



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 10-Mar-2021 | Report No: PIDA27636



BASIC INFORMATION

A. Basic Project Data

Country Uganda	Project ID P171305	Project Name Uganda Digital Acceleration Program	Parent Project ID (if any)
Region AFRICA EAST	Estimated Appraisal Date 22-Mar-2021	Estimated Board Date 06-May-2021	Practice Area (Lead) Digital Development
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance, Planning, and Economic Development	Implementing Agency National Information Technology Authority of Uganda (NITA-U)	

Proposed Development Objective(s)

The Project Development Objectives are to (a) expand access to high-speed internet in selected areas, (b) improve efficiency of digital service delivery in selected public sectors and (c) strengthen the digital inclusion of selected host communities and refugees.

Components

- Expanding Digital Connectivity in selected areas
- Enabling Digital Transformation of the Government
- Promoting Digital Inclusion of Host Communities and Refugees
- Project Management
- Contingency Emergency Response Component

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	140.00
IDA Grant	60.00

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

A. Country Context

1. **Uganda’s population is fast-growing, predominantly young and rural, with prevailing social and economic inequalities.** Driven by a high fertility rate of 5.59 births (2018), Uganda’s population has doubled to 42.86 million over the last three decades and is expected to reach 80 million by 2040.¹ More than 48 percent of the population is under the age of 15 and nearly 50 percent are between 15 and 65.² Such age demographics represent employment challenges as well as an opportunity to increase digital dividends. Overall, the population living in poverty is estimated at 8 million (21 percent of the population).³ Socio-economic inequalities and regional gaps in living conditions persist, with a higher prevalence of poverty in rural areas than in urban areas. The distribution of poverty affects certain sub-groups adversely, especially among women. For instance, poverty rate for households headed by widows is much higher than those headed by widowers, at 18 and 11 percent, respectively, although female-headed and male-headed households are both equally likely to be poor⁴. As of 2018, most Ugandans – 76 percent⁵ – live in rural areas and work in the agricultural sector, which accounts for 70 percent⁶ of total employment (75 percent of all women in the labor force) and around a quarter of the country’s gross

¹ Uganda Economic Update, Strengthening Social Protection to Reduce Vulnerability and Promote Inclusive Growth, 2020. World Bank.

² Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2015 Revision

³ Uganda Economic Update, Strengthening Social Protection to Reduce Vulnerability and Promote Inclusive Growth, 2020. World Bank.

⁴ The Uganda Poverty Assessment Report 2016. Washington, DC: World Bank. <http://pubdocs.worldbank.org/en/381951474255092375/pdf/Uganda-Poverty-Assessment-Report-2016.pdf>

⁵ World Bank Data

⁶ World Bank Data



domestic product (GDP).⁷ This renders a significant portion of the workforce vulnerable to climate change and weather shocks and demonstrates the need for economic diversification and alternative sources of employment in higher productivity industries.

2. The COVID-19 pandemic is putting Uganda’s growth trajectory at risk, exacerbating structural constraints and increasing pressure on the poor and vulnerable, including people living in Refugee Host Districts (RHDs). Uganda’s real GDP grew at 2.9 percent in FY20, less than half the 6.8 percent recorded in FY19⁸, due in large part to the effects of the COVID-19 pandemic. As of February 2020, there have been almost 40,000 cases of COVID-19 in the country. The expected revenue loss from COVID-19 measures is estimated at 0.18 percent of GDP in FY20 while tax revenues, more broadly, are expected to fall to 11.6 percent of GDP for FY20 – 1 percentage point less than FY19. Economic activity stalled during the latter part of the fiscal year due to a domestic lockdown that lasted over four months, border closures, and the spillover effects of disruption in global demand and supply chains. This resulted in a sharp contraction in public investment and deceleration in private consumption. The pandemic has also stalled telecommunications infrastructure investments and dampened consumer demand because of the falling purchasing power. For poor and vulnerable households in Uganda, the impact of COVID-19 is especially severe. Since the COVID-19 outbreak, 91 percent of households have reported reduced income (or losses) from at least one of their sources of livelihood.⁹ Together with the Desert Locust crisis, the impacts of the COVID-19 pandemic could add as many as 2.6 million poor in Uganda¹⁰. Preliminary estimates suggest that the pandemic could increase poverty incidence by between 2.7 to 8.2 percentage points, resulting in an additional 1.07 to 3.15 million poor. In urban areas, closure of non-essential institutions and the ban on public and private transport significantly affecting the incomes of those engaged in the services, manufacturing and construction sectors (around 35 percent of the work force). Remittances are expected to drop by almost a half in FY20 and FY21 from US\$1.4 billion in FY19. The impact in rural areas may be attenuated by the large (43 percent of rural Ugandans) dependence on subsistence agriculture, but rural incomes could still be depressed by lower demand for food and agricultural products and a localised decline in crop production due to locust swarms (see Annex 7 in the PAD for more details). Early indications show that socioeconomically depressed districts, including those hosting refugees, are among those affected the most. As such COVID-19 amplifies existing income inequalities and put decades of gains related to health, gender and economic prosperity at risk.¹¹ However, digital solutions can play a key role in addressing challenges posed by COVID-19.¹²

3. Uganda faces several challenges that could impede the country’s progress toward middle-income status by 2025 – a goal in its third National Development Plan (NDP III). Uganda has identified ‘digital transformation’ as one of key drivers that will enable the transition of Uganda’s economy under NDP III. However, in addition to the impacts from COVID-19, various factors have affected the country’s

⁷ Uganda Economic Update, Strengthening Social Protection to Reduce Vulnerability and Promote Inclusive Growth, 2020. World Bank.

