowledge exchange and best practices. This type of partnership is also developed with other regional and international training institutions, but it seems limited to public institutions such as UTG and GTTI. Only a few private TVETs have formal partnerships unless it is accredited such as Microsoft or ABMA. Another positive sign during the design of the ICT roadmap was the private sector engagement to design a new Gambia Skills Qualifications Framework (GSQF) under the leadership of the National Accreditation and Quality Assurance Authority (NAQAA). The TVET survey has also identified two major gaps - Half of the TVET reports lacking the necessary equipment and material for teaching ICT courses. During the regional consultations, several ICT trainers complained about the old computers in the training centres, frequent power cuts and the absence of quality maintenance.

- Absence of impact assessment and quality assurance: Although TVET in ICT shows positive and encouraging signs of development, it is important to highlight that none of the surveyed

institutions conducts tracer studies to follow up on their graduates. The lack of tracer studies has been identified by many previous reports as a major issue affecting the impact assessment of the TVET system. Efforts need to be made to support the introduction of system-wide tracer studies that would be administered across training institutions under NAQAA's authority. Given their nature, TVET in ICT sector should be leading on this front and assist in the development and piloting of systems. Additionally, members of the ICT sector core team involved in the design of the roadmap have reported the absence of a quality framework to certify the levels of diplomas provided by TVET.

123. The TVET Roadmap (2020-2024) emphasises the need for providing online learning as a sub-objective and the increased relevance of digital skills at the TVET level. However, there is no well-defined strategy or framework for the development of intermediate and advanced digital skills within TVET centres, Higher Education Institutions (HEIs), and other public and private providers of digital skills training[21]. The low computer to student ratio is another factor that should be addressed.

124. TVET and higher education institutions, even those that do not explicitly focus on ICT specific programs or degrees, can (and should) play an important role in digital skills development, particularly in providing intermediate-level skills. This is reflected in the significant role technology plays in teaching and learning, and the impact TVET and HEIs have on digital adaptation, as it relates to specific technical fields (e.g., staying informed on how digital technology influences different sectors of employment and ensuring students are versed and literate in these new technologies). However, there is a need to align TVET and higher education more strategically with market needs, including in the areas of digital technology. For example, curricular reviews to align existing computer science degrees with industry expectations could be a starting point, and there is an appetite for a more entrepreneurial TVET and higher education model that promotes and facilitates opportunities for self-employment, innovation, and technology-based businesses. In The Gambia, the broader role of TVET and higher education in digital skills development of post-secondary institutions is further undermined by the lack of necessary digital infrastructure and trained TVET and higher education instructors to adequately teach both ICT specific courses, as well as incorporate new technologies into teaching and learning across a diverse set of topics, for example, agro-processing, fisheries, tourism, business management, and creative industries.

125. There are significant gender and urban/rural divide in access to digital skills training in TVETs. The FGDs conducted with female students (existing and ex-students) revealed some gender biases but were not very stringent. The more pressing challenges for the females remain non-availability and cos of computers, electricity and data connectivity. A survey of 25 TVET institutions reports an approximately 30 percent increase in enrolments over the past five years. Women represent 36 percent of the ICT workforce and approximately 40 percent of ICT students, many of whom are encouraged by equity incentives, such as discounted tuition fee structures or scholarships. According to the same survey, in terms of quality, half of the TVET graduates are qualified as 'poorly prepared', whereas they represent 56 percent of the employees in the ICT sector. The main occupations that companies find hard to fill include software and multimedia developers and analysts, database specialists, ICT network administrators and hardware professionals, telecommunication engineers, content technicians, etc. TVET institutions provide limited to no courses to pursue these occupations. The low education level provided by TVET institutions appears to be one of the primary sources of the skills gap in the ICT sector

126. While these reforms could support the introduction of basic digital skills into the primary and secondary levels of education, the lack of a comprehensive and progressive digital skills framework covering intermediate and advanced skills provided at upper levels of education, could act as a

[21] Adapted from The Gambia Digital Economy Diagnostic, Digital Economy for Africa Initiative, The World Bank, 2021

hindrance. The TVET Roadmap (2020-2024) underscores the enhanced relevance of digital skills at the TVET level and the importance of the provision of online learning as a sub-objective. Nonetheless, there is no well-defined strategy or framework for the development of intermediate and advanced digital skills within TVET centres, higher education institutions (HEIs), and other public and private providers of digital skills training.

### 3.4.3 Tertiary Institution Competence

127. **Institutions rolling out digital literacy and existing programs available:** The University of The Gambia and the American International University of West Africa offer degree programmes in ICT. The American University of West Africa launched a Computer Science program in 2014 and has since graduated 26 students, nine of whom are female. The program has a strong practical component with fully equipped computer labs for student use, and a six-months internship integrated in the third-year curriculum.

128. At the University of The Gambia, the School of Information Technology and Communication, established in 2010, offers two bachelor's degree programs - in computer science and in information systems. As of 2021, the school only has one full-time staff member who holds a doctoral qualification with most faculty members being part-time lecturers. To date, the school counts 269 graduates: 181 in computer science and 88 in information systems. Collectively, 23 percent of graduates are women. This suggests that qualifications in computer science and information systems are not at the appropriate level to support growth in other sectors. Further, the lack of integration of computer science into programmes that train teachers (at both primary and secondary levels), means that computer science is not making its way into senior secondary schools and universities[22].

129. KIIs with representatives of tertiary institutions brought out challenges faced due to weak enabling infrastructure at the level of institutes such as good computer labs, electricity and data connectivity. The course in demand in the market, as stated by this stakeholder group, is digital literacy, enterprise digital skills (cloud computing, data science, creative content creation, web & application development and crypto) and transversal skills courses. Other skill sets demanded include adaptability, curiosity, teamwork, honesty, listening, problem-solving, critical thinking, flexibility, emotional intelligence, a collaborative mindset, inquisitiveness, accountability and creativity.

130. In early 2020, a trainers' program on ICT User Skills (IC-3) was facilitated by Smart Technologies in partnership with the Information Technology Association of The Gambia (ITAG). 50 participants from 23 TVETs took part in the training and were equipped with relevant skills required for their certification as IC3 trainers. Out of these, 21 participants were certified. In addition to this, 38 freelancers were trained through a programme that was delivered fully online after the classroom sessions in Essau had to be cancelled due to the pandemic.

131. The TVET Roadmap, launched in December 2019 sets out key actions to improve the efficiency and effectiveness of skills training in The Gambia to meet the demands of the labour market. One of the key priorities of the Roadmap is the creation of a formalised apprenticeship program. To establish the program, ITC in partnership with the Ministry of Higher Education, Research, Science and Technology (MoHERST) and the National Accreditation and Quality Assurance Authority (NAQAA) set up the Sector Skills Council (SSCs), a private-sector led body that developed the occupational standards and curricula for formalized apprenticeships. Under the framework of the ICT Sector Skills Council (SSC), Insist Global was contracted to develop a training curriculum for "application developers and

[22] Adapted from The Gambia Digital Economy Diagnostic, Digital Economy for Africa Initiative, The World Bank, 2021

testers". The course was delivered in 2021 through selected TVETs to 25 students on app development using Flutter and Python[23].

132. **Standards of digital literacy taught or followed by institutions:** Local IT training institutions such as Smart Professional College, Interlink Global College and Nifty ICT Solutions follow the ICC-3 digital literacy certification. The IC-3 digital literacy certification is another course which is provided by Certiport (a product of Pearson Virtual University Enterprises), a for-profit provider of certification exams. IC3 Digital Literacy Global Standard 6 (GS6) is the latest version of the IC3 Digital Literacy program. This program has been restructured to address current computing concepts, including cloud and mobile technologies, to align closely with educational requirements and ensure learners of all ages can validate their understanding of digital technologies The program consists of three levels— basic, intermediate and advanced. These are courses for students or employees seeking to pursue a career in IT or enhance their knowledge in the use of technology. The course content includes areas related to online usage (internet, browsing, navigation, email communication), digital citizenship, computing fundamentals, managing computer files, computer devices, configuration etc. It also covers common applications like word processing, presentations, and slide design. The course can be delivered online or offline and the certification requires passing three individual exams to validate competency.

133. **Suruwa Camara Unified IT Institute and Nursery (SUITIN)** follows the European Computer Driving License (ECDL) which is a worldwide recognised computer literacy certification programme. It provides students with the IT skills and abilities needed to build on existing knowledge, motivate further learning, and improve their employability in a wide range of fields and industries. It is accredited by the Chartered Institute of IT (BCS) as an ITQ and is classified as a flexible qualification.

134. **The Microsoft Digital Literacy Certification** is a popular course which is free and open-source. This is targeted to all users with basic reading skills who want to learn the fundamentals of using digital technologies, such as working with computers, accessing information online, communicating online, participating safely and responsibly online, creating digital content in word processing, collaborating and managing content digitally. The course can be delivered online though a self-paced individual study or face-to-face classroom delivery. To obtain a digital literacy certificate, users require to pass 70 percent or higher. The biggest advantage of this course is that it is free and is open-source, unlike the IC-3 and ECDL where user fees are charged. However, a limitation is that the course is linked to a particular vendor's software and may not give sufficient breadth of understanding to the student**.**

### 3.5 Advance Digital Skills Training (ADST)

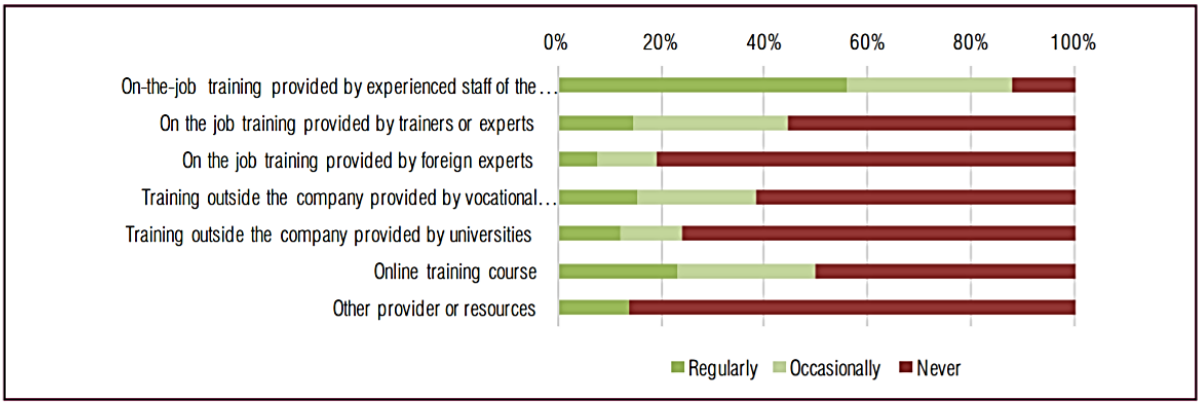
135. Enterprises in the ICT sector claim the cost of employment to be the greatest barrier to employing young people, followed by the poor attitude toward work and unsuitable qualifications. This perception from the company might be explained by the relative scarcity of qualified and competent young people, which could be reflected in higher salaries compared to other sectors. Additionally, the KIIs with private sector stakeholders reveal that the unsuitable qualifications and cost of additional training required to get ADS are the greatest barriers in employing young people. This clearly shows the high level of digital skills gap between the private sector's needs and the level of competence of young people looking for a job in the ICT sector.

136. Junior staff coming from universities are slightly better prepared to perform successfully in their jobs than those coming from colleges or vocational and technical schools. It is important to highlight that 50% of staff educated in technical and vocational schools are qualified as 'poorly prepared', whereas they represent 56% of the employees in the ICT sector. The education level provided by TVET seems to be one of the main sources of the skills gap in the ICT sector.

[23] Youth Empowerment Project, Gambia

137. The private sector complains about the wide disparity of the competency level of graduates between training institutions. The KIIs highlighted almost no training in latest technologies like Internet of Things (IoT), open data or drones.

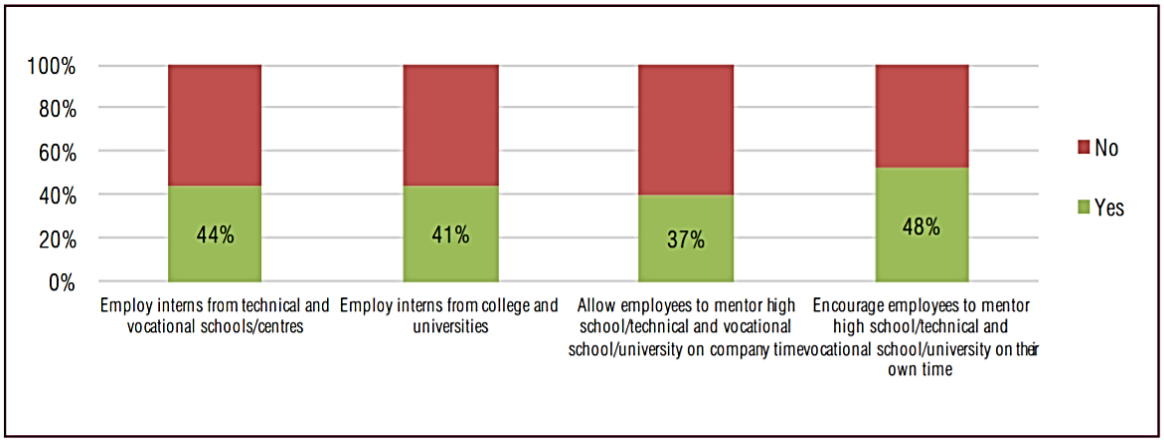
138. Majority of ICT companies claim to provide on-the-job training to overcome the skills gap and only half use online training courses. The most common method regularly used by ICT companies to upgrade their employees' skills is to call on experienced staff (close to 55% of companies) to deliver on-the-job training. It is important to highlight that no other form of training is provided on a regular basis besides online training. It is surprising to note that only 50% of ICT companies reinforce staff skills through online training given the vast amount of free quality educational material accessible online. On the contrary, 50% of ICT companies use external trainers or experts, but only 20% call on the services of foreign experts. Regarding the use of other external training providers, a bigger proportion of ICT companies use the training services of TVET compared to universities.




*Source:* ITC SMECS The Gambia, 2017.

**Figure 2: Types of Training and Mentoring Provided**

139. Less than half of the companies employ interns and facilitate mentorship. When looking at the detailed information, approximately 40% of the companies employ interns coming from technical and vocational schools and universities. It is very surprising to see that only 44% of the companies in the ICT sector employ interns from TVET, whereas 56% of the employees have been educated in the TVET. Internships should be an important part of TVET educational programmes. Given the low level of preparedness of students following TVET education, a greater number of companies must hire interns. This would be a way to improve the overall competency level in the sector. Less than half of the companies promote mentoring of their employees with vocational schools or universities. The share of companies allowing employees to mentor high school, university, technical and vocational school students on company time represents only 37 percent. It increases to 48 percent when it comes to companies encouraging employees to mentor on their own time. This demonstrates room to improve the collaboration between the private sector and training providers to find a way to better match the needs of businesses and reduce the skills gap in youth employment.




*Source:* ITC SMECS The Gambia, 2017.

**Figure 3: Facilitation of Mentorship or Internship by Firms in the ICT Sector**

140. MOICI is working to establish an innovation hub at the University of Gambia, to expand student opportunities, attract scholars and researchers, and encourage private-sector collaborations.

141. Several efforts are underway by MoHERST for the conversion of the Gambia Technical Training Institute (GTTI) into a University of Engineering that is aimed at fostering innovation and contributing to specialised digital skills development. GTTI is supported through the WB-financed Africa Centres of Excellence (ACE) Project that is assisting the GoTG in developing an Emerging Centre of Excellence in Science, Technology, Engineering and Entrepreneurship.

### 3.6 DIFFUSION OF DIGITAL LITERACY IN RURAL AREAS

142. In 2014, the Ministry of Information and Communication Infrastructure supported by UNDP developed Rural Community Information Centers (RCIC) in Mansakonko particularly for communities where primary and basic ICT services were scarce. Besides other programs, the Center offered more medium ICT practice, including cell phone repairs (Connect a School, and Connect a Community in The Gambia, 2019).

143. Due to infrastructure deficiencies (erratic energy supply, Internet, ICT training centres) in the rural areas and relatively low economic activities, ICT landscape in rural Gambia varies significantly from the urban Gambia. Growing curiosity in digital literacy and ICT skills and technologies has been observed in the rural Gambia. There is a low demand for ICT services as few businesses have computers and internet connections. People are aware of the potential or opportunities that ICT presents. However, the awareness and exposure to the opportunities, utilities of skills and technologies have been very low. Studies find that the rural population is aware of topics such as digital connectivity, networking, graphic design etc., but are unaware of the content and opportunities.

144. To assess the digital literacy landscape in the rural Gambia, FGDs were conducted with 54 persons with education levels of Madrassa to 12th Grade in the age group of 18-48 years and occupations such as driving, masonry, tailoring, satellite technician, petty trading, construction, carpentry, tiling, welding, mechanics, business and farming. The participants in FGDs revealed that 48 of them own smartphones (88.89%). Those who own smartphones use the internet and applications such as Messenger, Facebook, WhatsApp, Youtube, Xender, Vitmet.

145. Reasons for poor usage of digital services by rural dwellers are primarily affordability related, high cost of electronic devices and high tariff prices for internet services, along with other barriers faced in the usage of ICT related services such as fear of scammers intrusion into one's account, weak

and inconsistent internet connection, slow internet connection and poor electricity supply to rural areas.

146. All participants in FGDs showed interest and willingness in increasing their level of digital literacy, provided they get the opportunity and availability of internet connectivity, electricity and affordable devices and internet connection at their communities along with some training on digital literacy. However, participants in FDGs had no idea on the costs involved in increasing digital literacy.

147. Of the 54 participants on FGDs, 9 participants had previously undergone some sort of formal or informal digital literacy program. All the respondents agreed that high digital literacy will enhance employability. "Being a digital literate is part of the competencies that most employers looked for when recruiting'', revealed by one of the respondents.

148. Very few private digital literacy centres are mentioned by the respondents of the FDGs. Despite these in place, access (proximity and cost) to digital literacy program remains a challenge in all the rural areas of The Gambia.

149. Rural Gambia severely lacking ICT infrastructure such as Internet cafés, ICT centres and ICT training activities, and something as simple as electricity availability makes diffusion of digital literacy and ICT skilling to rural areas difficult. However, lately basic IT machinery such as mobile phones, computers, photocopies etc., have been penetrating Gambian rural areas and even creating business opportunities. Ensuring basic infrastructure such as electricity supply along with digital awareness campaigns can create sustainable coverage of digital literacy, IT infrastructure and basic ICT skilling in rural Gambia.

