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Report No: PAD4612

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF US\$200 MILLION

TO THE

REPUBLIC OF GHANA

FOR A

GHANA DIGITAL ACCELERATION PROJECT

April 7, 2022

Digital Development Global Practice
Western and Central Africa West Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective March 17, 2022)

Currency Unit = Ghanaian Cedi

Cedi 7.17 = US\$1

FISCAL YEAR

January 1 - December 31

Regional Vice President: Ousmane Diagana

Country Director: Pierre Frank Laporte

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Task Team Leaders: Maria Claudia Pachon, Kaoru Kimura

ABBREVIATIONS AND ACRONYMS

| | |
|--------|--|
| AI | Artificial Intelligence |
| BPO | Business Process Outsourcing |
| CARES | COVID-19 Alleviation and Revitalization of Enterprises Support |
| CIC | Community Information Center |
| CPF | Country Partnership Framework |
| ESO | Entrepreneur Support Organization |
| EPR | Extended Producer Responsibility |
| GAS | Ghana Audit Service |
| GDP | Gross Domestic Product |
| GEA | Ghana Enterprise Agency |
| GHG | Greenhouse Gas |
| GIFEC | Ghana Investment Fund for Electronic Communications |
| GIFMIS | Ghana Integrated Financial Management Information System |
| GRM | Grievance Redress Mechanism |
| GSMA | Global System for Mobile Communications Association |
| GoG | Government of Ghana |
| ICT | Information and Communications Technology |
| IDA | International Development Association |
| IFC | International Finance Corporation |
| IFR | Interim Unaudited Financial Report |
| IPF | Investment Project Financing |
| IRU | Indefeasible Rights of Use |
| ILO | International Labour Organization |
| IT | Information Technology |
| IVA | Independent Verification Agent |
| M&E | Monitoring and Evaluation |
| MDAs | Ministries, Departments, and Agencies |
| MoCD | Ministry of Communications and Digitalisation |
| MoF | Ministry of Finance |
| NCA | National Communications Authority |
| NITA | National Information Technology Agency |
| OHCS | Office of the Head of Civil Service |
| PBC | Performance-Based Condition |
| PCU | Project Coordination Unit |
| PDO | Project Development Objective |
| PFM | Public Financial Management |
| PIM | Project Implementation Manual |
| PIU | Project Implementation Unit |

| | |
|------|---|
| PPSD | Project Procurement Strategy for Development |
| PwDs | Persons with Disabilities |
| STEP | Systematic Tracking of Exchanges in Procurement |
| VCTF | Venture Capital Trust Fund |
| WBG | World Bank Group |



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DATASHEET

BASIC INFORMATION

| | | |
|--------------|------------------------------------|--|
| Country(ies) | Project Name | |
| Ghana | Ghana Digital Acceleration Project | |
| Project ID | Financing Instrument | Environmental and Social Risk Classification |
| P176126 | Investment Project Financing | Moderate |

Financing & Implementation Modalities

| | |
|---|--|
| <input type="checkbox"/> Multiphase Programmatic Approach (MPA) | <input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC) |
| <input type="checkbox"/> Series of Projects (SOP) | <input type="checkbox"/> Fragile State(s) |
| <input checked="" type="checkbox"/> Performance-Based Conditions (PBCs) | <input type="checkbox"/> Small State(s) |
| <input type="checkbox"/> Financial Intermediaries (FI) | <input type="checkbox"/> Fragile within a non-fragile Country |
| <input type="checkbox"/> Project-Based Guarantee | <input type="checkbox"/> Conflict |
| <input type="checkbox"/> Deferred Drawdown | <input type="checkbox"/> Responding to Natural or Man-made Disaster |
| <input type="checkbox"/> Alternate Procurement Arrangements (APA) | <input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS) |

| | |
|------------------------|---|
| Expected Approval Date | Expected Closing Date |
| 28-Apr-2022 | 30-Jun-2027 |
| Bank/IFC Collaboration | Joint Level |
| Yes | Complementary or Interdependent project requiring active coordination |

Proposed Development Objective(s)

To expand access to broadband, enhance the efficiency and experience of selected digital public services, and strengthen the digital innovation ecosystem



Components

| Component Name | Cost (US\$, millions) |
|---|-----------------------|
| Component 1. Ensuring Inclusive and Safe Digital Transformation | 43.00 |
| Component 2. Modernizing Digital Government Services | 76.00 |
| Component 3. Support for Digital Transformation of Productive Strategic Sectors | 66.00 |
| Component 4. Project Management and Implementation Support | 15.00 |
| Component 5: Contingency Emergency Response | 0.00 |

Organizations

| | |
|----------------------|---|
| Borrower: | Republic of Ghana |
| Implementing Agency: | Ministry of Communications and Digitalisation |

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

| | |
|--------------------|--------|
| Total Project Cost | 200.00 |
| Total Financing | 200.00 |
| of which IBRD/IDA | 200.00 |
| Financing Gap | 0.00 |

DETAILS

World Bank Group Financing

| | |
|---|--------|
| International Development Association (IDA) | 200.00 |
| IDA Credit | 200.00 |

IDA Resources (in US\$, Millions)

| | Credit Amount | Grant Amount | Guarantee Amount | Total Amount |
|--------------|---------------|--------------|------------------|--------------|
| Ghana | 200.00 | 0.00 | 0.00 | 200.00 |
| National PBA | 200.00 | 0.00 | 0.00 | 200.00 |



| | | | | | | | | |
|---|---------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Total | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Expected Disbursements (in US\$, Millions) | | | | | | | | |
| WB Fiscal Year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | |
| Annual | 0.00 | 5.41 | 54.42 | 53.83 | 53.83 | 17.62 | 14.89 | |
| Cumulative | 0.00 | 5.41 | 59.83 | 113.66 | 167.49 | 185.11 | 200.00 | |

INSTITUTIONAL DATA

Practice Area (Lead)

Digital Development

Contributing Practice Areas

Education, Finance, Competitiveness and Innovation, Governance

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

| Risk Category | Rating |
|---|---------------|
| 1. Political and Governance | ● Moderate |
| 2. Macroeconomic | ● Substantial |
| 3. Sector Strategies and Policies | ● Moderate |
| 4. Technical Design of Project or Program | ● Substantial |
| 5. Institutional Capacity for Implementation and Sustainability | ● Moderate |
| 6. Fiduciary | ● Substantial |
| 7. Environment and Social | ● Moderate |
| 8. Stakeholders | ● Moderate |
| 9. Other | |
| 10. Overall | ● Substantial |



COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

Yes No

Does the project require any waivers of Bank policies?

Yes No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

| E & S Standards | Relevance |
|---|------------------------|
| Assessment and Management of Environmental and Social Risks and Impacts | Relevant |
| Stakeholder Engagement and Information Disclosure | Relevant |
| Labor and Working Conditions | Relevant |
| Resource Efficiency and Pollution Prevention and Management | Relevant |
| Community Health and Safety | Relevant |
| Land Acquisition, Restrictions on Land Use and Involuntary Resettlement | Relevant |
| Biodiversity Conservation and Sustainable Management of Living Natural Resources | Relevant |
| Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities | Not Currently Relevant |
| Cultural Heritage | Relevant |
| Financial Intermediaries | Not Currently Relevant |

NOTE: For further information regarding the World Bank’s due diligence assessment of the Project’s potential environmental and social risks and impacts, please refer to the Project’s Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Schedule 2. Section I. 2 (a): The Recipient shall not later than three (3) months after the Effective Date, establish



and thereafter maintain at all times during Project implementation the Project Oversight Committee, with a composition, mandate, functions and resources satisfactory to the Association, as set forth in the Project Implementation Manual.

Sections and Description

Schedule 2. Section I. B. 2: The Recipient shall not later than six months from the Effectiveness Date, update the Grants Manual, in form and substance satisfactory to the Association, giving details of the guidelines and procedures governing the provision of Grants under Parts 3.1(b) and (c), including: (i) eligibility criteria applicable to potential Grant Beneficiaries; (ii) procedures for the award of Grants and selection of Grant Beneficiaries; and (iii) templates for Grant Agreements.

Sections and Description

Schedule 2. Section I. D.1: Without limitations to the provisions of Section I.A.2(a) of this Schedule 2, the Recipient shall recruit, not later than six (6) months after the Effective Date, and thereafter maintain throughout Project implementation, an independent verification agent (“Verification Agent”) with qualification, experience and under terms of reference satisfactory to the Association to undertake the verification of compliance with the PBCs in accordance with the Verification Protocol.

Sections and Description

Schedule 2. Section I. D. 2: The Recipient shall ensure that the Verification Agent, not later than thirty (30) days after the verification of compliance with or achievement of the PBCs for the pertinent calendar year has been completed, prepares and furnishes to the Recipient, who shall in turn furnish to the Association, a report on the results of said verification process of such scope and in such detail as the Association shall reasonably request.

Sections and Description

Schedule 2. Section I. E. 1 (a): Annual work plan and budget for the first year of the project shall be furnished no later than one (1) month after the Effective Date.

Sections and Description

ESCP 5.1: RAPs/ARAPs shall be submitted for the Association’s approval prior to commencing Project activities that involve land acquisition and resettlement

Sections and Description

ESCP 5.2: GRM to be established during project preparation and prior to commencement of resettlement activities and maintained throughout implementation

Sections and Description

ESCP 2.2: Grievance mechanism will be established prior to engaging Project workers and maintained operational throughout Project implementation

Sections and Description

ESCP 6.1: The ESIA’s /ESMPs will be conducted/ prepared and submitted for the Association’s approval, prior to the commencement of subproject works and will be implemented throughout Project Implementation thereafter.



Conditions

| | | |
|-----------------------|------------------------------|---|
| Type Effectiveness | Financing source IBRD/IDA | Description The Recipient has prepared and adopted a Project Implementation Manual (“PIM”) in form and substance satisfactory to the Association. |
| Type Effectiveness | Financing source IBRD/IDA | Description The Recipient has recruited an Environmental and Social specialist with qualifications, experience and under terms of reference satisfactory to the Association. |
| Type Disbursement | Financing source IBRD/IDA | Description No withdrawal shall be made for payments made under Categories (1) and (2), unless and until the Recipient has furnished evidence satisfactory to the Association, including verification reports from the Verification Agent, that: (i) payments for the relevant Eligible Expenditures for the relevant PBC have been made in accordance, and in compliance, with the procedures set forth in the Verification Protocol; and (ii) the PBC for which payment is requested has been met on terms and conditions and in a manner satisfactory to the Association and verified in accordance with the Verification Protocol. |
| Type Disbursement | Financing source IBRD/IDA | Description No withdrawal shall be made under Category (5) unless and until the Recipient has prepared, adopted and submitted to the Association a Grants Manual in form and substance satisfactory to the Association |
| Type Disbursement | Financing source IBRD/IDA | Description No withdrawal shall be made under Category (3), unless and until the Recipient has: (i) prepared and entered into a Cooperation Agreement with the VCTF Fund; and prepared and adopted a VCTF Manual, both in form and substance satisfactory to the Association; and (ii) recruited a VCTF Fund Manager with qualification and experience and under terms of reference satisfactory to the Association. |



I. STRATEGIC CONTEXT

A. Country Context

- Ghana is a lower-middle-income country in West Africa** with 32.2 million¹ inhabitants, of whom 57 percent are youth.² Ghana has rich natural resources, with 80 percent of its export revenues coming from gold, crude oil, and cocoa (including cocoa beans, paste, and butter).³ The economy is one of the best performers in Sub-Saharan Africa, characterized by relatively few policy barriers, political stability, and strong economic growth, but dependence on primary commodity exports and limited growth-enhancing structural transformation and economic transformation leave Ghana vulnerable to external shocks, such as COVID-19. COVID-19 reduced trade, investment, and tourism activities, halting growth. Real gross domestic product (GDP) growth was 0.4 percent in 2020, compared with an average of 6.1 percent between 2017 and 2019. It is projected to recover gradually, reaching 4.9 percent in 2021 and 5.5 percent in 2022.⁴
- Although Ghana's economic outlook is gradually improving, its fiscal position has worsened, with a sharp increase in public sector debt in 2021.** A 29 percent reduction in oil-related revenue and the economic slowdown have hit the economy hard. The government's COVID-19 response, high interest rates due to increased borrowing, and higher compensation and capital expenditures to cover increased healthcare spending and subsidy payments increased overall government expenditures to 7.5 percent⁵ of GDP between 2019 and 2020. Ghana received a disbursement of US\$1 billion from the International Monetary Fund's rapid credit facility in 2020 which helped create some fiscal space to respond to the pandemic. Consequently, in 2021, the fiscal deficit increased to 14.5 percent of GDP (including energy and financial sector costs), and public debt rose to 83.5 percent of GDP. Ghana is at high risk of debt distress, although public debt is assessed as sustainable provided that medium-term fiscal consolidation is introduced, supporting a gradual decline in public debt.⁶
- A substantial reduction in the poverty rate has accompanied Ghana's economic growth, although the pace has stagnated in recent years, and the poverty rate remains high in rural areas.** Driven by favorable economic conditions, Ghana reduced the national poverty rate from 49.7 percent to 12.7 percent between 1991 and 2016 (compared with the Sub-Saharan African average of 41.9 percent as of 2016).⁷ As of 2020, 10.5 percent of the population was living below the poverty line (US\$1.90), a modest reduction since 2016. As the labor force shifts toward self- and wage employment, the poverty rate continues to decline in the wealthiest regions.⁸ Rural areas have the highest concentration of poverty (up to 80 percent in some

¹ World Population Review, 2022. Ghana Population 2022. Accessed March 17, 2022.

<https://worldpopulationreview.com/countries/ghana-population>

² United Nations Department of Economic and Social Affairs. 2019. World Population Prospects 2019: Data Booklet.

³ Gold 49.8 percent, crude petroleum 21.5 percent, cocoa beans 7.4 percent, cocoa paste 2.3 percent, and cocoa butter 1.6 percent as of 2019. The Economic Complexity Observatory. 2019. <https://oec.world/en/profile/country/gha?depthSelector1=HS4Depth>.

⁴ World Bank. 2021. Macro Poverty Outlook for Sub-Saharan Africa: Country-by-country Analysis and Projections for the Developing World. <https://thedocs.worldbank.org/en/doc/77351105a334213c64122e44c2efe523-0500072021/related/mpo-am21.pdf>

⁵ International Monetary Fund. 2021. Fiscal Monitor: Strengthening the Credibility of Public Finances.

<https://www.imf.org/en/Publications/FM/Issues/2021/10/13/fiscal-monitor-october-2021>

⁶ Ibid.

⁷ World Bank. 2021. Poverty Headcount Ratio at US\$1.90 a Day (2011 purchasing power parity) (percentage of population)

⁸ Such as Greater Accra, Ashanti, Central, and Eastern regions.



districts in the Northern, Upper West, and Upper East regions), with one in four living below the poverty line, high rates of youth unemployment, and 70 percent of the labor force engaged in agriculture.⁹ Causes of increasing inequality are limited access to basic services and infrastructure and lack of diversification in the economy¹⁰(with agriculture employing more than half the population on a formal and informal basis, accounting for almost 20 percent of GDP and almost half of export earnings¹¹). Ghana continues to have goods and exports concentrated in primary commodities and small-scale informal services absorbing a large share of the labor force but being highly unproductive. Digital technologies offer potential to provide much-needed productivity enhancement (particularly in agriculture), reduce poverty, and improve the livelihoods of unskilled workers.¹²

4. **There has been some progress on gender equality in Ghana, but disparities remain a challenge.**¹³ There has been good progress in education, with gender parity at the primary and secondary levels,¹⁴ but men are enrolled at the tertiary level at slightly higher rates than women (17.7 percent for men, 13.6 percent for women, 2018 figures). The female share of science, technology, engineering, and mathematics graduates is 19.8 percent.¹⁵ With respect to access and use of information and communications technology (ICT), the Global System for Mobile Communications Association finds that women are 16 percent less likely to have a mobile phone,¹⁶ and women report using the Internet at a lower rate than men (19 percent for women, 33 percent for men).¹⁷ Men participate in the labor force at a higher rate than women.¹⁸ Women account for 11 percent of the ICT workforce and face a 43 percent gender pay gap.¹⁹ In entrepreneurship, women are well-represented in ownership (31.6 percent; regional average for Sub-Saharan Africa, 27.9 percent), but only 14.7 percent of firms have majority female ownership.²⁰
5. **Ghana is sensitive to climate change**, ranking 111 out of 183 on the Notre Dame Global Adaptation Index in climate vulnerability and 121 in readiness, indicating its high exposure and lack of readiness to adapt to climate change. Rainfall in Ghana is highly variable, with erratic and intense rainfall during the wet season. Intense rainfall events are also likely to result in urban and river flooding and riverbank erosion. Recurrent

⁹ World Bank. 2021. Poverty & Equity Brief.

¹⁰ World Bank. 2017. Creating Markets in Ghana: Country Private Sector Diagnostic.

¹¹ Ibid.

¹² World Bank. 2021. Ghana Country Economic Memorandum. Ghana Rising: Accelerating Economic Transformation and Creating Jobs.

¹³ As of 2021, Ghana ranked 117 out of 156 countries on the Global Gender Gap, a sharp drop from 2006 when it ranked 58. Similarly, it ranked 135 out of 162 countries on the Gender Inequality Index in 2019, with a score of 0.54. World Economic Forum. *Global Gender Gap Report 2021*.

¹⁴ Primary enrollment in 2018, female, 85.1 percent net; male, 83.9 percent net; secondary enrollment, female, 58.8 percent net; male, 57.8 percent net. <https://www.worldbank.org/en/data/datatopics/gender/country/Ghana> (Net enrollment rate is the ratio of children of official school age who are enrolled in school to the population of the corresponding official school age).

¹⁵ 2018 figures. UNESCO Institute for Statistics via the World Bank Group (WBG) Gender Data Portal.

<https://www.worldbank.org/en/data/datatopics/gender>.

¹⁶ Buddy Buruku and Clarissa Kudowor. 2020. How Ghana's New Digital Finance Policy Can Drive Women's Inclusion.

<https://www.cgap.org/blog/how-ghanas-new-digital-finance-policy-can-drive-womens-inclusion>.

¹⁷ 2016/2018 respondents were asked: How often do you use the Internet? (Percentage who say "a few times a week" or "every day"). Source: AfroBarometer. <https://afrobarometer.org/blogs/african-women-have-less-access-internet-african-men-do-thats-problem>.

¹⁸ Labor force participation rate according to sex in 2019 (percentage of population aged 15+), male, 72 percent; female, 64 percent. <https://www.worldbank.org/en/data/datatopics/gender/country/Ghana>

¹⁹ Women in Information and Communication. International Labour Organization (ILO) Stat. <https://ilostat.ilo.org/techs-persistent-gender-gap/>

²⁰ World Bank. 2022. Enterprise Surveys. <https://www.enterprisesurveys.org/en/data/exploretopics/gender>.



floods, wildfires, and droughts adversely impact the economy and damage agricultural land and critical infrastructure. Factors contributing to lack of readiness include limited use of energy-efficient; lack of resilient infrastructure (including digital); limited integration of climate data and climate risks into sectoral policies and regulations (including digital) and infrastructure planning; limited ability to manage and analyze climate data, including its cross-sectoral impacts on sectors such as agriculture; and limited e-waste management.²¹ Agricultural production is most vulnerable to climate change and its associated damage (land degradation, soil erosion, and reduced crop yields) primarily because of its dependence on rainfall. More than 70 percent of the country's land area is dedicated to agriculture.²² Farmers in rural areas have limited resources and digital tools to confront, mitigate, and adapt to these challenges. Ghana's agriculture is not only vulnerable to climate change, but also contributes to it, being estimated to be the second-largest contributor to Ghana's greenhouse gas (GHG) emissions after the energy sector.²³

B. Sectoral and Institutional Context

- 6. ICT is one of Ghana's best-performing sectors and grew on average by 19 percent per year between 2014 and 2020, with Ghana being among the digital leaders in Sub-Saharan Africa.** In 2020, Ghana's ICT sector accounted for 3.3 percent of the country's GDP (US\$1.7 trillion),²⁴ growing 23 percent in 2020 despite the pandemic. Telecommunications is the largest component of the sector, accounting for 85 percent of ICT gross value added and 37 percent of employment, followed by information technology (IT) support services, which accounts for 13 percent of gross value added and 28 percent of employment.²⁵ Ghana is also regarded as a top performer, in the United Nations' Global e-Government rankings.²⁶ The potential gain from Ghana's accelerating digital transformation is significant, as reflected in the rise of foreign direct investment, which grew from US\$144 million in 2005 to US\$3.8 billion in 2019.²⁷ Several global technology companies have established a presence in Accra (Google, Microsoft, IBM, Oracle, and soon Twitter) recognizing the high potential of the Ghanaian market. Several global players in Business Process Outsourcing (BPO) are also recognizing the unfolding digital opportunities and have located or are in the process of locating their businesses in the country.
- 7. A diagnostic of Ghana's digital economy, conducted in 2020 as part of the Digital Economy for Africa initiative (DE4A),²⁸ identified the main bottlenecks to accelerating digital transformation.** Lack of infrastructure sharing, and network optimization has led to suboptimal use of existing infrastructure. To ensure more-efficient use, completion of missing fiber optic links and greater investment in last-mile infrastructure, particularly in underserved communities, and better guidelines and regulations will be required. Lack of trust in the National Information Technology Agency's (NITA) ability to provide services to

²¹ Ibid.

²² World Bank. 2021. Ghana: Climate Risk Country Profile.

²³ International Food Policy Research Institute. 2012. Ghana—Strategy Support Program, Climate Change, Agriculture, and Food Crop Production in Ghana.

²⁴ World Bank. 2021. Ghana Country Economic Memorandum. Ghana Rising: Accelerating Economic Transformation and Creating Jobs.

²⁵ Ibid.

²⁶ UN E-Government Development Index. <https://publicadministration.un.org/egovkb/en-us/About/Overview/-E-Government-Development-Index>.

²⁷ World Bank. 2021. Foreign Direct Investment, Net Inflows (BoP, current US\$).

<https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?locations=GH>

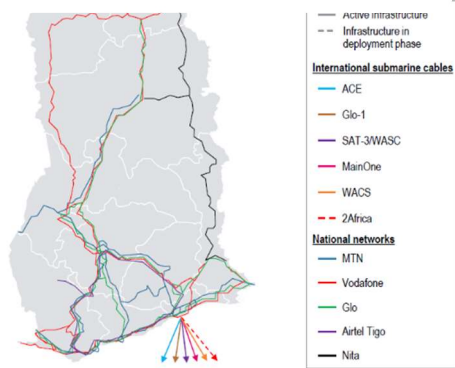
²⁸ Digital Economy for Africa Initiative. <https://www.worldbank.org/en/programs/all-africa-digital-transformation>.



ministries, departments, and agencies (MDAs) is also a bottleneck for development of shared services and supporting interoperability. Finally, although growing in number, entrepreneurship support organizations are of mixed quality, and many are not able to support businesses past the startup stage and into the growth and maturity stages.²⁹

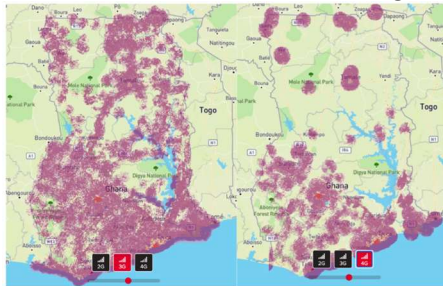
Need to strengthen the enabling environment for vibrant, safe, inclusive digital transformation

Figure 1. Overview of Fiber Infrastructure Network



Source: Roland Berger, based on IFT, Buddecomm, companies' website, press research.