⁸ Uganda Economic Update, 16th Edition Investing in Uganda’s Youth December 2020

⁹ Uganda Bureau of Statistics and World Bank (July 2020). Uganda National COVID-19 Phone Survey Brief.

¹⁰ MoFPED (Ministry of Finance, Planning, and Economic Development). 2020. “Statement by Minister of Finance to Parliament on the Economic Impact of COVID-19 in Uganda. MFPED <https://www.finance.go.ug/press/statement-minister-finance-parliament-economic-impact-covid-19-uganda>.

¹¹ Uganda Economic Update, 15th Edition DIGITAL SOLUTIONS IN A TIME OF CRISIS July 2020

¹² Uganda Economic Update, 15th Edition DIGITAL SOLUTIONS IN A TIME OF CRISIS July 2020



economy, including adverse weather conditions and meagre harvests, private sector credit constraints, conflict and unrest in neighboring countries and underperformance in public sector project implementation.¹³

4. **As a result of ongoing outbreaks of unrest, drought and socio-economic crises across the neighboring Horn of Africa sub-region, Uganda currently hosts over 1.4 million refugees,¹⁴ making Uganda the largest refugee-host country in Africa.** Despite many challenges, Uganda has maintained a strong policy and protection environment for refugees and asylum seekers. The majority of refugees come from South Sudan and the Democratic Republic of Congo. Women and children constitute 81 percent of the refugee population and youth constitute 23 percent.¹⁵ 12 of Uganda's 121 districts host a large share of the refugees, and most live in northern or western Uganda. Inflows of refugees have put pressure on natural resources, infrastructure and social services delivery to people living in RHDs. Humanitarian organizations serving refugees also serve host communities to strengthen social cohesion between the groups. Self-employment is prevalent among refugees and this entrepreneurial drive also generates jobs for Ugandan nationals.¹⁶ One in five refugee households own a non-agricultural enterprise.¹⁷ Skills and job training opportunities are thus crucial to enhance self-reliance, but only 8 percent of refugees have received some type of skills or job training.¹⁸ For refugees and RHD, digital support can facilitate self-reliance and promote Micro, Small and Medium Enterprises (MSME) solutions to foster a post-COVID-19 recovery.¹⁹

B. Sectoral and Institutional Context

5. **Digital represents one of the fastest growing sectors in Uganda, with positive spill-over effects on other sectors of the economy, the combination of which can play a key role in a post-COVID-19 recovery.** Although the ICT sector's contribution to the country's GDP has considerably increased, it remains minimal at 2 percent in 2019, according to the World Bank Group (WBG)'s 2020 Uganda Digital Economy for Africa (DE4A) report.²⁰ This growth is driven by: i) a series of conducive Government policies, such as the increased investment by the Government and private sector in fiber infrastructure,²¹ and ii) significant uptake of mobile phone subscribers. Recent analysis by the World Bank (WB) Africa Chief Economist's Office finds that closing the digital infrastructure gap in the East and Southern Africa region could result in 1.5 percent-point increase in economic growth per capita. If complemented by expansion in human capital development, the growth effect could increase to 3.87 percent points.

¹³ Uganda Economic Update, Strengthening Social Protection to Reduce Vulnerability and Promote Inclusive Growth, 2020. World Bank.

¹⁴ UNHCR and GoU, Uganda Comprehensive Refugee Response Portal, November 2020, <https://data2.unhcr.org/en/country/uga>

¹⁵ UNHCR and GoU, Uganda - Refugee Statistics October 2020 <https://data2.unhcr.org/en/documents/details/82807>

¹⁶ <http://documents.worldbank.org/curated/en/571081569598919068/Informing-the-Refugee-Policy-Response-in-Uganda-Results-from-the-Uganda-Refugee-and-Host-Communities-2018-Household-Survey>

¹⁷ <http://documents1.worldbank.org/curated/en/571081569598919068/pdf/Informing-the-Refugee-Policy-Response-in-Uganda-Results-from-the-Uganda-Refugee-and-Host-Communities-2018-Household-Survey.pdf>

¹⁸ <http://documents.worldbank.org/curated/en/571081569598919068/Informing-the-Refugee-Policy-Response-in-Uganda-Results-from-the-Uganda-Refugee-and-Host-Communities-2018-Household-Survey>

¹⁹ <http://documents.worldbank.org/curated/en/571081569598919068/Informing-the-Refugee-Policy-Response-in-Uganda-Results-from-the-Uganda-Refugee-and-Host-Communities-2018-Household-Survey>

²⁰ Uganda Digital Economy for Africa (DE4A) Report, Country Diagnostic, 2020

²¹ Uganda Digital Economy for Africa (DE4A) Report, Country Diagnostic, 2020



6. Digital solutions can play a key role in addressing the economic growth and health challenges posed by COVID-19 and its aftermath. Digital solutions can support delivery of essential services for firms (e.g. utility and tax payments, access to markets via digital platforms and e-commerce, and digital SME finance), consumers (e.g. mobile money, remittances and e-commerce) and the most vulnerable (e.g. expanded social safety nets or humanitarian payment schemes to refugees). Digital skills development can drive medium- and longer-term job creation. Introduction of innovative digital health solutions offers the opportunity to undertake holistic disease surveillance and monitoring (e.g. through geo-tracking applications), leverage digital data and analytics from public systems to strategically allocate resources and pre-empt outbreaks, disseminate public health messages and cautionary guidelines (e.g. through SMSs in a low-tech environment like Uganda), and improve inventory management of medical supplies.²² The latter is especially relevant as regional and global production and supply chains have faced sustained interruptions and there will be further strain due to the upcoming COVID-19 vaccine distribution. Enabling agile digital solutions for education, severely affected by pandemics, further adds to the cross-sector potential to recover from COVID-19 with the help of digital potential. In short, digital solutions will form the enabling backbone of critical COVID-19 resilience and recovery interventions across sectors, including through multiple WB-funded projects (see Annex 6 in the PAD).