150. Cases from other African countries successfully expanding digital literacy to rural areas have embedded digital literacy and IT tools and skills in pedagogy and curriculum. Successful case studies have found peer-to-peer learning between teachers and students in rural schools, such collaborative practices among peers can be enhanced and amplified to overcome resource and material availability challenges.

### 3.7 DIGITAL TRAINING LANDSCAPE AND ITS VALUE CHAIN

151. Those occupations with the greatest skill shortages in ICT include software and multimedia developers and analysts, applications development, ICT network and hardware professionals, web technicians, database specialists and systems administrators[24].

**Table 9: Most Needed Occupations in Agriculture, ICT and Tourism**

| Occupations in ICT | Score |
|---|---|
| Software and Multimedia Developers and Analysts | 19 |
| Applications Development and Testing Technicians | 13 |
| ICT Network and Hardware Professionals | 10 |
| Web Technicians | 9 |
| Database Specialists and Systems Administrators | 9 |

[24] TVET Roadmap, 2020-2024

| Occupations in ICT | Score |
|---|---|
| Information Technology and Telecommunications Directors | 6 |
| Sales and Marketing | 5 |
| Shop Salespersons | 5 |
| Electronics and Telecommunications Installers and Repairers | 3 |
| Personal Services Workers | 3 |

*Source: TVET Roadmap, 2020-2024*

152. 48 TVET institutions offer ICT skills training (Microsoft Office modelled after the ICDL) from basic to advanced levels. Annually, 3000 students of different ages are trained[25]. NAQAA has developed an IT user skills curriculum standardised for all institutions. Understandably, few TVET institutions have implemented the curricula. In collaboration with Youth Empowerment Project, the NAQAA trained local ICT assessors to monitor and evaluate TVET centres offering ICT courses. In a bid to ensure further development of the ICT ecosystem in The Gambia, the Information Technology Association of Gambia (ITAG) and the Internet Society of The Gambia (ISOC) have been involved in raising awareness about employment opportunities in the ICT sector.

153. Licensed training institutions focusing on only IT user skills, which provide basic computer literacy, are covering all Local Government Areas (LGAs) in the country. It is important to emphasize that advanced ICT courses are only available in the Kanifing and Brikama areas, which is in line with the concentration of the population and economic activity around the coastal area[26].[27]

154. Mapping of firms and services in ICT in Gambia is compiled in **Error! Reference source not found.** while Institutions rolling out digital literacy and existing programs available are compiled in **Table 11**

[25] The Gambia Digital Economy Diagnostic, Digital Economy for Africa Initiative, The World Bank, 2021
[26]Institutes such as Management Development Institute and O.K. Computer Training.
[27] ITC Youth Empowerment Project Gambia, 2017

**Table 10: Mapping of Firms and Services in ICT In the Gambia**

| | Company | Leading products and services | Markets | Significance to the sector |
|---|---|---|---|---|
| **Internet access and related services** | Gamtel | Web hosting, 3G, dial-up services, lease line, telephone line, Internet service provider (ISP), ISDN, virtual private network, e-banking, additional ventures planned in e-learning, e-commerce and e-health | Gambia | |
| | Gamcell | Prepaid/post-paid services, Internet and data services, roaming facilities, Kafo (closed user group), Njukal (loyalty scheme) and conference calls | Gambia | |
| | Unique Solutions | Internet services, networking, software advisory, mobile phone repairs training, virtual private networks, security solutions, technology integration and system set-up | Gambia | RLG sister company |
| | Smiling Coast Media Limited | Multimedia, advertising and branding | Gambia | |
| | Lanix | Offering training to individuals on CISCO networking, cybersecurity and IC3 digital literacy | | |
| | Netpage | LTE broadband service, ISP, local and wide area networking, local wireless connectivity, web design and website hosting, corporate training and IT security consultation | The Gambia, serving government, non-governmental organizations (NGOs), embassies and individuals | First to launch 4G, now 4G LTE |
| | I-Link | Internet café, computer repairs, computer equipment and accessories | | |
| | NICE Gambia | Internet services, education (IT and business courses), business hub, outsourcing, IT and energy products distribution | | |
| | Web design Gambia | Web design, logo design, graphic design, hosting solutions, e-mail solutions and SEO services | | |
| | ITG Security | Internet security solutions | | |
| | QCell | 3G + network, USB data card and Qodoo Mobile Money | | |
| | InSIST Net | ISP | The Gambia, serving homes, companies and schools | Employs 10+ |
| | Standard Newspaper / Nucitech / | Company branding, digital marketing and graphic designing | | |
| | Africell | ISP | Gambian headquarters, with subsidiaries in the Democratic Republic of the Congo, the Republic of Sierra Leone and the Republic of Uganda | Country's largest mobile Internet provider |
| | QuantumNet | ISP | The Gambia, Sierra Leone | Employs 300. Country's first ISP. Sister company of Qcell. |

*Source: Youth and Trade Roadmap of The Gambia 2018-2022*

## Table 11: University and Main TVET Institutions in ICT

| Name of institution | Status | Region | Number of graduates in 2016 ( % women) | Total number of teachers / instructors | Standard duration of the training course | Level | Courses offered by the institution |
|---|---|---|---|---|---|---|---|
| University of The Gambia (UTG)* | Public | Banjul | 1 310 (35%) | 226 lecturers full time and 50 part time | 9 months for diploma and 3-year or 4-year degree programmes | Bachelor's, diploma | BSc Computer Science, BSc Information Systems, Diploma in Information Technology |
| Public TVET | | | | | | | |
| Management Development Institute* | Public | Banjul | 1 500 (60%) | 32 full time and 32 part time | 6 months | Advanced diploma, diploma, certificate | Certificate in IT, Advanced Diploma in IT, Diploma in Programming, Cisco Certificate Network Associate |
| Gambia Technical Training Institute (GTTI)* | Public | Banjul | 2 000 (15%) | 140 full time and 15 part time | 6 months to 3 years | Diploma, certificate | Certificate & Diploma Software Application, Technician Certificate & Diploma Information Processing, Certificate in Computer Engineering, High National Diploma Computer Science |
| Bansang Youth Centre – IT support | Public Under NYC | CRR-South | N/A | N/A | N/A | Basic | The IT training centre is managed by the Bansang Youth Development Association and supported by the youth centre. The IT training centre offers paid classes and free classes for students who don't have IT in their school. The IT training centre is the only IT training centre in the Central River Region. |
| Gambia Telecommunications and Multimedia Institute (GTMI) | | Banjul and URR | N/A | N/A | N/A | Diploma, certificate, foundation | In Banjul, courses offered are IT essentials (PC hardware and software), scaling networks, cybersecurity essentials, introduction to networks, routing and switching essentials and connecting networks<br>GTMI Basse Annex is a regional training centre: Foundation, certificate and diploma. |
| Private TVET | | | | | | | |
| QuantumNet Institute of Technology* | Private | Banjul | 2 000 (40%) | 10 full time and 4 part time | 3 months to 12 months | Advanced diploma, diploma, certificate | A+ PC repairs and maintenance, Cisco Certified Network Associate (CCNA), Microsoft Certified Solutions Associate (MCSA), web design and MS applications |
| Microtech Institute of Multimedia & Technology* | Private | Western | 120 (21%) | 7 part time | 4 months to 12 months | HND/graduate diploma, advanced diploma, diploma certificate | IT user skills, Diploma in Computer System and Network, Diploma in Network Implementation, Certified Technology Associate, Certified Solution Expert, Database Management SQL & MySQL, programming, web design and development, graphics, higher education qualification – HEQ: certificate, diploma and professional graduate diploma under BCS-UK. |
| Nifty School of Computer Technology* | Private | Banjul | 106 (46%) | 3 full time and 3 part time | 6 weeks to 24 weeks | Diploma, certificate | ICT – IT Foundation, Certificate in IT, Diploma in IT, modular courses in Microsoft applications (Word, Excel, Access Windows, Publisher), MCSE, Microsoft Certified Solutions Associate (MCSA), website design and development, Java Programming, Comptia A+ and Microsoft Visual Basic |
| Gaye Njorro Skills Centre Farafenni Annex* | Private | North Bank | 120 (92%) | 7 full time | 1 year | Certificate | Basic IT and catering |
| Future in Salikenni* | Community-based | North Bank | 66 (N/A) | 2 for the ICT | 1 year | Certificate | Basic computer user skills |

| Name of institution | Status | Region | Number of graduates in 2016 ( % women) | Total number of teachers / instructors | Standard duration of the training course | Level | Courses offered by the institution |
|---|---|---|---|---|---|---|---|
| Smart Technologies* | Private | Banjul | 389 (64%) | 7 full time and 4 part time | 6 months to 9 months | HND/Graduate diploma, advanced diploma, diploma certificate | ICT software, hardware, networking and multimedia |
| Insight Training Centre* | Private | Banjul, Upper River, Western | 175 (41%) | 7 full time and 31 part time | 1 year per level | Advanced diploma, diploma, certificate | Computer repairs and maintenance |
| Sterling Consortium* | Private | KMC | 118 (41%) | 4 full time and 5 part time | 1 month, 3 months or 6 months | Diploma, certificate | Satellite installation and programming, CCTV installation and programming, advanced satellite networking, database management and solar installation |
| Success Institute College | Private | URR | N/A | N/A | N/A | N/A | IT – certificate and diploma level |
| Ensa Touray Computer and Information Technology Training Centre | Private | NBR | N/A | N/A | N/A | | Full IT course, MS Office, computer hardware repair and maintenance, data management using SPSS. The centre also engages students with field data collection techniques. |
| African Information Technology Holdings Limited | Private | WBR | N/A | N/A | N/A | | IT certificate and diploma level |
| Suna Institute of Science and Technology | Private | WBR | N/A | N/A | N/A | | Offers programmes like IT – certificate and diploma, database, computer graphic design, web programming 101. Also offers scholarships to students graduating from grade 12. |
| Start Now | Private | WBR | N/A | N/A | N/A | | Trains and empowers virtually impaired secondary graduates on computer skills and rehabilitation techniques as a preparation for higher education and employment. |
| NGOs | | | | | | | |
| YMCA Computer Training Centre and Digital Studio* | NGO | KMC | 573 (42%) | 6 full time and 5 part time | 8 weeks | | Computer literacy and information technology, software application, web authoring, desktop publishing, IT support, multimedia, filming and video editing, and sound and music production |
| Give1Project | NGO | KMC | N/A (100%) | | N/A | | Focus on ICT capacity training for girls, and civic and entrepreneur skill development. Also trains and empowers youths in agriculture and has a garden in Kafuta, WCR. The project also won the AFRINIC Fire Award and Africa Google Code Week. |
| Tech centre | | | | | | | |
| Jokkolabs Banjul | NGO | KMC | N/A | N/A | | | Open innovation ecosystem and a virtual cluster for a social change based on an organic entrepreneur community and a network of innovation centres. Jokkolabs Banjul is also the host of Google Developers Group Banjul. |
| Community-based | | | | | | | |
| Balal Rural Empowerment Sustainable Development Initiative | | LRR | N/A | N/A | | | Provide free training to students on basic IT, cyber security, web development, computer repair and maintenance. The initiative has also provided cyber security training for security personnel like police, immigration and PIU. |
| Rural Community Information Centre | | LRR | N/A | N/A | | | The centre was established with support from MOICI to enhance access to information. It offers services such as printing, photocopying, laminating, and Internet café at 10 GMD for one hour. |

* TVET was interviewed as part of ITC TVET mapping

*Source: Youth and Trade Roadmap of The Gambia 2018-2022*

## 3.8 CONCLUSIONS

155. The assessment in this section brings out the following challenges that needs to be addressed in order to enhance digital literacy in The Gambia:

- Disjointed policy landscape: The policy landscape in the country is disjointed and there is scope to leverage important policy directives that position ICT as a central component of the country's socio-economic growth, and a vibrant ecosystem of support for young people interested in the digital domain. However, the absence of standardized measures to determine the state and development of digital skills, and the lack of a formal digital skills

development strategy/plan integrated in the education curriculum are acting as roadblocks;

- Over-emphasis on lower-level and poor quality digital qualifications offered by TVET institutions, and a general lack of opportunities to develop more advanced digital competencies; and
- Critical infrastructure challenges and high data cost.

156. In order to address these challenges, the country needs to implement an objective digital literacy program encompassing laying out of a digital literacy strategy and plan for the country to catalyse the creation of demand and supply of digitally skilled employable manpower in the Gambian market, rolling out objective digital literacy programs aligned with the development objectives of the country as well as promoting digital innovations and entrepreneurship to benefit maximally from the increased digital literacy.

# 4. DIGITAL LITERACY PROGRAM FOR GAMBIA

157. The digital literacy program will set out a comprehensive and objective set of digital literacy interventions for The Gambia, based on four key strategic pillars defined in the section, upon which interventions are framed. The strategic pillars are further translated to Action Points and Projects which identify the resources and institutional needs for achieving digital literacy and skilling across the economy and society. The digital literacy program sets out the implementation measures, lead institutions, stakeholders, major implementation activities and defined outputs, outcomes and impact indicators for implementation.

158. Digital literacy and skills will prove to be a vital component for The Gambia's socio-economic development in the 21st century, especially for the younger population who will constitute the largest share of the workforce, undertake entrepreneurship, and Research and Development activities, and provide digital leadership to The Gambia. Therefore, while developing the digital literacy program for The Gambia, the Consultant has given due consideration to the GoTG's ambition to develop The Gambia into a digital nation and a new age society, and adequate importance to their prior policies and initiatives, which have been imbibed into the proposed digital literacy program.

159. Several studies exploring the future of work and skills conclude that countries aiming to transit from an agrarian and pre-industrial economy to a digital economy and new age society must train large sections of their society and workforce within the next few decades in order to effectively address the digital divide and reap the benefits of digital technologies. Studies also suggest that for an effective transition from an agrarian and pre-industrial economy to a digital economy, the delivery of digital skilling to large sections of the workforce and society must be preceded and complemented with conventional skills such as analytical ability, STEM, creativity, and problem-solving ability. The proposed digital literacy program for The Gambia constantly reflects the integration of digital literacy and skilling with conventional skills.

160. The existing literature on enhancing digital literacy at a national scale, especially from previous case studies in The Gambia and peer countries with similar socio-economic conditions indicates a strong positive correlation between penetration of ICT tools and gadgets such as computers, laptops, mobile phones and tablets in the everyday life and sustained organic development of digital literacy in all sections of the economy and society. In view of this, under the proposed digital literacy program, several strategies, Action points and Projects categorically focus on expanding digital tools in everyday operations for Gambian population, along with necessary implementation efforts and resources required for the distribution and operation of digital tools to support the organic development of digital literacy in the country.

161. The Proposed strategic pillars, Action Points and Projects contextualise the digital development solutions within the overall socio-economic development conditions and development ambitions of The Gambia and the region, anticipating the growing demands for digital literacy and digital skills, and poor economic performance from traditional economic sectors in the Gambia. The labour market is experiencing stronger demand for a digitally skilled workforce. The proposed digital literacy program is certainly influenced by growing economic trends and digital disruption occurring in the region as well as globally and proposed action plans and projects will further help The Gambian economy and workforce to adapt to such shocks and disruptions.

### 4.1 Digital Literacy Program

162. The Gambian socio-economic, demographic, and cultural factors indicate Gambia's digital readiness for scaling up of the digital literacy initiatives, and overall perceptiveness to digital

knowledge and digital economy. Considering the readiness favourable conditions in The Gambia along with findings from the situation analysis in the previous section, a comprehensive and unified approach along with a respective set of strategic pillars and Action Points are proposed for catalysing digital literacy in the country and ensuring the benefits emanating from the same. The strategies and Action Points proposed in this section reflect the needs of the economy and various population segments; and are aligned with the national digital literacy priorities spelt out in various sectoral policies and larger national development objectives.

163. The Consultant's approach in defining the strategic and categorically producing recommendations for various initiatives in the form of an Action Points stems from the digital learning framework shown in **Figure 4** and learnings from global best practices and experience of peer countries such as Kenya, Rwanda, and India among many who have successfully implemented similar digital literacy initiatives at a national scale.

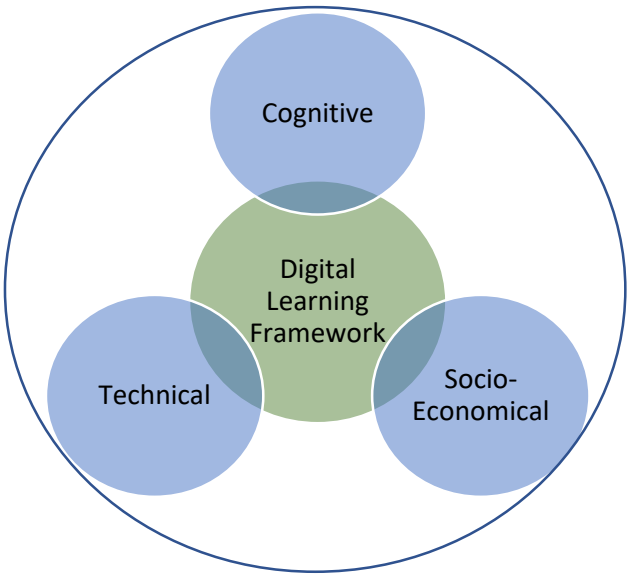



**Figure 4: Digital Learning Framework**

164. The Digital Learning Framework stems from the understanding that, learning of new digital technologies and skills are shaped by technological trends which enable us to work and communicate more efficiently within the existing context. Same socio-economic operations can be performed utilising new digital tools without replacing traditional operational mechanisms. Therefore, The Digital Learning Framework emphasizes that digital literacy training should be embedded into traditional educational methods along with conventional skills such as STEM, creativity, and problem solving to achieve optimum digital learning. Hence, the optimum digital learning results from union of technical, cognitive, and socio-economic dimensions of digital literacy. The four strategic pillars and various Action Points stemming from this Digital Literacy Framework consistently reflect embedding digital literacy and skills into existing learning methods and socio-economic operations.

165. Based on the current situation assessment of digital literacy levels in The Gambia, Gambian ICT market, digital readiness and overall national developmental, digital and strategic objectives, the following strategic pillars are proposed:

i. **Strategy 1:** Structural reforms to create an enabling policy, regulatory and institutional environment that can catalyse the creation of demand and supply of digitally skilled employable manpower in the Gambian market;

ii. **Strategy 2:** Rolling out robust digital literacy program aligned with the development objectives of the country as well as promoting digital innovations and entrepreneurship to benefit maximally from the increased digital literacy;

iii. **Strategy 3:** Gradually migrate towards e-governance to improve the quality of governance, accountability, and transparency; and

iv. **Strategy 4:** Kick start overall digitisation of the economy and align towards enabling the creation of a new-age digital society.