Figure 2. Comparison of Third- and Fourth Generation Mobile Network Coverage



Source: GSMA 2020.

8. The combination of a competitive market and private sector investment in digital infrastructure has been instrumental in reducing the cost of and enabling access to broadband connectivity, although there is room for further enhancement of sector policy and regulation to keep up with technological innovations. Operators continue to invest in infrastructure on profitable routes, but Internet access is not expanding rapidly enough. As such, the nominal mobile broadband subscription rate in Ghana stands at 111 percent while the "unique" mobile broadband subscription rate per 100 inhabitants stands at 46 percent in 2021.³⁰ Fiber optic network capacity is limited outside of the main cities (Figure 1), and mobile coverage is concentrated in urban and commercial areas, leaving large sections of the rural population with limited coverage (Figure 2). Effective coordination across sectors (road, electricity, and railways) in building public infrastructure is crucial to leverage synergies in fiber optic deployment and promote efficient nationwide coverage. The regulatory framework could also be enhanced, especially through greater competition regulation for fixed broadband, infrastructure sharing, and flexible and dynamic regulatory models, to respond to emerging technologies and services.

9. Ghana recognizes the importance of data generated by digital platforms and the need to ensure personal data protection and governance across the MDAs. The 2021 World Development Report highlights that data can lead to better lives through multiple channels.³¹ Because of the cross-border nature of data transactions, a consensus to ensure that data are safeguarded as a public good and as a resource is crucial in achieving equitable, sustainable development,³² but effective implementation of data protection in Ghana faces several challenges, primarily because of limited public

²⁹ WBG. 2019. Digital Economy for Ghana Diagnostic Report.

³⁰ Global System for Mobile Communications Association (GSMA) Intelligence, 2021. Unique mobile broadband subscriptions represent total unique users who have mobile broadband connections on their mobile devices (GSMA Intelligence, 2021) divided by the total population (United Nations Population Prospects, 2019). Subscribers differ from connections such that a unique user can have multiple connections.

³¹ World Bank. 2021. World Development Report 2021: Data for Better Lives. <https://www.worldbank.org/en/publication/wdr2021>.

³² Ibid.

sector investment and lack of capacity in enforcing privacy across the government. The Data Protection Commission’s effort to provide a common data privacy framework and manage personal data across all MDAs has not been realized because of lack of in-house talent and technical capacity.

10. **The Ghanaian cybersecurity ecosystem ranks third in Africa, but more needs to be done.** Despite the Cyber Security Authority’s efforts, many Ghanaian businesses and organizations lack awareness of and fail to implement basic security measures, leaving the network exposed to cyberattacks. Ghana’s Critical Infrastructure Protection is in its infancy, with no formal mechanisms for threat and vulnerability disclosure. There is no consensus on national ICT security standards and baselines, including procurement processes and software development steps.³³

Need to accelerate government-wide digital transformation with more human-centric digital public services

11. **Ghana is the West African leader in digital public services.** Over the past decade, the government has launched several World Bank–financed projects to enhance government efficiency, transparency, and agility. This includes ongoing operations such as e-Transform Ghana (P144140)³⁴ (Table 1), the Public Sector Reform for Results Project (P164665)³⁵ and the Public Financial Management (PFM) for Service Delivery Program (P176445) under preparation.

Table 1. e-Service Deliverables Under the e-Transform Ghana Project

| Component | Deliverables |
|---|---|
| Component 2: Support for Digitization and Connectivity | <p><u>Digitization of records in selected institutions:</u></p> <ul style="list-style-type: none"> • Digitization of 45 million public records in the Births and Deaths Registry, Ghana Immigration Services, Judicial Service of Ghana, Registrar General’s Department, Office of the Attorney-General, and Ministry of Justice <p><u>Internet connectivity:</u></p> <ul style="list-style-type: none"> • Equipment for Security Operations Centre for connectivity monitoring • International internet bandwidth. 10 gigabits/s of additional international internet bandwidth is available to the government over a five-year period, benefiting more than 180 MDAs. |
| Component 3: Scale up of Applications to Improve Service Delivery in Priority Sectors | <p><u>e-Services:</u> Improving the back-office of NITA to serve MDAs</p> <ul style="list-style-type: none"> • Official launch of Ghana.gov portal in July 2021 with 16 operational e-services <p><u>The e-Justice System:</u> Automated case and court management system providing one-stop administrative and financial functions ^{a)}</p> <ul style="list-style-type: none"> • Fully operational case and court management system in 43 high courts in Accra • Phase 2 of e-Justice extending the system to appellate courts and selected high courts nationwide • Integrated information management system between Ministry of Justice and Office of Attorney-General <p><u>e-Procurement:</u> Procurement system automation for Public Procurement Authority</p> |

³³ World Bank, 2019. Global Cybersecurity Capacity Program Report: Lessons Learned and Recommendations towards strengthening the Program. <https://documents1.worldbank.org/curated/en/947551561459590661/pdf/Global-Cybersecurity-Capacity-Program-Lessons-Learned-and-Recommendations-towards-Strengthening-the-Program.pdf>

³⁴ Project Development Objective (PDO) is to improve efficiency and coverage of government service delivery using ICT. Several digital platforms have been developed under this project to improve the delivery of public services such as e-health, e-procurement, e-immigration, e-parliament, and e-justice.

³⁵ PDO is to improve efficiency and accountability in the delivery of selected services by selected entities. The project digitizes public records, builds capacity, provides technical support and training, develops and implements web- and mobile app-based systems, and provides other ICT core services and technical support. The project supports 16 MDAs.



| Component | Deliverables |
|-----------|--|
| | <ul style="list-style-type: none"> • e-Procurement system deployed for five pilot entities:³⁸ system expansion to 150 additional entities underway • 152 staff from 14 entities and 173 suppliers trained to pave way for e-Procurement expansion <p><u>e-Immigration:</u></p> <ul style="list-style-type: none"> • e-Gate system: providing secure entry and exit at 10 entry points (including international airport, seaport, border crossings) • Covering visa issuance, work permits, biometric verification, and interlinks between Ghana Immigration Service and national and international agencies • 6.195 million digitized records via Enterprise Content Management System <p><u>e-Parliament:</u></p> <ul style="list-style-type: none"> • Solution developed for Parliament of Ghana promoting paperless Parliament • More than 100,000 parliamentary records converted for online access |

a) Ghana Integrated Digital Transformation Blueprint is a multi-sectoral document based on extensive national and international consultations. It establishes underlying pillars, drivers, and guiding principles over a 10-year horizon (2021–30). Ghana’s digital transformation has 12 pillars (e.g., hard infrastructure, data infrastructure, and service infrastructure). The blueprint offers wide-reaching recommendations that could lead to new institutions, initiatives, and programs, including establishment of the National Digital Transformation Agency. The government has not approved the blueprint yet.

12. **Although the government is working to advance a whole-of-government digital transformation agenda, multiple challenges persist, affecting its ability to operate digitally and the quality and adoption of e-services.** In July 2021, NITA launched Ghana.gov as the main government portal and payment platform for all Ghanaians, but some foundational prerequisites must be established before the benefits of digital investments can be realized: connecting MDAs to broadband remains a challenge, investments in ICT hardware and software are relatively new, system interoperability is not yet the standard across the public sector, and MDAs cannot fully automate their systems because many business process stages depend on data from other MDAs. As a result, citizens continue to experience inconsistent service delivery. In addition, uptake of e-services remains low, partly because of limited trust in and awareness of services available through Ghana.gov, overall low digital literacy, and absence of simple transactional end-to-end online services. Most existing digital services are supply driven, with little attention paid to user experience or beneficiaries’ point of view. In addition, using digital public services for marginalized groups, specifically persons with disabilities (PwDs), is particularly challenging because service design does not accommodate different access needs.

13. **Operationalization of common interoperability standards and framework is essential to ensure coherency across government entities, avoid potential duplication of effort and overlap, and foster a whole-of-government approach.** The current e-Government Interoperability Framework is outdated and yet to be adopted and implemented across MDAs. As a result, MDAs cannot respond quickly to rapidly changing business needs, dysfunctional websites, non-transactional e-services, and inefficient overall service delivery. The government is developing an enterprise architecture and interoperability framework that will update the existing framework and be under technical review by 2022. The government plans to establish several new agencies and reposition existing ones to accelerate the digital agenda. The Ghana Integrated Digital Transformation Blueprint (2021-2030) (“Blueprint”)³⁶ proposes repositioning NITA to regulate the digital

³⁶ Ghana Integrated Digital Transformation Blueprint (2021-2030) is a multi-sectoral document based on extensive national and international consultations. It establishes underlying pillars, drivers, and guiding principles over a 10-year horizon (2021–30). Ghana’s digital transformation has 12 pillars (e.g., hard infrastructure, data infrastructure, and service infrastructure). The blueprint offers wide-reaching recommendations that could lead to new institutions, initiatives, and programs, including establishment of the National Digital Transformation Agency. The government has not approved the blueprint yet.



ecosystem and ensure a robust digital government service infrastructure. Establishing a human-centered design approach will improve collaboration with beneficiaries, increase system efficiency, and provide a better user experience.

Need to nurture digital innovation, skills adoption, and boost youth employment

14. **Ghana lacks a critical mass of digitally skilled professionals to accelerate digital transformation and fuel the digital innovation ecosystem for national and regional opportunities.** Despite the fact that training programs in digital skills exist, local businesses are forced to look for talent overseas due to lack of qualified local professionals with in-demand skill sets (e.g., data analysts and modelers, software and cybersecurity engineers, web designers, digital marketers, content curators, and moderators). In recent years, there has been remarkable growth and development of the innovative ecosystem in Ghana, paving the way for proliferation of incubation hubs and technology start-ups. In addition to Entrepreneur Support Organizations (ESOs), a handful of government entities are providing targeted support, such as the National Entrepreneurship and Innovation Program, Ghana Enterprise Agency (GEA), and Ghana Venture Capital Trust Fund (VCTF). Furthermore, access to finance is a challenge for technology start-ups and entrepreneurs, many of which are assessed as not ready for investment and requiring further support to accelerate their growth. The BPO industry also is experiencing a resurgence in response to global businesses' increasing need to rationalize costs and improve efficiency. The global BPO market size was valued at US\$232.3 billion in 2020 and is expected to register a Compound Annual Growth Rate of 8.5 percent between 2021 and 2028.³⁷ Key African countries are prioritizing this opportunity, with South Africa planning to increase its market size to US\$3.2 billion by 2027.³⁸

15. **Adoption of digital technologies and innovation by other key productive sectors, such as agriculture, can foster an economy-wide digital transformation and help create better jobs and economic opportunities.** Agriculture is an important source of jobs, accounting for 30 percent of formal employment and approximately 70 percent of informal employment, but young Ghanaians are increasingly gravitating toward careers outside of agriculture. Ghana is facing a youth transition, with approximately 57 percent of the population younger than 25, and as the population gets younger, farmers are getting older, with farmers having an average age of 55. Examples from other countries³⁹ show that investments in digital agriculture can make agriculture more attractive for youth, bringing skills and innovation. Ghana has potential to improve the livelihoods of small-scale farmers and rural communities by introducing practical, sustainable, and innovative digital solutions, but if use of digital technologies and engagement (especially among young farmers and community chiefs and leaders) is not promoted, adoption of innovative, digital practices is likely to remain limited.

³⁷ Grand View Research, 2021. Business Process Outsourcing Market Size, share, and Trends.

<https://www.grandviewresearch.com/press-release/global-business-process-outsourcing-bpo-market>

³⁸ Business Wire – South Africa Business Process Outsourcing Market Size, Share and Trends Analysis Report

³⁹ Food and Agriculture Organization. 2019. Food and Agriculture Organization of the United Nations and Korea Invest in Digital Agriculture for Youth. <https://www.fao.org/news/story/pt/item/1197915/icode/>



C. Relevance to Higher-Level Objectives

16. **The proposed project areas of intervention are fully consistent with the Ghana Beyond Aid (2021-2023) Vision, the Ghana COVID-19 Alleviation and Revitalization of Enterprises Support (CARES) Program, the Ghana Medium-Term Development Plan, the Coordinated Program of Economic and Social Development Program (2017–24), and the Ghana Integrated Digital Transformation Blueprint (2021–30).** The CARES program, which includes fast-tracking of digitization as an integral part of its action plan, envisions structural reforms to support economic diversification and refocusing key government flagship programs to increase efficiency, leverage digitization, and advance financial sustainability.⁴⁰ The proposed project activities are aligned with its Phase 2 initiative, *Fast-Tracking Digitization*, supporting a regulatory shift to create an enabling environment for digital inclusion and innovation; streamlining governance and delivery of public services; and facilitating smallholder engagement in data-driven digital agriculture, which will also help Ghana achieve its Beyond Aid goals⁴¹. The proposed activities are also closely aligned with the Blueprint objectives of developing an open, safe, and people-oriented digital economy.
17. **The proposed project will contribute directly to the FY2022–26 World Bank Group (WBG) Country Partnership Framework (CPF, Report No.157249) for Ghana, specifically to CPF Focus Area 1 (*Enhancing conditions for private sector development with quality job creation*), which underpins the project.** The CPF also prioritizes digital transformation as a cross-cutting approach to leveraging digital solutions, which offers a unique opportunity to provide better jobs, greater efficiency, quality services, and better governance. **CPF Objective 1.1: Improved conditions for enterprise development.** The project aims to streamline the regulatory environment, boost the digital innovation ecosystem by positioning the private sector as a key player in the digital economy, and support development of market-relevant digital skills to increase labor and firm productivity. **CPF Objective 1.2: Increased access to finance** for technology start-ups; digital entrepreneurs; and micro, small, and medium-sized enterprises, focusing on female-led businesses. **CPF Objective 1.5: Strengthened market-relevant skills for a productive workforce.** By addressing key barriers, prioritizing citizens' most pressing needs, and focusing on vulnerable groups, the project is aligned with and complements the WBG's twin goals of ending extreme poverty and boosting shared prosperity in a sustainable manner. Digital Transformation is recognized as a cross cutting area in the CPF. The proposed project will increase access to mobile internet and broadband services by encouraging private sector investment in last-mile connectivity in underserved rural areas to close the regional digital gap. The proposed project will improve availability and adoption of digital services.
18. **The project contributes to several other WBG such as the World Bank Western and Central Africa Region Priorities 2021–25 and government strategies.** The proposed activities support operationalization of the World Bank Western and Central Africa regional strategic priorities, in particular its four transformational goals: rebuilding trust between citizens and the state to create a new social contract through stronger government accountability mechanisms; removing bottlenecks that prevent firms from creating more and better jobs by addressing the infrastructure gap and nurturing the innovation ecosystem; strengthening human capital and empowering women by integrating an inclusive approach into all planned activities; and boosting climate resilience by promoting green growth and balancing mitigation and adaptation through digital technologies.

⁴⁰ World Bank. 2021. The CPF for the Republic of Ghana for the Period FY22-FY26. Report No.157249-GH.

⁴¹ Government of Ghana. 2019. Ghana Beyond Aid Document. http://osm.gov.gh/assets/downloads/ghana_beyond_aid_charter.pdf



19. **The proposed project is aligned with the WBG Digital Economy for Africa initiative that is helping operationalize the African Union Digital Transformation Strategy 2020–30 and contributes to the International Development Association (IDA)-19 Digital Commitments.** Project interventions include supporting universal access to broadband service in underserved and rural areas, which will stimulate demand for digital services and employment opportunities; supporting enhanced, inclusive, and universally accessible digital public services; helping technology start-ups and entrepreneurs grow and successfully access-to-finance; and building capacity by providing an array of skills training to use digital tools in the public and private sectors to respond to labor market demand. All intervention activities will prioritize women, PwDs, and other marginalized groups to increase access to and use of digital services, in line with IDA-19 commitments.
20. **The project will support green, resilient, and inclusive development,** in accordance with the WBG Climate Change Action Plan 2021–25, COVID-19 Crisis Response Approach Paper, Gender Strategy 2016–23, and Disability Inclusion and Accountability Framework. The project activities are fully aligned with the country’s commitment to:
- (i) **increase climate resilience and readiness, adapt to climate change and mitigate its impact.** A climate and disaster risk screening was undertaken, and project activities are based on priority actions identified in the Ghana Country Climate and Development Report. To respond to the identified risks, the project will assist in increasing climate resilience and readiness to adapt to and mitigate the effects of climate change. Furthermore, the project supports transformative public and private investments in the agricultural sector, one of the five key sectors for climate actions identified in the action plan.
 - (ii) **respond to and recover from COVID-19 through digital adoption and service delivery:** The project will support Pillar 2 (Protecting Poor and Vulnerable People), Pillar 3 (Ensuring Sustainable Business Growth and Job Creation) and Pillar 4 (Strengthening Policies, Institutions, and Investments for Rebuilding Better) of the WBG COVID-19 Crisis Response Approach Paper through activities that extend digital connectivity to rural areas where poor people are concentrated, invest in end-to-end digital public services, and support enabling policy and institutional frameworks.
 - (iii) **promote digital inclusion for women, PwDs, and rural communities:** The project will use several approaches, including regulatory updates and investments, to remove barriers to broadband and digital service access for Ghana's lowest-income people, who are disproportionately located in rural areas. The proposed activities will also contribute to three pillars of the WBG gender strategy: Enhancing Human Endowments, by improving digital skills and increasing access to digital public services; Removing Constraints to More and Better Jobs, by increasing women’s participation in the digital economy and supporting income-earning opportunities; and Improving Control and Ownership of Assets, by enhancing support for female-led digital businesses. The project also includes targeted interventions to bridge the disability divide by providing digital public services that meet accessibility standards, as well as capacity building to increase access to technology and increase employment opportunities through digital skills.
21. **The project will promote the maximizing-finance-for-development approach by designing interventions that crowd in private sector funding and stimulate private sector development.** Furthermore, the results framework will track private capital investment leveraged through project intervention. The “Blueprint” emphasizes the importance and the government’s intent of crowding in private capital for investments in the digital economy. It is critical to mobilize private capital to expand broadband access and to strengthen



the innovation ecosystem. The project will seek to bring in commercial financing to expand broadband access by supporting the development of an improved regulatory framework in the telecom sector and providing technical assistance in the establishment of commercially viable PPP models in select areas. Thus, the project will help de-risk the investment and expand the reach of commercial coverage. A recent IFC digital infrastructure assessment in Sub-Saharan Africa (2021) identified several potential investment opportunities in the country, including fiber optic networks deployment and mobile networks expansion. The World Bank will collaborate closely with the International Finance Corporation (IFC) to materialize the investment potential. The project's investment in and support of the overall digital innovation ecosystem will also facilitate private sector initiatives for technology innovations and job creation, preparing the relevant policy framework and extended support to ESOs. Furthermore, mobilizing catalytic public funds to ensure access to capital for promising technology start-ups and entrepreneurs would lay groundwork for addressing market failure and other barriers to expansion faced by technology start-ups. While significant resources are also required to close digital skills gap in the public and the private sectors, this project will leverage partnerships with private sector stakeholders such as Microsoft Philanthropies.

II. PROJECT DESCRIPTION

A. Project Development Objective (PDO)

22. The PDO is to expand access to broadband, enhance the efficiency and experience of selected digital public services, and strengthen the digital innovation ecosystem.
23. Achievement of the PDO will be measured according to the following results indicators:

Expanding access to broadband

- People provided with new or enhanced access to broadband internet⁴² (Number) (percentage of which are female)
- Newly connected public broadband access points in lagging areas, under the project (Number) (Performance-based Condition [PBC])

Enhancing efficiency and experience of selected digital public services

- Digital service transactions completed through Ghana.gov and Citizen App (user app) (Number)

Strengthening the digital innovation ecosystem

- Increase in average value of net revenue of the digital businesses supported by the project (Percentage)
- Individuals who secure new employment opportunities after completion of digital skills training supported by the project (percentage of which are women and PwDs) (Number)

⁴² The indicator includes direct, inferred, and enhanced access to internet service. Direct access is measured as the number of people that benefitted from new access to Internet service. Inferred access is measured as the number of people that benefitted from the increased connectivity provided to public institutions or community centers, improved broadband affordability, a proportion of whose output is reasonably estimated to be contributing to individual connections. Enhanced access to broadband is measured as the number of people that benefitted from improved broadband speed and reliability.

B. Project Components

24. **The project is an Investment Project Financing (IPF) operation comprising five components (Table 2).** The project aims to accelerate country-wide digital transformation in the public and private sectors, focusing on critical digital enablers and safeguards that promote the digital economy. Component 1 fosters inclusive, safe digital transformation using a results-based approach, with part of the financing linked to PBCs, supporting an enabling regulatory framework governing the telecommunication sector. Component 2 promotes modernization of digital government services emphasizing user experience in digital public services and enhances the government’s digital capabilities. The project will further increase Ghana’s capacity to promote digital innovation, digital skills development, and sector-wide digital transformation through Component 3.

Table 2. Summary of Components and Proposed Budget Allocation

| Component | Title | Budget (US\$ million) |
|--------------------|---|-----------------------|
| Component 1 | Ensuring Inclusive and Safe Digital Transformation | 43 |
| Subcomponent 1.1. | Enabling Environment for Broadband Development and Greening ICT Enablers | 10 |
| Subcomponent 1.2. | Digital Connectivity in Lagging Areas | 21 |
| Subcomponent 1.3. | Safeguards for Cybersecurity and Data Protection | 12 |
| Component 2 | Modernizing Digital Government Services | 76 |
| Subcomponent 2.1. | Change Management Moving Towards a Strengthened Digital Governance | 4.2 |
| Subcomponent 2.2. | Digital Government-Enhancing User-Centric Services | 64.5 |
| Subcomponent 2.3. | Future of Work in Government | 7.3 |
| Component 3 | Support for Digital Transformation of Productive Strategic Sectors | 66 |
| Subcomponent 3.1. | Scaling up Digital Entrepreneurship and Innovation Ecosystem | 33 |
| Subcomponent 3.2. | Digital Transformation in Agriculture Sector | 18 |
| Subcomponent 3.3. | Skills for Digital Jobs and Inclusion | 15 |
| Component 4 | Project Management and Implementation Support | 15 |
| Component 5 | Contingent Emergency Response | 0 |
| Total | | 200 |

Component 1: Ensuring Inclusive and Safe Digital Transformation (US\$43 million)

25. **This component is designed to support the government’s continued efforts to build solid foundational building blocks for inclusive and safe digital transformation.** Specifically, it is designed to establish an enabling environment for a vibrant and competitive broadband market capable of responding to a dynamic and rapidly changing technological development; to expand the reach and coverage of broadband networks in lagging areas; and, to ensure the security and resilience of digital services. The subcomponent 1.1 and 1.2 will support important regulatory actions and investments needed to achieve the universal broadband access target for Ghana.⁴³ Under subcomponent 1.1, the project supports the development of the enabling

⁴³ Ghana Integrated Digital Transformation Blueprint (2020-2030). The universal broadband connectivity is considered achieved with 90 percent penetration of the population aged 10 and older (ITU Broadband Commission Working Group. 2019. Broadband for All: A digital infrastructure moonshot for Africa; ITU. 2020. Connecting Humanity - Assessing investment needs of connecting humanity to the Internet by 2030). While Ghana needs to reach 69 percent of unique mobile broadband subscriptions to achieve universal access to broadband, the project aims to add 6 million broadband users which represent close to half of the additional users required to reach the target.



regulatory and institutional frameworks to expand connectivity in line with a MFD approach. Under subcomponent 1.2, the project will increase the broadband connectivity to lagging areas through catalytic public funding. Subcomponent 1.3 supports the strengthening of cybersecurity and data governance, protection, and privacy.