7. The substantial increase in mobile phone ownership is laying the foundation for Uganda’s digital transformation and enabling the rapid take-up of digital services. The country counts approximately 27 million mobile subscriptions, which is a penetration rate of 69.2 percent of the population²³, although phone ownership rates are higher among urban residents compared to rural residents.²⁴ A Gender gap also persists. Only 53.7 percent of women own phones compared with 74.5 percent of men. In addition, women account for the largest share (66 percent) of people who do not use mobile phones.²⁵ The telecommunications market includes two major private operators (MTN and Airtel) that control market shares (in terms of mobile subscriptions) at 37 percent and 45 percent respectively, and other mobile operators, such as Uganda Telecom and Africell, with market shares below 10 percent each.²⁶ The increased access to mobile phones and mobile services in Uganda has enabled the take-up of related services such as mobile banking, demonstrated by the latest available 2017 Global Findex data of 50 percent of adults owning mobile money accounts in Uganda.²⁷ The take-up of mobile services has also increased women’s rates of financial inclusion over time.

8. The digital divide persists in Uganda. The gaps characterized by gender, geography, refugee status, people with disabilities and income levels undermine the transformative potential of digital services while excluding the most vulnerable from the associated benefits. Only 16 percent of the total number of mobile phone users have smartphones.²⁸ Geographically, the wide gap between the 19.5 percent Internet

²² Uganda Economic Update, 15th Edition Digital Solutions in a Time of Crisis July 2020

²³ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

²⁴ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

²⁵ Women’s Economic Empowerment in Uganda: Inequalities and Implications. Policy Brief No. 110, November 2019. Kampala: Economic Policy Research Centre. Available at: <https://eprcug.org/all-publications/614-women-s-economic-empowerment-in-uganda-inequalities-and-implications>

²⁶ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

²⁷ Global Findex Database. World Bank Group, 2017. https://globalfindex.worldbank.org/sites/globalfindex/files/2018-04/2017%20Findex%20full%20report_0.pdf

²⁸ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018



penetration rate in urban areas and the mere 7.1 percent in rural areas also raises concerns around the urban-rural divide.²⁹ The gender gap in Internet use is estimated at 25 percent between men and women³⁰, influenced by the lower socio-economic position and education levels of women. Skills are also an issue as 75 percent of Ugandans who do not use the Internet report that they lack the skills to do so.³¹ Skills gaps are particularly stark between men and women. For every 10 Men in STEM, there is less than 4 women and by the time the 4 are in their 5th year of their career, most leave the labor force in lieu of care responsibilities³². Even among the employed population, more women than men possess no formal education: 4.4 versus 6.2 percent; and two-thirds of young women in employment lack a trade, technical skills, or specialization.

9. Affordability remains a key barrier to the take-up of mobile broadband, despite widespread adoption of mobile phones²⁵. Mobile devices are the main platform for Internet use (as opposed to fixed access). According to the ITU, the cost of a basic mobile broadband services (1GB of mobile data) was at 16.61 of GNI per capita in 2017³³, in contrast with the UN Broadband Commission’s target of 2 percent, making it prohibitively expensive for many Ugandans. Based on a survey by Research ICT Africa in 2018³⁴, Internet use among individuals earning more than US\$ 1,000 per month is very high (almost 100 percent), but it drops significantly in lower income brackets: among people earning less than US\$ 100 per month, only 11 percent use the Internet³⁵. Affordability of mobile devices also appears to be a key barrier: 89 percent of respondents of a NITA-U survey who do not own a mobile phone cite its cost as the main barrier.³⁶

10. Network coverage is another serious constraint to higher adoption of mobile broadband, with sharp regional disparities. While more than 95 percent of the population is covered by mobile telephony networks (2G), mobile broadband (3G and 4G) geographic coverage is only at 50 percent, with sharp regional disparities, particularly between the Northern and Western regions (which host most refugees) and the Central region.³⁷ For instance, the geographic coverage for mobile telephony is still low at 44 percent as of 2018.³⁸ As a result of limited broadband access, the use of the Internet by enterprises and the public sector remains very low. The quality of service also remains problematic: according to Ookla³⁹, mobile download speeds in Uganda ranked only 115th in the world (June 2019).

11. The situation among the refugee population is even more dire. To-date, 68 percent of the refugee population have SIM cards, but often rely on cheap feature phones.⁴⁰ For example, in the large Bidibidi settlement in North-western Uganda 15 percent of men and only 4 percent of women own

²⁹ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

³⁰ The State of ICT in Uganda. Research ICT Africa, 2019. <https://researchictafrica.net/publication/the-state-of-ict-in-uganda/>

³¹ The State of ICT in Uganda. Research ICT Africa, 2019. <https://researchictafrica.net/publication/the-state-of-ict-in-uganda/>

³² ITU

³³ The State of ICT in Uganda. Research ICT Africa, 2019. <https://researchictafrica.net/publication/the-state-of-ict-in-uganda/>

³⁴ The State of ICT in Uganda. Research ICT Africa, 2019. <https://researchictafrica.net/publication/the-state-of-ict-in-uganda/>

³⁵ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

³⁶ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

³⁷ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

³⁸ National Information Technology Survey 2017/18 Report. NITA Uganda, March 2018