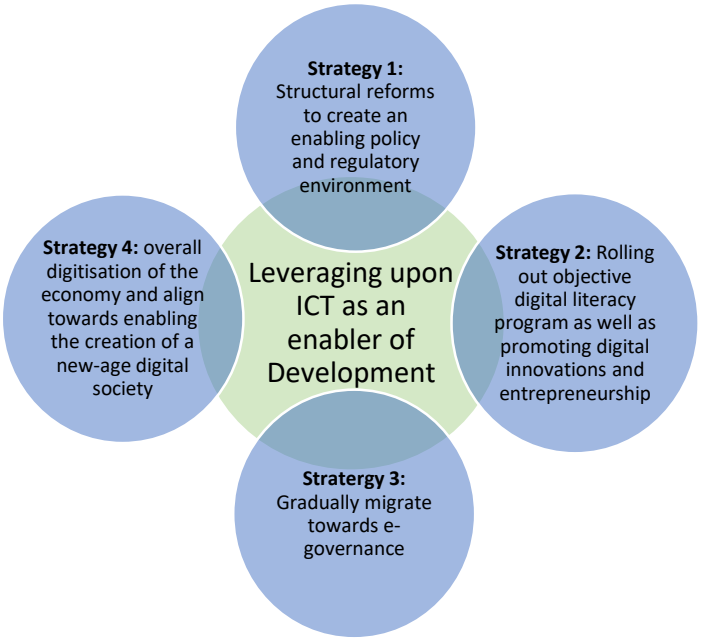



**Figure 5: Proposed Strategic Interventions**

166. Aligned with the proposed strategies, actions aimed at enhancing digital literacy are compiled in **Error! Reference source not found.**.

**Table 12: Proposed Action Plan**

| Strategic Pillars | Actions needed |
|---|---|
| Strategy 1 | 1. Based on the existing but fragmented sectoral policies that emphasize the need for enhanced digital literacy, spelling out a comprehensive and objective national digital literacy strategy and plan; and<br>2. Setting up the institutional framework for implementing the digital literacy initiatives, and institutionalizing the digital literacy in the economy. |
| Strategy 2 | 3. Initiating a digital literacy and skilling program from ECD and enhancing digital learning readiness from schooling years;<br>4. Integrating digital literacy in TVET programs;<br>5. Producing graduate, post-graduate and above trained ICT workforce;<br>6. Fostering research, innovation and entrepreneurship development in the ICT sector;<br>7. Planning and rolling out an objective rural digital literacy program; and<br>8. Designing and implementing an awareness program on digital literacy in the country. |
| Strategy 3 | 9. Rolling out the digital literacy program for the public workforce; |
| Strategy 4 | 10. Catalysing the path towards advanced digital skills development through public-private partnership; and<br>11. Promoting research and innovation in advanced digital technologies. |

**Action 1: Spelling out a comprehensive and objective national digital literacy strategy**

167. As inferred from the analysis in the previous section, despite the progress made on the policy front, The Gambia like most African countries lacks a dedicated and coherent strategy for enhancing the digital literacy and digital skills at a national level. The digital skills initiatives in The Gambia remain limited, fractured and ad-hoc in nature, ranging from a few independent pilot interventions at some of the ministerial and departmental levels to handful of TVET and university programs. While multiple policies and plans focus on improved broadband coverage, ICT infrastructure provision, ICT skill development and digital literacy for some section of population, The Gambia is yet to adopt a single comprehensive and dedicated digital literacy strategy which can leverage upon the favourable emerging digital conditions in the Gambian market and the opportunities that digitisation poses to The Gambia to build a digital economy and new-age society.

168. This study, to a greater extent, fulfils the requirement for a comprehensive and dedicated national digital literacy strategy along with detailed Action Points and project packages which aim at addressing the needs of national digital literacy, ICT infrastructure, skilling, entrepreneurship, e-governance and research and development for all sections of the economy and society. followed by an economic feasibility assessment for rolling out digital literacy over the duration of five years.

**Action 2: Setting Up the Institutional Framework for Implementation of Digital Literacy Initiatives**

169. For ensuring a digital leadership role in the inter-sectoral coordination on the digital transformation agenda, The Gambia ICT Agency under MoICI was already established by an act of parliament in 2019. To ensure implementation of the proposed digital program, ICT agency should be made fully operational and should be delegated as a nodal agency to oversee the planning, designing and implementing the digital literacy program in coordination with various ministries, institutions, international donors/financers and other stakeholders.

170. GoTG and MoICI, working in coordination with national, multilateral, market institutions and institutional experts in The Gambia should draw up an institutional framework keeping ICT Agency as nodal agency to roll out the proposed National Literacy Program. The institutional framework will guide the effective setting up for institutional order, coordination mechanisms and institutional practices for implementation activities. The Consultant's cost estimates for reviewing the current institutional framework and institutional capacities, and identifying and implementing measures for improving institutional measures is estimated at **USD 3 million.**

**Action 3: Initiating a Digital Literacy And Skilling Program From Early Child Development and Enhancing Digital Learning Readiness from Schooling Years**

171. The school enrolment and the size of the teachers' workforce in the country are compiled in **Table 13**.

**Table 13: School Enrolment and Teachers' Workforce in The Gambia**

| Schooling Level | Pupil Age (Years) | No. of Institutions | Student Enrolment as of 2019 | Annual Enrolment Aggregate Growth Rate | No. of Teachers | Average School Strength | Average Grade Strength |
|---|---|---|---|---|---|---|---|
| Early Childcare Centre (ECC) | 4-6 | 1384 | 125781 | 6.6 % | 3459 | 90 | 45 |
| Lower Basic Education (LBE) | 7-12 | 1153 | 374962 | 6.3 | 10110 | 326 | 80 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Upper Basic Education (UBE) | 13-15 | 481 | 104554 | 3.8 | 5310 | 217 | 70 |
| Senior Secondary (SS) | 16-18 | 193 | 69315 | 7.9 | 2802 | 359 | 180 |

*Source: Compiled from MoBSE*[28]

172. ICT adoption in the school curriculum is a recent phenomenon mandated by new education policies, however, the lack of access to ICT tools for learners and teachers and inadequate ICT training imparted to teachers, while rural schools face challenges with basic supplies such as electricity supply. The poor infrastructure and low digital skills among teachers have been identified as primary hindering factors for digital literacy development in schools. Based on the situation assessment of digital literacy in education section under previous section as well as referring to the global best practices and successful case studies, the subsequent Action Points and Projects targetting digital literacy development from ECD are discussed below.

173. Achieving success on building a sound foundation for digital literacy from ECD requires designing local educational solutions, equipping teachers with digital skills, adapting technological applications and curriculum content to the Gambian context, using freely available/open-source e-learning applications, and ensuring continuous monitoring, evaluation and revision of curriculum and pedagogy methods to changing knowledge needs. The GoTG and MoBSE should ensure gradual expansion of ICT infrastructure and electricity supply to Gambian schools long with digitally trained teachers to enable integration of ICT tools into ECD. The provision of ICT embedded education should be complemented by digital coordination using a nationwide Learning Management System and periodic review, monitoring and evaluation of tutor, pupil, and school performance in digital learning aspects. The scope of digital learning from ECD is not only to ensure digital literacy among pupils, but also to develop younger generation for more digitally advanced world. In this regard, the Consultant identifies the following set of action points and project packages to integrate digital learning from ECD for long-term development. The action points and project packages discussed below also include implementation suggestions, project budgets, roles, and responsibilities of implementing institutions, and indicators for monitoring outputs, outcomes, and impacts.

**Table 14: Components of Action 3 for Enhancing Digital Learning Readiness from Schooling Years**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Development, Digitisation and Standardisation of Curriculum | The Development and Digitisation of the new curriculum will include two actions:<br>a) To integrate ICT tools in the delivery of existing curriculum and,<br>b) Develop new curriculum to introduce pupils to basic of programming and other intermediate digital skills. | National consensus fully reached under the leadership of NAQAA and CREDD towards the amendment, development and establishment of minimum curriculum for LBE and UBE levels of schooling and its delivery by using ICT tools (both hard and soft) digital formats and | Nationally endorsed and digitally integrated and standardized curriculum focused on delivering basic coding, programming and intermediate digital skills, fully functional and accessible to over (…)% of | Level of digitally driven and digitally complaint institutionalization of primary and secondary schooling (covering both private and public schooling) in The Gambia.<br><br>(…)% of teachers trained in both the application of ICT tools in the delivery of |

[28] The Gambia Bureau of Statistics, https://www.gbosdata.org/topics/education/number-of-schools

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | • A minimum of curriculum should be identified at Lower Basic Education (LBE) and upper levels of schooling to be delivered by employing ICT tools only.<br>• A collaborative effort between National Accreditation and Quality Assurance Authority (NAQAA) and Curriculum Research, Evaluation and Development Directorate (CREDD) should develop and establish a minimum curriculum to be delivered via ICT tools and make available the same curriculum in digital formats.<br>• Weekly 2-3 hours of identified curriculum to be delivered using ICT tools.<br>• Programming and coding Integration into curriculum - In addition to basic digital curriculum, LBE will introduce students to basics of computer, Microsoft tools, and introductory concepts of computer learning, preparing them for basic coding and programming curriculum. UBE and SS curriculum will introduce students to basics of programming and introductory coding in C, C+, and Linux languages. The curriculum should be delivered batch or class wise such that each individual has access to one system at a time in school | hardware, computer labs etc., ensured.<br><br>National Train the Trainer curriculum on ICT integration skills for teachers at LBE, UBE and SS levels of schooling fully developed, functional and accessible.<br><br>All teaching support staff trained for 15 days on ICT integration skills. Potential trainers/teachers for programming and coding fully trained for 60 days.<br><br>List of key ICT tools outlined, procured and fully utilized and functional across all schools in The Gambia.<br><br>Digitally driven curriculum with focus on basic coding, programming and intermediate digital skills developed, functional and accessible to Children and teachers across LBE, UBE and Senior secondary levels of schooling in The Gambia. | schools and students at LBE, UBE and SS levels of schooling across The Gambia by the year (20...) | curriculum and teaching of basic coding, programming and intermediate digital skills at LBE, UBE and SS levels of schooling across The Gambia.<br><br>(…)% increase in the application of ICT tools in the delivery of curriculum at LBE, UBE and SS levels of schooling across The Gambia.<br><br>(…)% increase in the delivery of basic coding, programming and intermediate digital skills developed to students at LBE, UBE and SS levels of schooling across The Gambia.<br><br>(…)% raise in the number of senior secondary students perusing advanced studies in computer sciences, communication and digital technologies, and related fields post completion of school.<br><br>(…)% rise in the number of senior secondary students who had graduated in computer sciences, communication and digital technologies, and related fields, and have joined ICT |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | environment under a teacher for 1.5-2 hours every week.<br>• Train the Trainer Curriculum - Apt and unique Trainer curriculum for teachers at LBE, UBE and SS level of schooling should be developed. All Teaching and support staff should undergo a centralised 15 days training session on ICT integration skills. Concerned trainers on programming and coding should undergo 60 days of training prior to commencing the delivery of the same. | | | service sector as ICT professional across The Gambia.<br><br>(…)% increase in the youth and middle-aged population (15 to 45 years age group) in the daily application of ICT tools, digital applications, e - money transfers, and related applications across rural and urban areas of The Gambia.<br>(…)% rise in the employment level of teachers/ instructors in the ICT industry across The Gambia.<br><br>Improved levels of employability of youths in ICT and other industry verticals across The Gambia<br><br>Improved levels of employability of computer software and hardware specialists in ICT across The Gambia. |
| Provision of Hardware for Schools | • Presentation rooms/labs: All Schools should set up a dedicated presentation room equipped with desktop(s), projector(s) and broadband connection to deliver weekly 2-3 hours of learning through ICT tools.<br>• Computer Labs: All schools should set-up dedicated | • Schools at LBE, UBE and SS levels fully equipped with necessary ICT hardware/ICT equipment such as dedicated computer labs, with learning and teaching software and other essential ICT tools. | • Over (…)% of Schools and students at LBE, UBE and SS with full access and in utilization of hardware/ICT tools and equipment by the year (20…). | (…)% rise in the demand and supply of ICT hardware equipment across The Gambia.<br><br>Rise in demand and supply causing Foreign Direct Investors/ International ICT companies to invest in ICT software development and hardware |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | programming lab(s) to deliver basic programming and coding curriculum for 1.5-2 hours each week at a student-computer ratio of 1:1 for the labs session.<br>• Estimated Procurement:<br>Each school for LBE, UBE and SS should establish a dedicated presentation lab, which would require<br>- Projectors (no. of LBE, UBE and SS schools): 1827<br>- Desktop/laptop for presentation room: 1827<br>- School broadband connections: 1827<br>Each UBE and SS school should establish a dedicated computer lab with 30 laptops in each lab.<br>– Desktop/laptop for computer labs (no. of schools x 30): 27500<br>– Supporting lab equipments and hardware.<br>• The procured hardware should be customised and optimized to support the learning and teaching software that in turn supports the curriculum, and limit any misuse and distractions and for longevity of electronic tools. | | | manufacturing plants in The Gambia. |
| Provision of Software for Schools | • Procurement/ customised development of appropriate Learning Management System (LMS) for schools. The LMS software should include offline function operations considering low/poor | Schools at LBE, UBE and SS levels fully equipped with necessary software tools and applications such as LMS, Microsoft Office, C, C++ and Linux, digital learning software and provision of | (…)% of Schools and students at LBE, UBE and SS have full access and in utilization of software ICT tools by the year (20…). | (…)% raise in the demand and supply of ICT software across The Gambia.<br>Rise in demand and supply causing Foreign direct investors/International ICT |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | bandwidth connection in Gambia.<br>• Procurement of school version of Microsoft Office, C, C++ and Linux license.<br>• Develop learning and teaching software to be embedded into supplied ICT equipment, the digital learning software to be embedded should provide offline services as well, considering erratic/low band width internet connection. | offline services and other essential ICT tools. | | companies to invest in ICT software development hubs in The Gambia.<br>Rise in the levels of digitisation of Education Management systems, review and inspections systems.<br>Overall improvement in school's digital assets.<br>Spill over effects of students' and teachers' digital literacy skills into other economic and social activities.<br>Improved levels of employability of computer software specialists across The Gambia. |
| Teacher Training | Train the Trainers - distribution of ICT equipment and internet connection to schools should be accompanied with trained teaching and support staff. Teachers in primary and secondary schools should undergo training to deliver ICT integrated education and coding & programming education. Teachers should be incentivized in terms of accreditation, promotions, salaries/pays or other credit scores to undergo and successfully complete teacher training and deliver the same via curriculum. | (…)% of Schools teachers at LBE, UBE and SS levels fully trained to deliver ICT integrated education and coding & programming across the Gambia.<br>(…)% of teachers across the Gambia (at national and subnational level) incentivized accredited, promoted, salaries/pays and other credit scores and completed teachers training. | Over (…)% of Schools teachers at LBE, UBE and SS fully capable of delivering integrated education and coding & programming by the year (20…)<br>Over 90% of school teachers at LBE, UBE and SS fully integrated into the staff structure with all applicable staff entitlements and regulations by the year (20…). | (…) raise in the Digitally literate and equipped teaching and support staff across all schools in The Gambia.<br>Improvement in the motivation and reward system resulting to improved teacher performance.<br>(…)% rise in the employment level of teachers /instructors in the ICT industry across the public and private sector Academia in The Gambia.<br>Improved levels of employability of teachers |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | | | | /instructors in ICT across The Gambia. |
| School Performance Review | Setting up a national monitoring framework executing the same with annual student and teacher performance inspections and evaluations. It should be expanded to include the exclusive review of the performance of schools, students and teachers in digital skills and delivery, and, status and usage of procured equipment and labs.<br><br>Learning Management System will be used in performance review for pupil, teacher and school performance. | National monitoring framework at national and sub-national levels established and fully functional at LBE, UBE and SS levels of schooling with proven records of annual student and teacher performance inspections and evaluations conducted to measure the digital skills and delivery, and optimal usage of procured ICT equipment and labs. | Students and teachers at LBE, UBE and SS levels of schooling demonstrate improved performance in digital skills and delivery of curriculum, and optimal usage of ICT equipment and labs. | (…) raise in the compliance and utilization of national monitoring framework by school administrations at LBE, UBE and SS levels across The Gambia.<br><br>(…) raise in the use of Digitised LMS and feedback to schools on improving performance and informed policy decision making.<br><br>(…) raise in the levels of competitiveness among schools in terms of performance of teachers and students in digital skills and delivery of curriculum. |
| **Implementation:** With the setting up of institutional mechanism in place during Action Plan 2, amongst the priority learning sectors to be addressed, GoTG can prioritise digital learning in schooling system. The Action points are further translated below into projects which include suggestions on implementation. | | | | The overall estimated costs for the next five years will be 41.98 million USD. |

174. **Project 3.1 - Development of Digital Curriculum:** The development of digital learning and integration of ICT into learning should be done in two steps, firstly, by expanding the existing curriculum to include digital skills and introductory programming subjects, followed by the digitisation of existing curriculum and employing digital tools in the delivery of learning.

175. The project of developing a new digital curriculum, digitising the existing curriculum, and employing digital tools in delivering learning should come from a combined effort of NAQAA (National Acceleration and Quality Assurance Authority) and CREED (Curriculum Research, Evaluation and Development Directorate) in consultation with regional/provincial education boards and digital education experts.

176. NAQAA and CREED along with regional/provincial education boards and education experts should set a board/committee under MoBSE to review the current basic and secondary schooling curriculum, categorically focusing the review on aspects of STEM (Science, Technology, Engineering and Mathematics) and accordingly introduce the subjects of computer operations, MS office and

introductory programming. In addition, the new curriculum should also ensure that these initiatives are complemented by the introduction of educational digital applications in all subjects, through all the phases of learning, to enhance understanding and capability with respect to subject matter knowledge.

177. The estimated cost of reviewing and developing a new digital curriculum for basic and secondary schools, and digitising the overall curriculum is at **USD 1 million.**

178. **Project 3.2 - Train the Educators:** This project will include a large-scale training programme on the Professional Development for Digital Learning (PDFDL) to strengthen the digital pedagogical capabilities of teachers. A key aim of this project is to ensure professional development in the use of digital technologies that enhances delivery of digital learning, as well as enabling the process for doing so by the leaders and the support staff. The intervention is targeted at teacher trainers, school leaders and teachers, e-learning specialists, and curriculum subject specialists.