Subcomponent 1.1. Enabling Environment for Broadband Development and Greening ICT Enablers (US\$10 million, of which US\$5 million linked to PBC)

26. **This subcomponent will support establishing an enabling environment for the development of a broadband market and green ICT enablers, focusing on providing forward-looking legal, regulatory, and institutional frameworks governing the telecommunications sector, with the aim of boosting competition, access, and innovation.** Environmental policy approaches and instruments to promote energy-efficient, green ICT solutions while mitigating the environmental risks that the ICT sector poses will be supported. It will consist of a mix of PBC focused on the deployment and investment of telecommunications network infrastructure and a series of activities to be carried out as regular IPF components. The Ministry of Communications and Digitalisation (MoCD), NITA, National Communication Authority (NCA), and Environmental Protection Agency will be the main beneficiaries of activities financed under this subcomponent.

PBC#1 on telecommunication network infrastructure deployment and investment

27. **Purpose:** PBC#1 will encourage cross-sectoral coordination among regulatory authorities, infrastructure owners, and private telecommunications operators to deploy new telecommunications infrastructure. Simplified administrative procedures and requirements for deployment of passive network elements (poles, ducts, conduits, shelters, power, and equipment rooms) will lower the costs of telecommunications network deployment while significantly reducing the risk of fiber optic cuts during civil projects.⁴⁴ Regulatory guidelines for sharing passive infrastructure will increase the ability of regulatory bodies of different infrastructure sectors, including roadways, railways, water and sewer systems, and electricity transmission and distribution systems, to implement consistent regulatory processes and standards for all sector participants.

28. The PBC will also encourage a coordinated approach to fiber asset deployment and investments, implementing international best practices in Ghana. The fiber asset coordination process would begin with gathering and integrating data on geographic location, available capacity, and other physical features of all civil engineering infrastructure. A single platform with information on current physical network infrastructure, as well as planned or ongoing construction, deployment, and installation of network infrastructure activities, facilitates close coordination across infrastructure sectors. The platform will include detailed geographic climate risk information to allow adaptation measures to be used in civil works projects

⁴⁴ The sharing of infrastructure among operators and across sectors has the potential to reduce the cost of internet access. It can accelerate digital connectivity at a lower cost, particularly in areas where returns on investment can be limited. It helps investors and operators reduce their investment costs and operating expenses, thereby improving their balance sheet sustainability. Additionally, sharing models can benefit consumers by increasing competition, lowering prices, and improving the quality of service. More information: *Strusani, Davide; Hounghonon, Georges V.. 2020. Accelerating Digital Connectivity Through Infrastructure Sharing. EMCompass, no. 79; International Finance Corporation, Washington, DC.*



in vulnerable areas to floods and storms. Legal and regulatory mandates should be established for public and private operators to submit information about civil projects to ensure the central data portal's effective operation and support this process. The data will also be used to establish a commercialization strategy and plan for public fiber capacity.

29. The amount of funds disbursed will depend on satisfactory achievement of PBCs. Specific PBC results are defined as follows:

Table 3. PBC: Optimizing Telecommunications Network Infrastructure deployment and Investments.

| PBC | Year 1 | Year 2 | Year 3 |
|---|--------|--|---|
| Optimizing telecommunications network infrastructure deployment and investment [Value: US\$5 million] | | On or before August 31, 2023, the Recipient has issued regulatory guidelines for sharing of passive network element. [Value: US\$2 million] | On or before August 31, 2024, the Recipient has established a Single Information Point on existing physical infrastructure and planned civil projects for network infrastructure. [Value: US\$3 million] |

30. **Eligible Expenditures:** Eligible expenditures will consist of all expenditures for goods, non-consulting and consulting services and training related to achievement of the PBCs. These investments broadly include preparation of technical studies to draft the regulatory framework on infrastructure sharing; financing for hardware, software, IT equipment, and tools required to establish and operate the single information point; regulatory due diligence assessment regarding public fiber asset commercialization; a public-private partnership options study to define ownership, management, maintenance mechanisms, and transaction advisory services to implement the commercialization strategy and plan; and capacity-building training for technical staff to operate and manage the single information point. NCA and NITA are responsible for developing the regulatory framework on infrastructure sharing and for planning, facilitating, and implementing fiber coordination efforts.

31. Other activities to be financed under this component will be implemented as regular IPF components (estimated at US\$5 million) and include:

- (i) technical assistance to support the telecommunications sector regulator in preparing a strategic plan to optimize sector development and performance,⁴⁵ with detailed goals and actions to ensure equitable access to broadband for impoverished and disadvantaged populations, including youth, women, PwDs, and people living in marginalized areas;⁴⁶

⁴⁵ The World Bank is working closely with the IFC to identify market gaps, strengthen engagement with private operators, and address regulatory and commercial obstacles to private investment.

⁴⁶ The strategy should include clear measurable targets for ICT sector outcomes, including on inclusive access, female digital livelihood opportunities, employment, and female enrollment in science, technology, engineering, and mathematics education; establishment of clear accountability structures for achieving targets; consultations with women’s groups and experts in the policy development process; leveraging of procurement opportunities to create income-generating opportunities for women-owned businesses; and strengthening of efforts to collect timely, comprehensive sex-disaggregated ICT data on access and use. These efforts could also include integration of online safety into the policy framework using a range of options including training to address cyber risks, with a focus on online safety modules included in ICT training and exploring opportunities to build capacity to address cybercrime against women and girls.



- (ii) acquisition of necessary equipment and materials to monitor network performance and conformance, such as quality of service and spectrum use, in compliance with licensing requirements, and to establish a laboratory to undertake conformance immunity testing on electronic communications equipment;
- (iii) strengthening of policy and regulatory capacity to regulate emerging technologies and services through technical assistance to develop a regulatory framework on priority services and technical capacity-building training on new communications services and regulatory sandbox approaches; and
- (iv) technical assistance to develop a national strategy on green ICT and to design and implement Extended Producer Responsibility (EPR) program⁴⁷ for e-waste.

Subcomponent 1.2. Digital Connectivity in Lagging Areas (US\$21 million, of which US\$18 million linked to PBCs)

32. This subcomponent will support carrying out investments into passive backhaul and access infrastructure with a focus on closing the broadband infrastructure gap in selected rural areas. It will help the government close the geographic digital divide in Ghana and will specifically focus on leveraging private sector investments, through a catalytic public funding. The subcomponent will consist of a PBC to deploy broadband access points, through the pre-purchase of internet capacity with aggregation of demand, and complementary technical assistance to further stimulate private sector investment by identifying additional commercially viable PPP models. The value of private investment leveraged through the project will be tracked through an intermediate indicator. The Ghana Investment Fund for Electronic Communications (GIFEC) will be the main beneficiary of activities financed under this subcomponent.

PBC#2 on extending digital connectivity in lagging areas

- 33. Purpose:** This subcomponent will finance broadband connectivity of public sites, with a focus on closing the broadband infrastructure gap in lagging areas where private operators have little commercial interest without any public interventions. The release of US\$18 million in IDA funds will be conditioned on the achievement of specific scalable PBC targets related to extending digital connectivity in lagging areas. Public broadband access points will be established at public buildings or facilities such as Community Information Centers (CICs), schools, libraries, health clinics, and through free Wi-Fi hotspots for community use.
34. The proposed approach applied under the project is demand aggregation and pre-purchase of capacity for the government as a whole under “Indefeasible Rights of Use (IRU)”. This activity will seek to incentivize private sector investment in digital connectivity, using provision of services to public institutions as an anchor tenant for wider geographical service provision. The tendered contracts ensuring long-term supply agreements with the government will serve as an investment guarantee for a wider network roll-out. The bandwidth contracts will be structured in such a way that bidders commit to a certain amount of fiber investment in addition to the funding they receive for bandwidth purchase. Telecom service operators such as fiber wholesalers, internet service provider, and other licensed operators would be able to bid on the capacity in a fixed price auction, with their bids specifying the number of sites, quality of service (e.g., Gbit/s), number of years for the IRU contract (5-10 years), and amount of complementary fiber investment

⁴⁷ Extended producer responsibility (EPR) system design would include product scope, definition of roles of responsibilities along the whole product life cycle, targets, obligations and fees, a monitoring and enforcement mechanism of the functioning of the system as well as awareness raising programs.

they would commit to. The winning bidder will receive payments under a contract from the Government, using project funds, for the services provided, and against achieving service delivery milestones within the duration of the contract.

35. The activity will be carried out in two phases. The effectiveness of the mechanism will be evaluated following the initial round of investments, to establish a proof of concept to scale up the program at the later phase. This will also build on successful experiences in extending the connectivity to district centers, hospitals, and selected government institutions under the e-Transform Project (P144140).
36. All infrastructure financed under the project will be developed in cooperation with GIFEC to ensure crowding in of private capital and promote competition; energy-efficient civil project standards; climate-resilient design and solutions that anticipate, prepare for, and adapt to changing climate conditions; and sustainability beyond the project closing date. The Government of Ghana (GoG) anticipates including in the national budget the necessary allocations to cover the O&M expenditures after project closure.
37. Specific PBC results are defined as follows:

Table 4. PBC: Extending digital connectivity in lagging areas

| PBC | 2023 | August 2024 | August 2025 | August 2026 | August 2027 |
|---|------|---|---|---|--|
| Extending digital connectivity in lagging areas [Value: US\$18 million] | - | 30 public access points are established [Value: US\$6 million] | 60 public access points are established [Value: US\$4 million] | 90 public access points are established [Value: US\$4 million] | 120 public access points are established [Value: US\$4 million] |

38. **Eligible Expenditures:** The eligible expenditures will consist of all expenditures for goods, non-consulting and consulting services (including transaction advisory), and trainings related to achievement of the PBCs. Expenditures can include pre-purchase of Internet bandwidth from private sector operators, subsidies, costs of construction and upgrades of public buildings and facilities to establish public access points and address specific needs of vulnerable population such as women and PwDs, provision of sustainable and reliable energy solutions such as off-grid solar solutions at project locations⁴⁸, operations and maintenance costs during the project lifetime, computer network components and terminal equipment, computer hardware and software to facilitate access to and use of digital services in connected locations, technical assistance to develop or refine targeted interventions by identifying public and community spaces largely populated by women and exploring affordable pricing models for devices and services, and capacity-building.
39. Other activities to be financed under this component will be implemented as a regular IPF component (estimated at US\$3 million) to support GIFEC in leveraging more private sector financing to expand the broadband network coverage, through the recruitment of a transaction advisor. This technical assistance

⁴⁸ Mandatory enhanced measures are developed under existing procurement framework to support projects that require procurement of solar panels. The additional enhanced procurement measures include: (i) Forced Labor Performance Declaration (past performance), (ii) Forced Labor Declaration (commitment to addressing forced labor in the future, including cascading those requirements to their own sub-contractors and suppliers), and (iii) Strengthened contract clause on Forced Labor. Applicable solar projects have been mandated for prior review by Procurement for at least 24 months.



support will ensure value-for-money for GIFEC funds.⁴⁹ The transaction advisor (firm) will assist in (i) determining areas of intervention in lagging areas: “Coverage Gap” are areas where the private sector is unlikely to invest without some form of public interventions or “Market Efficiency Gap”⁵⁰ are areas where the private sector has potential investment appetite; (ii) preparing an assessment of detailed capacity requirements and technical specifications to support network planning in regions with limited coverage and capacity; (iii) conducting a feasibility and public-private partnership options study for the network expansion and capacity upgrades. The study will recommend a set of strategies and mechanisms for crowding in private sector financing, in collaboration with IFC; and (iv) supporting a tendering process for the selection of telecommunications operators in selected locations, including the preparation of tender documentation, to implement the recommended PPP option in the “Market Efficiency Gap.”

Subcomponent 1.3. Safeguards for Cybersecurity and Data Protection (US\$12 million)

40. This subcomponent is intended to support the government’s efforts to promote trust in data governance and data management by strengthening a more robust cybersecurity and data protection ecosystems in alignment with the 2021 World Development Report.
41. To support development of institutional capacity for effective implementation and regulation of the Cybersecurity Act, 2020 (Act 1038), this subcomponent will finance:
 - (i) technical assistance to enhance existing legal and regulatory frameworks on cybersecurity to increase the efficiency of crisis management by the Cybersecurity Authority, including development of legislative and regulatory directives, licensing framework and compliance standards;
 - (ii) strengthening the operational capacity of sectoral computer emergency response teams (CERTs) and implementing the Critical Information Infrastructure Protection (CIIP) framework by funding activities such as capacity building trainings for the Cybersecurity Authority staff, CERTs, and CII Owners, strengthening public-private information sharing and collaboration mechanisms through assisting in registration and compliance audits; and
 - (iii) cyberculture and awareness-raising programs targeting all members of the cyber ecosystem, including government, the private sector, and citizens.
42. To ensure safeguards for trusted data use, this subcomponent will also support the Data Protection Commission in implementing the Data Protection Act, 2012 (Act 843). Key activities to be financed include:
 - (i) technical assistance to enhance existing legal and regulatory frameworks on data protection, including but not limited to a gap analysis on the data protection framework and a regulatory impact assessment of emerging technologies (e.g., Artificial Intelligence (AI), machine learning, big data);
 - (ii) strengthening the operational capacity to implement and maintain additional data protection controls by funding activities such as strengthening of platforms and applications of the Ghana Registration System and technical training for Data Protection Commission staff; and

⁴⁹ GIFEC is a Universal Service Fund administered by the government that is funded by 1 percent of total annual revenue of mobile telecom operators.

⁵⁰ The term “Market Efficiency Gap” refers to the discrepancy between existing coverage and the extent to which broadband services could be commercially viable with certain pro-market measures. It defines all geographic locations where commercially viable broadband service could be offered if no economic or regulatory constraints impeded market development.



- (iii) data culture and awareness-raising programs to support development of relevant materials and delivery of awareness-raising and training programs for target audiences of data practitioners.

Component 2. Modernizing Digital Government Services (US\$76 million)

43. **This component is designed to establish an agile, user-centric digital government model in Ghana.** Activities financed will help respond to the COVID-19 crisis by making investments that improve the front-end user experience of digital public services and increase the efficiency of back-end government systems. The activities are focused on building next-generation government infrastructure and delivering transactional and digital-by-design public services by supporting a shift in service delivery and moving toward a strengthened digital governance, expanding the availability of high-quality transactional government e-services in key sectors, and helping build the next generation of the government workforce.

Subcomponent 2.1. Change Management Moving Towards a Strengthened Digital Governance (US\$4.2 million)

44. **This subcomponent focuses on strengthening institutional arrangements, leading toward more user-oriented e-government, under a whole-of-government approach.** Digital governance (according to the 2021 World Development Report) is critical to establishing clear accountability for digital strategy, policy, and standards. The government has become increasingly aware of the challenges of implementing digital government strategies. The “Blueprint” provides a range of recommendations leading to new institutions, initiatives, and programs. In addition, MoCD is formulating a digital economy policy, strategy and action plan that would replace the 2003 Ghana Information Technology Policy for Accelerated Development.

45. Key activities financed under this subcomponent include technical assistance to:

- (i) develop a new inter-ministerial digital governance framework with a clear definition of the roles and responsibilities of each institution, especially MoCD and NITA, introducing a clear allocation of policy functions and implementation responsibilities;
- (ii) support in the implementation of the new digital governance framework, which may include organizational restructuring and establishment and operationalization of new institutions for digital policy implementation and creation of new positions (e.g., Chief Digital Officer). This will include equipment purchases for new institutional arrangements to accelerate operationalization;
- (iii) design a national emerging technologies strategy, with a focus on AI, to coordinate governmental and intergovernmental efforts to develop, test, deploy, and adopt emerging technologies. The strategy will include an assessment of the country's strategic priorities, strengths, and weaknesses, a framework for workforce development, a plan to develop and deploy digital and emerging technologies across economic sectors, and an AI regulatory roadmap;
- (iv) design and finance implementation of an interoperability model that includes a framework for data governance (actors and roles) and service governance (web and app interfaces and protocols), and an interoperability platform (which could include implementation of an Enterprise Service Bus (ESB) for service interoperability);
- (v) draft regulations for a national interoperability standard (technical, semantic, legal, and processes); and
- (vi) design and finance the implementation of a robust change management and communications strategy that will strengthen public sector digital transformation and draw from behavioral sciences initiatives. The technical assistance will focus on development of communications and awareness



campaigns targeting different levels of government employees (as well as citizens and businesses) to ensure awareness, commitment, and advocacy of Ghana's digital government agenda and increase trust in and use of digital services.

Subcomponent 2.2. Digital Government-Enhancing User-Centric Services (US\$64.5 million)

46. **This subcomponent will expand the availability of high-quality transactional government e-services in key sectors.** It will focus first on establishing a common framework (government-as-a-platform approach) across the public sector, laying the foundations to expand public service digitization homogeneously. This subcomponent will then support development of just-in-time and priority digital public services (government-to-government, government-to-business, and government-to-citizen e-services) by consolidating and upgrading existing services and developing new ones using a user-centric design.
47. This subcomponent will first finance the following key activities:
- (i) technical assistance for elaboration of a government services directory on the government services and the service channels, to be included in Ghana.gov;
 - (ii) technical assistance to support identification, strategic planning, and design of priority user-centric e-services, including end-user consultations, and a public service delivery, accessibility, and user journey assessment of current in-person and digital services that the government provides.⁵¹ This technical assistance will also support regulatory- and process-simplification analysis of public services to cut red tape and facilitate re-engineering of services;
 - (iii) technical assistance and financing for consolidation of existing web-based services of MDAs under the government portal, Ghana.gov, and use of apps,⁵² minimizing existing silos;
 - (iv) design and development of priority and core common platforms for e-services;
 - (v) financing a team to develop a set of standards and manuals for service digitization across government entities, which will be key instruments for homogeneous digitization of the public sector; and
 - (vi) financing development of a multi-channel citizen feedback and grievance mechanism available for Ghana.gov web and Citizens App (user app) users to ensure two-way communication between government and citizen.⁵³ Activities financed include implementing notification functions (e.g., text, email, push notifications through the mobile app), dedicated functions for citizens with sporadic connectivity, government-to-citizen emergency channels for community mobilization and alert, and

⁵¹ On-going Digital Development Partnership Trust Fund activity to support mainstreaming human-centric design for digital public services in Ghana will complement this.

⁵² The government has developed the Ghana.gov mobile app (Citizens App), which is in the final stages of testing. The app, which will be available on iOS and Play store, will facilitate interaction between citizens and government, report problems, and allow services to be requested and rated. As a first phase, it will have a job posting component led by the national youth employment agency, Payment function, Tax component owned by Ghana Revenue Authority, and Citizen Complain owned by the Ministry of Information. The app will also offer fully digitized services for driver registration and passport issuance. The government plans to expand the scope of the app and make more public services available as a next phase.

⁵³ NITA, in partnership with MDAs, has established a call center to support Ghana.gov where users can interact via multiple channels (e.g., phone, email, social media, WhatsApp). Users can contact the call center to request support or raise concerns regarding payments, transactions, and refunds, among other things. The government is also developing a mobile-based beneficiary feedback app under the Public Sector Reform for Results Project (P164665) to cover 10 key services addressed under the project (e.g., passport issuance) within 5 years; five services will be piloted by 2022. The Office of Head of Civil Services and Public Service Commission are responsible for this. The Ghana Digital Acceleration Project will consider integrating with existing apps for expansion and to avoid duplicating efforts.



assessing and grievance channels with a minimum service-level agreement for the grievance. A periodic – semi-annual – survey of user satisfaction with the new public digital services will be conducted to continue improving the services’ delivery mechanisms and as other services are reengineered.

48. These activities establish a foundation for the coherent and homogeneous digitization of public services. A just-in-time public sector digitization approach will be adopted in the priority sectors.⁵⁴ The Project Coordination Unit (PCU) will review the proposals submitted by MDAs. Beneficiary selection will be subject to specific MDA readiness criteria laid out in the PIM. Once selected, the MOCD will finance the agreed proposals. Further details will be laid out in PIM. For selected beneficiaries, activities financed will include:
- (i) financing for business process re-engineering and purchasing of IT equipment, hardware, and software;
 - (ii) technical assistance to support diversification of service delivery channels by assessing different options to access digital services (voice, message, unstructured supplementary services data, website, mobile app) from cities and rural areas, identifying adequate service delivery mechanisms and channels, piloting cloud-based services by converting select services with good connectivity and bandwidth, and creating basic network service-level agreement between MDAs offering services to ensure service availability; and
 - (iii) financing for digitization of public records including the Public Records and Archives Administration Department (PRAAD).⁵⁵
49. This component will finance further expansion of the network of meteorological weather stations to collect, provide up-to-date, and just in time information about climate-related events. This will help address key vulnerabilities and improve readiness for climate emergencies.

Subcomponent 2.3. Future of Work in Government (US\$7.3 million)

50. **Government digital transformation and the availability of required human capital are intimately intertwined.** Investing in and retaining skills for digital transformation is critical to realizing the digital government transformation agenda. The ability of the public sector to capitalize on digital back-office systems and shared services and to provide digital services to citizens and businesses depends on ongoing development of digital capacity of civil servants. There is insufficient in-house capacity and overreliance on contractors for upgrades. Furthermore, the capacity gap within the government hinders adoption of digital tools and systems and limits the opportunity to leverage data-enabling technologies (e.g., big data analysis, machine learning, AI) in public service planning, emergency response, and service delivery.
51. This subcomponent will focus on building digital capacity within the public sector, led by the Office of the Head of Civil Service (OHCS) in close collaboration with the Public Service Commission as well as MoCD and NITA. Activities include:

⁵⁴ Prioritized sectors include health, social protection, agriculture, local government, trade, and industry. Further details will be included in PIM.