³⁹ <https://www.speedtest.net/global-index/uganda>

⁴⁰ <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/The-Digital-Lives-of-Refugees.pdf>



a smart-phone.⁴¹ Furthermore, only 24 percent of refugees in the camp have used the Internet and 17 percent are active Internet users.⁴² For 73 percent, the cost of an Internet-enabled device is a key barrier.⁴³ Consequently, refugees struggle to contact relatives, get timely market or business development information, access digital financial services, use digital learning options and use Internet for other productive purposes. Many also face challenges meeting identity documentation requirements, especially in the context of registering for a SIM card. COVID-19 has affected refugee livelihoods and increased income insecurity, sexual and gender-based violence and anxiety. Women are more direly affected. Based on household surveys with over 1,500 refugees in Kampala and the settlements as well as interviews with 185 key informants, UNHCR and UN Women found that household income loss has contributed to an increased incidence of Gender-Based Violence (GBV) and negative coping mechanisms such as survival sex and sale of alcohol. 53% of girls and 46% of women aged 18-24 years reported an additional unpaid work burden, with school closures also affecting their ability to access learning opportunities⁴⁴. Limited connectivity also hampers humanitarian actors like the World Food Programme (WFP) from providing cash-based solutions through mobile finance and increasing the efficiency of aid to refugees. Access to digital connectivity can enable refugees and their communities to access accurate and relevant information in appropriate languages, access business opportunities, and communicate with their families and host communities. As such, the Uganda Digital Acceleration Project (UDAP) will be laying an important foundation needed to enable digital services delivery from key development actors serving refugees and RHDs. COVID-19 pressures have further highlighted the impact of this digital divide on refugees. The need for information on fluctuating market prices, accessing mobile learning platforms, and supporting MSMEs with information, finance and learning support have all increased within refugee settlements which have seen periodic lock downs.

12. The growing amount of e-waste also presents challenges to the ICT sector. A survey conducted by UNEP in 2017⁴⁵ demonstrate that the amount and flow of e-waste is rising fast with the estimated stock of e-waste at 1,900 MT. It has an estimated annual growth of 25,000 tons. A recent study has projected that between 2018 and 2022, there will be an average of 4,500 tons per year of e-waste generated from communications end user equipment only (phones, televisions, computers and radios).⁴⁶

13. Uganda has put in place the legal, policy, strategic and technical foundations for cybersecurity resilience and is optimizing them, while shifting focus to next-stage good practices in governance, capacity building and steady-state sustainability. With an increasing number of digital platforms and services being rolled out by Uganda’s public and private sectors and investments made into networks and applications, Uganda has prioritized the strengthening of its cybersecurity, information security and data protection frameworks. In 2018, cyber-attacks cost the Ugandan economy an estimated US\$52 million, up from US\$42 million in 2017 and US\$35 million in 2016. The most affected sectors are the Government sector, financial institutions, services integrators and

⁴¹ <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/The-Digital-Lives-of-Refugees.pdf>

⁴² <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/The-Digital-Lives-of-Refugees.pdf>

⁴³ <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/The-Digital-Lives-of-Refugees.pdf>

⁴⁴ Inter-agency report: refugee women and girls in Uganda disproportionately affected by COVID-19.

<https://www.unhcr.org/afr/news/press/2020/12/5fc7a6694/inter-agency-report-refugee-women-and-girls-in-uganda-disproportionately.html>

⁴⁵ UNEP

⁴⁶ UNEP



microfinance and banking service providers, with 96 percent of cyberattacks being unreported or unresolved. As a legislative framework, the government has enacted a suite of laws that include the Computer Misuse Act 2011, the Electronic Signatures Act 2011 and the Electronic Transactions Act 2011. A review of the existing cybersecurity and cybercrime legislation and an update to the Cybersecurity Strategy are being supported under currently active RCIP-5 project and the government has stated its intentions to accede to the Council of Europe's Budapest convention on cybercrime. The Digital Uganda Vision of 2019, the National Information Security Framework (NISF) of 2014 and the National Information Security Strategy (NISS) of 2011 round out the strategic and policy foundations for cybersecurity. To handle incidents and attacks, Uganda has both a national Computer Emergency Response Team (CERT) at NITA-U and a Communications Sector CERT at UCC. The country has benefitted from two in-depth cybersecurity diagnostics: a Cybersecurity Maturity Model (CMM) assessment was undertaken in 2016 and updated in 2020; the emanating recommendations, for instance on capacity building and awareness raising are reflected in the present project's design. Uganda was nominated as the regional lead on Cybersecurity under the East African Northern Corridor Infrastructure Project Regional MoU. In 2018, Uganda ranked 7th in Africa in the ITU's Global Cybersecurity Index, and 65th globally.⁴⁷ The country's next challenges for cybersecurity are therefore to expand technical capacity, implement best practice governance and move towards effective, steady-state implementation and sustainability.

14. In the area of Data Protection, Uganda is in the early stages of operationalizing a recently adopted Data Protection law. The landmark Data Protection Act was passed in 2019, making Uganda the first East African country to recognize privacy as a fundamental human right, as enshrined in Article 27 of the 1995 Uganda Constitution. It aims to protect individuals and their personal data by regulating processing of personal information by state and non-state actors, within and outside Uganda. The law expands the rights of individuals to control how their personal data is collected and processed, placing a range of obligations on those processing, both public bodies and companies. A year since its enactment, the law remains in need of accelerated implementation and enforcement, with observers reporting that personal data continues to be collected in violation of the principles of the law.⁴⁸ A Data Protection Office (DPO) to lead the implementation of the law, issue codes and regulations and provide for administrative, civil or criminal sanctions and penalties must be established, resourced and enabled to fulfil its mandate. Due to the present hold on creating new government agencies, this DPO is envisioned to be established as an independent entity under NITA-U; recruitment to staff it is ongoing. The DPO will require substantial capacity building and logistical set-up; selected priorities among these will supported under the project.