179. The MoBSE and Higher Education Institutes (HEIs) responsible for producing teachers should implement and oversee the teacher training program to build digital competencies in school teachers. The implementing agencies should work with pedagogy experts to develop a focused digital curriculum and toolkit for training the teachers, educators and school staff, and ensure all levels of the education sectors are involved in supporting the implementation of digital learning across Gambian Schools. The full-scale rollout of the PDFDL across all districts and provinces must be put on fast forward over the next 4-5 years, while simultaneously implementing ICT infrastructure and digital curriculum.

180. The initial steps towards commencing PDFDL should include the convening of a conference on digital pedagogy in teacher education to which all the faculties, schools and departments of education in HEIs should be invited with an objective to critically review the scope and quality of teacher training program(s) and their curriculum, followed by evaluating the scope of introducing digital learning subjects and accordingly introducing teacher training in digital skills and ICT operations. The subjects of the conference should become part of their annual meetings/conventions among teachers, geared towards the formulation and continuous review of a roadmap for strengthening the scope and quality of digital pedagogy in the teacher education and development curriculum. The estimated costs for implementing PDFDL is about **1.8 million.**

181. **Project 3.3 - Expansion of Digital Broadband Connectivity and ICT Infrastructure in Gambian Schools:** The rollout of the digital curriculum and developing digital competencies from ECD require wider expansion of broadband connectivity, quality of internet services, and distribution of ICT infrastructure and devices for teachers and learners across rural and urban schools in The Gambia. Integration of the new digital curriculum and ICT tools into basic and secondary schooling requires schools to effectively use digital applications to augment, modify and transform the teaching and learning experience, in order to increase the success rate of learners in all subjects.

182. An effective and easy way of implementing broadband connectivity and ICT infrastructure is through partnership between service providers (district or regional wise) and regional/provincial school boards for broadband connectivity, supply and installation of computer labs, and services and replacement. **Project component 3.3** will support broadband connectivity, supply/refurbishment of computer labs and services to an estimated 1827 schools across the Gambia. In addition to supporting the intended digital curriculum and digital delivery of learning, the broadband and ICT infrastructure expansion should support the use of open-source learning platforms, software and LMS (discussed as **Project 3.4**) as well as the supply and maintenance of supplementary energy systems or PVC (Photo Voltic Cells) units, considering the shortage of power supply.

183. The estimated cost for procuring broad connection and ICT hardware (projectors, computers, lab furniture, power backup systems and other supporting software tools) is **USD 39 million.**

184. **Project 3.4 - Development of National LMS (Learning Management System) Software:** This project should be read in complementation with **Project 3.3,** to generalise and standardise the digital learning contents, curriculum and learning, and documenting mechanism across all schools, the MoBSE along with technical and education experts should develop a LMS. LMS will also digitise the education administration, especially for the purpose of monitoring the teacher, pupil and school performance system. The estimated cost for the development of LMS is **USD 300,000.**

185. In addition to LMS based education administration and performance management system, MoBSE should expand the regular school surveys to include indicators on delivery of digital education, digital equipment, and overall school performance in digital literacy aspects. Ideally the surveys should be SDI (Service Delivery Indicators) based. In regard to expanding school surveys, MoBSE should define a set of digital literacy SDIs and maintain qualitative and quantitative indicators that help education policy makers to regularly monitor and evaluate the level of digital education services.

186. The implementation plan for these projects that emanate from the identified action points along with monitoring indicators is given in **Table 14** and

187. **Table 15**.

**Table 15: Implementation Schedule Digital Literacy and Skilling Program from Early Child Development**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 3.1 | Development of Digital Curriculum | | | | | |
| 3.2 | Train the Educators | | | | | |
| 3.3 | Expansion of Digital broadband connectivity and ICT infrastructure to Gambian Schools | | | | | |
| 3.4 | Development of National LMS (Learning Management System) software | | | | | |

**Action 4: Integrating Digital Literacy in TVET Programs**

188. The assessment of human resources demand and supply for ICT skilled labour shows Gambian labour market is challenged with lack of skilled workforce, high cost for skilled labour cost, availability, demand for employment, skills and qualifications. The market assessment shows growing demand for ICT skills especially in telecom and tourism sectors, wherein the private sector and TVETs collaboration through establishing MoUs for training, apprenticeships and employments can be leveraged to boost the skilled labour supply and demand situation. In this regard, the Consultant identifies following set of interventions which can foster TVET and ICT sectors collaboration and address skilled labour supply crunch.

**Table 16: Components of Action 4 for Integrating Digital Literacy in TVET programs**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Development of certification and accreditation system | • Pre-empting the development of the ICT sector, NAQAA, respective ministry/ department in association with ICT sector in Gambia and in Region will | National consensus developed and approved for the NAQAA, respective ministry/department in collaboration with ICT sector in Gambia to establish a | (…) % improvement in the overall competency level and skillset of ICT workforce, covering full continuum of education levels, | (…)% increase in the overall number of trained and digitally inclined ICT workforce.<br><br>(…)% improvement within the ICT |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | together work to establish a comprehensive national digital skills framework, covering the full continuum of education levels understanding the market needs for quality assurance and better answer to the human resources needs of the industry and improve the overall competency level of the ICT workforce.<br>• Instituting the Quality Assurance system for TVET schools and other training institutes will include setting up nationally, regionally and internationally recognized certification systems.<br>• The certification and Quality Assurance will include working with existing private tutors and institutes to expand improved certification and accreditation system and accordingly enhance their training curriculum and training delivery to meet quality standards.<br>• Establish internship and apprenticeship links between TVET centres and ICT market.<br>• Set-up ideal TVET centres as role model institutes for other private and non-governmental Training centres. | comprehensive national digital skills framework.<br><br>Comprehensive national digital skills framework aimed at improving the overall competency level of ICT workforce, covering full continuum of education levels, market needs for quality assurance, responsiveness to the human resources/industry needs developed, approved, established and fully functional. | market needs for quality assurance, responsiveness to the human resources/industry needs across The Gambia.<br><br>Quality Assurance system for TVET school and other training institutes fully institutionalised.<br><br>Nationally, regionally, and internationally recognized certification systems fully functional.<br><br>Increased level of working with existing private tutors and institutes.<br><br>Certification and accreditation system expanded with improved levels of training curriculum and training delivery and quality standards.<br><br>Internship and apprenticeship links between TVET centres and ICT market established and accessible.<br><br>TVET centres established and functional as role model institutes for other private and non-governmental entities. | workforce direct responsiveness and level of fulfilment of The Gambia's human resource requirement and industry needs. across all sectors.<br><br>(…) Improvement in the compliance levels with Quality Assurance system across TVET schools and other training institutes.<br><br>(…)% increase in the number of certified and accredited private tutors and institutes across The Gambia.<br><br>(…)% Increase in the number of internship and apprenticeship between TVET centres and ICT market.<br><br>(…)% increase in the number of TVET centres enrolment levels nationally.<br><br>(…)% increase in the job prospects/number of jobs for TVET graduates and new enrolments.<br><br>(…)% increase in the Private and non-governmental TVETs procurement of ICT equipment to meet certification standards. |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | | | | |
| Procurement of Certification Licences, Hardware and Software Requirements. | ICT skills agency, the ministry for youth and employment, and the ministry responsible for public ICT sector should acquire licences from recognized training systems such as BOSCH, ORACLE, IBM, etc., and award to private and non-governmental TVET centres meeting desired quality standards of and ICT facilities and training. | Licences obtained for all relevant Government entities in the public ICT sector - ICT skills agency, ministry for youth and employment, from recognized training systems such as BOSCH, ORACLE, IBM, etc.<br><br>Private and non-governmental TVET centres in full compliance with the desired quality | (…)% increase in the procurement of certification licences, hardware and software requirements across all sectors. | Increased responsible behaviour among Governmental, private and non-Governmental entities in acquiring necessary and authentic licenses for ICT tools.<br><br>Level of improvement in the maintenance of standards of ICT facilities and training centres across The Gambia. |
| Role model TVET schools | GoTG will institute 2 National TVET schools, or update the existing TVET schools with regionally and internationally recognized certification systems and ICT facilities to meet certification quality system which will guide the overall TVET training environment in The Gambia.<br><br>Each TVET school will intake 150 students each annually in the following structure;<br>• 70 students for Technician courses<br>• 50 students for networking and hardware, and<br>• 30 students for Application development and testing.<br><br>Each TVET schooling will be equipped with technical, networking & hardware and computer labs, high-speed internet connection and ICT tools required by certification standards. | 2 National TVET schools fully institutionalized by GoTG.<br><br>Existing TVET schools fully updated with regionally and internationally recognized certification systems.<br><br>ICT facilities in full compliance with certification quality system with proven guidance to TVET training environment in Gambia.<br><br>All TVET schools fully equipped and functional with technical, networking & hardware and computer labs, high-speed internet connection and ICT tools as per the requirement of certification standards.<br><br>150 students enrolled in all TVET schools annually out of which 70 students for Technician courses, 50 | A majority of national TVET schools fully operational as per the internationally recognized certification systems.<br><br>ICT facilities fully operational as per certification quality system and contributing to the TVET training environment in The Gambia.<br><br>TVET schools periodically enrol students for Technician courses, networking and hardware, and application development and testing.<br><br>(…) increase in the fully equipped TVET schools in The Gambia (technical, networking & hardware and computer labs, high-speed internet connection and ICT | (…)% of trainees in TVET schools in digital literacy as per the regionally and internationally recognized certification systems by the year (20…)<br><br>Improved levels of employability among the trainees graduated from the TVET schools. |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | | students for networking and Hardware, and 30 students for Application development and testing. | tools) as per certification standards. | |
| **Implementation:** Below, the action points are translated into project packages, along with specifics such as implementation mechanisms, agencies, roles and responsibilities and project wise budgets. | | | | The overall estimated costs for the next five years will be 1.92 million USD. |

189. **Project 4.1 - Development and Standardisation of TVET Certification and Accreditation system and Fetching Certifications:** Considering the rapidly growing demand for skilled workforce in the job market the NAQAA and MoICI should work towards setting up and standardisation of TVET training and certification system. This project component will include a review of the TVET courses and curriculum, and quality of certifications offered under various ICT related TVET courses. NAQAA and MoICI should work with industry leaders and ICT training providers to prioritise TVET programs based on a detailed market research assessing the human resources needs for particular jobs and skills in the Gambian job market. To execute this, the implementing agencies along with certification institutions, subject experts, leading universities, and industry leaders should review and develop the curriculum, TVET courses, benchmark the current certification system and adopt better certifications following regional and global standards.

190. In developing and adopting an enhanced certification system, the implementing agencies should seek out to partner with major training and certifying agencies such as Oracle, Microsoft, Robert Bosch Engineering, Cisco Networking Academy among many others, which will ensure better training, Quality Assurance for certifications, and reputations for TVET programs.

191. The quality of developing and offering new TVET programmes is also dependent on ensuring the availability of qualified trainers at TVET schools. The new certifications and partnership with international training and certifying agencies mentioned above should also ensure upgrading and enhancing the qualifications of TVET lecturers in the specific digitally oriented programmes and their overall digital pedagogical competency.

192. The focus on enhancing the TVET programs and certification systems must be accompanied by a targeted campaign(s) to entice candidates, including women to enrol into ICT related TVET programs.

193. The estimated cost for developing and implementing a certification and accreditation system, procuring certification licences and conducting a targeted campaign is **USD 1 million.**

194. **Project 4.2 - Development of role model TVET Schools:** The percolation of enhanced TVET courses and new certification system across all private run TVET schools may seem challenging initially. In view of this, the Ministry for Youth and Employment should undertake the development of two role model TVET schools or upgrade the existing state-run TVET schools with enhanced training facilities and faculties to deliver the newly developed TVET courses under new certification systems. The role model TVET schools will lead the path towards vocational skilling and serve as a benchmark and guide other TVET schools as an example.

195. The proposed two role model TVET schools will intake an annual strength of 150 candidates each year (or depending on the duration of the program) and be equipped with all the necessary labs,

high-speed broadband and ICT hardware and training staff. Ministry of Ministry for Youth and Employment should also ensure the role model TVET schools tie up with ICT companies to offer graduates with apprenticeships and jobs on graduation.

196. The estimated cost of upgrading two role model TVET schools, training 150 candidates annually and procurement of necessary labs, high-speed broadband, other ICT infrastructure and supporting equipment is **USD 920,000** (Excluding the cost of civil works for two new TVET school buildings if new institutes are to be constructed and developed).

197. The implementation plan for these projects that emanate from the identified action points along with monitoring indicators is given in **Table 14** and **Table 17**.

**Table 17: Implementation Schedule for Integrating Digital Literacy into TVET Program**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 4.1 | Development and Standardisation of TVET certification and Accreditation system | | | | | |
| 4.2 | Development of role model TVET Schools | | | | | |

**Action 5: Producing Graduate, Post-graduate and Above Trained ICT Workforce**

198. Situation assessment shows that The Gambia has 5 universities, of which only the University of Gambia (UTG) offers two bachelor level courses in computer science and Information systems and a Diploma in Information Technology, which produces a mere 1310 graduates annually (as of 2016). Gambia universities lack higher education programs both in terms of the number of programs offered, types of courses offered and the quality of programs, some of the important courses such as Electronics, Communication, Instrumentation, and IoT lack dedicated courses with very low research output.

199. The problem is cyclical in nature, wherein limited supply of graduates, trained in advanced ICT skills, has hindered the development of Gambian ICT market which in turn results in constrained growth in demand for trained ICT skills.

200. Considering the Gambian (as in other West African economies) situation of high unemployment, low education levels, un-skilled labour, under-employment and poor demand for high skilled labour, except for a few market segments, professionals having higher education with masters and doctoral programs are in limited demand while existing ICT sector looks mostly for vocationally trained workforce who can learn on the job. In view of this, it is advisable to invest resources in producing optimum number but high-quality IT post-graduates by provision of higher degree courses in one or two universities rather than expanding such IT programs at multiple universities.

**Table 18: Components of Action 5 for Producing Graduate, Post-graduate and Above Trained ICT Workforce**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Enhanced Higher Education Curriculum and introduction of new programs | Enhance the existing higher education curriculum to<br>• Include a masters and integrated (bachelors + | Higher education curriculum enhanced with master's course, integrated (bachelors + masters) and a PhD | (…) number of students/scholars enrolled and graduated under masters course, integrated (bachelors + | (…)% of students/scholars, Masters, bachelors, and a PhD holders in computer and information sciences, Electronics and communication, |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | masters) and a PhD program in computer and information sciences.<br>• Introduce a bachelor's Program in new areas of electronics and communication, networking, instrumentation technologies and IoT.<br>• Estimated costs for enhancing higher education curriculum = USD 1 million. | program in computer and information sciences institutionalized, functional and enrolled.<br><br>Bachelors program in new areas of Electronics and communication, networking, instrumentation technologies and IoT institutionalized, functional and enrolled. | masters) and a PhD program in computer and information sciences, Electronics and communication, networking, instrumentation technologies and IoT by the year (20…) | networking, instrumentation technologies and IoT fully employed by the year (20…)<br><br>Number of Masters, and PhD holders in computer and information sciences, Electronics and communication, networking, instrumentation technologies and IoT employed as Professors at Academia/ Universities/institutes.<br><br>Number of entrepreneurs, start-ups by Masters, bachelors, and PhD holders in computer and information sciences, Electronics and communication, networking, instrumentation technologies and IoT by the year (20…)<br><br>(…)% improvement in the employability levels of students/scholars, Masters, bachelors, and a PhD holders in computer and information sciences, Electronics and communication, networking, instrumentation technologies and IoT. |
| Promotion of Research & Development and Procurement | • Support Computer Science and Information Science programs and research PhD program with enhancing the existing Lab at University of Gambia with new facilities, equipped with licensed | Computer science, information science programs and research, PhD and bachelor program supported with existing Lab and new facilities, equipped with licensed software such as MATLAB Simulink and Cad-Engg. and high-speed internet connection | (…) number of students/scholars, PhD, Masters and Bachelor utilizing Labs and facilities at the University of Gambia.<br><br>(…) number of students/scholars selected under the MoUs for semester exchange and incentivized higher | Number of relevant research projects (R&D) developed and approved by students/scholars, PhD, Masters and Bachelor by utilizing Labs and facilities at the University of Gambia.<br><br>(…)% increase in the level of R&D contribution of the University of Gambia towards the ICT industry in The Gambia. |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | software and high-speed internet connection.<br>• Support new bachelor's courses in electronics and bachelors with electronics and communication labs, equipped with licenced software such as MATLAB Simulink and Cad-Engg. and high-speed internet connection.<br>• Develop partnership and MoUs for students' semester exchange with other regional and international universities to promote and incentivize pursuing higher education. | Labs, fully equipped and functional at University of Gambia.<br><br>MoUs with regional and International Universities established for students' semester exchange to promote and incentivize pursuing higher education in related fields. | education in related fields with regional and International Universities. | Increased level of R&D and joint projects between the students/scholars of University of Gambia under the exchange and incentivized higher education and International and regional Universities. Improved levels of employability of the students of the University of Gambia. |
| **Implementation:** The above interventions are also required simultaneously with the interventions focused on the schools and TVET programs with an implementation period of 5 years. The Action components are translated to project packages below. | | | | The overall estimated costs for the next five years will be USD 1.25 million. |

201. **Project 5.1 - Development and Introduction of New Graduate and Above Level Programs:** The development of graduate-level and above trained ICT workforce requires a two-fold intervention. Firstly, enhance the current programs with advanced curriculum and resources, which are limited to handful of courses in computer and information systems. Secondly, develop new bachelors, masters and doctoral programs in new emerging areas of electronics, communications, instrumentation related subjects to expand the university level program offerings.

202. The project of reviewing and enhancing the current curriculum, and development and introduction of new university level programs should be overseen by the university boards along with leading academic experts and industry leaders as well. The project component also includes review of curriculum for non-ICT programs and introducing the use of ICT and digital skills within the scope of their program, such as use of BIM (Building Information Modelling), analytics and MATLAB for traditional engineering fields (civil, mechanical and automobile engineering etc.)

203. The estimated costs of reviewing the program curriculum, and development and introduction of new university level programs for the next five years is **USD 1 million.**

204. **Project 5.2 - Establishment of University** Research **and Development Labs and Facilities:** This project is to promote research and innovation output from universities by supporting them with necessary ICT infrastructure in terms of well-equipped computer laboratories, high-speed broadband connectivity, necessary softwares and other supplementary infrastructure.