⁵⁵ Supporting public records digitization in PRAAD is critical to preserve historically valuable and vulnerable paper public records in digital format. It also supports climate mitigation (by reducing the amount of paper used) and adaptation (by reducing the risk of files to damage from floods or extreme climate events).



- (i) technical assistance to enhance the government competencies framework for IT officials across the MDAs and to design and implement a specific training program for IT officials (including training in disruptive technologies in public administration);
- (ii) technical assistance to develop a core digital training curriculum and upskilling program for public sector employees, targeting civil servants to advance the government’s digital transformation, with a focus on promoting women in technology and upskilling female civil servants;
- (iii) capacity building to enhance in-house technical skills in selected MDAs and information technology and infrastructure management and research classes on such topics as database management, Microsoft apps, digital service delivery, data analytics, and data science-related subjects and data science-related subjects and data science-related subjects and data science-related subjects;
- (iv) acquisition of software for expanding the concept of Smart Workplace, a virtual working solution for government employees and civil service providers, to enable more flexible work options (including remote working) and ensure continuity of government operations; and
- (v) financing ICT equipment and data analytics tools in the selected MDAs to support capacity building program delivery, if deemed necessary.

52. This project will leverage partnerships with private sector stakeholders including but not limited to Microsoft Philanthropies. Microsoft Philanthropies has a MOU with the World Bank that allows the use of its platform for training purposes which will be made available to the Government under a specific MOU.

Component 3. Support for Digital Transformation of Productive Strategic Sectors (US\$66 million)

53. **This component will strengthen the local digital entrepreneurship ecosystem and talent base.** Activities financed will support better innovation ecosystem coordination and better service provision by ESOs, expand access to early-stage financing, and promote advanced digital innovation capabilities. By strengthening the local digital entrepreneurial and innovation ecosystem, this component will contribute to COVID-19 pandemic response and recovery by supporting start-ups that can help develop data-driven digital products and services. The project will encourage the use of new public datasets and public goods, considering recommendations in the 2021 World Development Report on Data for Better Lives. A stronger local entrepreneurship ecosystem will also help in developing locally relevant content and services that can stimulate digital adoption and uptake of digital services. This component will specifically support the agricultural sector as a pilot to unlock the digital transformation of key productive sectors. Each subcomponent is designed to provide end-to-end support to establish proof of concept of how other sectors can leverage and reap the full benefit of digital solutions to drive robust, inclusive sector growth and diversify the economy. The component will also explore synergies and opportunities for cooperation with the *YouStart* program, a recently launched Government initiative to facilitate job creation in the country via skills, capacity development, and access to funding for youth.

Subcomponent 3.1. Scaling Up Ghana’s Digital Entrepreneurship and Innovation Ecosystem (US\$33 million)

54. **This subcomponent is designed to improve the survival and growth rates of digital technology-enabled start-ups and strengthen Ghana’s position as a regional test bed for innovation.** The proposed activities are in line with the “Blueprint” action plans to develop a policy, strategy, and implementation framework to create a thriving technology ecosystem and actively support and collaborate with ESOs focused on promoting digital businesses. Support will be provided to create an enabling strategic, policy, regulatory,



and institutional environment conducive to stimulating the growth of digital innovation, businesses, and start-ups, positioning Ghana as a regional digital entrepreneurship hub in West Africa. All support will consider challenges that COVID-19 has presented to start-ups and young firms, as well as specific needs of entrepreneurs at different stages of a firm's business life cycle.⁵⁶ Interventions will help create a robust pipeline of viable start-ups poised for expansion and strengthen Ghana's digital innovation capacity, contributing to job creation and productivity gains critical to COVID-19 recovery. The component will also explore support to the YouStart program to facilitate job creation in the country via skills and capacity development and access to funding for young entrepreneurs.

55. Key activities to be financed include:

- (i) **technical assistance in support of enabling strategies, policies, and institutions for digital innovation (US\$1 million)**, specifically to finalize the Startup Act and develop a clear regulatory and policy framework to encourage the growth of BPO businesses;
- (ii) **performance-based grants for ESOs that serve digital start-ups (US\$6 million)** to encourage quality-based, self-sustaining ESO models that offer better services and entrepreneurship support programs. This activity will target three Digital hubs, established by MoCD under the eTransform Ghana project with a particular focus on improving the quality and scope of incubation services for digital startups and provision of small grants to program participants. The disbursement of performance-based grants will be tied to an action plan and milestones submitted in the financing proposals for each participating hub. All innovation and training grants administered by program participants will follow the requirements of the Grants Manual;
- (iii) **an international accelerator program that serves digital start-ups (US\$16 million)**, including (i) technical assistance to establish an international acceleration program that serves digital start-ups; and (ii) grants for competitively selected digital entrepreneurs and start-ups including those participating in an international acceleration program and the YouStart Initiative to promote youth-led digital businesses in Ghana. The program will be designed to attract high-quality international players to the local market. It is expected that a competitively selected international accelerator will launch a series of acceleration programs targeting digital firms at early growth stage and work in close cooperation with a local partner to ensure knowledge transfer and local institutional capacity building. To encourage eligible female applicants, a comprehensive outreach and media strategy will target female entrepreneurs by profiling role models and leveraging women's networks;
- (iv) **early-stage co-finance mobilization for digital innovation (US\$10 million)**, including technical assistance for fund management and an early-stage financing window managed by the Ghana Venture Capital Trust Fund.⁵⁷ The investment will target digital firms at early growth and growth stage.

Subcomponent 3.2. Digital Transformation in Agriculture Sector (US\$18 million)

56. **This subcomponent is designed to support end-to-end digital transformation in the agricultural sector, which is a dominant productive sector in Ghana.** Ghana has significant potential to transform the

⁵⁶ A firm's business life cycle traditionally involves five stages: pre-seed and seed, start-up, early growth, growth, developed and established.

⁵⁷ The Ghana Venture Capital Trust Fund has established two investment mechanisms under the Ghana Economic Transformation Project (P166539) —the Start-up Catalyst Fund and the Strategic Industry Fund. An additional window, potentially called Tech VC fund will be established for the fund disbursement.



agricultural sector into a more digitally enabled, innovative, and productive sector while re-creating agricultural jobs to make them more dynamic and attractive to youth. The private sector is a key driver of digital innovation in agriculture in Ghana, but the initiatives remain largely fragmented and disconnected. Proposed activities support coherent, strategic development of the digital agriculture ecosystem, including support to the Ministry of Food and Agriculture to become a leader in the use of data and digital solutions to increase efficiency and improve services to farmers. Key challenges in the sector include improving extension services to farmers; developing precision agriculture to increase the productivity of farmland; expanding crop insurance programs; enabling traceability of export crops (with a focus on cocoa production); and implementing digital solutions for natural resource management, including soil health, water use, and forest preservation.

57. Key activities to be financed include:

- (i) **A sector assessment and digital transformation strategy:** Building on current initiatives, technical assistance to support the development of an in-depth digital agriculture ecosystem assessment and feasibility study for transforming Ghana into a digital agriculture innovation hub in West Africa;
- (ii) **Support for Ghana Digital Agriculture Innovation Hub⁵⁸** to foster adoption of ICT-based solutions for more-productive, -resilient, -sustainable agricultural systems and provide technical assistance to support the transformation of Ghana into a regional digital agricultural hub that serves the digital agricultural ecosystem by providing links to international partners, developing training and capacity-building programs on climate-resilient agricultural practices and technologies with emphasis on women and youth, and hosting innovation challenges and hackathons to solve key challenges in the sector through digital solutions.⁵⁹ The hub will provide a series of services through (i) access to best practices and testing so the beneficiaries (i.e., entrepreneurs, startups, Micro, Small, and Medium-sized Enterprises, and farmers) make informed decisions for investments and business development; (ii) provision of business development and training on key approaches for digital agriculture solutions; (iii) support in finding investment and access to financial institutions, investors, and incubation program; and (iv) access to community building and networking programs, bringing relevant stakeholders and administrations together looking into new agricultural digital solutions;
- (iii) **early-stage financing or grant support for investments in climate-smart agricultural technologies,** including investments into agricultural technology firms to develop and commercialize innovative, green technologies to lower emissions, improve the use of agricultural inputs such as water and fertilizers, reduce GHG emissions, and incentivize private companies to reduce carbon emissions and increase the use of carbon credits. The disbursement will be channeled through VCTF's financing window; and
- (iv) **strengthening data management, sharing, and analytics,** including technical assistance to support the development of enabling legal, strategic, and policy frameworks through feasibility studies, data-sharing guidelines, templates, standards, and protocols, and related training; operationalization of the Agriculture Open Data Digital Platform for the Ministry of Agriculture and Food; and strategic

⁵⁸ Digital innovation hubs are one-stop shops that help businesses become more competitive in their business and production processes, products, or services using digital technologies. They are regional multi-partner endeavors (of Research and Technology Organizations, universities, industry associations, chambers of commerce, incubators, accelerators, regional development agencies, and governments) to provide access to the latest knowledge, expertise, and technology. They operate near their users and clients and are the first regional point of contact for businesses, strengthening the regional innovation ecosystem.

⁵⁹ This program is designed to replicate successful platforms such as the One-Million Farmer Initiative in Kenya and similar programs in India.



implementation of big data use cases in agriculture (e.g., advanced extension services, forest, and palm tracking, disease tracking, satellite monitoring of deforestation, value chain traceability). Additional training and capacity building will be provided. A consultant will be recruited to support the Ministry of Food and Agriculture in developing the platform.

58. Programs will be implemented in coordination with the World Bank Agriculture and Food Global Practice and ongoing initiatives in Ghana, including the Accelerating the Impacts of CGIAR Climate Research for Agriculture (P173398) project, the Food Systems Resilience Program (P172769), and work in the cocoa sector.

Subcomponent 3.3. Skills for Digital Jobs and Inclusion (US\$15 million equivalent)⁶⁰

59. **This subcomponent will take an ecosystem approach to equip Ghanaians with digital skills to support digital service uptake and provide access to job opportunities, enabling greater participation in the digital economy.** This subcomponent will also support advanced digital skills development to provide a quality pipeline of ICT workers and digital entrepreneurs. The World Bank is working with IFC to identify skills gaps and strengthen engagement with the private sector. By building the local digital talent pipeline and equipping Ghanaians with skills for jobs of the future, this subcomponent will help stem the rise in youth unemployment expected because of COVID-19.
60. Key activities financed under this subcomponent include:
- (i) **technical assistance to conduct a digital skills supply and demand–gap analysis** to provide a baseline assessment of immediate and future gaps between skills and opportunities to offer training on the most viable digital skills;
 - (ii) **financing for the development of a digital skills and job platform to periodically assess demand and supply gap of digital skill.** The MoCD will initially manage this activity, which will allow for collaboration with training providers to develop appropriate digital competencies based on real-time market needs (e.g., Singapore, Kenya, Paraguay’s job-matching, skills gap monitoring portal);
 - (iii) **digital skills training for employment pathways at various skill levels.** In addition to training material development, the financing will provide facility upgrades and IT equipment to training centers, including the Kofi Annan center, community information centers, and selected technology hubs. Youth, women, girls, and rural populations will be the main beneficiaries of the training. Training will be carried out at all digital skills levels (basic, intermediate, and advanced), on top of specific courses in-demand and related to BPO services; and
 - (iv) **digital inclusion programs** to support tailored digital skills training for PwDs to increase their access to and use of digital technologies and enable them to participate actively in the broader labor market. The project will finance the delivery of targeted training, facility upgrades, provision of assistive technologies and accessible devices, and reasonable adjustments to online training materials to meet accessibility standards.

⁶⁰ Discussions are ongoing to include support to skills for business process operations or Knowledge Process Operations (KPO), with an initial allocation of US\$5 million.



Component 4. Project Management and Implementation Support (US\$15 million)

61. **This component will support the management and implementation of project-associated activities.** It will finance activities related to recruitment of project management consultants, project coordination, fiduciary specialists (e.g., procurement and financial management), Monitoring and Evaluation (M&E), environmental and social safeguards, project communication, and citizen engagement. It will also cover operating costs, independent audits, and a third-party verification agent to verify achievement of PBCs, and training of key beneficiaries (e.g., PCU, Technical Committee) up to the official closing date of the project. Special attention will be devoted to promoting equal participation of women in all decision-making bodies under the project and dismantling barriers to recruitment, retention, and promotion. It is also anticipated that consultants' terms of reference will stipulate knowledge transfer and hands-on training of ministry staff. To enable Ministry of Finance (MoF) to play its oversight and facilitation role effectively, the project will also earmark a budget line of US\$1 million to support the operations of the World Bank Unit as well as the Ministry's ICT systems.

Component 5: Contingent Emergency Response Component

62. **In the context of the COVID-19 crisis, a contingent emergency response component is added to the project structure to help the government respond swiftly to eligible crises or emergency, including climate and natural disasters and public health emergencies.** Including a contingent emergency response component, albeit with no funding, provides for flexibility for an agile response to an imminent or actual emergency (e.g., COVID-19) through quick disbursement of uncommitted balances from other components. The crisis response expenditures could cover, for instance, the facilitation of emergency payments to vulnerable population groups using mobile money or ensuring business continuity of core government functions when civil servants are required to continue home-based work. The contingent emergency response component is not expected and intended to finance activities that may present risks or lead to any activities that result in adverse environmental and social harm. CERC Annex will be included in PIM.

C. Project Beneficiaries

63. **Because the proposed project is designed to be human-centric, each component offers a series of interventions that will directly affect a wide range of final beneficiaries.** At the project level, people will benefit from enhanced digital public services, affordable high-speed broadband service, and greater digital adoption. Moreover, direct project beneficiaries include persons and institutions receiving targeted training while citizens and businesses benefit from greater access to better administrative e-services. Citizens will benefit from access to broadband services and digital public services and increased digital skills adoption. Component 1 will affect nearly every broadband user (citizens and businesses) by modernizing the regulatory environment for broadband service providers to improve their services. Through GIFEC's support, people living in lagging areas with no or limited connectivity or digital adoption will benefit from better high-speed broadband service delivery. Component 2 will support the public sector by ensuring more robust, human-centric digital public service delivery and help government create a coherent, sustainable environment for resilient, safe, interoperable digital public services. Many individuals (particularly women, youth, and PwDs), local incubators, and start-ups will be direct beneficiaries of Component 3.



64. **The project is designed to close gender gaps in various areas of digital development (see more details in Annex 2).** It is aligned with **IDA-19 priorities, the WBG 2016–23 Gender Strategy,⁶¹ and the Digital Development Gender Strategy.⁶²** Actions designed to close gender gaps in the digital economy are incorporated into various components of the project:

- Under Component 1, integrating a gender lens into the ICT policy and regulatory environment, including a focus on collecting comprehensive sex-disaggregated ICT data; addressing gender gaps in access to digital infrastructure through targeted support for female-headed households in rural areas; connecting public access spaces where women are often concentrated; designing gender-smart digital literacy training in rural and remote communities; and promoting the participation of women and girls in science, technology, engineering, and mathematics.
- Under Component 3, providing comprehensive support that incorporates business and soft skills, mentorship, access to networks and new markets, and targeted financing to help female founders establish and expand their businesses; providing incentives for accelerators to target and recruit female founders and explore the provision of support services, such as providing on-site childcare and transportation stipends, supporting device access, designing flexible training programs; and leveraging and strengthening women’s cooperatives.

D. Results Chain

65. Project activities will support the achievement of the PDO through various channels, as detailed in Figure 3.

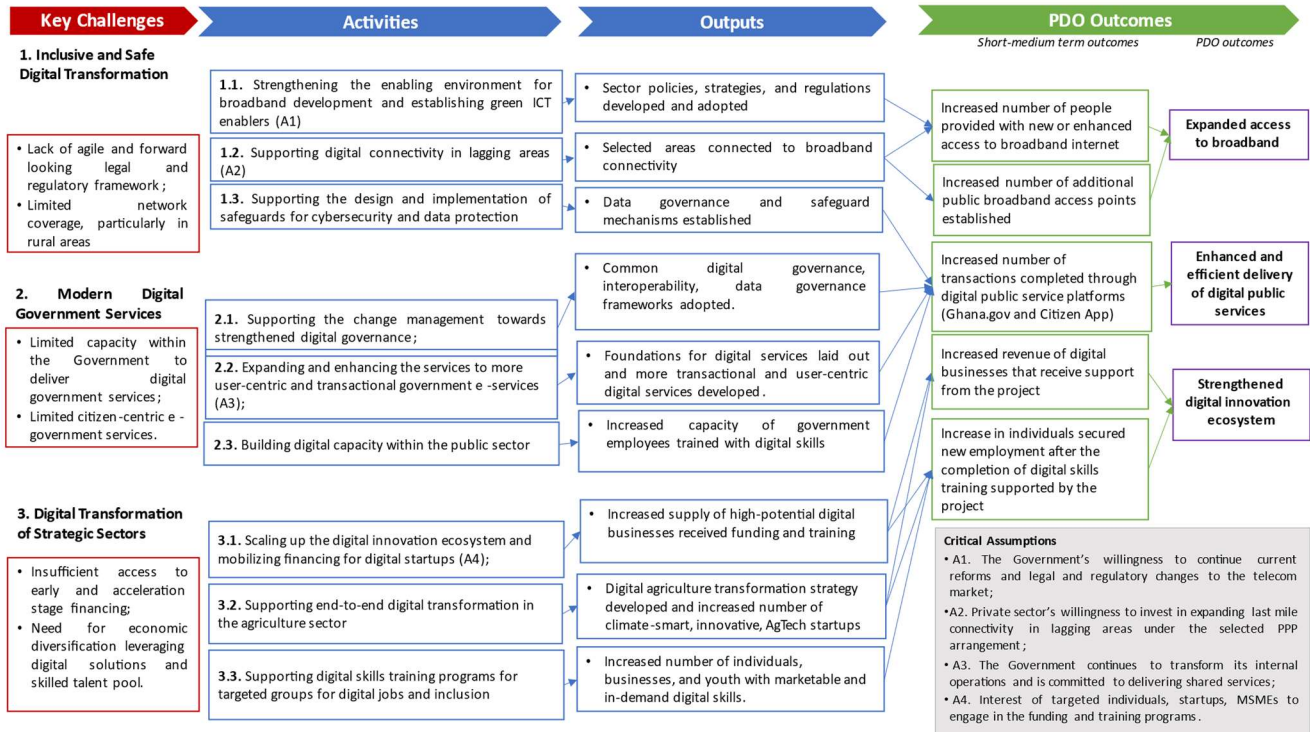
⁶¹ World Bank Group. 2015. World Bank Group Gender Strategy (FY16–23): Gender Equality, Poverty Reduction and Inclusive Growth. <https://openknowledge.worldbank.org/handle/10986/23425>.

⁶² World Bank. 2021. The Digital Development Gender Strategy.

<https://thedocs.worldbank.org/en/doc/61714f214ed04bcd6e9623ad0e215897-0400012021/related/Digital-Development-Note-on-Gender-Equality-November2021-final.pdf>.



Figure 3. Theory of Change



E. Rationale for World Bank Involvement and Role of Partners

66. Public sector financing is appropriate, because it addresses market failures, supports digital public goods, and stimulates or crowds in the private sector in line with maximizing finance for development principles.

The project will explicitly finance areas where market failures prevent private sector solutions in the absence of public sector funding or de-risking. The proposed project is expected to bring economic and social benefits to a segment of the Ghanaian population in remote areas that would remain excluded without public intervention. Digital services have increasingly become a necessity for households and remain out of reach for many because of a lack of accessibility or affordability. Reducing this digital divide by increasing coverage, lowering prices, and improving service quality—especially in underserved regions—can significantly close the opportunity gap between population segments. Moreover, digital services can dramatically enhance resilience to shocks (including medical diagnosis and distance learning during crises such as COVID-19). Finally, the project will actively stimulate private sector development through technical assistance to enable market and regulatory reform and ecosystem support for digital start-ups.

67. The World Bank is well-positioned to support Ghana's digital acceleration, with a focus on empowering the regulatory environment, improving digital connectivity, and supporting digital public platforms through its technical expertise; a positive track record of successfully implementing projects in the country (e.g., e-



Ghana⁶³, e-Transform Ghana); and its rich experience implementing similar projects in other African countries (e.g., Cameroon, Congo, Rwanda, and Senegal) and around the world. The proposed project builds on the e-Transform Project. The operations of the project are built on a series of analytical efforts (e.g., digital economy assessment of Ghana), systematic engagements, and support for sectoral modifications and strong WBG working relationships with the main ministries (MoCD, Ministry of Education, Ministry of Health, MoF, Office of Attorney General, and Ministry of Justice) and other stakeholders (e.g., NITA, NCA, MDAs, and mobile network operators). The WBG has a widely recognized track record of designing and delivering similar projects⁶⁴ supporting this agenda across six global regions for the past several decades (universal communications agenda, digital government agenda since the 1980s).

68. The project identifies, leverages, and complements work that other development partners that support digital development in Ghana have performed, capitalizing on synergies and lessons learned. For example, the project will leverage the current and proposed Digital Transformation initiatives supported by the German Agency for International Cooperation (GIZ) to support the digital innovation ecosystem. On-going discussions expect to leverage proposed private initiatives (i.e., MTN Ghana support to the MoCD). Multiple development and financial partners⁶⁵ are active players in the growing digital economy in Ghana. The WBG has taken a lead role in initiating donor and partner coordination to identify collaborations and overlaps.

F. Lessons Learned and Reflected in Project Design

69. The project takes a comprehensive approach to help Ghana move to the next level of the digital economy. Global lessons learned from more-advanced digital economies (e.g., Denmark, Republic of Korea, Indonesia, and Saudi Arabia) and other regional peers (e.g., Kenya and Rwanda) were incorporated into project design. The project adopted several agile, creative approaches adapted to the country's context:

- (i) Component 1 supports the government's continued efforts to build solid foundational building blocks for inclusive and safe digital transformation. It incorporates key sector policies and tools to develop environmentally-conscious approaches that aspirational peers have adopted, such as the Republic of Korea's Green New Deal, national green ICT strategy, extended producer responsibility program, and e-waste management strategy.
- (ii) Component 2 continues the e-Transform Ghana Project's effort to support digital public service delivery (informed by Saudi Arabia's e-Government Program, Yesser) by helping Ghana.gov become a more human-centric, integrated, and end-to-end government portal.
- (iii) Component 3 incorporates global best practices and approaches to developing an enabling environment for technology start-ups and digital entrepreneurs (e.g., startup Act in Italy, the Philippines, Senegal, and Tunisia) and incorporates lessons from Kenya and Indonesia's Agriculture Hackathon to strengthen the digital agriculture ecosystem.

⁶³ The e-Ghana project (P093610, a total of US\$84.6 million IDA project) was the first WB funded project in ICT/ digital sector in Ghana. The project was approved in 2006 and closed in 2014. The PDO was to assist the Recipient to generate growth and employment by leveraging ICT and public-private partnerships to (i) develop the IT Enabled Services industry, and (ii) contribute to improved efficiency and transparency of selected government functions through e-government applications.