15. The WB has partnered with the Government of Uganda (GoU) in its efforts to address these bottlenecks and leverage opportunities through the Regional Communications Infrastructure Program Phase 5 project (RCIP-5; P130871), currently in implementation with a planned closing date of February 2022. RCIP-5's PDO is to "(i) Lower prices for international capacity and extend the geographic reach of broadband networks (the connectivity development objective); and (ii) Improve the Government's efficiency and transparency through e-Government applications (the transparency development objective). The project has provided support for developing or updating key laws and regulations with the

⁴⁷ International Telecommunications Union, *Global Cybersecurity Index 2018*. https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2018-PDF-E.pdf

⁴⁸ <https://privacyinternational.org/news-analysis/3385/one-year-what-has-ugandas-data-protection-law-changed>



view to increase competition and lower prices for broadband connectivity and digital services. It has also supported the expansion of the national fiber optic backbone infrastructure and connected government facilities to high-speed broadband. Finally, RCIP-5 has helped improve the GoU's ability to deliver services to its citizens through putting in place shared e-Government infrastructure, digital platforms, and shared services. The project's main implementing agency is also the National Information Technology Authority-Uganda (NITA-U) – an autonomous statutory body with the authority to coordinate and regulate Information Technology services in Uganda. UDAP is a continuation of RCIP-5; take up of services will accelerate as MDAs are progressively being connected and reach secondary MDAs.

16. The GoU's ability to deliver public services digitally has improved in recent years, helped by investments in shared IT facilities and service delivery platforms. Uganda is ranked 137 out of 193 countries on the 2020 UN e-Government Development Index⁴⁹, up from 156 five years ago. The investments made through RCIP-5, including in government cloud-based data centers, data exchange and integration platform, SMS and e-payment gateways as well as in digital authentication services have played a key role in the improved ranking. To-date, over 80 sectoral e-services have been introduced, in collaboration with a variety of Ministries, Departments and Agencies (MDAs). However, much remains to be done to improve the efficiency and the speed of introducing new services.

17. Steps to strengthen the ICT sector by policy and regulatory reforms have been implemented. For example, the 2018 National Broadband Policy and the recent Data Protection Act approved in February 2019 aim to build trust and provide a stronger policy direction for achieving universal Internet access in the country. Looking ahead, the GoU is finalizing the Digital Uganda Vision (DUV), setting an overarching framework and direction for national ICT policies and utilization of digital services to advance inclusion, sustainable development, and poverty eradication. In addition to the DUV, the Government is finalizing its Digital Transformation Program (DTP), one of the 18 key programs under the NDP III. The DTP aims to increase ICT penetration and use of ICT services for social and economic development and is expected to contribute to a) increasing ICT penetration; b) reducing cost of ICT devices and services; c) creating more direct jobs in the sector; d) increasing ICT incubation; and e) increasing government services online.

C. Proposed Development Objective(s)

PDO Statement

The Project Development Objectives are to (a) expand access to high-speed internet in selected areas, (b) improve efficiency of digital service delivery in selected public sectors and (c) strengthen the digital inclusion of selected host communities and refugees.

⁴⁹ 2020 UN e-Government Development Index



PDO Level Indicators

The following indicators will be considered for measuring achievement of the PDO.

Table 1: Outcome and Indicators

Outcome	Indicators (<i>PDO-level</i>)
Expanding access to high-speed Internet in underserved areas	<ul style="list-style-type: none"><li data-bbox="651 541 1518 611">• Broadband penetration (fixed + mobile) (gender disaggregated) (Percentage)
Improving efficiency of digital government services nationwide	<ul style="list-style-type: none"><li data-bbox="651 642 1518 711">• Public services in target sectors that can be delivered digitally and securely without requiring physical presence (end-to-end) (Number)
Strengthening the digital inclusion of host communities and refugees	<ul style="list-style-type: none"><li data-bbox="651 779 1518 879">• Individuals in the targeted refugee and host communities with access to Broadband Internet connectivity (gender disaggregated) (Number)

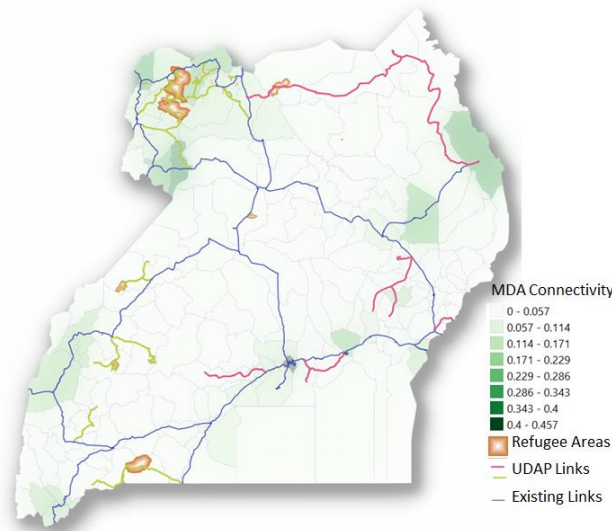


D. Project Description

Project Components

18. The Project is built around 3 central components that are designed to work synergistically to achieve the PDO. Component 1 will expand broadband connectivity to rural areas and underserved areas. The map below illustrates the target geographies under the project. Component 2 will deliver a wide array of digitally enabled public services to citizens and businesses throughout the country. Component 3 will extend broadband connectivity and e-services to refugees and host communities in RHDs, addressing their specific needs. The COVID-19 relevance to all components is described in Annex 7 of the PAD.