205. This requires university boards to assess and procure computer labs, software and supporting infrastructure. The estimated for setting up and operations of advanced laboratories at selected universities level is **USD 250,000.**

206. The implementation plan for these projects that emanate from the identified action points along with monitoring indicators is given in **Table 18** and **Table 19**.

**Table 19: Implementation Schedule for producing Graduate and above-trained ICT workforce**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 5.1 | Development and Introduction of new Graduate and Above Level Programs | | | | | |
| 5.2 | Developement of University Research and Development Labs and Facilities | | | | | |

**Action 6: Fostering Research, Innovation and Entrepreneurship (RI&E) development in ICT sector**

207. Multiple economic indicators, including digital competitiveness index and ease od doing business show that the Gambian market is perceptive and responding to innovations in the areas of platform economy, fintech and other services adopting ICT. In addition to perceptive economy, The Gambia is also showing early signs of innovation, resulting in re-designing digital products and business models to Gambian market conditions. To strengthen the innovation capacity, new business models and scaling, encouragement to private and foreign investment is critical to attain sustained economic growth.

**Table 20: Components of Action 6 for Fostering Research, Innovation and Entrepreneurship (RI&E) Development in ICT Sector**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Indicators |
| RI&E Plan | The GoTG should develop and adopt new RI&E plan to foster research, innovation and entrepreneurship in core-ICT sector and ICT cross-cutting sectors.<br><br>The Plan will include the schemes (incentives) and an enabling framework, which will layout the information services, technical assistance, training, market research and | RI&E plan adapted by GoTG resulting in enhanced research, innovation and entrepreneurship in core-ICT sector and ICT cross-cutting sectors. | Implementation of RI&E plan resulting to a framework, laying out the information services, technical assistance, training, market research and capital mobilisation to support RI&E for core ICT sectors and ICT cross-cutting sectors.<br><br>Existing implementing agency GIEPA elevated to the umbrella | (…)% level of overall increase and improvement in the information services, technical assistance, training, market research and capital mobilization, research, innovation and entrepreneurship in core-ICT sector and cross-cutting sectors such as Telecommunications, fintech, software, hardware and other sectoral areas such as Tourism, Agriculture, |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Indicators |
| | capital mobilization to support RI&E for core ICT sectors and ICT cross-cutting sectors.<br>The existing implementing agency GIEPA should be elevated to the umbrella organisation for implementing RI&E plan, supporting and mentoring incubation, sensitization campaign and management of National innovation funds.<br>Core ICT sectors - Telecommunication, fintech, software, hardware, and other technology services.<br>ICT Cross-cutting sectors: Tourism, Agriculture, Transport, Logistics, Trade etc. | | organisation with Implementing RI&E plan, supporting and mentoring incubation, sensitisation campaign and management of National Innovation Funds secured. | Transport, Logistics, Trade across The Gambia. |
| National Innovation Fund and Financial Schemes | The GoTG will set-up a national innovation Fund (based on an accurate need assessment) which will be used to promote new business innovation and scaling of business models.<br>In addition to dedicated national innovation fund, the Government will support entrepreneurship activities with banking and lending. | Needs assessment conducted at the national level to inform the decision making of the GoTG on establishment of National innovation fund for the ICT sector in GoTG. | National innovation Fund established and resulting in the promotion of new business innovation and scaling of business models. | (…)% increase in the promotion of new business innovation and scaling of business models across The Gambia.<br><br>Increase in entrepreneurship activities motivated by (20…)<br><br>Increase in the number of new business receiving banking services, financial schemes and sufficient lending. |
| Incubators | The Government will further equip and expand Startup Incubator Gambia.<br><br>Estimated costs for enhancing existing | Start-up Incubator Gambia further equipped and expanded by the Government. | Increase in the number of new start-ups supported by the Start-up Incubator Gambia by the year (20…) | Gradual increase in the level of growth of Start-ups/companies supported by the Start-up Incubator Gambia. |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | **Output** | **Outcome** | **Indicators** |
| | incubators = USD 400,000. | | | Level of contribution of new Start-ups/companies empowered by the Start-up Incubator Gambia towards the overall improvement of employability levels. |
| Sensitisation campaign | The implementing agency should develop an Entrepreneurship forum to sensitise younger population to explore innovation and entrepreneurship. | Entrepreneurship forum established by the implementing agency. | Entrepreneurship forum efficiently contributing to the sensitization of younger population to explore innovation and entrepreneurship. | Number of entrepreneurs (of all age groups) sensitized towards innovation and entrepreneurship.<br><br>(…)% of increase in entrepreneurs (of all age groups) directly benefited from the Entrepreneurship forum in applying further innovation and development to their business.<br>Improvement in the trust levels of ICT workforce towards the new entrepreneurs in The Gambia. |
| **Implementation:** This implementation of the action points will be carried out simultaneously with other action points. Below, the action points are translated in project packages with details on implementing agencies, implementation suggestions and budgets. | | | | The overall estimated costs for the next five years will be 1.40 million USD. |

208. **Project 6.1 - Development of National Research, Innovation and Entrepreneurship Plan and its Implementation:** The successful development and promotion of a vibrant ecosystem for research, innovation and entrepreneurship in ICT and allied sectors will be centred on promoting and supporting digital and entrepreneurial skills in the Gambian market, especially among youth.

209. Ministry of Trade, Industry, Regional Integration and Employment, and GIEPA, which already oversees the national entrepreneurship policy, should lead the development and adoption of a National RI&E Plan to support roll out of Research, Innovation and Entrepreneurship activities.

210. The implementing agencies should work with market and academic experts to conduct a market study to assess and valuate local business and innovation models and develop a national RI&E plan to support innovation and entrepreneurship trough a dedicated National Research, Innovation and Entrepreneurship Fund and suitable financing mechanisms to attract and promote RI&E.

211. The estimated cost of developing a National RI&E Plan and its implementation is estimated to be **USD 1 million.**

212. **Project 6.2 - Development and Enhancement of Incubators:** The establishment of an ecosystem to support RI&E in the form of incubators is an important step in the direction of providing technical, financial, and business development support for new businesses in Gambia. The Implementing agencies in support for RI&E must enhance and develop existing and/or new incubators, which will house the new enterprises and provide access to capital, knowledge support and facilities to young entrepreneurs operating in the ICT and allied sectors. The incubators may be located within the state-owned Special Economic Zones and industrial parks that are currently supported under various programs by GIEPA.

213. The rollout of RI&E should help the new entrepreneurs in scaling up their digital skills, market capturing or expansion, technology and innovation. The proposed incubators will consist of a network of innovation focused hubs, accelerators, along with consortium of universities, and research and development centres to ensure that overall ecosystem brings together all the relevant stakeholders in a way that enables the seamless provision of services to entrepreneurs in the ICT sectors.

214. The project 6.2 also includes nationwide sensitisation and awareness campaign targeted at the Gambian youth and entrepreneurs to promote the RI&E plan, incubator facilities, technical, financial and institutional support.

215. The estimated cost of setting up Incubators along with technical and business development provisions (costs for some initial financial support have included in Project 6.1) for select number of companies along with targeted sensitisation campaign is estimated to be **USD 400,000.**

The implementation plan for these projects that emanate from the identified action points along with monitoring indicators is given in **Table 20** and

**Table 21**.

**Table 21: Implementation Schedule for Research, Innovation and Entrepreneurship in ICT sector**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6.1 | Development of National Research, Innovation and Entreprunership Plan | | | | | |
| 6.2 | Development and Ehnancement of Incubators | | | | | |

**Action 7: Planning and rolling out an objective rural digital literacy program**

216. Action Plan 7 lays out an objective digital literacy program to bridge the rural-urban digital divide and support rural digital development. The digital literacy program, for rural Gambia is combination of localised or community level digital skilling, along with large scale IECs (Information Education Campaigns) and skilling for employment initiatives. Community level digital skilling initiatives and IEC campaigns aim at the general rural population to increase the rural digital awareness and digital literacy, while skilling initiatives will be in line with national rural employment schemes and those interventions by the development partners such as **Coding for Employment** (by AfDB), Employment Intensive Investment Program (EIIP) and the over-arching National Policy for Poverty Reduction. which will aim at skilling rural youth, improving their employability and overall rural economy. These programs will be in addition to the other digital literacy initiatives such as digital literacy through primary and secondary schooling, TVET programs and digital skilling of the public workforce, which may partially cover rural areas.

**Table 22: Components of Action 7 on objective rural digital literacy program**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Indicators |
| Rural Digital Literacy IEC Program | To improve the level of awareness and penetration of digital literacy in rural Gambia, GoTG should conduct a series of targeted IEC campaigns promoting general awareness, benefits, and digital employment opportunities from participation in various digital literacy programs. The rural awareness campaign can be part of a national IEC campaign or could be separate and unique. | Periodic targeted IEC campaign will systematically attract rural population to partake in digital literacy campaign. | Raise in the rate of enrolment to newly deployed digital literacy programs, especially among adolescents and youth.<br><br>(…) number of GoTG led IEC campaign, conducted in disseminating awareness on job opportunities, certification and quality standards and incentives by the year (20…) | (…)% increase in the number of youth and adolescents enrolled various programmes.<br><br>(…)% increase in number of youth and other age groups of population digitally inclined in the use of digital applications and improved acquaintance with technical and vocational skills.<br><br>(…)% people benefited (found jobs) from GoTG led IEC campaign, for on-the-job opportunities, certification and quality standards and incentives. |
| Rural digital literacy curriculum Program | To spread the digital literacy in an organised way across all gradients of the society, adoption of digital services among public at large scale, and improve overall digital readiness and learning in Gambian society is required. The Government should conduct a bottom-to-top approach in implementing digital literacy program.<br><br>The curriculum developed for general public under the program will be at two levels;<br><br>**Grade 1:** Population aged above 40, having achieved basic literacy (ability to read, write and communicate) and acquired minimum 5 years of basic schooling | Government led digital literacy program developed and curriculum delivered on a periodic basis for general public under the program categorized at two levels-<br><br>**Grade 1:** Population aged above 40, having achieved basic literacy (ability to read, write and communicate) and acquired minimum 5 years of basic schooling received 20 hours of digital training.<br><br>**Grade 2:** Population below 40 years of age, achieved 6 years or above of schooling, | Digital literacy curriculum delivered in an organised way across all gradients of the society of The Gambia resulting in the adoption of digital services among the public at a large scale, with considerable improvement in the level of overall digital usage, readiness and learning in Gambian society by the year (20…) | (…)% of population aged above 40, have achieved basic digital literacy and fully acquainted in the use of the following<br>- Introduction to mobile phones and computers.<br>- Introduction to internet and communication using internet.<br>- Accessing public services and financial services online.<br>- Protecting user information and privacy online.<br><br>(…)% of Population aged below 40, have achieved advanced digital literacy and fully |

| | | | | |
|---|---|---|---|---|
| | should undergo 20 hours of digital training covering the following topics<br>- Introduction to mobile phones and computers.<br>- Introduction to internet and communication using internet.<br>- Accessing public services and financial services online.<br>- Protecting user information and privacy online.<br><br>**Grade 2:** Population below 40 years' age, achieved 6 years or above of schooling, with prior exposure to mobile phones and laptops should undergo 40 hours of training to advance in following aspects;<br>- Basic use of MS word, spreadsheet, presentations, know-how of digital learning, advanced uses of internet, e-commerce etc. which can be used in their day-to-day life.<br>- Population undergoing grade 2 curriculum should also be trained to expand the grade 1 curriculum within their family or community level.<br><br>Population below 40 years of age, not satisfying requisites of grade 2 should undergo and complete grade 1 level curriculum prior to undergoing grade 2 curriculum. | with prior exposure to mobile phones and laptops received 40 hours of training. | | acquainted in the following-<br><br>Basic use of MS word, spreadsheet, presentations, know-how of digital learning, advanced use of internet, e-commerce etc., which can be used in their day-to-day life.<br><br>Population undergoing grade 2 curriculum fully trained to expand the grade 1 curriculum within their family or community level.<br><br>(…)% of population of all age groups and all literacy levels, fully acquainted in both basic and advanced digital literacy and evidently utilizing all key digital platforms and applications in both personal and professional life; thereby by enjoying ease in both public and private services.<br><br>(…)% of population contribution to the business growth of The Gambia's ICT related private and public enterprises offering digital apps and platforms for public services.<br><br>(…)% of population contribution to The Gambia's Economic growth through the utilization of e-governance apps/services, |

| | | | | |
|---|---|---|---|---|
| | | | | other digital public and private services such as e-transactions, mobile payments, etc.. by the year (20…) |
| While the above listed digital literacy program for Grade 1 and Grade 2 will be shorter duration and generalised programs with a focus of improving overall digital literacy and digital readiness in Rural Gambia. However, the employability, especially digital employability of Gambian youth in rural areas and complimenting rural business with digital capacities is yet to explored. In this regard the Consultant proposed following targeted skilling program to train the rural youth to improve their digital business skills and support rural business with skilled labour as well. These programs unlike TVET programs will be for short duration courses, not more than 2-3 months and training in digital business skills. | | | | |
| Skilling for Employment | **Grade 3:** Skilling for Employment (based on successful learnings from coding for employment). The ideal target population for skilling for employment should be recent diploma, university or even exceptional high school graduates. Who will undergo intensive 3-month training in digital communication, digital marketing, web-design along with necessary soft skills such as critical thinking and project management. | Improved employability of Gambian youth especially in sectors related to tourism, fishing, process food and allied industries with scope for digital business. | (…) number of people from grade 1 and 2 enrolling to grade 3. | No. of people successfully completing grade 3 and seeing changes in their employment and incomes. |
| Multi-purpose Utilization of School Labs as Community Digital Centres | Rural schools equipped with computer labs can be converted to community level digital centres for few days of the week (including weekends) can act as community digital centres for the course delivery.<br>This will also enable cost optimisation. | Majority of local schools across Gambia equipped with computer labs can be converted into digital classrooms temporarily or on few days of week which can be used to train rural population. | (…) number of community digital centres utilized in a periodic basis to ensure course delivery at large scale to both rural and urban populations at national and sub-national level. | (…)% of population trained at community centres by the year (20…). |
| Digital Ambassadors (digitally well-acquainted local trainers, and teachers) | To deliver the Grade 1 and Grade 2 curriculum GoTG can recruit additional digital ambassadors at community level to deliver training. (school teachers trained in ICT can also partake in the same process).<br><br>Specially trained or digital professionals with | Additional digital ambassadors recruited by GoTG at community level resulting in delivery of training. | Enhanced training sessions at community level, thereby attracting more trainees. | Scale of impact made by digital ambassadors in raising the enrolment number of trainees at the sub-national level. |

| | | | | |
|---|---|---|---|---|
| | experience in Gambian digital markets and relevant fields should train Grade 3 professionals. | | | |
| **Implementation:** This action is also to run for five years along with other interventions. | | | | The overall estimated costs for the next five years will be USD 5.20 million. |

217. **Project 7.1 - Development of National Rural Digital Literacy Program and Curriculum:** To support the equitable development of digital literacy in The Gambia and address the rural-urban digital disparity, the GoTG should develop a specialised digital literacy program for Rural Gambia. As a first step, the GoTG along with rural development experts, curriculum and digital education experts, should develop curriculum for various caveats of rural society to equip rural population with sufficient digital literacy as well as catalyse penetration of digital technologies in rural Gambia and use of digital public services in rural areas. The estimated cost of developing the curriculum is at **USD 300,000.**

218. **Project 7.2 - Implementation of National Rural Digital Literacy Program:** Following the development of rural digital literacy curriculum, GoTG should work with rural school boards and private sector agencies that specialise in rural education and adult teaching to conduct rural digital literacy training. GoTG should also work with other relevant stakeholders such as civic organisations, NGOs and volunteers to disseminate training.

219. For the purpose of training, GoTG should utilise computer labs installed in rural school labs. Considering the workload of computer labs in rural schools, it can be estimated that labs are unused for more than two days a week and at weekends, which can be converted into learning centres for the rural population.

220. GoTG should also recruit tutors to deliver learning to the rural population. Tutors can be local school teachers and /or dedicated digital ambassadors. Further details on the implementation schedule and action points along with outputs, outcomes and impact from implementation are discussed in **Table 22** and **Table 23**. The Consultant's cost estimates for the implementation and operation of a rural digital literacy program for the next five years is approximately at **USD 4.7 million.**

221. **Project 7.3 - Information, Education and Communication Campaign on Digital Literacy for Rural Gambia:** The implementation of rural digital literacy program should be complemented by a nationwide IEC campaign across rural Gambia promoting the general awareness and benefits of rural digital literacy programs and use of digital tools. IEC campaign will improve the enrollment of rural population in digital literacy training program.

222. The implementation of rural IEC campaign can be carried out by local rural bodies under GoTG or by implementing ministry, through promotional materials such as posters, house-to-house invitations, plays etc. Further details on the implementation schedule and action points along with outputs, outcomes and impact from implementation are discussed in **Table 22** and **Table 23**. The Consultant's cost estimates for rural IEC campaign is estimated at **USD 200,000.**

**Table 23: Implementation Schedule for Planning and Rolling out of Rural Digital Literacy Campaign**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 7.1 | Development of National Rural Digital Literacy Program and Curriculum | | | | | |
| 7.2 | Implementation of National Rurual Digital Literacy Program | | | | | |
| 7.3 | Information, Education and Communication Campaign on Digital Literacy for Rural Gambia | | | | | |

**Action 8: Designing and implementing an awareness program on digital literacy in the country**

223. To support large scale growth and adoption of digital economy and digital public services access, it is crucial to introduce the general public to the concepts and the use of digital literacy and digital tools in day-to-day life. Considering that the digital literacy rates in urban Gambia are significantly higher than in rural Gambia, the scale of population undergoing basic digital literacy in training may vary by much smaller rates while other programs such as TVETs and public workforce trainings are more active in urban areas. In this regard, the Consultant proposes the following set of action points and project packages to facilitate digital awareness and foster adoption of digital tools and digital public services.