⁶⁴ Some recent projects, including in Cabo Verde, Cameroon, Congo, Georgia, Haiti, Kenya, Morocco, Rwanda, and Senegal, can provide valuable opportunities for peer-to-peer learning.

⁶⁵ Such as the International Telecommunication Union in partnership with Cisco deploying digital transformation centers, the European Union addressing e-waste control and management in eight regions of Ghana, and the Norwegian Agency for Development Cooperation expanding the International Telecommunication Union's initiative by targeting underserved communities.



70. **The project adopts an agile, phased approach to respond to the government's digitalization agenda.** As a continuation of the ongoing e-Transform Ghana Project (P144140), support for MDAs' digitalization processes is one of the project's core intervention areas (specifically under Component 2). Digitalization of MDAs on a rolling basis based on their readiness is a new approach, rather than pre-selecting and allocating a specific budget to each MDA. Overcoming some implementation challenges faced in the e-Transform Ghana Project, this approach will encourage MDAs to accelerate implementation based on their readiness and the government's needs. Detailed readiness checklists and assessment criteria will be included in the Project Implementation Manual (PIM).

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

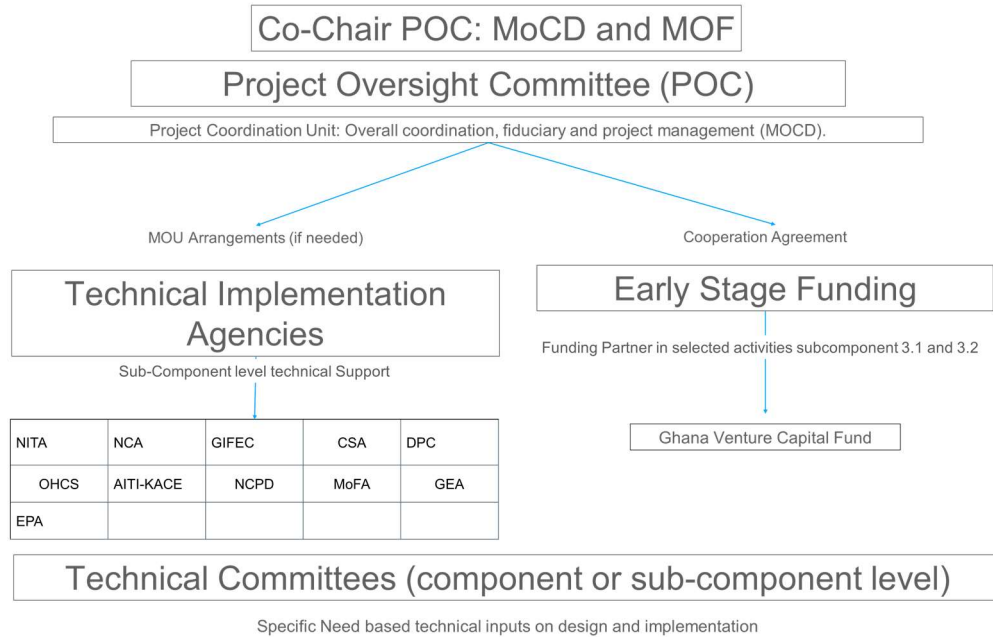
71. **A PCU within the MoCD will provide project oversight and day-to-day management of the project,** leveraging the existing e-Transform Project Implementation Unit (PIU) and taking advantage of experience and institutional memory accumulated from past and ongoing World Bank-funded projects. The current e-Transform PIU will be expanded and become a PCU responsible for the implementation of the e-Transform Project (until it closes in October 2023) and the Ghana Digital Acceleration project. The PCU will consist of a project coordinator, a deputy project coordinator, a procurement specialist, an administrative officer, a safeguards specialist (environmental and social), technical specialists (covering technical expertise in the project components), and specialists to cover other PCU functions such as M&E and communications. The technical specialists will work directly with the technical implementing agencies and beneficiaries to ensure timely implementation progress and achievement of project outcomes. The proposed project will build on the experience and lessons learned from the e-Transform Project (e.g., in setting the Technical Committee, Project Steering Committee, and Inter-Ministerial Oversight Committee) and strengthen the coordination role of the ministry.
72. **Although the PCU at MoCD will maintain overall responsibility for the management of all project activities, it will work closely with key technical implementing agencies and MDA partners which are the main beneficiaries and technical counterparts for planned investments.** These include NCA (for subcomponent 1.1—telecommunications sector regulatory support), NITA (for subcomponents 1.1, 2.1, and 2.2—fiber consolidation and digital government services), Cybersecurity Authority (for subcomponent 1.3—cybersecurity), Data Protection Commission (for subcomponent 1.3—data protection), GIFEC (for subcomponent 1.2—digital connectivity and subcomponent 3.3—digital skills), Environmental Protection Agency (for subcomponent 1.1—e-waste management), Office of the Head of Civil Service (for subcomponent 2.3—future of work in government), Ghana Venture Capital Trust Fund and Ghana Enterprise Agency (for subcomponent 3.1 and 3.2), Ministry of Food and Agriculture (for subcomponent 3.2—digital transformation in agriculture), Ghana-India Annan Centre of Excellence in Information and Communications Technology (for subcomponent 3.3—digital skills), and National Council on Persons with Disability (for subcomponent 3.3—digital inclusion of PwDs). These agencies are expected to contribute their technical input on a day-to-day basis, working closely with technical experts embedded in the PCU, including supporting MoCD on technical aspects of the procurement-related process, aiding in quality assurance, and sign-off of key deliverables, and supporting effective M&E framework management. Detailed roles and responsibilities and terms of engagement will be captured in the PIM and finalized ahead of project effectiveness, where needed memoranda of understanding will be established between the PCU



and the partner technical implementing agencies, at the start of the project implementation. Each technical implementing agency will designate a project focal point, who will receive technical support from relevant technical specialists within the PCU.

73. **The Ghana Venture Capital Trust Fund has been selected as a relevant technical counterpart agency given its mandate and track record.** VCTF has been successfully implementing similar activities under the existing World Bank-financed project in a manner that is satisfactory to the World Bank. Delegated responsibility will be subject to a cooperation agreement pertaining to specific activities under subcomponents 3.1 and 3.2 (seed and early-stage financing). A Grants Manual and a VCTF Manual will be required as disbursement conditions. The Ghana Venture Capital Trust Fund supports other World Bank-financed projects and is familiar with World Bank guidelines, processes, and requirements. It has experience analyzing risk and managing grants and venture funding, although its capabilities must be strengthened, particularly on the risk capital side. Related capacity building to strengthen this function through hiring a specialized fund manager will be provided through the project. MoCD will retain all fiduciary responsibilities inclusive of financial management.
74. **A series of dedicated subcomponent-specific technical committees will be convened as needed to address key technical design decisions.** The technical committees will comprise technical implementing agency focal points, the PCU project coordinator or deputy project coordinator, and PCU technical specialists. PCU technical specialists will chair technical committees, and MDAs designated as core technical partners (noted above) will co-chair them.
75. **The Project Oversight Committee**, which the MoF and the MoCD will co-chair and will comprise relevant ministers, stakeholders, and private sector representatives (Figure 4), will provide strategic guidance to the MoCD and oversight to ensure minister-level support and effective coordination across the government. This committee will oversee project implementation and advise the PCU. The project coordinator will serve as the secretary and lead technical and operational discussions. The mandate of the oversight committee will include a review of project progress, provision of strategic guidance and recommendations for project implementation, and coordination of involvement of relevant ministries. The terms of reference explaining roles and responsibilities, objectives, and expected output for the technical committee and the project oversight committee will be detailed in the PIM. The Project Oversight Committee will be established 90 days after Effectiveness.

Figure 4. Project Coordination Structure



76. A PIM detailing institutional and implementation arrangements presented above, will be presented to the World Bank for review before project effectiveness.

B. Results Monitoring and M&E Arrangements

77. **The PCU will be responsible for monitoring and evaluation.** Each component technical lead will lead M&E, supported by the PCU M&E specialist, who will provide guidance and support to all components. The PCU will organize an annual public event to report on project results, including technical and financial aspects. Details of the event will be included in the PIM. In addition, the MoCD will recruit a third-party verification agent to verify the achievements of the PBCs based on an agreed-upon verification protocol.
78. **The MoCD will provide comprehensive quarterly reports reflecting M&E findings to IDA and the oversight committee,** and a comprehensive report showing progress toward outcomes will be submitted semi-annually. The quarterly report should be tied to the submission of the financial and procurement reports. The project will build on successful M&E lessons learned from the implementation of the e-Transform project. The team will use new ICT-based tools (e.g., Geo-Enabling Initiative for Monitoring and Supervision - GEMS) and mobile-based beneficiary feedback mechanisms to strengthen project monitoring facilities and build citizen engagement to be used for monitoring end user satisfaction and feedbacks, consultations, community/beneficiary monitoring. Also, survey and analytics, focus group consultation will be planned for Component 2 activities. Periodical feedback summary report will be generated and included in the implementation status and results report from MoCD to the World Bank team bi-annually. M&E will thus provide a way to illustrate which districts and regions have well-performing programs. The M&E team will work in conjunction with the Policy, Planning, and Monitoring and Evaluation Directorate of MoCD.



79. In terms of tracking the user experience of select digital services that the project supports, real-time feedback tools and functions will be embedded directly into the design of service delivery. Feedback received from end-users will be tracked over time and reflected in system updates or upgrades.

C. Sustainability

80. The project’s sustainability will be ensured by using private sector-led, market-based mechanisms for resource allocation to digital connectivity and digital entrepreneurship and by supporting capital investments in shared public infrastructure and platforms that can reduce long-run costs of public service delivery.

Table 5. Sustainability Mechanisms According to Component

| Component | Sustainability Mechanisms |
|--|---|
| Component 1: Ensuring Inclusive and Safe Digital Transformation | <ul style="list-style-type: none"> • Policy, regulatory, and institutional strengthening for the digital economy is designed to address market barriers and help ensure a level playing field for various segments of the information and communications technology sector, encouraging expanded, and continued digital service provision by the private sector. • Project funds will supplement existing resources of the GIFEC for extending rural coverage. Access to broadband for targeted unserved and underserved communities will be facilitated through a competitive bidding process that awards long-term supply contracts for Internet capacity or provides a capital expenditures subsidy for network deployment to winning bidders. The long-term indefeasible rights-of-use contract will continue long after project closing. • Greater cybersecurity and data protection capacity investments will ensure the sustainable development of the cyber ecosystem. |
| Component 2: Modernizing Digital Government Services | <ul style="list-style-type: none"> • The shared infrastructure, platforms, and services approach will allow for significant savings over each ministry, department, and agency maintaining independent information technology infrastructure, platforms, and applications, although continuous funding will be needed for operations, maintenance, and upgrading. • Training of government officials within ministries, departments, and agencies will continue after project closing. |
| Component 3: Support for Digital Transformation of Strategic Sectors | <ul style="list-style-type: none"> • An international accelerator will be established to collaborate with local partners to allow for knowledge transfer and local ownership and demonstrate self-sustainability by year five of the project. • Interventions will be implemented to catalyze market-based approaches to boost early-stage finance. • A digital learning and talent platform will continue to operate after project closing. The platform will be widely promoted to crowd potential employers into local and regional markets. • Digital learning contents and modules will be retained after project closing. |
| Component 4: Project Management | <ul style="list-style-type: none"> • Implementation will leverage existing structures, teams, and processes wherever possible to avoid creating an additional burden on the government. • Capacity building within the government through training will allow for a sustainable continuation of activities beyond project closing. |



IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

Technical Analysis

81. **The project's interventions and activities will benefit significantly from the Digital Economy for Africa Country Assessment and lessons learned from previous projects and from other countries.** The project components are designed as an integrated, interlinked program to maximize the development impact of the investments. The government's strategic goal of developing an inclusive, transformative digital economy and becoming a digital powerhouse beyond the continent requires large-scale investments to close the connectivity gap and complete the digitalization agenda while facilitating innovation in the private sector. Each component addresses analog foundations and institutional capacity while making public investments in the digital ecosystem.
82. **Component 1 takes a cascade approach to leverage private sector expertise and financing in expanding connectivity to lagging areas.** A set of regulatory adjustments under subcomponent 1.1 will simplify a cumbersome approval process for permits to construct new infrastructure while reducing high maintenance costs by facilitating infrastructure-sharing arrangements within and between sectors and introducing new regulatory frameworks for emerging technologies. Public utility assets, such as ducts and poles, land rights, and fiber networks, could be leveraged for cost-effective deployment of the new infrastructure. The private sector will be asked to identify the most cost-effective and efficient solutions for infrastructure deployment in lagging regions. Public access sites will serve as anchor tenants who aggregate initial demand for the broadband connection in the area, allowing easier expansion of residential services for operators. Community centers will provide a physical space to expose the population to broadband services. By mandating a successful bidder to operate the network on an open-access basis, the project also aims to facilitate downstream competition, providing options for consumers. In addition, private operators will be required to provide free training on basic ICT literacy skills to people in project intervention areas for a reasonable period.
83. **For Component 2, technical design is based on advancing the use of shared digital government infrastructure and investing in additional new shared services following a whole-of-government approach to accelerate the launch of priority e-services.** Although the component is designed to help Ghana establish an agile, human-centric digital government model, subcomponent 2.1 will help the government create a sound governance framework to drive the national digital transformation agenda forward. Subcomponent 2.2 will increase access to user-friendly, integrated, end-to-end digital public services through a multichannel approach that focuses on the government portal, Ghana.gov, and the use of apps using a human-centric design. Special attention will be paid to leveraging existing infrastructure and solutions, strengthening data requirements, and promoting privacy and cyber-resilience. Subcomponent 2.3 will provide capacity-building and skills-development activities targeting civil servants to ensure the full realization of the digital government transformation agenda, with in-house skills combined with public sector modernization.
84. **For Component 3, technical design is structured to address supply and demand challenges to promote employment and entrepreneurship through digital transformation.** To facilitate innovation through digital technologies, the project supports the business environment by increasing ESOs' capacity while providing direct access to finance to start-ups and small and medium-sized enterprises. Digital skills training at various levels to ensure a pipeline of quality employees with digital competence will complement sectoral digital transformation.



Economic Analysis

85. **The project developed detailed modeling to justify the project's economic and financial viability. The below summarizes the findings.**
86. **Component 1: The project will produce significant economic and financial gains for private telecommunications operators, unconnected rural populations, and the general population.** The component interventions are expected to generate benefits primarily in the form of increased customer base and revenue for telecommunications operators, increased employment and productivity gains from increased connectivity, and stronger cybersecurity to reduce related economic loss. The regulatory package supported by the project will increase the geographic size of the economically viable area, or market frontier, by lowering deployment costs and introducing innovative deployment technologies. The proposed interventions, when combined with demand-side interventions, are expected to increase mobile broadband penetration by at least 5 percent throughout the project. According to research, a 10 percent increase in mobile broadband penetration in developing countries is associated with a 2.5 percent increase in GDP. It is estimated that for every one percent increase in broadband penetration, there will be a 0.3 percent increase in job creation. Furthermore, despite the project's initial lack of financial viability in remote areas, the public funding channeled through the project makes it acceptable for private operators. Project funding will cover the cost of public access points and passive network infrastructure, allowing private operators to save significant amounts in capital expenditures and be able to expand their customer base by investing only in the last-mile network.
87. **Component 2: The public sector digitization is expected to generate significant economic and development benefits for citizens and the government.** The project's interventions are expected to yield significant economic benefits, primarily in the form of increased operational efficiency gains and time savings for the general public and government officials. The public sector's operational efficiency will be improved by lowering costs associated with back-office operations and lowering costs for handling, storing, and processing documents for public institutions involved in the project. The digitization of transactional government services will also result in significant cost savings due to decreased travel and processing time to obtain services, as well as transaction costs such as manual entry errors, fraud, and corruption.
88. **Component 3: Innovation ecosystem support will increase private sector competitiveness and thereby the number of digital start-ups, their expected revenues, and employment opportunities.** The project's direct and indirect support to start-ups and entrepreneurs is expected to improve performance and productivity, lowering the start-up failure rate and creating jobs, as well as increase employment, salaries, and access to better-paying jobs as a result of skill upgrades. The project also demonstrates a positive return on investment for farmers in the target value chains and the agricultural sector as a whole. Adopting a digital platform to connect farmers directly to end consumers can lower search, tracing, and transaction costs, potentially assisting farmers in expanding market access, achieving economies of scale, and generating higher income.

B. Fiduciary

(i) Financial Management

89. **Overall, the financial management arrangement of the project is adequate and meets minimum requirements according to World Bank policy and directives on IPF with PBCs.** PBC financing will be used for part of



Component 1, whereas a traditional investment financing approach will be used for all other components. The main implementing agency responsible for executing the digital acceleration project is MoCD.

90. **The project's financial management will follow the policies, rules, and procedures stated in the PIM, which provides guidelines** on budgeting; financial reporting; fund disbursement procedures; financial management, monitoring, and control; and external audit arrangements. Project implementation will, where practical and reasonable, rely on existing government financial management systems for project implementation and oversight. The World Bank reviewed the FM arrangements indicated above and noted a few risks which have been detailed in the FM risk assessment.
91. **The financial management risk assessment summarizes the risks and risk-mitigating measures for the financial management aspects of the project.** Inherent and control risks are rated as moderate, so the overall project financial management risk is considered moderate. Examples of risks identified include high accounts staff turnover leading to reporting discrepancies, outdated accounting procedures based on an old manual, lack of effective collaboration between the Accounts team and other units responsible for operations, the time-consuming nature of preparing and reporting on financial transactions, and delays in providing audited reports and annual work plans and budgets to the World Bank for clearance. Details on mitigation measures for the identified risks can be found in the financial management risk assessment in Annex 1.
92. **From a financial management perspective,** the key strength of the project is that there is a solid foundation for a strong legal and regulatory framework for PFM in Ghana, as the various laws, regulations, and manuals already in place (e.g., Public Financial Management Act, 2016 [Act 921]) exemplify. In its quest to make the PFM systems and processes more robust, the government continues to pursue actions to prevent uncontrolled accumulation of arrears by introducing the commitment control module of the Ghana Integrated and Financial Management Information System (GIFMIS) and strengthening the cash forecasting and management processes and the funds' release management process to increase the predictability of resource flows to service delivery agencies—a feature that will be critical to the success of the PBC modality adopted for the implementation of this project.
93. Overall, the financial management arrangement of the project is adequate and meets minimum requirements according to World Bank policy and directives on IPF with PBCs.

(ii) Procurement

94. **The implementing agency, MoCD, will implement and manage procurement under the project using the current PCU.** The existing e-Transform PIU will become the PCU. The procurement team may require strengthening after project implementation.
95. **Procurement of goods, works, non-consulting, services, and consulting services for this IPF operations to be financed in whole or in part by the World Bank funds will be following World Bank Procurement Regulations for IPF Borrowers,** dated November 2020; the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by International Bank for Reconstruction and Development Loans and IDA Credits and Grants, dated October 15, 2006 and revised in January 2011 and as of July 1, 2016; and other provisions stipulated in the financing agreements. The procurement documents will be based on the World Bank standard procurement documents for all procurements subject to international competition. Documents will be modified for procurements subject to a national market approach. Recently enhanced documents to address

environment, social health, and safety; gender-based violence; and sexual exploitation, abuse, and harassment will be used. The PIM will elaborate on the procurement procedures, standard procurement documents, and model contracts associated with the market approaches and selection methods for the various procurement categories.

96. **MoCD will prepare all procurement plans in Systematic Tracking of Exchanges in Procurement based on the Project Procurement Strategy for Development (PPSD).** Procurement plans will be updated in agreement with the World Bank at least annually or as required to reflect project implementation needs and increases in institutional capacity. Systematic Tracking of Exchanges in Procurement (STEP) will be the primary tool to prepare, submit, review, and provide clearance to all procurement plans and prior review procurement activities and for online real-time storage of all (prior and post review) procurement process documents. The initial procurement plan was approved by the World Bank on March 26, 2022.
97. **A procurement capacity assessment was conducted following the Operations Core Services—Procurement Policy and Services guidelines and the Procurement Risk Assessment and Management System.** The PCU will bring their vast experience on e-Transform and established procurement review and decision-making structures at MoCD to the project.
98. **A PPSD has been developed to understand the implementation context market and identify associated risks to achieving value for money and project development objectives.** The PPSD sets out the selection methods to be followed in the procurement of Goods, Works, and Non-Consulting and Consulting Services financed under the project. The underlying Procurement Plan will be updated at least annually, or as required, to reflect project implementation needs and institutional capacity, which will also be informed by market-sounding that may be conducted as needed during project implementation. More information can be found in Annex 1.

C. Legal Operational Policies

| | Triggered? |
|---|------------|
| Projects on International Waterways OP 7.50 | No |
| Projects in Disputed Areas OP 7.60 | No |

D. Environmental and Social

99. **Project activities will be implemented under a variety of environmental and social conditions.** The World Bank assessment concluded that the project will not have significant adverse impacts on people or the environment. The project provides an opportunity to close digital gender gaps and Internet access gaps between urban and rural areas. Although the scope of the anticipated civil works under the project is not entirely clear, it is expected to be moderate-scale civil works with temporary and site-specific impacts.
100. **The environmental risk rating is moderate.** This risk rating takes into consideration the environmental risks and impacts associated with the proposed activities under the project and the institutional capacity of MoCD and the e-Transform Ghana Project PIU. Direct environmental risks identified are predictable, reversible, and site-specific – with a low probability of serious adverse effects on human health and the environment. Most activities financed



involve strengthening institutional capacity, enhancing policy framework, training, technical assistance, and studies while some activities involve limited civil works related to the construction and or rehabilitation/refurbishment of enabling infrastructure. Key risks identified include e-waste generation and occupational health and safety hazards for civil workers and communities, which will be mitigated through e-waste provisions financed and application of energy-efficiency and disaster response requirements for digital infrastructure. Project workers involved in civil works will be provided with personal protective equipment and trained on the application of health and safety protocols.