Map 1: Target Geographies in Uganda under UDAP



19. The project components are summarized in Table 1 below.

Table 2: Project Components and Estimated Costs

Component	Estimated Cost (US\$ Million)
Component 1: Expanding Digital Connectivity to unserved and underserved populations	86
1.1. Expanding the digital infrastructure outreach	49.6
1.2 Strengthening of digital infrastructure “complements”	33.1
1.3 Strengthening of the enabling environment, digital capabilities, and inclusiveness of digital services	3.3
Component 2: Enabling Digital Transformation of the Government	50
2.1 Accelerating Digital Transformation of Service Delivery	23.6
2.2 Mainstreaming Digital Services in Priority Sectors	11.5
2.3 Strengthening Cybersecurity and Data Protection	14.9



Component 3: Promoting Digital Inclusion of host communities and refugees	57
3.1 Digital inclusion of host communities and refugees through enhanced connectivity	37
3.2 Digital inclusion of host communities and refugees through access enablers	20
Component 4: Project Management	7
Component 5: Contingency Emergency Response Component	0

Component 1: Expanding Digital Connectivity to unserved and underserved population (US\$ 86.0 million)

20. This component will seek to bridge the digital divide by improving access to high-speed Internet in both underserved and unserved communities in Uganda, through a combination of infrastructure investments and policy reforms, in support of the objectives set forth in the Government’s Digital Transformation Program under NDP III and will facilitate Uganda’s post COVID-19 economic recovery. Uganda’s digital infrastructure will also be enhanced through expansion of in-country data centre hosting capacity and establishing e-waste management capabilities. Component 1 and relevant activities in Component 3 will contribute to promoting universal access to high-speed, affordable Internet in Uganda under Maximizing Finance for Development (MFD) approach. To avoid any displacement of private investment, public financing will only be used to the extent necessary to reach the areas where private sector would not go without additional incentives from the government to invest in closing infrastructure gaps in unserved and underserved areas and avoid any displacement of private investment. This component will include:

Subcomponent 1.1: Expanding the digital infrastructure outreach (US\$ 49.6 million)

21. This will finance the gaps in national digital infrastructure coverage, to complement private sector and public sector led investments. The subcomponent will focus on the following:

- a) **Extension of the National Backbone Infrastructure (NBI):** This will finance the expansion of 1,000 km of NBI backbone fiber infrastructure; additional 500 km of fiber optic network links between towns; and updates to existing links between 20 towns across Uganda. The NBI is operated in line with “open access” principles, enabling any licensed operator to purchase wholesale capacity on the network on equal non-discriminatory terms. The investments to be made in the publicly owned backbone infrastructure are a continuation of what has already been implemented under RCIP 5⁵⁰ and are designed to further promote private sector participation (through leasing of excess capacity) and incentivize investments in digital infrastructure and services in underserved areas where the private sector would otherwise not go due to low commercial viability. Public-Private Partnership (PPP) mechanisms will be employed to leverage financing and expertise from the private sector. While the NBI is owned by the Government of Uganda, from the beginning it has been operated through a management contract by a competitively selected private company responsible for maintenance of the network and sale of excess capacity to licensed operators and Internet service providers (ISP). This private management contract has continued under RCIP-5. Similar arrangement will be maintained under UDAP in respect to future phases of the NBI extension,

⁵⁰ Activities under this component build on the experience of RCIP-5 that extended the backbone underserved regions through buildout of 842 km (on top of a network which previously already extended to 1500+km).



ensuring a seamless and interoperable network (see also subcomponent 1.3). The private sector is currently leveraging investments in the NBI to roll out complementary infrastructure and services in areas where there is strong demand and commercial viability. This has facilitated the expansion of networks by private operators who were buying backhaul capacity from the government to reach areas which were previously unreachable. The project will support continuous industry soundings, to ensure that the additional links proposed for financing indeed require public sector investment. Periodic technical and operational audits will be conducted to ensure satisfactory quality of service, open access of the NBI to avoid duplication of infrastructure by operators and avoid monopoly in service provision.

- b) **Last mile connectivity:** In addition, 900 Government administrative units and service centers will be connected through the mobile broadband coverage to be deployed under c) below. A total of 828 Wi-Fi hotspots will be established in select last mile locations to support the access to secure online services to the rural and peri-urban underserved and unserved communities. Expanding public Wi-Fi offering will primarily focus on locations where women and other marginalized communities can safely and security access the Internet and allied digital services, such as public markets. This activity will ensure that MDAs are well connected, so that e-services can be used at the local level by citizens and businesses. This activity will also include design and deployment of Local Area Networks (LANs)/Campus Area Networks (CANs) in each of the 2,900 last mile locations. The project will fund a technical study to evaluate the most suitable mix of technologies, viability analysis and pricing models, private sector partnerships arrangements and procurement approaches to determine how best to incentivize private sector investment.
- c) **Pre-purchase of International Bandwidth:** This activity involves lowering the average cost of international bandwidth through a bulk pre-purchase of international bandwidth, aggregating the needs of public institutions. This activity has been initiated through the RCIP-5 project. A scale-up is required to cater to the growing bandwidth needs of the government institutions in terms of additional number of MDAs connected, and growing usage per MDA. This activity will finance the procurement of an additional 20 Gbit/s per year for the duration of the project.
- d) **Mobile Broadband Deployment in Rural Areas:** This activity will finance the deployment of broadband in rural areas and provisioning of mobile broadband in underserved areas through various PPP schemes and reverse auction mechanisms, to leverage financing by private players to increase the coverage of mobile broadband network in areas that are otherwise not economically viable. This activity will involve installation of 50 Masts (tower type structures to support antennas and other telecom transmission equipment) to improve Voice and Data services in underserved areas. The masts will serve 900 MDAs. A detailed survey to determine the best location of the masts and preferred financing and PPP schemes that will be carried out during implementation⁵¹.