**Table 24: Components of Action 8 for Designing and Implementing an Awareness Program on Digital Literacy in the Country**

| Component | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | impact |
| Awareness Campaign | While Gambian public sectors and Public services, gradually migrate towards digital services and e-governance, Gambian public should be mobilized towards utilising digital services and taking part in e-governance. The GoTG should aim at increasing digital literacy and digital readiness of Gambians to enable usage of e-Government and e-Business services.<br>In this regard GoTG should target via Public Awareness Campaigns to reach out to the last mile citizens, even in rural areas.<br><br>A dedicated campaign should attract the Gambian population to enrol for public digital literacy programs showcasing the benefits of advanced digital skills. | National campaign rolled out and implemented at the national and sub-national level resulting in reaching out to the Gambian population, including last mile citizens, in rural areas, towards enrolment in public digital literacy programs and the benefits of advanced digital skills widely disseminated among public. | (…)% Gambian public gradually move towards utilization of digital services and e-governance platforms for accessing and benefiting from ease of public services by the year (20…). | (…) increase in the level of digital literacy and digital readiness of Gambians in the effective usage of e-Government and e-Business services for improved ease of public services and benefits.<br><br>Increased level of trust of the Gambian people towards enrolling for public digital literacy programs and benefits of advanced digital skills in improving employability |
| Developing public digital literacy curriculum | To spread the digital literacy in an organised way across all gradients of the society, adoption of digital services among public at large scale, and improve overall digital readiness and learning in Gambian society is required. The Government should conduct a bottom-to-top approach in | Government led digital literacy program developed and curriculum delivered on a periodic basis for general public under the program categorized at two levels- | Digital literacy curriculum delivered in an organised way across all gradients of the society of The Gambia resulting to the adoption of digital services among the public at large scale, | (…)% of population aged above 40, have achieved basic digital literacy and fully acquainted in the use of the following -<br>– Introduction to mobile phones and computers. |

| Component | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | impact |
| | implementing digital literacy program.<br><br>The curriculum developed for general public under the program will be at two levels;<br><br>**Grade 1:** Population aged above 40, having achieved basic literacy (ability to read, write and communicate) and acquired minimum 5 years of basic schooling should undergo 20 hours of digital training covering the following topics<br>- Introduction to mobile phones and computers.<br>- Introduction to internet and communication using internet.<br>- Accessing public services and financial services online.<br>- Protecting user information and privacy online.<br><br>**Grade 2:** Population below 40 years' age, achieved 6 years or above of schooling, with prior exposure to mobile phones and laptops should undergo 40 hours of training to advance in following aspects;<br>- Basic use of MS word, spreadsheet, presentations, know-how of digital learning, advanced uses of internet, e-commerce etc., which can be used in their day-to-day life.<br>- Population undergoing grade 2 curriculum should also be trained to expand the grade 1 curriculum within their family or community level.<br><br>Population below 40 years of age, not satisfying | **Grade 1:** Population aged above 40, having achieved basic literacy (ability to read, write and communicate) and acquired minimum 5 years of basic schooling received 20 hours of digital training.<br><br>**Grade2:**<br>Population below 40 years age, achieved 6 years or above of schooling, with prior exposure to mobile phones and laptops received 40 hours of training. | with considerable improvement in the level of overall digital usage, readiness and learning in the Gambian society by the year (20…) | - Introduction to internet and communication using internet.<br>- Accessing public services and financial services online.<br>- Protecting user information and privacy online.<br><br>(…)% of Population aged below 40, have achieved advanced digital literacy and fully acquainted in the following-<br><br>Basic use of MS word, spreadsheet, presentations, know-how of digital learning, advanced uses of internet, e-commerce etc. which can be used in their day-to-day life.<br><br>Population undergoing grade 2 curriculum fully trained to expand the grade 1 curriculum within their family or community level.<br><br>(…)% of population of all age groups and all literacy levels, fully acquainted in both basic and advanced digital literacy and evidently utilizing all key digital platforms and applications in both personal and professional life; thereby by |

| Component | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | impact |
| | requisites of grade 2 should undergo and complete grade 1 level curriculum prior to undergoing grade 2 curriculum. | | | enjoying ease in both public and private services.<br><br>(…)% of population contribution to the business growth of The Gambia's ICT related private and public enterprises offering digital apps and platforms for public services.<br><br>(…)% of population contribution to the Gambia's Economic growth through the utilization of e-governance apps/services, other digital public and private services such as e-transactions, mobile payments, etc.. by the year (20…)<br><br>(…)% raise in the employment level of trained and digitally included ICT workforce across the public and private sector in The Gambia.<br><br>Improved levels of employability within the ICT workforce across The Gambia. |
| Multi-purpose Utilization of School Labs as Community Digital Centres | Local schools equipped with computer labs can be converted to community level digital centres for few days of the week (including weekends) can act as community digital centres for the course delivery. | Majority of local schools across Gambia equipped with computer labs also utilized as community level digital centres for few days of the week (including weekends) | (…) number of community digital centres utilized in a periodic basis to ensure course delivery at large scale to both rural and urban populations at | (…)% of population trained at community centres by the year (20…). Improved levels of employability within the ICT workforce across |

| Component | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | impact |
| | This will also enable cost optimisation. | | national and sub-national level. | the rural areas of The Gambia. |
| Digital Ambassadors (digitally well-acquainted local trainers, and teachers) | To deliver the Grade 1 and Grade 2 curriculum GoTG can recruit additional digital ambassadors at community level to deliver training. (school teachers trained in ICT can also partake in the same process) | Additional digital ambassadors recruited by GoTG at community level resulting in delivery of training. | Enhanced training sessions at community level; thereby attracting more trainees. | Scale of impact made by digital ambassadors in raising the enrolment number of trainees at the sub-national level.<br><br>(…)% raise in the employment level of trained and digitally included ICT workforce across the public and private sector in the rural areas of The Gambia.<br><br>Improved levels of employability within the ICT workforce across the rural areas of The Gambia. |
| **Implementation:** This action will run simultaneously to the rural digital literacy program. Below, the implementation points in terms of projects are discussed along with specifies such as implementing agencies, implementing suggestions and project budgets. | | | | The overall estimated costs for the next five years will be USD 0.73 million. |

224. **Project 8.1 - Development of National Digital Literacy Program and Curriculum:** To support the development of digital literacy and promote use of digital services among the Gambian public, the GoTG should develop a specialised digital literacy program for The Gambia. As a first step towards developing digital literacy and digital skills among public, the GoTG along with curriculum development experts, and digital education experts, should conduct a detailed assessment of current level of digital literacy in The Gambia and accordingly develop curriculum for various caveats of Gambian population to equip people with sufficient digital literacy as well as catalyse penetration of digital technologies and skills among citizens.

225. The details of the digital literacy curriculum and components of the curriculum for different caveats of population-based on prior exposure to digital tools, and outputs, outcomes, and potential impacts from implementation of digital literacy program and the implementation schedule are discussed in **Table 24** and **Table 25**. The Consultant's cost estimates for development of curriculum is at **USD 80,000.**

226. **Project 8.2 - Implementation of National Digital Literacy Program:** Following the development of the digital literacy curriculum, GoTG should work with local school boards, civic bodies and private sector agencies that specialise in digital education and adult teaching to deliver digital literacy training. GoTG should also work with other relevant stakeholders such as NGOs and volunteers to disseminate training.

227. For the purpose of training, GoTG should utilise the computer labs installed in local/nearby school labs. Considering the workload of computer labs in schools, it can be estimated that labs are unused for more than two days in a week and weekends, which can be converted into local learning centres for the general population. Utilising local school facilities as community learning centres also serves for cost optimisation.

228. GoTG should also recruit tutors to deliver learning to the population. Recruiting teachers for delivery of training can be a combination of one or more of the following methods— tutoring can be outsourced to private education service providers, local school teachers can partake in the process, and recruiting dedicated digital ambassadors for training purposes among many. Various other options for tutors should be explored for Gambian conditions. Further details on the implementation schedule and action points along with outputs, outcomes and impact from implementation are discussed in **Table 24** and **Table 25**. The Consultant's cost estimates for the implementation and operation of rural digital literacy program for the next five years, which will primarily include tutors for delivery of training is estimated at **USD 250,000.**

229. **Project 8.3 - Information, Education and Communication Campaign on Digital Literacy for The Gambia (for Urban):** The Implementation of digital literacy program should be complemented by a nationwide IEC campaign to promote the general awareness regarding benefits of digital literacy programs and use of digital tools. IEC campaign will improve the enrollment of the population in digital literacy.

230. The Implementation of rural wise IEC campaign can be carried by local urban bodies under GoTG or implementing ministry, through using promotional materials such as posters, house-to-house invitations, plays etc., other organisations such as local schools, civic organisations and NGOs can also partake in executing IEC campaign. Further details on the implementation schedule and action points along with outputs, outcomes and impact from implementation are discussed in **Table 24** and **Table 25**. The Consultant's cost estimates for IEC campaign is estimated as **USD 400,000.**

**Table 25: Implementation Schedule for Awareness Program on Digital Literacy Program**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 8.1 | Development of National Digital Literacy Program and Curriculum (for Urban) | | | | | |
| 8.2 | Implementation of National Digital Literacy Program (for Urban) | | | | | |
| 8.3 | Information, Education and Communication Campaign on Digital Literacy (for Urban) | | | | | |

**Action 9: Rolling out the digital literacy program for the public workforce**

231. Over the years, the GoTG has adopted several policies and rolled out a handful of initiatives to make public services available via digital mode to improve digital public services and e-governance. The GoTG needs to align and mainstream the existing policies and initiatives under a National e-Governance Plan (NeGP), which can take a holistic view of e-Governance initiatives across the country, integrating them into a collective vision and a shared national cause. To materialise a massive expansion of digital literacy, digital infrastructure and public services to all sections of the society, the digital training of public workforce is recommended.

232. In addition to the proposed digital literacy interventions in this report, covering all sections of society including public workforce, a holistic NeGP should advocate for -

- Large-scale digitization of public records,
- Expand reliable and affordable access to internet;
- Expand digital public services platform; and

- Enable digitally competent public workforce and general public to realise e-governance.

233. The current situation assessment of digital skills in public workforce is poor. While striving to build digital capacity among its workforce, GoTG efforts have been limited to drafting relevant policies in the direction and pilot programs in some of the government departments.

234. Several adult digital pedagogical studies suggest that discrepancies in learning skills and insufficient employing of skills in day-to-day job regularly lead to poor knowledge and skill retention, especially among executive trainees. Sudden transition from offline public services to digital services can endanger shocks to the digitally illiterate population, risk data and security concerns.

235. Gradual digital migration and heuristics approach strategically allows for digital training and deployment of public workforce in multiple phases (non-critical to critical departments) and simultaneous inception of digital public services, while still keeping non-digital services active till full digital migration is complete. This process allows for continuous learning by public workforce and general public leading to smoother digital migration without shocks to public service systems.

**Table 26: Components of Action 9 for rolling out the digital literacy program for the public workforce**

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Developing sector-wise digital literacy plan | Develop a 5-year sector-wise digitisation and digital literacy plan for public workforce to be executed in multiple phases, based on digital readiness and critical aspects of departments.<br>• Phase 1: Identify non-critical public departments such as accounting, administration, statistics & program implementation, record management and public procurement departments in all public ministries. Conduct detailed needs assessment and develop digital curriculum for the same.<br>• Phase 2: Identify semi-critical departments in all public ministries, such as rural and urban management departments, natural resource management, revenue records, GST services departments, conduct capacity needs assessment and develop curriculum for the same. | 5-year sector-wise plan for digitisation and digital literacy for Public workforce developed for multiple phases, considering the state of digital readiness and critical aspects of departments. | 5-year sector-wise digital literacy plan implemented for public workforce.<br><br>Digital literacy plan periodically delivered in multiple phases, outlining digital literacy interventions with non-critical departments as well as critical sectors outlined.<br><br>Digital capacity building in conjunction with gradual introduction of ICT tools in daily working for public officials ensured.<br><br>Phase 1: Non-critical public departments such as accounting, administration, statistics & program implementation, record management and public procurements | (…)% of public workforce migration annually towards ICT.<br><br>Advantages and limitations involved in introduction of digital public services without exposing public service delivery mechanism to unprecedented security and social risks.<br><br>(…)% of improvement in the accountability and transparency of government with the help of mass usage of e-governance tools and applications.<br><br>Level of improvement in the performance, punctuality, and quality of service delivery to citizens at departments ranging from |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | • Phase 3: Identify critical public sector services such as critical infrastructure management, electricity, water, gas and other engineering services gridlines, departments for law and order and state security.<br><br>Implementation Plan: Implementing the 5-year sector-wise digital literacy plan for public workforce should be executed in multiple phases, initiating digital literacy interventions with non-critical departments and then covering the critical sectors. Digital capacity building should be accompanied with gradual introduction of ICT tools in daily working for public officials. Gradual migration of average 20 percent of public workforce annually will be sustainable for gradual migration towards ICT and introduction of digital public services without exposing public service delivery mechanism to unprecedented security and social risks.<br><br>• The Digital literacy curriculum training coverage will be for 80-100 hrs. (20-30 hrs. theory + 60-70 hrs. practical training), either continuous or in stages within that respective year. | | departments in all public ministries fully identified.<br><br>Detailed needs assessment conducted and digital curriculum developed.<br><br>Phase 2: Semi-critical departments in all public ministries, such as rural and urban management departments, natural resource management, revenue records, GST services departments identified.<br><br>Capacity needs assessment conducted, and curriculum developed.<br><br>Phase 3: Critical public sector services such as critical infrastructure management, electricity, water, gas and other engineering services gridlines, departments for law and order and state security identified. | accounting, administration, statistics & program implementation, record management up to public procurements departments in all public ministries.<br><br>Level of improvement in the performance, punctuality, and quality of service delivery to citizens at all public ministries, such as rural and urban management departments, natural resource management, revenue records, and GST services departments.<br><br>Level of improvement in the performance, punctuality, and quality of service delivery to citizens at critical public sector such as critical infrastructure management, electricity, water, gas and other engineering services gridlines, departments for law and order and state security.<br><br>(…)% raise in the employment level of trained and digitally included ICT workforce across the public and private sector |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | | | | in the rural areas of The Gambia.<br><br>Improved levels of employability within the ICT workforce across the rural areas of The Gambia |
| Setting Up Training Schools | To execute the 5-year sector plans, GoTG needs to establish region-wise training institutes or integrate dedicated digital training institutes into pre-existing civil service training institutions.<br><br>Training systems will be equipped with all necessary presentation tools, computers, licenced software, networking & communication system, and other equipment. | 5-year sector plans approved and gradually executed as per GoTG needs resulting to the establishment of region-wise training institutes and integration of dedicated digital training institutes into pre-existing civil service training institutions.<br><br>All training systems fully equipped with all necessary presentation tools, computers, licenced software, networking & communication system, and other equipment. | (…) number of trainee enrolments at regional training institutes and dedicated digital training institutes and civil service training institutions. | (…) % of digitally driven and well-trained civil servants joining various Government sector entities by the year (20…)<br><br>Improved public perception of the new age of civil servants in easing citizen services.<br>Improved levels of employability of trainees of civil service training in areas of ICT. |
| Estimated procurement for training | Based on estimations, Gambian public workforce is 50+ thousand, and increasing considering the current growing needs for public department services, public capacities and overall Gambian population growth rates.<br>The 5-year digital literacy program will instigate training and promotion of 10 thousand public officials annually for the next 5 years.<br>For proposed 10,000 officials to be trained for 80-100 hrs. gross estimation of hardware and software sum up to following details;<br>- 3000 desktop systems | The 5-year digital literacy program designed, developed, and approved and training delivered to 10 thousand public officials annually for the next 5 years.<br><br>10,000 officials trained for 80-100 hrs.<br><br>Gross estimation of hardware and software procured and installed as follows;<br>- 3000 desktop systems | The 5-year digital literacy program directly addressing and responding to the current growing needs for public department services, public capacities against the growing Gambian population.<br><br>The 5-year digital literacy program directly addressing and responding to the estimated Gambian public workforce, as well as the covering the estimated increase | (…)% of improvement in public perception or public approval of Government department citizen services.<br><br>Scale of improvement in the digitally driven capabilities of public sector in addressing the citizen services of the growing Gambian population.<br><br>Number of approved performance |

| Components | Description | Monitoring Indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | - 10 projectors/ presentation system with supporting sound and other systems;<br>- Licenced software such as Microsoft, GIS, security apps.<br>- Customised departmental software and websites. | - 10 projectors/ presentation system with supporting sound and other systems;<br>- Licenced software such as Microsoft, GIS, security apps. | in the public workforce by the year (20…) | appraisals of Gambian public workforce, as well as the estimated increase by the year (20…)<br><br>Overall level of improvement in the performance, timeliness and quality of service delivery through digital platforms to citizens of The Gambia. |
| **Implementation:** The implementation of the action plan, will include developing curriculum developing ICT training equipped centres, followed by integration of training with existing HEIs responsible for producing civil servants. In the following section, the action points are translated into project packages along with specifics such as implementing agencies involved, implementing suggestions and project wise estimated budgets. | | | | The overall estimated costs for the next five years will be USD 1.60 million. |

236. **Program 9.1 - Development of Sector-wise Digital Training Program for Public workforce:** GoTG should develop and adopt a sector-wise training program for civil servants to equip 100 per cent of its workforce digitally in the next 5 years. GoTG along all ministries and departments should implement a combination of multiple initiatives to optimise the value of digital government, focusing on building the technical skills required to operate, manage and sustain the digitally mediated processes of government and the underlying technological systems, databases, analytics risks, and the advancement of digital leadership skills among public service leaders and managers.

237. GoTG along with Ministry for Information and Communication Infrastructure should remain responsible for producing civil servants at various levels. In collaboration with the education and digital governance experts, the level of adoption of digital tools in governance, digital capacity in public workforce should be reviewed and accordingly develop and implement a sector-wise digital training program. The sector-wise digital training program will individually evaluate each ministry or department for the said capacities and accordingly develop training curriculum, training methods, tools and phase-wise implementation mechanisms.

238. The Consultant has further proposed the detailed implementation action points, details of the phased implementation process along with outputs, outcomes, and impacts from implementation of digital training in the public workforce in **Table 26** and **Table 27**. The Consultant's cost estimates for review of public workforce digital capacities, development of digital training program and implementation strategy is estimated at **USD 350,000.**

239. **Program 9.2 - Establishment of Digital Training Centres for Public Workforce:** To support the implementation of Digital Training Program for public workforce, the GoTG should work with institutions responsible for producing civil servants and ICT service providers to develop new or upgrade existing regional training facilities to accommodate the digital training programs for public workforce.

240. Further details on the implementation schedule, implementation action points and quantities of procurement for setting up regional wise digital training centres along with outputs, outcomes and

impacts are discussed in **Table 26** and **Table 27**. The Consultant's cost estimates for setting up of 5 regional training centres is estimated at **USD 1.25 million**.