101. **The social risk rating is moderate.** The anticipated social risks and impacts of the project are deemed moderate. Risks identified include exclusion of youth, older adults, women, PwDs, and people in hard-to-reach communities from the entrepreneurial and digital skills training, although these can be mitigated by establishing clear selection criteria to ensure inclusion. A robust stakeholder engagement process will also mitigate such risks of social exclusion. The project is expected to have an overall positive social impact because the interventions will deepen digital inclusion for people in rural and hard-to-reach areas and PwDs and bridge the digital gender gap. Although the specific technology and approach to increasing access to the broadband network are yet to be clarified, the mix of connectivity technology to be deployed could include trenching to install broadband fiber optic cables and erection of new towers. Installation of fiber optic cables could require small-scale land acquisition and temporary disruption of social and business activities, particularly along road corridors. Permanent acquisition of land may also be required to accommodate tower-based stations. Engagement of consultants to conduct capacity-building training and contractors to install IT equipment may lead to labor-related risks, health, and safety risks of workers to be hired for IT installation, gender-based violence, and exposure to COVID-19. The impacts associated with these risks will be localized, will not be significant, and can be prevented or mitigated.
102. During project preparation, measures to avoid, reduce, or mitigate risks and adverse impacts on the environment and vulnerable populations will be identified. As part of the overall project environmental and social assessment process, the project will use the World Bank's environmental, health, and safety guidelines for telecommunications and general environmental, health, and safety guidelines. An Environmental and Social Commitment Plan was prepared and disclosed in-country on March 21, 2022, and on the World Bank's website on March 10, 2022, and a Stakeholder Engagement Plan was developed based on Environmental and Social Standard 10 and other supporting documents as part of the Environmental and Social Framework and disclosed in-country on March 21, 2022 and on the World Bank's website on March 10, 2022. The Environmental and Social Management Framework that includes Labor Management Procedures (according to Environmental and Social Standard 2) and e-Waste Management Plan (to identify hazardous waste that the project will generate directly or indirectly; consistent with Environmental and Social Standard 3) has been developed and disclosed in-country on March 22, 2022, and on the World Bank's website on April 7, 2022. The framework will also assess environmental and social risk and impacts during the construction, operation, and decommissioning phases of proposed civil works. A commitment to managing resettlement was also included in the framework, instead of a standalone resettlement policy framework. Risks related to sexual exploitation, abuse, and harassment were assessed as part of the Environmental and Social Management Framework the Recipient is preparing to guide project activities at all levels. The screening tool will also be used to identify and address the potential risks of HIV/AIDS, sexually transmitted infections, and the causes of widening gender inequality associated with project interventions.
103. **Citizen engagement:** During project preparation, consultations were held with direct stakeholders to gather feedback and inform the proposed design and the prioritization of activities. Throughout the project's implementation, CE activities will be conducted to establish a systematic approach for developing and maintaining constructive



relationships with all relevant stakeholders, particularly citizens, in accordance with guidelines for adapting engagement methodology in light of COVID-19-related restrictions. The Stakeholder Engagement Plan identifies the stakeholders, the means to ensure effective project communication with each stakeholder group, and indicators to monitor engagement activities. In particular, the project will: (a) develop a proactive communication and stakeholder engagement strategy to inform stakeholders about project objectives and scope; (b) develop an engagement strategy with the targeted population to address specific demands; and (c) establish, operationalize and maintain a Grievance Redress Mechanism (GRM) for the submission of complaints. As the design of digital public service delivery in the project (under Component 2) will adopt a human-centered design approach, it is especially critical for the government to understand the current limitations of existing e-services from the beneficiaries' point of view and incorporate their growing needs and different expectations into service design and delivery. A participatory, bottom-up approach with beneficiaries will promote active engagement and collaboration with citizens and businesses. Therefore, a periodic user satisfaction survey will be embedded within the project design as a means of getting feedback on the delivery mechanisms of the new and reengineered digital public services hosted in the Ghana.gov portal. The survey results will be used to inform the design of the newly introduced and additional digital public services.

V. GRIEVANCE REDRESS SERVICES

104. Communities and individuals who believe that a World Bank-supported project has harmed them may submit complaints to existing project-level grievance redress mechanisms or the World Bank Grievance Redress Service, which ensures that complaints are promptly reviewed, and project-related concerns addressed. Project-affected communities and individuals may submit complaints to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of the World Bank's noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention and World Bank management has been given an opportunity to respond. For information on how to submit complaints to the World Bank corporate Grievance Redress Service, visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, visit www.inspectionpanel.org.

VI. KEY RISKS

105. Overall project risk is rated **substantial** after mitigation measures based on the following factors:

106. **Macroeconomic risk is rated substantial.** Ghana is classified as being at high risk of external debt distress. The COVID-19 crisis resulted in large government and external financing needs to respond to the spread of the pandemic and support affected households and businesses. A slow recovery could limit the participation of the private sector in the ICT sector, limiting financial resources to expand broadband coverage to absorb people trained with new skills under the project, and reducing interest by international and domestic partners in supporting the digital innovation ecosystem. To mitigate these risks, the World Bank will closely monitor the country's macro-fiscal condition and its impact on project implementation and objectives in close dialogue with the government. Despite an effort to mitigate this risk, the residual risk remains substantial because of continued vulnerabilities related to COVID-19.

107. **Technical design risk is substantial.** Although the project will build on previous experience, there are new design elements that increase the risk. This is the first time PBCs have been introduced in a MoCD project. With a wide range



of stakeholders and programs, which adds complexity to project design, the project requires new processes and technologies that have a limited track record in Ghana. Previous World Bank-financed projects (in sectors such as health, education, judiciary, civil registry, and public records) have provided the MoCD with extensive experience in some of the project activities. The technical approach for supporting public sector digitization (especially subcomponent 2.2) is based on lessons learned from the e-Transform Ghana Project. The project also ensures synergy and collaboration with other World Bank-funded projects such as the Ghana Economic Transformation Project (P166539). The World Bank will leverage its wealth of knowledge and expertise from similar regional projects and global best practices to ensure appropriate and achievable PDOs, project design, and the results framework. Furthermore, experienced project technical committee members will provide technical support and advice to the PCU, line ministries, agencies, and other key stakeholders.

108. **Institutional capacity for implementation and sustainability risk is moderate.** The government will need to acquire new expertise and adopt a user-centric model in which services are designed from the bottom up rather than the traditional top-down approach. The project will support a comprehensive program to upskill government employees across sectors and agencies. Implementation will require several agencies to work in coordination with the MoCD. The MoCD must also work closely with the MoF and the Office of the Vice-President—both key stakeholders in the digital economy. MoF and MoCD have extensive experience coordinating World Bank-funded long-term, large-scale investment projects (e.g., e-Ghana and e-Transform Ghana), but the PCU may still require additional capacity and staff to ensure seamless project implementation. Component 4 supports the establishment of a strong PCU with a strong implementation capacity, consisting of representatives from the relevant MDAs. Finally, the World Bank will support intensive implementation including providing hands-on training, workshops (in-person and virtual).
109. **Fiduciary risk is substantial.** Fiduciary risk includes financial management and procurement risks. Despite the overall moderate financial management risk, the substantial rating is based on significant procurement risk, as detailed in the following section. **Procurement risk is substantial**, and the prior review thresholds have been set to reflect this. The World Bank procurement specialist and technical specialist or independent auditors will conduct procurement post-reviews and technical audits annually. The main risks identified are increasing the procurement workload of the existing PCU procurement team, inadequate monitoring of contracts, delays in processing procurement and payments, and external interference in procurement processes. The proposed mitigation will include recruitment of an additional procurement specialist with experience in contract management, on-going capacity building, and World Bank hands-on support in procurement and contract management, training sessions for MoCD and other beneficiary agencies on project implementation requirements in the policy framework, and ensuring that open competitive procurement is the default under the project.



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Ghana

Ghana Digital Acceleration Project

Project Development Objectives(s)

To expand access to broadband, enhance the efficiency and experience of selected digital public services, and strengthen the digital innovation ecosystem

Project Development Objective Indicators

| Indicator Name | PBC | Baseline | Intermediate Targets | | | | End Target |
|--|-------|----------|----------------------|--------------|--------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | |
| Expand access to internet | | | | | | | |
| People provided with new or enhanced access to broadband internet (CRI, Number) | | 0.00 | 0.00 | 1,500,000.00 | 2,500,000.00 | 4,000,000.00 | 6,000,000.00 |
| People provided with new or enhanced access to broadband internet – Female (CRI, Number) | | 0.00 | 0.00 | 600,000.00 | 1,000,000.00 | 1,600,000.00 | 2,400,000.00 |
| Newly connected public broadband access points in lagging areas [PBC] (Number) | PBC 2 | 0.00 | 0.00 | 30.00 | 60.00 | 90.00 | 120.00 |
| Enhance the efficiency and experience of selected digital public services | | | | | | | |
| Digital service transactions completed through Ghana.gov and Citizen App (user app) (Number) | | 0.00 | 0.00 | 50,000.00 | 300,000.00 | 1,000,000.00 | 1,500,000.00 |



| Indicator Name | PBC | Baseline | Intermediate Targets | | | | End Target |
|---|-----|----------|----------------------|--------|----------|----------|------------|
| | | | 1 | 2 | 3 | 4 | |
| Strengthen the digital innovation ecosystem | | | | | | | |
| Increase in average value of net revenue of the digital businesses supported by the project (Percentage) | | 0.00 | 3.00 | 8.00 | 12.00 | 13.00 | 15.00 |
| Individuals who secure new employment opportunities after completion of digital skills training supported by the project (Number) | | 0.00 | 100.00 | 500.00 | 1,000.00 | 1,700.00 | 2,100.00 |
| of which are women (Percentage) | | 0.00 | 25.00 | 20.00 | 25.00 | 30.00 | 30.00 |
| of which Persons with Disabilities (Percentage) | | 0.00 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 |

Intermediate Results Indicators by Components

| Indicator Name | PBC | Baseline | Intermediate Targets | | | | End Target |
|---|-------|----------|----------------------|-----|-----|-----|------------|
| | | | 1 | 2 | 3 | 4 | |
| Component 1. Ensuring Inclusive and Safe Digital Transformation | | | | | | | |
| National Broadband Strategy developed (Yes/No) | | No | No | Yes | Yes | Yes | Yes |
| A single information point on exiting physical infrastructure established and civil works for network infrastructure planned [PBC] (Yes/No) | PBC 1 | No | No | No | Yes | Yes | Yes |



| Indicator Name | PBC | Baseline | Intermediate Targets | | | | End Target |
|--|-----|----------|----------------------|----------|------------|--------------|--------------|
| | | | 1 | 2 | 3 | 4 | |
| Sectoral CERT established and operational (Number) | | 0.00 | 0.00 | 1.00 | 2.00 | 3.00 | 3.00 |
| PCM Indicator: Value of private sector investment leveraged under the project (Amount(USD)) | | 0.00 | 0.00 | 0.00 | 500,000.00 | 1,000,000.00 | 1,000,000.00 |
| Component 2. Modernizing Digital Government Services | | | | | | | |
| Government interoperability standards validated and adopted by the GoG (Yes/No) | | No | No | No | No | Yes | Yes |
| New/reengineered transactional services digitized and available to citizens and businesses (Number) | | 0.00 | 0.00 | 2.00 | 6.00 | 10.00 | 15.00 |
| of which are accessible to Persons with Disabilities (Percentage) | | 0.00 | 0.00 | 0.00 | 50.00 | 50.00 | 50.00 |
| User satisfaction with the new public digital services hosted on the Ghana.gov portal supported through the project (Percentage) | | 0.00 | 0.00 | 70.00 | 75.00 | 80.00 | 85.00 |
| Civil servants and government employees trained in digital skills and knowledge areas supported under the project (Number) | | 0.00 | 1,500.00 | 3,000.00 | 5,000.00 | 7,500.00 | 10,000.00 |
| of which are women (Percentage) | | 0.00 | 25.00 | 27.00 | 30.00 | 30.00 | 30.00 |
| Component 3: Support for Digital Transformation of Productive Strategic Sectors | | | | | | | |
| ESOs supporting digital | | 0.00 | 3.00 | 3.00 | 4.00 | 5.00 | 5.00 |



| Indicator Name | PBC | Baseline | Intermediate Targets | | | | End Target |
|--|-----|----------|----------------------|----------|----------|----------|------------|
| | | | 1 | 2 | 3 | 4 | |
| startups under the project (Number) | | | | | | | |
| Tech startups and digital entrepreneurs received grants under the project (Number) | | 0.00 | 0.00 | 40.00 | 120.00 | 180.00 | 200.00 |
| of which are female owned (Percentage) | | 0.00 | 20.00 | 30.00 | 40.00 | 40.00 | 40.00 |
| Digital firms received investment under the project (Number) | | 0.00 | 4.00 | 10.00 | 16.00 | 18.00 | 20.00 |
| of which are female-owned (Percentage) | | 0.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| Climate-smart and AgTech firms received investment under the project (Number) | | 0.00 | 5.00 | 10.00 | 15.00 | 20.00 | 20.00 |
| of which are owned by female entrepreneurs (Percentage) | | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 40.00 |
| Individuals, excluding civil servants, received digital skills training under the project (Number) | | 0.00 | 1,000.00 | 2,500.00 | 4,000.00 | 5,500.00 | 7,000.00 |
| of which are women (Percentage) | | 0.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| of which are persons with disabilities (Number) | | 0.00 | 100.00 | 200.00 | 300.00 | 400.00 | 500.00 |



Monitoring & Evaluation Plan: PDO Indicators

| Indicator Name | Definition/Description | Frequency | Datasource | Methodology for Data Collection | Responsibility for Data Collection |
|---|------------------------|-----------|------------|--|------------------------------------|
| People provided with new or enhanced access to broadband internet | | Annual | NCA/GIFEC | The data will be collected through statistics reports submitted by NCA and GIFEC. The indicator measures both new and enhanced access to internet services. Enhanced access to broadband is expected from improved broadband speed and reliability. The total number of connections to broadband services (3G or above) will be measured based on data from telecom operators, compiled by NCA. An estimated number of individuals that use broadband services at a newly connected public access point will be tracked and reported by GIFEC. | NCA/GIFEC |



| | | | | | |
|---|--|---------------|---------------------------------------|---|------------------|
| <p>People provided with new or enhanced access to broadband internet – Female</p> | | <p>Annual</p> | <p>NCA/GIFEC</p> | <p>The data will be collected through statistics reports submitted by NCA and GIFEC. The indicator measures both new and enhanced access to internet services. Enhanced access to broadband is expected from improved broadband speed and reliability. The total number of connections to broadband services (3G or above) will be measured based on data from telecom operators, compiled by NCA. An estimated number of individuals that use broadband services at a newly connected public access point will be tracked and reported by GIFEC.</p> | <p>NCA/GIFEC</p> |
| <p>Newly connected public broadband access points in lagging areas [PBC]</p> | <p>This indicator tracks the number of public broadband access points established in rural areas using project</p> | <p>Annual</p> | <p>Project implementati on report</p> | <p>PCU will gather data from service providers hired by the project. Data will be cross-</p> | <p>GIFEC</p> |



| | | | | | |
|--|---|--|-------------|--|-------------|
| | <p>funding. Public broadband access points are public buildings or facilities that are connected to the internet and provide high-quality broadband services via a Wi-Fi hotspot or other technology.</p> | | | <p>referenced with GIFEC data and confirmed by a third-party verification agency.</p> | |
| <p>Digital service transactions completed through Ghana.gov and Citizen App (user app)</p> | <p>This indicator measures the total number of digital services transactions completed through Ghana.gov and Citizen App (user app) per year. The objective is to track digital service uptake by users (business and citizens) as a result of new/ reengineered digital service deployment activities supported through the project to increase availability and access to user-friendly and citizen-centric digital public services. Enhanced efficiency and experience, for digital public services refers to services that are transactional, user-friendly, digital-by-design, and accessible through the government portal and user</p> | <p>Annual, starting Year 2 of the project implementation</p> | <p>NITA</p> | <p>The data will be collected by NITA and submitted through the Project implementation reports by PCU.</p> | <p>NITA</p> |



| | | | | | |
|--|--|--------|---------------------------------------|---|-----|
| | app. | | | | |
| Increase in average value of net revenue of the digital businesses supported by the project | This indicator measures the increase in revenue that is above the values registered (in the previous 1-3 years) by a sample among beneficiary businesses secured grants and/or investments. The project will do an annual sampling to calculate the average value of revenues through the ESOs and VCTF supported under the project. | Annual | Survey conducted by the ESOs and VCTF | The data will be collected by the ESOs, VCTF, and any other entities providing financing support to the beneficiary businesses through an annual survey. The percentage will be recorded in the project implementation report by PCU. | PCU |
| Individuals who secure new employment opportunities after completion of digital skills training supported by the project | This indicator measures the number of individuals who reported that they were able to find new job offers, added new income streams while self-employed, or secured revenue-generating activities as a result of targeted virtual and in-person training or other project-funded activities. | Annual | Survey conducted by training centers | The relevant information will be provided via training centers, such as Community Information Centers (CICs) and other entities/contractors offering training under the project. Six months after the program, the training centers will perform surveys of the trainees. The total number will subsequently be | PCU |



| | | | | | |
|------------------------------------|--|--------|--------------------------------------|--|-----|
| | | | | recorded in a project implementation report by PCU. | |
| of which are women | This indicator measures the number of individuals who reported that they were able to find new job offers, added new income streams while self-employed, or secured revenue-generating activities as a result of targeted virtual and in-person training or other project-funded activities. | Annual | Survey conducted by training centers | The relevant information will be provided via training centers, such as Community Information Centers (CICs) and other entities/contractors offering training under the project. Six months after the program, the training centers will perform surveys of the trainees. The total number will be recorded in a project implementation report by PCU. | PCU |
| of which Persons with Disabilities | This indicator measures the number of individuals who reported that they were able to find new job offers, added new income streams while self-employed, or secured revenue-generating activities as a result of targeted virtual and in- | Annual | Survey conducted by training centers | The relevant information will be provided via training centers, such as Community Information Centers (CICs) and other entities/contractors offering training under | PCU |



| | | | | | |
|--|---|--|--|---|--|
| | person training or other project-funded activities. | | | the project. Six months after the program, the training centers will perform surveys of the trainees. The total number will recorded in a project implementation report by PCU. | |
|--|---|--|--|---|--|

Monitoring & Evaluation Plan: Intermediate Results Indicators

| Indicator Name | Definition/Description | Frequency | Datasource | Methodology for Data Collection | Responsibility for Data Collection |
|--|--|-----------|--------------------------------|--|------------------------------------|
| National Broadband Strategy developed | Ghana's National Broadband Strategy has been prepared and made public. The Strategy will include a plan to ensure that impoverished and disadvantaged populations, such as youth, women, people with disabilities, and individuals living in marginalized areas, have equitable access to broadband. | Annual | NCA | Submission of the final national broadband strategy and acknowledgment of dissemination in the project implementation reports submitted by PCU. A review of relevant official publications is collected through the official website of NCA. | NCA |
| A single information point on exiting physical infrastructure established and civil works for network infrastructure | A single information point (SIP) has been set up within NCA and is operational. SIP | Annual | Project implementati on report | The establishment of the SIP will be recorded in a project | NCA |



| | | | | | |
|---|---|--------|---|---|-------------------------|
| planned [PBC] | consolidates and systematizes information on current physical network infrastructure, as well as planned or ongoing activities on construction, deployment, and installation of network infrastructure. The portal should have information on all existing physical passive and active public network infrastructure. Climate risk information will also be integrated into the spatial information tool to allow the monitoring of civil works projects in areas vulnerable to climate change-related floods and storms. | | | implementation report. The accuracy and pertinence of the information available on the portal will be confirmed by a third-party verification agency. | |
| Sectoral CERT established and operational | This indicator will count the number of sectoral CERTs established and operational according to the Accreditation Framework to be developed under the project. | Annual | Cybersecurity Authority | Project implementation reports submitted by PCU | Cybersecurity Authority |
| PCM Indicator: Value of private sector investment leveraged under the project | This indicator measures the value, in US dollars, of additional (or incremental) private sector investment in Ghana's ICT sector as a | Annual | Service contracts for the bandwidth purchase; | Private sector reporting, and PCU monitoring. Target will be revised during implementation, once | PCU |



| | | | | | |
|---|--|---|--|--|-------------|
| | <p>result of the project. It is anticipated that this will primarily be leveraged through sub-component 1.2, the connectivity initiative, and sub-components 3.1 and 3.2, early-stage financing to digital firms. Other components of the project may also leverage private sector investment, most notably through partnerships to deliver digital skills training that will be arranged.</p> | | <p>balance sheets of grant recipient firms</p> | <p>initial assessments are carried out.</p> | |
| <p>Government interoperability standards validated and adopted by the GoG</p> | <p>This indicator measures the recipient's achievement in streamlining the interoperability framework and its adoption. The achievement is met when the interoperability standards are endorsed by the Project Oversight Committee and disseminated by the Government to the MDAs.</p> | <p>Annual</p> | <p>NITA</p> | <p>Submission of the final interoperability standard and acknowledgment of dissemination in the project implementation reports submitted by PCU. A review of relevant official publications is collected through the official website of NITA.</p> | <p>NITA</p> |
| <p>New/reengineered transactional services digitized and available to citizens and businesses</p> | <p>This indicator measures the number of new/reengineered transactional services that</p> | <p>Annual, starting Year 2 of the project</p> | <p>NITA</p> | <p>The data will be collected by NITA and submitted through the Project implementation</p> | <p>NITA</p> |



| | | | | | |
|---|--|--|-------------|---|-------------|
| | <p>have been digitized and are available to citizens and businesses, supported by the project (cumulative). The objective is to increase availability and access to user-friendly, citizen-centric digital public services to stimulate user uptake. The services would be required to meet the standards for level 3 and above, as defined by the UN four-stage maturity model of e-government.</p> | <p>implementation</p> | | <p>reports by PCU.</p> | |
| <p>of which are accessible to Persons with Disabilities</p> | <p>This indicator measures the percentage of transactional public services (new or re-engineered through the project) accessible to persons with disabilities (PwD). Accessibility to PwDs is defined as conforming to the lowest level of the Web Content Accessibility Guidelines 2.1 (WCAG). The baseline will be validated by NITA, while targets to be developed in conjunction with the authorities when data becomes available.</p> | <p>Annual, starting Year 2 of the project implementation</p> | <p>NITA</p> | <p>NITA will prepare a report on the WCAG compliance of new or re-engineered digital public services.</p> | <p>NITA</p> |



| | | | | | |
|--|--|--------------------|--|---|-------------|
| <p>User satisfaction with the new public digital services hosted on the Ghana.gov portal supported through the project</p> | <p>This indicator will track the percentage of people accessing new digital governments services hosted in the Ghan.gov portal supported through the project and reporting satisfaction. The survey results will be used to inform and enhance the design and delivery mechanisms of the newly introduced and additional digital public services.</p> | <p>Semi-annual</p> | <p>Ghana.gov Citizen Feedback mechanism, M&E survey data</p> | <p>PCU will collect this information from NITA and relevant MDAs to feed into the project implementation report and the results framework. Assuming a five-level scale, user satisfaction will be the percentage of responses in the top two levels (e.g., satisfied and very satisfied).</p> | <p>NITA</p> |
| <p>Civil servants and government employees trained in digital skills and knowledge areas supported under the project</p> | <p>This indicator measures the percentage of the civil servants and government employees of total government employees completed at least one digital skill training courses, including online trainings, (at basic, mid, and advanced levels) within the scope of the project and as per the public sector digital skills development strategy. Baseline and targets to be developed in conjunction with the authorities when data becomes available.</p> | <p>Annual</p> | <p>OHCS</p> | <p>Data will be provided by OHCS and validated by MoCD, and to be included in Project implementation reports submitted by PCU</p> | <p>OHCS</p> |



| | | | | | |
|---|--|--------|--|---|---------------------------|
| of which are women | | | | | |
| ESOs supporting digital startups under the project | This indicator measures the cumulative number of ESOs (Digital hubs) providing incubation services and/or grants to digital businesses under the project. | Annual | Project implementation report | The data will be collected by PCU from the ESOs selected and received project financing. | PCU/MoCD/ Partnering ESOs |
| Tech startups and digital entrepreneurs received grants under the project | This indicator counts the total number of start-ups that are directly or indirectly secured grants through the ESOs (Digital Hubs, GEA) financed, and/or any of the start-up financing entities supported under the project. | Annual | Project implementation report, Digital hubs, GEA, and other ESOs | The data will be collected by PCU from ESOs and other public and/or private entities supporting start-ups that receive project financing. | PCU/ESOs |
| of which are female owned | Female-owned businesses are defined as those in which a majority (>50%) of the founders are female. | Annual | Project implementation report | The data will be collected by PCU from ESOs and other public and/or private entities supporting start-ups that receive project financing. | PCU/Digital Hubs/GEA |
| Digital firms received investment under the project | This indicator counts the total number of start-ups that are directly or indirectly secured funding through the investment fund supported under the project. | Annual | Project implementation report | The data will be collected by PCU from VCTF and/or other entities invested in selected digital firms under the project. | VCTF |



| | | | | | |
|---|---|--------|-------------------------------|--|---|
| of which are female-owned | Female-owned businesses are defined as those in which a majority (>50%) of the founders are female. | Annual | Project implementation report | The data will be collected by PCU from VCTF and/or other entities invested in selected digital firms under the project | VCTF |
| Climate-smart and AgTech firms received investment under the project | This indicator counts the total number of digital firms in the agriculture sector directly or indirectly secured funding through the investment fund supported under the project. To be counted as climate-smart, products and services shall host low GHG emission technologies to facilitate adaptation and mitigation to achieve resilience directly and indirectly against climate change impact. | Annual | Project implementation report | The data will be collected by PCU from VCTF and/or other entities invested in selected AgTech firms under the project | VCTF/Ghana climate innovation center |
| of which are owned by female entrepreneurs | Female-owned businesses are defined as those in which a majority (>50%) of the founders are female. | Annual | Project implementation report | | VCTF/Ghana climate innovation center |
| Individuals, excluding civil servants, received digital skills training under the project | This indicator measures the total number of individuals trained and received at least one certificate as part of the digital skills training supported directly or | Annual | training centers | The relevant information will be provided via training centers, such as Community Information Centers | KACE/GIFEC/National Council for Persons with Disability |



| | | | | | |
|--|---|--|------------------|--|--|
| | indirectly supported through the project. | | | (CICs) and other entities/contractors offering training under the project. The total number will subsequently be recorded in a project implementation report by PCU. | |
| of which are women | | | training centers | | AITI-KACE/GIFEC/ National Council for Persons with Disability |
| of which are persons with disabilities | | | training centers | | National Council for Persons with Disability |