Subcomponent 1.2: Strengthening digital infrastructure “complements” (US\$ 33.1 million)

22. This subcomponent will ensure that the connectivity infrastructure financed through subcomponent 1.1 is fully leveraged for development, by establishing or strengthening key “complements”. This will include:

Data Center Infrastructure: This activity will finance the expansion of the current data hosting capacity and establishment and operationalization of containerized green Data Center to complement the existing data hosting capability already financed through RCIP-5. This will improve geographical redundancy and resilience, including in the face of climate related shocks. The data center will be designed for maximum energy efficiency and minimum environmental impact. A variety of PPP models to ensure MFD will be explored via a market study that will help

⁵¹ The project will leverage experience from other Bank projects, notably from the Regional Communications Infrastructure (Phase I) project in Madagascar (P094103).



understand how the growing demand for data hosting can be best satisfied via a combination of public and private sector investments to ensure MFD. The implementation modality will be informed by a dedicated study which was agreed to be financed through RCIP-5.

- a) **Metropolitan Area Network (MAN) Center:** This will support the renovation and upgrade of the MAN Center located at Statistics House to provide a standard environment for mission critical systems installed in the facility. This will include the upgrade of core routing equipment and provisioning of air-conditioning, fire suppression system, CCTV, access control, and cabling in the MAN. This activity will also finance the equipment to support the establishment of the national IXP that will be governed by multi-disciplinary stakeholders from private and public sectors, academia, and civil society organizations (CSOs).
- b) **E-Waste Management:** This activity will support the establishment of two regional e-waste collection and management centres in different regions of Uganda to ensure that e-waste is collected, sorted and stored at central locations for the ease of management, for further refurbishing (when possible) and processing at recycling facilities. The e-waste facilities operations will be outsourced to the private sector. The exact operational modality will be determined through a dedicated study will be financed through RCIP to ensure sustainability of these operations and will cover these two e-waste centres as well as two others to be located near refugee hosting communities.
- c) **National ICT Spatial Data Infrastructure Store and High-Performance Computing Center (HPC)** will finance studies, equipment, software, GIS mapping tool, as well as undertake mapping of core ICT infrastructure that will guide the roll out of ICT spatial infrastructure in the country in collaboration with the road sector, energy sector, railway, water and the city councils and municipalities. This shall also include the creation of a unified special data system for sharing data among the utility providers and sectors to inform major infrastructure investments and data driven policy making in these sectors.

Subcomponent 1.3: Strengthening of the enabling environment (US\$3.3 million)

23. This subcomponent will finance the “analogue” complements required to support the deployment and operations of the digital infrastructure and services, strengthening of the policy and regulatory environment, as well as promoting digital skills among beneficiaries. Specifically, the subcomponent will support Ministry of ICT and National Guidance (MoICTNG), Uganda Communications Commission (UCC) and NITA-U in implementing the 2018 National Broadband Policy.

24. On the national regulatory front, subcomponent 1.3. will help establish a regulatory framework to coordinate investments and ensure infrastructure sharing, open access and complementarity through a variety of legal and regulatory instruments to provide incentives to sharing, thereby reducing duplication and better effective utilization of digital infrastructure⁵². Specifically this subcomponent will support the review and assessment of the following laws: Computer Misuse Act 2011; Electronic Transaction Act 2011; Electronic Signature Act 2011; Cyber Security law; E-government law; National Critical Information Infrastructure Law; and Development of Data Sharing and Governance Act. The following policies and strategies will be supported: Data Sharing and Governance Policy; Development of the policy framework for coordination of public and private infrastructure deployment; open data policy; National Critical Information Infrastructure policy; and Spectrum Management Policy. These instruments may include developing of appropriate guiding principles and regulation, the development of cost models, or performing periodic management,

⁵² Duplication may be the best alternative to an operator in certain circumstances (for example if the only existing infrastructure is not priced correctly or does not have the appropriate quality). While mandating sharing does therefore not follow best practice, government can develop a range of instruments to provide incentives to sharing and therefore improve return on investment and ultimately affordability to the end user.



price and quality audits on publicly owned infrastructure, notably to ensure it continues to function on a non-discriminatory, open access basis. This subcomponent will also support the regulatory aspects related to implementation of the regional *Single Digital Market Initiative* in East Africa, by promoting harmonization in legal and regulatory environment for increased digital cooperation and market access across the domains of: a) single connectivity market, b) single data market, c) single on-line market and d) enabling regional environment⁵³.

25. The project will support Digital Inclusion Capacity Building activities, including initiatives to train public officials on policy and regulations and will provide retooling and capacity building to the identified Women SMEs & associations, youth groups and the elderly. Public officials will be trained on digital leadership such as Professional certifications, technical training in key project areas e.g. spectrum management, cyber security. Mode of delivery will include short courses in Uganda and abroad, benchmarking visits, attachments, and affiliations to professional organizations among others. Evaluation/Assessment of existing incentives towards promoting ICTs in the country (Private Sector participation in ICT investments) will also be carried out in this subcomponent.