241. Following the development of sector-wise digital curriculum, and establishing digital training centres, GoTG along with multiple departments and ministries should oversee the implementation with ICT Directorate within MOICI as the overseeing agency. The 5-year multi-phase implementation approach will be suited, training annually 20 per cent of public workforce along with gradual roll out of digital public services. GoTG should also work with digital training experts, industry experts and subject matter experts to equip the public workforce with the necessary digital capacity.

**Table 27: Implementation Schedule for Digital Training Program for Public Workforce**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 9.1 | Development of Sector-wise Digital Training Program for Public workforce | | | | | |
| 9.2 | Establishment of Digital Training Centres for Public Workforce | | | | | |

**Action 10: Catalysing the path towards advanced digital skills development through public-private partnership**

242. In addition to the provision and facilitation of higher and vocational education as described in earlier action points, The GoTG should also catalyse and set up a mechanism for advanced skills development for the Gambian workforce in general.

**Table 28: Components of Action 10 for Catalysing the Path Towards Advanced Digital Skills Development Through Public Private Partnership**

| Component | Description | Monitoring indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Executive Higher Education and Training | The GoTG should set up a practice of executive education and training of its civil servants.<br><br>Executive education- The GoTG should identify the learning and aspiration needs of its public workforce and enable higher education by establishment of MoUs with local or international universities.<br><br>Executive Education- with a view of continuously upgrading its workforce learning and knowledge, each public department should undergo regular executive training from local/international technological and management institutes. | Executive education and training of civil servants considered under national priority plans of GoTG and learning needs of public workforce identified and comprehensively outlined.<br><br>Higher education extensively enabled by establishment of MoUs with local or international universities. | MoUs with local or international universities, local/international technological and management institutes resulting in improved executive education in GoTGs civil services across public workforce.<br><br>Over 90% of public workforce of GoTG received executive education and training in civil service resulting in upgrading of learning and knowledge under each public department by the year (20..) | (…)% raise in the number of MoUs signed with local or international universities, local/international technological and management institutes.<br><br>(…)% improvement in the digitally driven performance levels of public work force in GoTGs civil services across all public departments.<br><br>(…)% increase in positive public feedback on the level of ease observed and experienced within Government procedures and public services of GoTG |

| Component | Description | Monitoring indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| | | | | (…)% raise in the employment level of trained and digitally included ICT workforce across the public and private sector in The Gambia.<br><br>Improved levels of employability within the ICT workforce across the The Gambia. |
| Corporate Training | The GoTG should also catalyse continuous digital education market by supporting digital learning platforms for private employees and incentivise private enterprises to regularly train their employees. | GoTG prioritized continuous digital education market under its national plans. Private enterprises incentivized and regular training of private sector employees ensured through provision of digital learning platforms. | Over 90% of private enterprises incentivized and regular training of private sector employees fully accessible through the provision of digital learning platforms. | (…)% improvement in the digitally driven performance levels of private sector employees under private enterprises.<br><br>(…)% improvement in consumers positive feedback on ease of doing business with private companies/enterprises through digital/ICT applications.<br><br>(…)% increase in the impact of digital tools/applications in improving sales and business of private companies/enterprises etc...<br>Improved levels of employability within the ICT workforce across the private sector in The Gambia. |
| **Implementation:** This action is to start after a year of implementation of other priority actions to ensure a robust off take and then run for four years. | | | | The overall estimated costs for the next five years will be USD 200,000. |

243. **Project 10.1 - Executive Higher Education and Training Program for Public Workforce:** GoTG should establish the practice for executive training of its advanced workforce with critical digital skills. GoTG should establish MoUs with leading universities and specialised training centres to train their advanced workforce in Digital leadership programs.

244. Further Implementation action points, and implementation schedule along with outcomes, outputs, and impacts are detailed in **Table 28** and **Table 29**. The Consultant's cost estimates for executive higher education and training is estimated at **USD 200,000.**

**Table 29: Implementation Schedule for Executive Higher Education and Training for Public Workforce**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 10.1 | Executive Higher Education and Training for Public Workforce | | | | | |

**Action 11: Promoting Research and Innovation in Advanced Digital Technologies (Industry 4.0)**

245. The Gambia and Western African region though is gradually catching up with the trends of global digital development and digital economy, but the region is yet to exploit and localise the derivatives of the new age technologies for its economy, governance and security. In this view, The Gambia is posed with an opportunity to research, innovate, develop, and commercialise new technological advances.

**Table 30: Components of Action 11 for Promoting the Research and Innovations in Advanced Digital Technologies (Industry 4.0)**

| Component | Description | Monitoring indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Setting up ICT related Industrial and Scientific Research & Development Centres (ISRDCs) | The GoTG should expand the existing centres of excellences (CoEs) to induct new ICT related Industrial and research development centres.<br><br>ISRDCs, often operate directly under the respective ministries, under dedicated project-wise R&D budgets supported by the same ministry, who are mainly responsible for developing intellectual property, patenting, and technology transfer to national/international markets.<br><br>The GoTG should institutionalize new ISRDCs operating exclusively on ICT technologies and product development. | Centres of excellences (Comes) under GoTG expanded, resulting to induction of ICT related Industrial and research development centres.<br><br>ISRDCs under the organizational structure of respective Ministries, with project-wise R&D budgets allocated.<br><br>New ISRDCs fully operational on ICT technologies and product development. | New ISRDCs fully productive on ICT technologies with proven product development cycle in place resulting in fully fledged R&D, and technology transfer to national/internatio nal markets. | (…)% increase in fully established ICT related Industrial and Scientific research & Development Centres (ISRDCs) by the year (20…)<br><br>(…) increase in ISRDCs R&D capabilities with direct contribution to increased levels of various ICT product development, marketing, sales and increase in consumer level and satisfaction; thereby fully penetrating the national and international markets and addressing the market demand for improved ICT products. |

| Component | Description | Monitoring indicators | | |
|---|---|---|---|---|
| | | Output | Outcome | Impact |
| Consortiums | The newly established ISRDCs should join established global consortiums to take part in development of new technology and products.<br>The ISRDCs should collaborate with other COEs such as defence, metallurgy, agriculture etc., to develop ICT cross-cutting technologies.<br><br>In addition, the ISRDCs can also initiate new consortiums with technological corporations and other research & development centres. | Newly established ISRDCs join global consortiums and fully involved in development of new technology and products.<br><br>ISRDCs inter-collaboration ensured in defence, metallurgy, agriculture etc., resulting in the development of ICT cross-cutting technologies.<br><br>ISRDCs ensured new consortiums with technological corporations and other research & development centres. | Global consortiums associated with ISRDC resulting in the development of new technology and products at mass scale.<br><br>Development of ICT cross-cutting technologies fully addressing the needs of sectors such as defence, metallurgy, agriculture etc. to develop ICT.<br><br>ISRDCs ensured new consortiums with technological corporations and other research & development centres resulting in development of new technology and products at mass scale. | (…) number of approved and successfully utilized technological products developed by Global consortiums associated with ISRDC.<br><br>(…) number of cross-cutting technological products approved and successfully utilized in the arena of defence, metallurgy, and agriculture.<br><br>(…) number of cross-cutting ICT products approved and successfully developed as a result of ISRDC new consortiums on technological corporation and other research & development centres. |
| **Implementation:** The Implementation of nationally important ISRDCs should be in accordance with respective national scientific and technological mandates and regulations. The initiation of setting up ISRDCs and R&D fund and the respective legislation should be initiated from first year of the 5-year period, followed by effective expenditure of dedicated R&D fund in the next 5 years. Below, the details of implementation and implementing agencies along with budgets are detailed below. | | | | The overall estimated costs for the next five years will be USD 2.30 million. |

246. **Project 11.1 - Establishment of National ISRDCs and R&D Fund**: To foster the research and innovation in advanced themes of ICT such as IoT, Artificial intelligence, Quantum Computing, Robotics and Machine Learning, The Ministry for Higher Education, Research, Science and Technology (MoHERST) should develop dedicated Industrial and Scientific Research and Development Centres (ISRDCs) with an aim to conduct advanced research, intellectual property generation, innovations and build technological products. Developing such dedicated centers of excellence will be first of a kind the region which will leverage Gambian science and technology sector in R&D markets.

247. MoHERST, acting as an implementing agency should also strive towards establish research and development consortiums, knowledge relation and joint ventures with leading universities and laboratories across the world to work in collaboration with scientists and inventors produce cutting edge technological solutions.

248. Further Action implementation points, implementation schedule, along with outputs, outcomes, and impacts are discussed in **Table 30** and **Table 31**. The Consultant's cost estimates for setting up state of the art ISRDCs and dedicated R&D fund is estimated as **USD. 2.3 million.**

**Table 31: Implementation Schedule for Promoting Research and Innovation in Advanced Digital Technologies**

| Project No. | Projects | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 11.1 | Establishment of National ISRDCs and R&D Fund | | | | | |

## 4.2 Implementation Plan

249. For each of the four strategy elements, action points and projects packages proposed in the digital literacy program are to be implemented over a period of 5 years. This section offers implementation plan, which must be read together with the projects in the previous section and annual expenditures.

250. The proposed implementation plan is given as **Figure 6**.

| Strategic Pillars | Actions and Components | Years | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| Strategy 1 | 1. Based on the existing but fragmented sectoral policies that emphasize the need for enhanced digital literacy: spelling out a comprehensive and objective national digital literacy strategy and plan; and | | | | | |
| | 2. Setting up the institutional framework for implementing the digital literacy initiatives institutionalize the digital literacy in the economy. | | | | | |
| Strategy 2 | 3. Initiating a digital literacy and skilling program from early schooling and enhancing digital learning readiness from schooling years; | | | | | |
| | 4. Integrating digital literacy in TVET programs; | | | | | |
| | 5. Producing graduate, post-graduate and above trained ICT workforce; | | | | | |
| | 6. Fostering research, innovation and entrepreneurship development in ICT sector; | | | | | |
| | 7. Planning and rolling out an objective rural digital literacy program; and | | | | | |
| | 8. Designing and implementing an awareness program on digital literacy in the country. | | | | | |
| Strategy 3 | 9. Rolling out the digital literacy program for the public workforce. | | | | | |
| Strategy 4 | 10. Catalysing the path towards advanced digital skills development through public private partnership; and | | | | | |
| | 11. Promoting research and innovation in advanced digital technologies. | | | | | |

**Figure 6: Implementation Plan for Digital Literacy Program in Gambia**

# 5. COSTING THE ROLLING OUT OF DIGITAL LITERACY

**Table 32: Project Wise Schedule and Cost Estimates of Rolling out the Digital Literacy Program in The Gambia**

| Project No. | Projects | Years | | | | | Estimated Project Cost (USD) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 2.1 | Setting up of instutional framework for implementing project activities | | | | | | 3000000 |
| 3.1 | Development of Digital Curriculum | | | | | | 1000000 |
| 3.2 | Train the Educators | | | | | | 1822200 |
| 3.3 | Expansion of Digital broadband connectivity and ICT infrastructure to Gambian Schools | | | | | | 38857900 |
| 3.4 | Development of National LMS (Learning Management System) software | | | | | | 300000 |
| 4.1 | Development and Standardisation of TEVT certification and Accreditation system | | | | | | 1000000 |
| 4.2 | Development of role model TEVT Schools | | | | | | 920000 |
| 5.1 | Development and Introduction of new Graduate and Above Level Programs | | | | | | 1000000 |
| 5.2 | Developement of University Research and Development Labs and Facilities | | | | | | 250000 |
| 7.1 | Development of National Rural Digital Literacy Program and Curricilum | | | | | | 300000 |
| 7.2 | Implementation of National Rural Digital Literacy Program | | | | | | 4700000 |
| 7.3 | Information, Education and Communication Campaign on Digital Literacy for Rural Gambia | | | | | | 200000 |
| 8.1 | Development of National Digital Literacy Program and Curriculum (for Urban) | | | | | | 80000 |
| 8.2 | Implementation of National Digital Literacy Program (for Urban) | | | | | | 250000 |
| 8.3 | Information, Education and Communication Campaign on Digital Literacy (for Urban) | | | | | | 400000 |
| 9.1 | Development of Sector-wise Digital Training Program for Public workforce | | | | | | 350000 |
| 9.2 | Establishment of Digital training Centres for Public Workforce | | | | | | 1250000 |
| 10.1 | Executive Higher Education and Training Program for Public Workforce | | | | | | 200000 |
| 11.1 | Establishment of National ISRDCs and R&D Fund | | | | | | 2300000 |
| **Total Project Investment Costs(USD)** | | | | | | | **59580100** |
| **Total Project Investment Costs (USD million)** | | | | | | | **59.58** |

## Table 33: Action-point specific Cost Estimates of Rolling out the Digital Literacy Program in Gambia

| Action Points | Components | Unit | Unit Costs (USD) | Number of Units | Total Costs (USD) | Sources of Funding |
|---|---|---|---|---|---|---|
| Action 1 | Spelling out National Digital Literacy Strategy (Cost not taken as this feasibility study fulfills this requirement) | | | | | |
| Action 2 | Setting up the institutional framework for implementing the digital literacy initiatives and institutionalize digital literacy in the economy | Lumpsum | 3000000 | 1 | 3000000 | Development parntners/African Development Bank |
| | | | | **Sub-total (USD)** | **3000000** | |
| Action 3 | Projectors | Number | 500 | 1827 | 913500 | Development partners/African Development Bank |
| | Presentation computers | Number | 700 | 1827 | 1278900 | |
| | Lab Computers | Number | 700 | 27500 | 19250000 | |
| | Lab Furniture | Number | 200 | 27500 | 5500000 | |
| | Power back-up systems (rooftop solar PV) | Number | 1000 | 1827 | 1827000 | |
| | Internet connections (for 5 years) | Number | 5500 | 1827 | 10048500 | |
| | Software | Lumpsum | 40,000 | 1 | 40000 | |
| | LMS software system | Lumpsum | 300000 | 1 | 300000 | |
| | Digitisation of Curriculum | Lumpsum | 1000000 | 1 | 1000000 | |
| | Teachers' Training | Number | 100 | 18222 | 1822200 | |
| | | | | **Sub-total (USD)** | **41980100** | |
| Action 4 | Instutionlising certification and accredation system | Lumpsum | 500000 | 1 | 500000 | Development partners/African Development Bank |
| | Certification licenes | Lumsum | 500000 | 1 | 500000 | |
| | Role TVET schools (Training+labs+software +hardware for 300 students) | Number | 200000 | 2 | 400000 | |
| | Furniture and Support Equipments | Lumpsum | 500000 | 1 | 500000 | |
| | Power back-up systems | Number | 10000 | 2 | 20000 | |
| | | | | **Sub-total (USD)** | **1920000** | |
| Action 5 | Ehnancing higher education curriculum and initiation of new programs (Bachelor + Masters+Ph.D) | Lumpsum | 1000000 | 1 | 1000000 | Development partners/African Development Bank |
| | Computers labs (Improving learning facilities) | Number | 2000 | 75 | 150000 | |
| | Software procurement | Lumpsum | 60000 | 1 | 60000 | |
| | High speed internet connection | Lumpsum | 30000 | 1 | 30000 | |
| | Power back-up systems | | 10000 | 1 | 10000 | |
| | | | | **Sub-total (USD)** | **1250000** | |
| Action 6 | Formulation of RI&E plan and National Innovation fund | Lumpsum | 1000000 | 1 | 1000000 | GoTG budget and PPP |
| | Enhancing/setting up new incubators | Lumpsum | 300000 | 1 | 300000 | |
| | Sensitisation campaign | Lumpsum | 100000 | 1 | 100000 | |
| | | | | **Sub-total (USD)** | **1400000** | |
| Action 7 | IEC campaign focused on rural digital literacy | Lumpsum | 200000 | 1 | 200000 | Development partners/African Development Bank (May be aligned to Coding for Employment Program) |
| | Rural Digital Literacy program | Lumpsum | 3000000 | 1 | 3000000 | |
| | Skilling for employment program | Lumpsum | 2000000 | 1 | 2000000 | |
| | | | | **Sub-total (USD)** | **5200000** | |
| Action 8 | Developing public digital literacy curriculum | Lumpsum | 80000 | 1 | 80000 | Development partners/African Development Bank |
| | Awareness Campaign | Lumpsum | 400000 | 1 | 400000 | |
| | Digital Ambassadors costs (for 5 years) | Lumpsum | 250000 | 1 | 250000 | |
| | | | | **Sub-total (USD)** | **730000** | |
| Action 9 | Sector/department wise digital literacy curriculum and multi-phase implementation plan | Lumpsum | 350000 | 1 | 350000 | Development partners/African Development Bank |
| | 5 Regional Training Schools | | 250000 | 5 | 1250000 | |
| | | | | **Sub-total (USD)** | **1600000** | |
| Action 10 | Catalysing the path towards advanced digital skills development through public private partnership | Lumpsum | 200000 | 1 | **200000** | GoTG budget and PPP |
| | | | | **Sub-total (USD)** | **200000** | |
| Action 11 | Setting up 2 ICT relevant industrial and scientific centres | Lumpsum | 1000000 | 2 | 2000000 | |
| | Facilitating the consortium formulations | Lumpsum | 300000 | 1 | 300000 | GoTG budget and PPP |
| | | | | **Sub-total (USD)** | **2300000** | |
| | **Estimated Total Costs (USD)** | | | | **59580100** | |
| | | | | **Say USD** | **60** | **Million** |

# 6. FEASIBILITY ANALYSIS

251. Feasibility analysis considers economic, technical, legal, and scheduling factors to determine whether a program can succeed. The economic feasibility of the program depends on the economic costs and benefits emerging from it. The assessment in previous sections establish the need for rolling out the digital literacy program in Gambia. This section delves into the economic benefits of the same.

252. Digital transformation holds important potential for productivity, growth and well-being of citizens in The Gambia. The benefits of the digital economy for emerging economies such as The Gambia are potentially large. That is because it can have significant competitiveness and productivity-boosting opportunities related to access to digital products and services that help optimise processes and production, reduce transaction costs, and transform supply chains. Declining information and communication technology (ICT) prices encourage investment and adoption of digital technologies in emerging economies, providing their firms with cutting-edge services at competitive prices. All of this enable firms to participate in global value chains and directly access customers in foreign markets in ways previously only feasible for large and established companies from advanced economies.

253. For consumers, the benefits are associated with access to a wider range of goods and services at competitive prices and new opportunities for entrepreneurship and job creation. The Gambia will also benefit from the digital economy to the extent that it will have access to technologies that help in delivering improved public services, improve governance, public transparency, accountability to evaluate public policies, and deliver overall better results.