Performance-Based Conditions Matrix

| | | | | |
|----------------------|--|------------------------|-------------------------------------|---------------------------------------|
| PBC 1 | Optimizing Telecommunication Network Infrastructure Deployment and Investment | | | |
| Type of PBC | Scalability | Unit of Measure | Total Allocated Amount (USD) | As % of Total Financing Amount |
| Output | No | Text | 5.00 | |
| Period | Value | | Allocated Amount (USD) | Formula |
| Baseline | Current network elements not fully utilized and limited cross-sectoral coordination of civil works | | | |
| Sept 2022- Aug. 2023 | The Recipient has issued regulatory guidelines for | | 2.00 | \$2M upon completion |



| | | | | |
|-----------------------|--|------------------------|-------------------------------------|--|
| | sharing of passive network element. | | | |
| Sept. 2023 - Aug 2024 | The Recipient has established a single information point on existing physical infrastructure and planned civil works for network infrastructure. | | 3.00 | \$3M upon completion |
| Sept 2024 - Aug 2025 | - | | 0.00 | - |
| Sept 2025 - Aug 2026 | - | | 0.00 | - |
| Sept 2026 - Aug 2027 | - | | 0.00 | - |
| PBC 2 | Extending Digital Connectivity in Lagging Areas (Number of newly connected public broadband access points in lagging areas) | | | |
| Type of PBC | Scalability | Unit of Measure | Total Allocated Amount (USD) | As % of Total Financing Amount |
| Output | Yes | Number | 18.00 | |
| Period | Value | | Allocated Amount (USD) | Formula |
| Baseline | 0.00 | | | |
| Sept 2022- Aug. 2023 | 0.00 | | 0.00 | - |
| Sept. 2023 - Aug 2024 | 30.00 | | 6.00 | \$6M upon at least 30 sites connected |
| Sept 2024 - Aug 2025 | 60.00 | | 4.00 | US\$4M for every 30 additional sites connected |
| Sept 2025 - Aug 2026 | 90.00 | | 4.00 | US\$4M for every 30 additional sites connected |



| | | | |
|----------------------|--------|------|--|
| Sept 2026 - Aug 2027 | 120.00 | 4.00 | US\$4M for every 30 additional sites connected |
|----------------------|--------|------|--|

Verification Protocol Table: Performance-Based Conditions

| | |
|----------------------------|---|
| PBC 1 | Optimizing Telecommunication Network Infrastructure Deployment and Investment |
| Description | PBC 1.1 is defined as the issuance of regulatory guidelines for the sharing of passive network elements. The regulatory framework should articulate procedures and cost allocation principles for access and sharing of facilities such as ducts, poles, poles, shelters, and other physical installations used to support and accommodate telecommunications equipment. Prior to the release of the package, a public consultation on the proposed guidelines should be held. PBC 1.2 is defined as the establishment of a single information point on existing physical infrastructure and planned or ongoing activities on network infrastructure construction, deployment, and installation. The portal should contain information on all existing physical passive and active public network infrastructure. Climate risk information will also be integrated into the spatial information tool to allow the monitoring of civil works projects in areas vulnerable to climate change-related floods and storms. |
| Data source/ Agency | PCU/NCA |
| Verification Entity | Independent verification agency |
| Procedure | The IVA will review and verify that the PBC results comply with the terms stated in the PBC description and ensure Eligible Expenditures under the Project have been incurred in compliance with the arrangements provided in the Project Implementation Manual. Prior to the submittal of any withdrawal application in respect of the PBC, the Recipient shall furnish to the Association an Independent Verification Report, including all the findings and results from the Independent Verification, as well as certifications from the IVA of achievement of the respective PBC results. The Task Team confirms all evidence submitted is satisfactory to the World Bank. |



| | |
|----------------------------|---|
| PBC 2 | Extending Digital Connectivity in Lagging Areas (Number of newly connected public broadband access points in lagging areas) |
| Description | PBC2 is defined as the number of newly connected public broadband access points in rural areas. The public access points will be established at public buildings or facilities such as Community Information Centers (CICs), schools, libraries, health clinics. Connectivity and supporting ICT equipment should ensure that youth, women, and people with disabilities have equitable access. Furthermore, all infrastructure should be a) operated on a nondiscriminatory and open access basis; b) adhere to energy-efficient civil works standards to improve energy efficiency and fuel consumption; and c) implement climate-resilient design and solutions that anticipate, prepare for, and adapt to changing climate conditions. |
| Data source/ Agency | project implementation report |
| Verification Entity | Independent verification agency |
| Procedure | Verification is based on the number of connected public access points. PCU will compile information on public access points, including location, network architecture, capacity and performance, and neighborhood demographics (with particular attention to youth, women, and persons with disabilities). The baseline report on the coverage gap will be used to validate that these access points are installed in areas where market failure has been proven. The IVA will review and verify that the PBC results comply with the terms stated in the PBC description and ensure Eligible Expenditures under the Project have been incurred in compliance with the arrangements provided in the Project Implementation Manual. The PBC disbursement will be pro-rated by successfully connected public access points. Prior to the submittal of any withdrawal application in respect of the PBC, the Recipient shall furnish to the Association an Independent Verification Report, including all the findings and results from the Independent Verification, as well as certifications from the IVA of achievement of the respective PBC results. The Task Team confirms all evidence submitted is satisfactory to the World Bank. |



ANNEX 1: Implementation Arrangements and Support Plan

A. Financial Management

Budgeting Arrangements

1. MoCD follows budget preparation guidelines according to Public Financial Management Act 921 and the annual budget guidelines issued by the MoF. For the PBC component, the budgeting of project expenditures will constitute part of the government's budgeting process. The PBC component will be captured in the budget according to functional and object classification codes to capture expenditures for eligible expenditures consistent with the government chart of accounts. These will form the basis for financial reporting and monitoring of budget appropriations, revisions, releases, and expenditures for the PBC component.
2. Before the start of the budget cycle, the project coordinator will have discussed project activities and work programs with the M&E coordinator, procurement specialist, and respective beneficiary agencies, and developed detailed annual work plans and budgets. After reviewing the budget proposals from beneficiary institutions, MoCD clears them for implementation based on agreed-upon project activities. The annual work plan and budget will be submitted to the Project Oversight Committee for review and approval. Approved budgets will then be submitted to the IDA for "no objection" for the IPF components to ensure that the planned activities are in line with the project development objectives.
3. The submission should be no later than November 30, at least one month before the beginning of the calendar year. Based on the approved annual work plan and budget, a procurement plan will be derived and form the basis of yearly implementation. For the IPF component, MoCD will monitor expenditures under each disbursement category and submit unaudited interim financial reports (IFRs), with any significant variances explained, and the team will take prompt action to correct any significant material variance identified. The project will seek approval for budgetary variations greater than 10 percent from the World Bank before approval is given for activity implementation.
4. The officers involved in the budgeting process will have a minimum of 20 years of experience in the budgeting process.

Accounting Arrangements

5. **Staffing:** The MoCD head of finance will have overall financial management responsibility, ensuring that adequate financial management systems are in place throughout the implementation and use of project funds. The financial management functions of the implementing agencies have been fully mainstreamed within the ministry.
6. A chief accountant and a designated project accountant will support the head of finance. The chief accountant will have day-to-day accounting and reporting responsibilities. Lessons from the e-Transform Project suggest that project accountants seconded from the Controller and Accountant



General Department rotate every five years, resulting in frequent transfer of knowledge out of the ministry and the need to train a replacement accountant on donor-funded reporting arrangements. The recent introduction of a qualified accountant with more than 10 years of experience in reporting on donor-funded projects mitigates this risk. The chief accountant will facilitate interaction with IDA on project accounting and financial management.

7. MoCD adopts Generally Accepted Accounting Principles and International Accounting Standards, and there are written policies and procedures covering all routine accounting and related administrative activities. The policies included in the financial management manual are outdated and do not reflect some regulations indicated in Public Financial Management Act 921.
8. **Systems:** MoCD prepares financial reports using Microsoft Excel, which has weaknesses including being susceptible to manual data entry error, lack of control and security, vulnerability to fraud and corruption, troubleshooting difficulties.
9. Given that the government recently introduced the GIFMIS including a feature that allows for customization of the software to account for donor-funded activities, IDA will request that MoCD transition from a manual process to GIFMIS. The system will be used to process and report on project financial transactions to minimize the risk of human error and delays in financial reporting. MoCD is required to engage the GIFMIS Secretariat to migrate to GIFMIS. To facilitate the configuration, the GIFMIS Secretariat will ensure that the chart of accounts includes authorization codes for key activities under the PBC component and budget line items under the project. GIFMIS configuration and end-user training expenditures will be eligible under Component 4. Once implemented, GIFMIS will be the primary basis for transaction recording, to enable timely preparation of monthly budget execution reports related to overall program expenditures.
10. The GIFMIS Secretariat maintains GIFMIS, which runs on the Ghana National Data Center platform. GIFMIS reduces human intervention in the payment process, although stakeholders have had recent concerns about system downtime, Internet connectivity, and system closures, which delay payments to suppliers and may affect operations at the ministry, including the project.
11. Other projects have revealed areas for improvement regarding reporting in GIFMIS. MoCD should coordinate with the Secretariat and agree on the next steps in ensuring that GIFMIS is configured to generate relevant donor-funded project reports.

Internal Control and Auditing

12. The project's internal controls will rely on the government's established accounting and internal control guidelines as documented in internal audit manuals and Public Financial Management Act 921.
13. **Expenditure review and payments:** Expenditure initiation and related controls will follow the authorization and approval processes used in MoCD. Memos for committing funds for payment on the project are sent to the minister or chief director for approval, depending on the type of memo. After approval, the head of finance instructs the project accountant to prepare the payment voucher, which



the preparer, reviewer, authorizer, and approver sign. The chief director and a representative from MoF must approve the transfer of funds before the Bank of Ghana can make a payment.

14. **Internal Audit:** MoCD has a functioning internal audit unit that helps promote a sound control environment for transaction processing. The chief internal auditor manages the MoCD headquarters internal audit unit, supported by a qualified senior internal auditor and two internal audit staff members. The internal audit unit is responsible for performing post-audit reviews of project transactions. The chief internal auditor must include the Digital Acceleration Project in MoCD's internal audit work plan, so the internal audit team must periodically perform risk-based audits to monitor project activities and provide periodic internal audit reports. MoCD will maintain a fixed assets log for assets to be acquired or created using project funds. The internal audit unit will submit at least two internal audit reports to the World Bank each year.
15. **Conflict of Interest:** MoCD applies the conflict-of-interest guidelines described in the World Bank procurement documentation for direction on conflict of interest and related party transactions.
16. **Fixed Assets:** There are areas for improvement in MoCD's fixed asset management process. MoCD is compiling fixed assets purchased with project funds and distributed to various locations. Once completed, a follow-up visit by the World Bank FMS will confirm the existence of project assets.
17. **Bank reconciliation:** Reconciliation procedures for the ongoing e-Transform (P144140) project have not been consistent at MoCD because of recent movements of project staff, although it is expected that this will be corrected and that an accountant will prepare the reconciliation and review, and the head of finance will approve.

Funds Flow and Disbursements

18. The project will use proceeds of the credit for eligible expenditures as defined in the financing agreement and detailed in the respective approved annual work plans and budgets. Funds flow for IPF with PBC is the same as for other IPF, using any allowable disbursement method, as appropriate. For advances, IPF with PBC disbursements is expected to be made into the designated account, whether financing recurrent or investment expenditures.
19. Retroactive financing up to an aggregate amount not to exceed \$ 4,000,000 may be made for payments made prior to the signature date but on or after June 30, 2021 for Eligible Expenditures under Category (1);
20. MoCD will maintain one U.S. dollar designated account to receive funds from the World Bank and a local currency project account to support operational activities. Both accounts will be opened at the Bank of Ghana. The MoCD head of finance will manage these accounts with prior approval of all transactions from the chief director.
21. Once MoCD has opened the accounts, MoF must provide IDA with the account details and a list of designated signatories for the project to be set up in Client Connection.



22. MoCD, through MoF, must notify the World Bank of any changes in signature authority, electronically in Client Connection or through an updated authorized signatory designation letter. Procedures, modalities, signatories, and the like for operating the designated accounts and project accounts will be further clarified and outlined in the PIM.
23. **Disbursements:** Funds from the World Bank will be disbursed directly to the project U.S. dollar designated account maintained at the Bank of Ghana. For IPF components, once funds are received into this account, they can be moved into a cedi account that MoCD maintains for project activities; authorization should be obtained before initiating fund movements. The project accountant must prepare monthly bank reconciliations of the designated account, which the MoCD head of finance will approve. The report-based method of disbursement will apply to the IPF aspect of the project. Other methods of disbursement will include advances, direct payments, special commitments, and reimbursements.
24. Funds will be requested based on withdrawal applications that at least one representative from each of MoF, MoCD, and the Controller and Accountant General Department has signed, supported by unaudited IFRs using the report-based modalities and will include budget execution reports generated from GIFMIS together with forecast expenditures against the achievement of PBCs.
25. Applications and necessary supporting documents will be submitted to the World Bank electronically in a manner and on terms and conditions that the World Bank specifies through the Client Connection. The World Bank will, at its discretion, temporarily or permanently disallow the electronic submission of applications by the Recipient. The World Bank will permit MoCD to complete and submit applications manually in paper form. Paper application forms can be found on the Client Connection or obtained from the World Bank upon request. The World Bank establishes a minimum value for applications for reimbursement, direct payment, and special commitment and reserves the right not to accept applications that are below such minimum value.

Modalities for Disbursements – PBC Component

26. Component 1 supports the preparation of an enabling regulatory framework in the telecommunications sector and investment to close the geographical digital divide. Under the component, the project's achievements will be monitored according to predetermined indicators. Credit proceeds will be disbursed on an agreed-upon scale and schedule according to the achievement of indicators. The achievement will be documented through evidence of such achievement, and eligible expenditures will be documented in unaudited IFRs. The achievement will be verified based on a verification protocol that will be detailed in the Independent Verification Agent (IVA) contract and the PIM. Project funds will be disbursed into a transaction account and disbursed against specific eligible expenditures.
27. The advance option will be made available to the government upon request to help achieve the performance conditions. The advances would be deducted from the amount due upon achievement of the conditions. The amounts claimed will be capped at agreed-upon amounts for PBCs and transferred



using the reimbursement method from the project’s account in Washington D.C., to a segregated transactions account (which the project will confirm at the time the funds' request is submitted). Disbursements against verified PBCs can be made in full only if the amount to be disbursed is lower than the actual annual expenditure related to agreed-upon eligible expenditures. Once deposited in the transactions account, funds will be directed to activities related to reforms in the digital sector established under the project.

28. Project amounts to be allocated are shown in table 1.1 according to result area and year.

Table 1.1. PBC Pricing According to Results Area, Component, and Year

| Component | PBC | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|-----------|---|--------------|------------|------------|------------|------------|-------------|
| | | US\$ million | | | | | |
| 1.1 | Optimizing telecom network infrastructure deployment and investments | | 2.0 | 3.0 | 0.0 | 0.0 | 5.0 |
| 1.2 | Extending digital connectivity in lagging areas (Number of newly connected public broadband access points in lagging areas) | 0.0 | 6.0 | 4.0 | 4.0 | 4.0 | 18.0 |
| | Total IDA allocation to PBCs | 0.0 | 8.0 | 7.0 | 4.0 | 4.0 | 23.0 |

Modalities for Disbursements Under IPF Component

29. **Funds flow and disbursement arrangements:** The IPF components will be implemented under the principles of traditional IPF arrangements using the report-based disbursement arrangements. Under this approach, the allocated resources will be advanced to the MoCD’s U.S. dollar designated account based on a six-month forecast of expenditures and replenished quarterly for further periods of six months using IFRs generated from MoCD’s GIFMIS software. The IFRs (including “procurements subject to prior reviews” and “designated account reconciliation statement”) will serve as the basis for requesting advances and for documentation. The initial disbursement will be based on the consolidated expenditure forecast for six months, subject to the World Bank’s approval of the estimates. Subsequent replenishment of the designated account will be made quarterly based on the forecast of net expenditures for the subsequent six months.

30. It must be emphasized that for the IPF components, the World Bank Procurement Guidelines shall govern all the procurement activities.

31. If ineligible expenditures are found to have been made from the designated accounts, the Recipient must refund them, and IDA will have the right to suspend disbursement of funds if reporting requirements are not complied with as provided for in the financing agreement. The World Bank will periodically assess the adequacy of financial management systems, which will form the basis of any change in disbursement methods.

32. **Financial Reporting Arrangements:** MoCD will prepare quarterly unaudited IFRs for IPF components and submit them to the World Bank no later than 45 days after the end of each quarter. The project



coordinator will review and sign off on the IFR before the MoCD head of finance submits it to the World Bank. The existing IFR arrangement, including the IFR format in use at MoCD for the e-Transform project, will apply to all IPF components under the Digital Acceleration Project.

33. **Disbursement Categories:** The table below shows the disbursement categories for the entire project which includes the IPF and PBC components.

Table 1.2. Disbursement Categories

| Category | Amount of the Financing Allocated in USD | Percentages of Expenditures Financed (Inclusive of Taxes) |
|---|--|---|
| (1) Works, goods, non-consulting services, Training, Operating Costs, and consultants' services under Part 1.1 (a) and 1.2 (a) of the project (PBC 1) and (PBC 2) | 23,000,000 | 100% of each PBC Amount set out in Schedule 4 (or such lesser percentage as represents the total Eligible Expenditures incurred and paid by the Recipient as of the date of withdrawal) |
| (2) Works, goods, non-consulting services, Training, Operating Costs, and consultants' services for Part 1 (except Part 1.1 (a) and 1.2 (a)), Part 2 and 3.1 (a), 3.1 (c) (i) 3.2 (a), 3.2 (c) and 3.2 (d) of the project | 130,000,000 | 100% |
| (3) Capitalization of the VCFT Fund under Part 3.1 (d) and 3.2 (b) of the project | 18,000,000 | 100% |
| (4) Goods, non-consulting services, consultants' services, Operating Costs and Training under Part 4 of the project | 15,000,000 | 100% |
| (5) Grants under Parts 3.1(b) and (c) (ii) of the project. | 14,000,000 | 100% |
| (6) Contingency Emergency Response under Part 5 of the project | 0 | |
| TOTAL | 200,000,000 | |

34. The MoCD head of finance will ensure that these IFRs are prepared on time and submitted to all stakeholders, including the World Bank, in line with the timelines set out in the financing agreement. These reports should show clearly at a minimum:

- (i) a statement of sources and use of funds according to components according to the Project Appraisal Document (*useful in monitoring implementation of the components*)
- (ii) a statement of sources and use of funds showing expenditures according to a category according to the financing agreement (*for allocating expenditure*)
- (iii) a budget variance report comparing use of approved budget with expenditures (*useful to the World Bank to monitor implementation and fund use*)
- (iv) a designated account reconciliation statement
- (v) a list of current commitments (signed and ongoing contracts)



- (vi) a cash forecast for six months (*to be the basis for requesting additional funding*)
 - (vii) for PBC components, in addition to the above, copies of eligible expenditures spending reports
35. Formats of the various periodic financial monitoring reports to be generated from the financial management system was developed and discussed with the Recipient. The financial reports will be designed to provide relevant, timely information to project management, implementing agencies, and various stakeholders monitoring the project's performance.
36. MoCD will prepare financial statements at the end of each fiscal year in accordance with the International Public Sector Accounting Standards accrual basis. The financial statements will comprise, at a minimum, sources, and uses of funds (summary of expenditures shown under main program headings and according to the main category of expenditures for the period) and notes to the financial statements, including background information, accounting policies, detailed analysis, and explanation of the main accounts and major balances. MoCD will also provide, as an annex to the financial statements, an inventory of fixed assets acquired according to the asset class, date of purchase, location, and cost. Advances will not be recognized as expenditures until the goods or services have been delivered with the appropriate supporting documentation.
37. **Implementation for Early-Stage Financing:** The early-stage financing will be implemented by the Venture Capital Trust Fund. A fund manager with terms of reference, experience, and qualifications, satisfactory to the World Bank will be hired to support VCTF. VCTF shall have an investment committee with a composition, mandate, and resources satisfactory to the World Bank ("Investment Committee"). Currently, the VCTF implements the Ghana Economic Transformation Project (P166539) within appropriate arrangements. This will have to be continued for the implementation of the Ghana Digital Acceleration Project and will be reflected in the Cooperation Agreement. A Cooperation Agreement satisfactory to the World Bank, for the transfer of part of the financing for the implementation of this activity will be entered into between the MoCD and the VCTF and will be a condition for the disbursement of the funds. In addition, the preparation and adoption of a VCTF Manual satisfactory to the World Bank and with details for the administration of the fund; and recruitment of a Fund Manager with qualification and experience satisfactory to the World Bank will also be a disbursement condition. The Investment Committee under the ongoing Ghana Economic Transformation Project (P166539) shall be responsible for making decisions on direct investments of funds under subcomponents 3.1 and 3.2 of the Project. Further details will be reflected in the Cooperation Agreement and the VCTF Manual; and the investment activities of the Fund shall be carried out in compliance with procedures acceptable to the in eligible formalized, innovative, and growth-oriented businesses, all as set out in the VCTF Manual; and ensure that any modifications to the structure, ownership, management and governance arrangements of the VCTF Fund shall be approved in writing by the World Bank.
38. **External Auditing:** In line with its mandate as per the Ghana Audit Service (GAS) Act (Act 584), the Auditor General is responsible for the auditing of public funds as received by government ministries, departments, and agencies and as such, GAS will be responsible for conducting the Digital Acceleration Project audit. Consistent with the use of country FM systems, the GAS will conduct the audit of the project's financial statements as part of the MoCD Annual Audit. Detailed notes to be included in the audited financial statements will incorporate activities financed under the project. The auditor will



express an opinion on the financial statements in compliance with International Standards of Supreme Audit Institutions and prepare a management letter providing observations, comments, and recommendations for improvements in accounting records, systems, and controls and compliance with financial covenants in the financing agreement. External audits will be conducted annually, and the audit report and management letter will be submitted to the World Bank within six months after the end of the financial year audited, as noted under financial reporting above.

- 39. **Implementation Support Plan:** Based on the risk rating of the project and the current financial management arrangement, it is expected, that after effectiveness, in the first year of implementation, there will be at least one onsite visit to ascertain the adequacy of systems and how effectively the country systems are being used to support implementation. The financial management implementation support mission will ensure that strong financial management systems are maintained throughout project tenure. In adopting a risk-based approach to financial management implementation support, key areas of focus will include assessing the accuracy, reasonableness, predictability, and execution of budgets; compliance with payment and fund disbursement arrangements; and the ability of systems to generate reliable project-specific financial reports.
- 40. **Conclusion:** A description of the project’s financial management arrangements as documented in the preceding paragraphs indicates that they satisfy the World Bank’s minimum requirements according to World Bank Policy on IPF.
- 41. Overall financial management risk is assessed as **moderate** based on the solid foundation of a strong legal and regulatory framework for PFM in Ghana and MoCD’s experience with past World Bank-funded projects. Details are described in Table 1.3. To mitigate the risk of delays in financial reporting, MoCD will transition from a manual to an automated accounting system by project effectiveness.

Table 1.3. Risk Rating Summary Table

| Risk | Risk rating | Risk-mitigating measures and remarks | Conditions for effectiveness | Residual risk rating |
|---|-----------------|--|------------------------------|----------------------|
| Inherent risk | | | | |
| Country-level Weaknesses in the effective use of public funds, weak oversight regarding transparency and accountability, poor linkages between strategic planning and long-term budgeting at sector level | Substantial | Strengthening the role of ministries, departments, and agencies in financial management capacity building through ongoing reforms in PFM, has resulted in new legislation to guide PFM practices. | No | Moderate |
| Entity level The legal and regulatory framework exists, but the challenge remains in ensuring compliance with PFM systems, particularly at a subnational level | Moderate | MoCD is expected to be part of the financial management environment, and training sessions are held to ensure that staff iescomplies with the legal and regulatory framework. | No | Moderate |
| Project level Effective coordinating of project financial management requirements, particularly financial reporting | Moderate | Head of finance coordinates MoCD financial management requirements. Microsoft Excel and Microsoft Word are used for financial reporting and to track and monitor project activities. Policy, Planning, and Monitoring and Evaluation Directorate will use indicators to monitor what should be done. | No | Moderate |
| Overall inherent risk | Moderate | | | Moderate |
| Control risk | | | | |



| Risk | Risk rating | Risk-mitigating measures and remarks | Conditions for effectiveness | Residual risk rating |
|---|-------------|---|------------------------------|----------------------|
| Budgeting Challenge of capturing project budgets as part of overall agency budget | Moderate | It is not possible to obtain a consolidated ministry budget. All projects have their budgets and are run separately. IDA therefore regularly monitors to ensure that budgets are implemented. | No | Moderate |
| Accounting Accounting and reporting difficulties due to high staff turnover and lack of comprehensive financial management system MoCD uses manual and Excel-based systems to process transactions and for reporting, and these have weaknesses, including being susceptible to human error, lack of control and security, vulnerability to fraud and corruption, troubleshooting difficulties, and obstruction of regulatory compliance. Ineffective Coordination between the FM team and other project units. | Substantial | MoCD plans to engage with Government Integrated Financial and Management Information System Secretariat to migrate to the government’s integrated financial management system. The FM team is required to effectively collaborate with all project units to ensure they understand and can provide systemic reasons for variances between actual and budgeted expenditure on the IFRs. The FM team is expected to notify all relevant project staff of issues identified during World Bank FM reviews and internal and external audits. The issues should be discussed, and the necessary responses should be collated and shared with the relevant review agency. | No | Substantial |
| Internal controls Risk of non-compliance with internal control processes | Substantial | MoCD has a functioning internal audit unit to help minimize risk. Risk-based audits are conducted according to Public Financial Management Act 921. World Bank implementation support missions and reviews will help ascertain the level of compliance. The project will be included in MoCD’s internal audit work plan. | No | Moderate |
| Funds flow Delays in processing withdrawal applications | Low | Accounts staff are familiar with the IDA process. | No | Low |
| Financial reporting Delays in processing and submitting IFRs and other progress reports | Moderate | MoCD usually submits IFRs in a timely manner, as seen with the Ghana e-Transform Project. | No | Moderate |
| Auditing The risk that audits will not be submitted in time to ensure compliance with covenants | Moderate | World Bank will follow up with the client on the expected audit start date and request that the project share the expected work plan and any relevant incremental cost estimate no later than January 15 of each year under project implementation to mitigate the risk that the report is not submitted by June 30 each year of implementation. World Bank met with Ghana Audit Service to agree on the next steps to prevent future delays of audit reports. Ghana Audit Service requested a list of all World Bank-funded projects that the Ghana Audit Service audits, and it is expected that Ghana Audit Service will closely monitor | No | Moderate |



| Risk | Risk rating | Risk-mitigating measures and remarks | Conditions for effectiveness | Residual risk rating |
|----------------------------|-----------------|---|------------------------------|----------------------|
| | | the list and ensure that audit reports are submitted on time. | | |
| Overall Risk Rating | Moderate | | | Moderate |

B. Procurement

- 42. **Procurement implementation arrangement:** MoCD shall implement and manage procurements under the project using the current e-Transform PIU procurement team.
- 43. **Procurement of goods, works, and nonconsulting and consulting services** for this IPF operation to be financed in whole, or part, by World Bank funds under the proposed project will be in accordance with World Bank Procurement Regulations for IPF Borrowers (Procurement Regulations), dated November 2020; the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by International Bank for Reconstruction and Development Loans and IDA Credits and Grants, dated October 15, 2006 and revised in January 2011 and as of July 1, 2016; and other provisions stipulated in the financing agreements. The procurement documents will be based on the World Bank standard procurement documents for the international market approach, with modifications for the national market approach and recently enhanced documents to address the environment, social health, and safety; gender-based violence; and sexual exploitation, abuse, and harassment. The PIM will elaborate on procurement procedures, standard procurement documents, and model contracts associated with the market approaches and selection methods for the various procurement categories.
- 44. **Procurement planning:** MoCD will prepare all procurement plans in the Systematic Tracking of Exchanges in Procurement, based on the PPSD, and update them in agreement with the World Bank at least annually or as required to reflect project implementation needs and increases in institutional capacity. Systematic Tracking of Exchanges in Procurement will be the primary tool used to prepare, submit, review, and clear all procurement plans and prior review procurement activities, as well as on-line real-time storage of all relevant (pre- and post-review) procurement process documents. The initial procurement plan was prepared and covers the first 18 months of project implementation.
- 45. **PPSD Summary:** The approach adopted by the PPSD ensures that key risks are addressed throughout project implementation. A good collaboration with the World Bank through direct support and supervision will support project implementation and achievement of the PDO. The analysis in the document also confirms that the procurement activities be packaged and prepared in such a way that they expedite implementation. The MoCD has good experience of the procurement with competent and capable local and international service providers in the ICT sector who have provided services under previous World Bank projects. International and local firms have participated and won procurement contracts in the ICT sector, with the international firms attracted to the high value, high risk and relative complex assignments. While a competitive local market has attracted strong interest in lower value- lower risk contracts. Experience and lessons learnt from projects managed by MoCD show that vendors for the high value contracts usually have the financial capabilities to undertake the given assignment. The market has many participants with various levels of resources, expertise, and experience who have proved over the years to have both the technical and financial capacity and capability to respond appropriately and deliver satisfactorily. The PPSD includes procurement



strategies and recommended procurement approaches for the IPF portion of the project. The procurement approaches are reflected in the approved Procurement Plan. The PPSD will be duly updated as new procurements emerge during implementation. The World Bank has cleared the first PPSD on 17 March 2022. This will be subsequently uploaded in STEP by the Recipient.

46. **MoCD procurement capacity assessment:** This was conducted in accordance with Operations Core Services—Procurement Policy and Services guidelines and the Procurement Risk Assessment and Management System. The PCU will bring its experience on e-Transform, coupled with the established procurement review and decision-making structures at MoCD. The summary assessment of the procurement risk is **substantial** for the project, and prior review thresholds have been set accordingly. The World Bank procurement specialist and technical specialist or independent auditors will conduct procurement post-reviews and technical audits annually. The main risks identified are the initial procurement workload on the existing PIU procurement team, inadequate contract monitoring, procurements and payment processing delays, and external procurement interference. The proposed mitigation will include recruitment of an additional procurement specialist, on-going capacity building and World Bank hands-on support in procurement and contract management, training sessions for MoCD and other beneficiary agencies on the project implementation requirements in the policy framework, and ensuring that open competitive procurement is the default under the project.

Table 1.4. Thresholds for Substantial Risk Rating

| RISK RATING | Prior Review Threshold in (US\$ '000) | | | | Procurement Methods Thresholds (in US\$'000) | | | | | | | |
|--------------------|---------------------------------------|----------------------------------|--------------------|-------------------------|--|----------------------|--|---------------------------------------|----------------------|--|-----------------------------------|--|
| | Works | Goods, IT Systems+ Non Con. Serv | Consultant : Firms | Consultant: Individuals | Works | | | Goods, IT and non-consulting services | | | Shortlist of National Consultants | |
| | | | | | Open International I or ICB | Open National or NCB | Request for Quotation/ National Shopping | Open International I or ICB | Open National or NCB | Request for Quotation/ National Shopping | Consulting services | Engineering & construction supervision |
| SUBSTANTIAL | ≥\$10,000 | ≥\$2,000 | ≥\$1,000 | ≥\$300 | ≥15000 | <15000 | ≤200 | ≥3000 | <3000 | ≤100 | <300 | ≤500 |

47. Training, workshops, conference attendance, and study tours will be held based on approved annual work programs, although this should not be presented in the procurement plan.

48. **Operating cost procedures:** Operating costs financed under the project are incremental expenses related to the implementation of the project. The Recipient’s administrative procedures, which are acceptable to the World Bank, will govern procedures for managing these expenditures.

49. **Procurement management reports** will form part of the project report and cover all procurements under the project. The reports provide a snapshot of procurement progress; updated procurement plans; and a write-up on achievements, challenges, lessons learned, and future plans.

50. **Frequency of procurement implementation support:** In addition to the prior review , which the World Bank will provide, there will be one implementation support mission each year from the World Bank or Ghana Audit Service to conduct a post-review of procurement actions and technical review that should cover at least 15 percent of contracts subject to post-review, because the risk rating is substantial.



C. Implementation Support Plan

51. The proposed implementation support strategy and approach aim to strengthen the capacity of MoCD and other supporting MDAs. The World Bank and MoCD will work closely for day-to-day administrative management and implementation of the project. Formal implementation support missions and field visits will be conducted jointly with the government every three to six months, initially focused on increasing project management and fiduciary capacity at MoCD, developing operational guidelines, and preparing the first phase of activities planned. Later missions will focus on reviewing implementation progress, achievement of results, and sustainability. A mid-term review will be conducted 18 months after project effectiveness to take stock of progress and make any needed adjustments to project design. Targeted technical, financial management, and procurement-related review missions will be undertaken. Ongoing dialogue with the PCU and client, including through virtual meetings and e-mail, will ensure continuous support and monitoring. The implementation support plan will be reviewed annually to ensure that it is aligned with support needs. The estimated level of annual support required from the World Bank is identified in Table 1.5.

Table 1.5. Implementation Support and Skills Required

| Time | Focus | Skills Needed | Resource Estimate (US\$) |
|-----------------|---|---|--------------------------|
| First 12 months | Supporting speedy signing of the financing agreement and project effectiveness Technical assistance for the development of key legal and regulatory documents Technical assistance for strategies, studies, and implementation roadmaps Technical assistance for the development of terms of reference and bidding documents for major activities Support for the establishment of strategic partnerships, donors, civil society, and technical organizations | Task team leader - Technical specialists: digital infrastructure, digital skills, cybersecurity and data, digital government, digital entrepreneurship - Fiduciary specialists (financial management, procurement disbursement, monitoring, and evaluation) and Environment and Social Framework focal points, including gender | 220,000 |
| Annually | Ongoing technical support for Components 1–3 Fiduciary, safeguards, and project management support Continued policy dialogue and support for sector reforms | Task team leader - Technical specialists: digital infrastructure, digital skills, cybersecurity & data, digital government, digital entrepreneurship - Fiduciary specialists (financial management, procurement disbursement, monitoring, and evaluation) and ESF focal points, including gender | 200,000 |

Table 1.6. Skills Mix required

| Skills needed | Staff weeks | Trips |
|-----------------------------------|-------------|-------|
| | Per year | |
| Task Team Leader | 12 | 2 |
| Digital Infrastructure Specialist | 6 | 2 |



| | | |
|-------------------------------------|---|---|
| Digital Skills Specialist | 5 | 2 |
| Cybersecurity and Data Specialist | 6 | 2 |
| Digital Government Specialist | 4 | 2 |
| Digital Entrepreneurship Specialist | 5 | 2 |
| Procurement Specialist | 3 | 2 |
| Financial Management Specialist | 3 | 2 |
| Environment Safeguards Specialist | 2 | 1 |
| Social Safeguards Specialist | 2 | 1 |
| Gender Specialist | 1 | 1 |
| Administrative Support | 1 | 0 |



ANNEX 2: Gender Barriers and Proposed Actions

| Analysis | Actions | Indicators |
|---|---|---|
| Component 1. Enabling Environment for Fast-Tracked Digitization | | |
| <p>ICT and Gender Policy Framework: Women are 16 percent less likely to have a mobile phone⁶⁶ and reported using the Internet at a lower rate (19 percent) than men (33 percent).⁶⁷ According to Findex 2017, 38 percent of women made digital payments in the past year, versus 49 percent of men.⁶⁸ Women make up 11 percent of the ICT workforce, where there is a 43 percent gender pay gap.⁶⁹ The 2015 National Gender Policy calls for the promotion of an “ICT friendly environment for all in schools, workplaces, homes, social centers among others particularly for women,”⁷⁰ although it does not include concrete actions, targets, or funding focused on women’s inclusion in technology. Furthermore, collection of ICT sex-disaggregated data is not prioritized.</p> | <p>To enhance linkages between gender equality and ICT policy, proposed activities include setting clear, measurable targets for ICT sector outcomes, including on inclusive access, female digital livelihood opportunities, employment, and female enrollment in science, technology, engineering, and mathematics education; establishing clear accountability structures for achieving targets; consulting women’s groups and experts in the policy development process; strengthening efforts to collect timely, comprehensive, sex-disaggregated ICT data on access and use; and integrating online safety into digital skills training to address cyber risks.</p> | <p>Intermediate results indicator: Development of national broadband strategy (with particular attention to women and persons with disabilities) (Yes/No)</p> |
| <p>Internet Access: Women are 16 percent less likely to have a mobile phone⁷¹ and report using the Internet at a lower rate (19 percent) than men (33 percent).⁷² According to Findex 2017, 38 percent of women made digital payments in the past year, versus 49 percent of men.</p> | <p>Actions addressing gender gaps in access to digital infrastructure include targeting female-headed households for additional connectivity support; identifying and connecting public and community spaces where women congregate; and exploring affordable pricing models for devices and</p> | <p>PDO indicator: People provided with new or greater access to broadband internet – female (CRI, number)</p> |

⁶⁶ Buddy Buruku and Clarissa Kudowor. 2020. How Ghana’s New Digital Finance Policy Can Drive Women’s Inclusion. <https://www.cgap.org/blog/how-ghanas-new-digital-finance-policy-can-drive-womens-inclusion>.

⁶⁷ 2016/2018 Respondents were asked: How often do you use the Internet? (percentage who say “a few times a week” or “every day”) Source: Afrobarometer. <https://afrobarometer.org/blogs/african-women-have-less-access-internet-african-men-do-thats-problem>.

⁶⁸ Demircuc-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Ansar, Saniya; Hess, Jake. 2018. *Global Findex Database 2017 : Measuring Financial Inclusion and the Fintech Revolution*. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/29510> License: CC BY 3.0 IGO

⁶⁹ Women in information and communication, ILO Stat. <https://ilostat.ilo.org/techs-persistent-gender-gap/>.

⁷⁰ Ministry of Gender, Children and Social Protection, Republic of Ghana. 2015. National Gender Policy. <https://www.mogcsp.gov.gh/mdocs-posts/national-gender-policy/>.

⁷¹ Buddy Buruku and Clarissa Kudowor. 2020. How Ghana’s New Digital Finance Policy Can Drive Women’s Inclusion. <https://www.cgap.org/blog/how-ghanas-new-digital-finance-policy-can-drive-womens-inclusion>.



| Analysis | Actions | Indicators |
|--|---|--|
| | services, as relevant. In addition to connecting these spaces, the project will prioritize women’s basic digital literacy and use gender-smart training approaches, such as designing separate areas for women and men, when appropriate; employing female trainers or staff; considering childcare facilities; and ensuring operating hours that fit women’s time constraints and need for flexibility. ⁷³ | |
| Component 3. Support for Digital Transformation of Productive Strategic Sectors | | |
| Entrepreneurship: Only 14.7 percent of firms have majority female ownership. ⁷⁴ Women have less access to finance and capital and are less likely to have a business license. Lower levels of asset ownership for women (e.g., 8 percent of women own land alone, versus 28 percent of men; 2014 data) lead to lack of access to collateral, which constrains their ability to access finance. ⁷⁵ Other constraints include lack of technical skills and access to markets. ⁷⁶ Approximately 80 percent of small businesses operate in the informal sector, and women own and operate the majority of these. | These activities include comprehensive support that incorporates business and soft skills, mentorship, access to networks and new markets, and targeting financing to help female founders establish and expand their businesses. In addition, the project will explore incentives for accelerators to target and recruit female founders and explore providing support services such as on-site childcare and transportation stipends, facilitating access to devices (mobile phones/computers), and designing flexible training programs. | Intermediate results indicator: Number of technology start-ups and digital entrepreneurs that received grant support under the project, percentage of which are owned by female entrepreneur (baseline: 0/ target: 40 percent) |
| Digital Skills: There has been good progress in education, with gender parity at the primary and secondary levels, ⁷⁷ but men are enrolled at the tertiary level at slightly higher rates than women (17.7 percent for men and 13.6 percent for women, 2018 data). The female share of | The digital skills training program will leverage female role models in the sector to inspire and empower women and girls, develop mentorships programs or community-based social events to build women’s networks, incorporate a focus on professional development, and help make | PDO indicator: Percentage of individuals reporting increased incomes after the completion of digital skills training supported by the |

⁷³ World Bank 2021. *The Digital Development Approach Note on Gender Equality*. <https://thedocs.worldbank.org/en/doc/61714f214ed04bcd6e9623ad0e215897-0400012021/related/Digital-Development-Note-on-Gender-Equality-November2021-final.pdf>. World Bank: Washington, DC.

⁷⁴ World Bank. Gender (database) <https://www.enterprisesurveys.org/en/data/exploretopics/gender> (accessed January 25, 2022).

⁷⁵ WBG. Gender Data Portal. <https://genderdata.worldbank.org/>. (accessed January 25, 2022).

⁷⁶ Simon Boateng and Kwabena Osei Poku. 2019. Accessing Finance Among Women-Owned Small Businesses: Evidence from Lower Manya Krobo Municipality, Ghana. *Journal of Global Entrepreneurship Research* 9: 5. <https://link.springer.com/article/10.1186/s40497-018-0128-0>.

⁷⁷ Primary enrollment in 2018: female, 85.1 percent net; male: 83.9 percent net; secondary enrollment: female, 58.8 percent net; male, 57.8 percent net. <https://www.worldbank.org/en/data/datatopics/gender/country/Ghana>.



| Analysis | Actions | Indicators |
|---|--|---|
| <p>graduates in science, technology, engineering, and mathematics is 19.8 percent.⁷⁸ Women make up only 11 percent of the ICT workforce. In addition, there is a gender gap in digital skills. For example, 4 percent of young women can copy a file, versus 17 percent of men; 4 percent of women report the ability to use the copy and paste function, versus 14 percent of men; 3 percent of women report the ability to download software, versus 12 percent of men.⁷⁹</p> | <p>connections to technology internships and jobs. The training programs will also aim to create a safe environment by incorporating anti-discrimination and anti-sexual harassment policies and reporting mechanisms.</p> | <p>project (percentage of which are women (baseline: 0; target: 30 percent)</p> <p><i>Note: The project will also collect related data on training certification more broadly through the indicator below:</i></p> <p>Number of individuals who received digital skills training under the project, percentage of which are women (baseline: 0; target: 30 percent) <i>Indicator definition:</i> Total number of individuals trained in digital skills who received at least one skills certification through the project</p> |

⁷⁸ 2018 figures. WBG. Gender Data Portal. <https://genderdata.worldbank.org/> (accessed January 25, 2022).

⁷⁹ UN Women. 2022. Country Profile: Ghana. <https://data.unwomen.org/country/ghana>.