254. However, Gambia is yet to materialise and scale the economic benefits from digital development, primarily due to adoption barriers, high transition costs, and poor digital commoditisation. The GoTG should work on several fronts in order to enable the digital transition and reap the associated benefits. Besides other interventions such as investments in ICT ecosystems, connectivity, and digital infrastructure, the country needs to work for reducing capacity constraints and improving digital skills for catalysing the promotion of ICT adoption and diffusion.

255. As digital technologies are driving transformative change and economic paradigms are shifting in which new technologies are reshaping product and factor markets and profoundly altering business and work, digital literacy and resulting digital inclusion has become a very important pre-condition for inclusive development in countries such as Gambia. Review of literature reveals some of the following socio-economic benefits of enhanced digital literacy:

- People acquiring the confidence, motivation, skills and competencies that allow them to communicate more easily through digital technologies;
- Reducing their isolation and social exclusion;
- New opportunities opening up for people to contribute and participate in society and the economy. Life challenges can be dealt with in new ways;
- Learning can be personalised, democratic processes widened, and ‘communities of interest’ can share information and provide support in new ways;
- Consumers obtaining goods and services more easily and more cheaply, particularly helping families on low income and individuals on benefits;
- Citizens having the opportunity for greater democratic participation;

- The internet offers the public easier, more efficient and effective access to public services;
- For government, there are potential efficiencies in public service delivery as well as economic benefits from the digital economy.

256. There are researched evidences that people with good ICT skills earn between 3-10 per cent more than people without such skills. Children's educational performance gets improved by home access to a computer and the internet. Households get savings through use of online shopping and paying bills online while the service deliverers save on each transaction. All in all, there are evidences that diffusion of digital technologies in the economy leads to about 2% or more increase in GPD for the country.

257. With the estimated investment at USD 60 million over the next five years to enhance digital literacy in The Gambia, the resulting economic benefits of an assumed 1% growth in GDP, catalysed by enhanced digital literacy fetches an Economic Internal Rate of Return (EIRR) of well above 23%. Accounting for other tangible and intangible benefits of enhancing digital literacy, aggregate returns to the economy will get further boosted.

# 7. SUPPORT BY THE AFRICAN DEVELOPMENT BANK

258. The support by the development partners, particularly the AfDB, will be needed to finance a number of the key proposed actions such as listed in **Table 34**.

**Table 34: Actions that AfDB May Support**

| Action Points | Components | Total Costs (USD) |
|---|---|---|
| Action 2 | Setting up the institutional framework for implementing the digital literacy initiatives institutionalize the digital literacy in the economy | 3000000 |
| | **Sub-total (USD)** | **3000000** |
| Action 3 | Projectors | 913500 |
| | Presentation computers | 1278900 |
| | Lab Computers | 19250000 |
| | Lab Furniture | 5500000 |
| | Power back-up systems (rooftop solar PV) | 1827000 |
| | Internet connections (for 5 years) | 10048500 |
| | Software | 40000 |
| | LMS software system | 300000 |
| | Digitisation of Curriculum | 1000000 |
| | Teachers' Training | 1822200 |
| | **Sub-total (USD)** | **41980100** |
| Action 4 | Instutionlising certification and accredation system | 500000 |
| | Certification licenes | 500000 |
| | Role TVET schools (Training+labs(software +hardware) for 300 students) | 400000 |
| | Furniture and Support Equipments | 500000 |
| | Power back-up systems | 20000 |
| | **Sub-total (USD)** | **1920000** |
| Action 5 | Ehnancing higher education curriculum and initiation of new programs (bachelor + masters+Ph.D) | 1000000 |
| | Computers labs (Improving learning facilities) | 150000 |
| | Software procurement | 60000 |
| | High speed internet connection | 30000 |
| | Power back-up systems | 10000 |
| | **Sub-total (USD)** | **1250000** |
| Action 7 | IEC campaign focused on rural digital literacy | 200000 |
| | Rural Digital Literacy program | 3000000 |
| | Skilling for employment program | 2000000 |
| | **Sub-total (USD)** | **5200000** |
| Action 8 | Developing public digital literacy curriculum | 80000 |
| | Awareness Campaign | 400000 |
| | Digital Ambassadors costs (for 5 years) | 250000 |
| | **Sub-total (USD)** | **730000** |
| Action 9 | Sector/department wise digital literacy curriculum and multi-phase implementation plan | 350000 |
| | 5 regional training schools | 1250000 |
| | **Sub-total (USD)** | **1600000** |
| | **Estimated Total Costs (USD)** | **55680100** |

**Table 35: Projects that AfDB may support**

| Project No. | Projects | Years | | | | | Estimated Project Cost (USD) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 2.1 | Setting up of instutional framework for implementing project activities | | | | | | 3000000 |
| 3.1 | Development of Digital Curriculum | | | | | | 1000000 |
| 3.2 | Train the Educators | | | | | | 1822200 |
| 3.3 | Expansion of Digital broadband connectivity and ICT infrastructure to Gambian Schools | | | | | | 38857900 |
| 3.4 | Development of National LMS (Learning Management System) software | | | | | | 300000 |
| 4.1 | Development and Standardisation of TEVT certification and Accreditation system | | | | | | 1000000 |
| 4.2 | Development of role model TEVT Schools | | | | | | 920000 |
| 5.1 | Development and Introduction of new Graduate and Above Level Programs | | | | | | 1000000 |
| 5.2 | Developement of University Research and Development Labs and Facilities | | | | | | 250000 |
| 7.1 | Development of National Rural Digital Literacy Program and Curricilum | | | | | | 300000 |
| 7.2 | Implementation of National Rural Digital Literacy Program | | | | | | 4700000 |
| 7.3 | Information, Education and Communication Campaign on Digital Literacy for Rural Gambia | | | | | | 200000 |
| 8.1 | Development of National Digital Literacy Program and Curriculum (for Urban) | | | | | | 80000 |
| 8.2 | Implementation of National Digital Literacy Program (for Urban) | | | | | | 250000 |
| 8.3 | Information, Education and Communication Campaign on Digital Literacy (for Urban) | | | | | | 400000 |
| 9.1 | Development of Sector-wise Digital Training Program for Public workforce | | | | | | 350000 |
| 9.2 | Establishment of Digital training Centres for Public Workforce | | | | | | 1250000 |
| **Total Project Investment Costs in (USD million)** | | | | | | | **55.00** |

259. Besides other priority actions, the Bank may take up the cause of enhancing the digital literacy in rural Gambia which may be synchronized with Bank's Coding for Employment program. The sub-actions on 'Skilling for employment program' with an estimated investment outlay of USD two million may be directly linked with the Coding for Employment Program along with other proposed sub-actions to enhance rural digital literacy.

# REFERENCES


World Bank Group. (2020). Digital Economy Diagnostic: The Gambia.

1 World Connected (2020). Give1 Project Gambia: Providing Digital Literacy to Young Girls in the Gambia.

African Development Bank. (2020). Terms of Reference: Consulting Services for the Conduct of a Feasibility Study for The Gambia Digital Literacy and Skills Development.

Ministry of Information and Communication Infrastructure, The Gambia. (2020). Broadband Policy and Strategy: 2020-2024.

Personal Management Office, Office of The President, The Gambia. (2017). Civil Service Reform Programme (CSRP): 2018 – 2027 Strategy.

Hootsuite. (2021). Digital 2021: The Gambia.

Ministry of Basic and Secondary Education, The Gambia. (2016). Education Sector Policy 2016 – 2030.

Ministry of Basic and Secondary Education, The Gambia. (2019). Education statistics summary report.

Gianluca Misuraca. (2007). E-Governance in Africa, from Theory to Action: A Handbook on ICTs for Local Governance.

Ministry of Information and Communication Infrastructure, The Gambia. (2020). E-Government Strategy 2021-2024.

Information Communication Technology (ICT) Agency, The Gambia. (2019). Gambia ICT Agency Act 2019.

World Bank. (2018). The Gambia Labour Force Survey 2018

World Economic Forum. (2019). The Global Competitiveness Report 2019.

Government of Quebec. (2020). Digital Action Plan for Education and Higher Education.

Government of The Gambia/UNECA. (2007). Scan-ICT Country Report: Status of ICT Access, Usage and Exploitation in The Gambia.

Information Communication Technology (ICT) Agency, The Gambia. (2009). Gambia ICT Agency Act 2009.

Department of State for Communication, Information and Information Technology (DOSCIIT). (2009). ICT4D 2009-2012.

Department of State for Communication, Information and Information Technology (DOSCIIT). (2018). ICT4D2018-2028.

International Finance Corporation. (2019). Digital Skills in Sub-Saharan Africa: Spotlight on Ghana

International Telecommunication Union (ITU). (2021). Statistics: Individuals Using Internet.

International Trade Centre. (2018). Youth and trade roadmap of the gambia information and communication technologies sector 2018-2022.

International Trade Centre. (2017). SME Competitiveness Survey 2017. International Telecommunication Union. (2019). Economic contribution of broadband, digitization and ICT regulation Econometric modelling for Africa.

Knoema. (2021). World Data Atlas, Gambia - Gross Enrolment Ratio in Primary Education.

Kofi Mangesi. (2007). Survey of ICT and Education in Africa: The Gambia Country Report.

Marong, S. (2021). Integrating the Use of ICT into Teaching and Learning in the Teacher Training Program in The Gambia.

Directorate of Planning, Policy Analysis, Research & Budgeting, Ministry of Basic & Secondary Education, The Gambia. (2021). Statistics Year Book 2020/2021.

UNICEF. (2018). Multiple Indicator Cluster Survey report 2018.

Ministry of Information and Communication Infrastructure, The Gambia. (2020). National Broadband Strategy 2020-2024.

UNDP. (2018). National Development Plan (NDP) 2018-2021.

Ministry of Higher Education, Research, Science and Technology, The Gambia. (2014). National Tertiary and Higher Education Policy 2014–2023.

Public Utilities Regulatory Authority. (2001). PURA Act 2001

Ministry of Information and Communication Infrastructure, The Gambia. (2021). Private Sector Development and Empowerment Strategy 2021-2-24.

World Bang Group. (2020). Overcoming a No-Growth Legacy Systematic Country Diagnostic 2020, The Gambia.

Sunrise Centre. (2018). Schools in Gambia.

Suso, et. al (2021). Information and Communications Technology Challenges as Instructional Media in Gambia Vocational High Schools. Jurnal Pendidikan Teknologi dan Kejuruan 27.

The Ministry of Information and Communication Infrastructure. (2021). Strategy for promoting technology-enabled education & science, technology and innovation (STI) 2021-2024.

Portulans Institute. (2021). Network Readiness Index 2021, The Gambia.

International Trade Centre. (2018). ICT in the Gambia: A Sector Ready to Surf on the Recent Network Expansion. In Youth and Trade Roadmap of the Gambia Information and Communication Technologies Sector 2018-2022.

Ministry of Higher Education, Research, Science and Technology. (2020). TVET Roadmap 2020-2024.

United Nations. (2020). E-Government Development Index 2020

UNESCO. (2015). ICT in Education in Sub-Saharan Africa: A Comparative Analysis of Basic E-readiness in Schools.

United Nations Development Programme (UNDP). (2020). Human Development Report 2020.

Ministry of Information and Communication Technologies. (2020). Universal Access & Service Policy 2020.

World Bank Group. (2021). Digital Economy Diagnostic Gambia.

International Trade Centre. (2020). Youth Empowerment Project.

# ANNEXURE 1: TOOLS FOR KIIS AND FGDS

**Assessment of Digital Literacy in the Public/Private Workforce**

The Consultant will conduct the KIIs of the department head and ask questions about the status of Digital Literacy of his workforce. The Consultant will ask the following questions:

**Section A: Digital Literacy Rate of the Workforce**

- What percentage of your workforce are digitally literate?
- What percentage of your workforce are within the following levels of digital literacy?
    - No skill on digital literacy %
    - Basic %
    - Intermediate %
    - High %
- What percentage of your workforce have the following digital skills?
    - Technology basics %
    - Communication
    - Content creation %
    - Information management %
    - Safety & security %

**Section B: Need for Digital Literacy**

- Do you face any challenges in doing your work due to low digital literacy (if digital literacy is low)?
- What is the kind of challenge you face?

**Section C: Recommendations to Increase the Digital Literacy**

- Will high digital literacy help you to do your job better? If yes, how?
- How can high digital literacy be increased within your workforce?
- What support would you need to increase digital literacy within your workforce?
- What will be the cost to increase the digital literacy of the workforce?
- Should digital literacy be made mandatory for new recruitment?
- Should digital literacy be made mandatory for promotion?

**Assessment of Digital Literacy in Basic, Secondary and TVET schools**

The Consultant will conduct the KIIs of principals of Basic, Secondary and TVET schools and ask questions about the status of Digital Literacy of his students (current and ex) and teachers. The Consultant will ask the following questions:

**Section A: Assessment of Digital Literacy of Students**

- How many students are in your school?
- What is the status of digital literacy (computer literacy) among the students?
- What facilities do you have in the school for computer classes?
- What is the computer–student ratio?

**Section B: Assessment of Digital Literacy of Teachers**

- What percentage of your teachers are digitally literate?
- What percentage of your teachers are within the following levels of digital literacy?
    - No skill on digital literacy %
    - Basic %
    - Intermediate %
    - High %
- What percentage of your teachers have access to the following digital devices?
    - Computer %
    - Tablet %
    - Smartphone %
    - Others, please specify %
- Are you faced with challenges in class due to low digital literacy (if yes kindly specify?

**Section C: Assessment of digital literacy of administrators**

- What percentage of your admin staff are digitally literate?
- What percentage of your admin staff are within the following levels of digital literacy?
    - No skill on digital literacy %
    - Basic %
    - Intermediate %
    - High %
- What percentage of your admin staff have access to the following digital devices?
    - Computer
    - Tablet
    - Smartphone

**Section D: Recommendations to increase the digital literacy**

- Will high digital literacy help the students in future? If yes, how?
- How can the digital literacy of students, teachers and administrators be increased?
- What support would you need to increase the digital literacy of your students, teachers and admin staff (technical and equipment)?
- What will it cost to increase the digital literacy of students, teachers and administrators?

**KIIs of Government Institution Heads to assess the Digital Literacy Initiatives**

The Consultant will conduct the KIIs of the Institution Head and ask questions about the status, experience about the Digital Literacy initiatives which are taken by the institution. The Consultant will ask the following questions:

**Section A: Assessment of Digital Literacy Initiatives**

- What strategic initiatives do you have in place to increase digital literacy?

- Have you started the implementation of your initiatives to increase digital literacy? If yes, what initiatives have been implemented already, what initiatives are currently on implementation and what initiatives do you plan to implement in the future?

**Section B: Challenges during the Initiatives**

- Have you encountered any challenges in the implementation of your planned initiatives? If yes, discuss.
- Do you foresee any challenges in the future? If yes, discuss.

**Section C: Need of Digital Literacy Initiatives**

- How are digital literacy initiatives helpful to your institution?

**Assessment of Tertiary Education Institutions Competence**

The Consultant will conduct the KIIs of the tertiary Education Institution Head and ask questions about the existing programmes conducted by the institution, their standards, etc. The Consultant will ask the following questions:

**Section A: Assessment of Existing Programmes and their Standards**

**Name of institution:**

**Geographical Coverage:**

- Do you currently run any digital literacy programme (s)? If yes, list them
- Do you have an approved curriculum for the digital literacy programmes you run? If yes, by who?
- Is your institution accredited by NAQAA or any other regulatory institution?
- Are you lecturers certified by NAQAA or any other regulatory institution?

**Section B: Assessment of Challenges in the Rollout of Digital Literacy Programmes**

- Do you encounter any challenges in the implementation of digital literacy programmes? If yes, discuss.

**Section C: Recommendations for the betterment of these programmes**

- What do you think can be done to mitigate the above-mentioned challenges?
- What should we do to increase the efficiency of these programmes?
- What should we do to align with improved standards if existing standards are not up to mark?
- What will be the cost to increase the efficiency of these programmes?

**Section D: Assessment of available ADST**

- How many ADST courses/programmes are running in the country? Please specify if possible regional and global
- How are these courses contributing towards the socio-economic development of The Gambia?
- What courses are most needed to enhance youth employability?
- Which of the ADST courses would be in high demand in the near future?

**Section E: Assessment of Digital Training Landscape and its Value Chain**

- What will be the possible focus area for skill development?

- What is the skills gap in these training programmes?
- How can we fill these gaps? If possible, please specify the skills that require training and others avoid training
- What are the soft skills for digital and ICT skills development?
- What are the hard skills for digital and ICT skills development?
- Potential business and jobs in the digital sector.
- Potential skills in the digital sector for the future.

**Focus Group Discussion Guiding Tool (Rural Activist)**

i. The first session of FGD included questions related to the education, occupation, age and income profile of the respondents.

   - Education level of the respondents.
   - Occupation of the respondents.
   - Income profile of the respondents.

ii. The second session includes ownership, access to and usage of digital devices and applications as well as, internet connectivity.

   - Do you have a digital device?
   - Usage of digital applications
   - Use of internet

iii. The third session includes the reasons for the non-usage of digital services, participation in digital literacy training, and barriers faced in the usage of ICT related services.

   - Reasons for non-usage of digital services,
   - Barriers faced in the usage of ICT related services.
   - Are you interested to increase digital literacy?
   - How can we increase the usage of digital devices?
   - Cost to increase the digital literacy
   - Participation in digital literacy training programmes.
   - Will high digital literacy be helpful in employability? What do you think? (In participant is jobless)
   - What kind of digital literacy programmes?

**For Female participants (Ex female students)**

i. The first session of FGD included questions related to the education, occupation, age and marital status of the respondents.

   - Marital status.
   - Education level of the respondents.
   - Occupation of the respondents.
   - Income profile of the respondents (such as dependent or independent).

ii. The second session includes ownership, access to and usage of digital devices and applications as well as, internet connectivity.

   - Do you have a digital device?
   - How do you learn the usage of digital devices?

- Usage of digital applications.
- Use of the internet.

iii. The third session includes the reasons for the non-usage of digital services, participation in digital literacy training, and barriers faced in the usage of ICT related services.

- Reasons for non-usage of digital services.
- Barriers faced in the usage of ICT related services.
- Are you interested to increase digital literacy?
- How can we increase the usage of digital devices/ digital literacy?
- Possible cost to increase digital literacy.
- Participation in digital literacy training programmes.
- Will high digital literacy be helpful in employability? What do you think? If yes, then What kind of digital literacy programmes?