Component 2: Enabling Digital Transformation of the Government (US\$50 million)

26. **The global COVID-19 pandemic has provided valuable insights into the future of service provision where in-person, face-to-face service delivery may no longer be appropriate, practical, or the norm.** This Component will aim to boost the efficiency and effectiveness of digital government services and create foundations for better resilience, climate adaptation and economic recovery. The goal is to transform the way people, governments, businesses and civil society interact with each other, by supporting digital transactions and e-services that can be delivered in a paperless, cashless and secure manner without the requirement for in-person interaction, which in turn also contributes to climate mitigation. Combined with expanded last-mile access in underserved areas, this component will particularly cater to support women and marginalized communities who may struggle to balance family care responsibilities with accessing government services in-person. Developing foundations needed to deliver services digitally, will also allow the GoU address the on-going COVID-19 pandemic and mitigate possible future shocks by “building back better” and investing in its capability to provide government services that do not require travel or in-person interaction. The activities here are in line with Objective 2 of the NDP III, which aims to enhance the development of digital services across the Government.

Subcomponent 2.1. Accelerating Digital Transformation of Service Delivery (US\$ 23.6 million)

To streamline digital services development, there is a need to have a set of shared platforms to allow sectoral Ministries, Agencies and Departments (MDAs) to launch sector specific e-services in the most efficient and expedient manner. The activities included for financing will further contribute to “*build once, re-use always*” approach already adopted under RCIP-5. Specifically, this will support:

- **Scale-up of the shared platforms developed under RCIP-5:** This will include scale-up of digital authentication (DAES) capability with the view to build a nation-wide solution to issue more e-signatures by investing in PKI infrastructure to enable secure and trusted online transactions across different government services; rollout of messaging & collaboration services to additional 50,000 users in MDAs/LGs; expand the use of mobile gateway; increase the use of e-Payment mechanisms for e-services in support of cashless transactions; and on-boarding 20 new government

⁵³ The East Africa Single Digital Market (SDM) Initiative aims to support the East African Region to become a more deeply integrated and dynamic digital investment, innovation and trade hub - unlocking the growth potential of the East African Digital Economy. The Initiative, coordinated by the World Bank, has brought together key regional stakeholders to highlight the potential of a single digital market.



agencies into the integration platform designed to facilitate data exchange between ministries, in addition to eight expected to be on-boarded through RCIP-5.

- This will also support the development of new shared solutions, designed to **promote innovation in digital service delivery**, such as the development of a front-end mobile platform; shared application and microservices platform to avail new opportunities for e-services innovation; innovative initiatives to give opportunities to local talent, including through connection to digitalization opportunities in the government; partnerships with commercial partners for entrepreneurs to develop, test and operate innovative digital government services; and establishing innovative models to upskill youths to jumpstart digital career opportunities, including through a variety of internships and mentorships. The participation of women will be particularly encouraged.
- This component will also support a variety of **e-services support and promotion mechanisms**. This will include establishment of three regional eGovernment support service desks in Gulu, Mbarara, & Mbale in partnership with the Ministry and Posta Uganda; eDocument Management and Workflow System (EDMS) aimed at improving internal efficiency within MDAs and local Governments, by providing capabilities for storage, retrieving and preservation of documents expected to reduce the use of paper and contribute to climate mitigation. This will also include training and awareness activities in support of Digital Inclusion for Special Interest Groups Women SMEs & Associations, Youth Groups, Community Centres and Centres for the elderly.

Subcomponent 2.2: Mainstreaming Digital Services in Priority Sectors (US\$ 11.5 million)

27. This subcomponent will support specific sectoral digitalization of services in six priority sectors, which have been the focus under RCIP-5 (agriculture, education, justice and health) and two new sectors (tourism and trade) as well as the MoFPED that could be quickly developed taking advantage of the shared platforms and solutions included in 2.1. Since priorities may change during the life of the project, NITA-U will be facilitating a formal e-services prioritization exercise on an annual basis, with close collaboration with the technical committee represented by priority ministries, to select e-services to include for implementation under this project for any particular year.

28. The selection criteria for sectoral e-services to be implemented under the project will be based on, but not limited to: inclusion as a priority e-service under NDP III; potential impact in terms of number of people estimated to use that e-service and frequency of use; cost of implementation; technical capabilities and availability of human resources at the MDA level; potential of the e-service to make good use of the shared infrastructure and solutions (such as hosting, DAES, data exchange and interoperability platform, SMS gateway, and microservices); estimated time saving for both citizens and government and other priorities of the government, such as the need to streamline government procurement processes through e-procurement system. The e-services included for support may be new or the ones that require scale-up or refinement through introduction of new functionality or expansion to cover new beneficiaries.

29. Therefore, the activities to be financed will include the deployment of new digital services, development of additional modules for existing e-services to make them digital end-to-end, technical advisory services in support of digitalization of business processes across six priority sectors and related training for personnel at these MDAs. The project will also finance the respective support for external communications and outreach programs to ensure adoption of the newly introduced e-services. A gender lens will be incorporated in the design and implementation of sectoral e-services and training activities, with special attention to people with disabilities.

Subcomponent 2.3 Strengthening Cybersecurity and Data Protection (\$14.9 million)



30. To reinforce cybersecurity, information security and data protection for the safeguarding of the Ugandan digital economy and individuals' rights to safeguarded personal data, this subcomponent will finance TA activities including:

Supporting Cybersecurity, Cybercrime and Critical Infrastructure Legislation to provide technical capacity for the drafting (a) cybersecurity and cybercrime legislation; (b) Critical National Information Infrastructure (CNII) protection legislation and for (c) regional and international collaboration in cybersecurity, including signing and ratification of treaties and conventions.

Strengthening the Cybersecurity Institutional and Governance Framework to support (a) an institutional and governance structure for cybersecurity / CERT with a cybersecurity work and action plan; (b) an evaluation and audit framework for audits of infrastructure, systems and processes to ensure compliance with the NISF and training of auditors; (c) analyses of cybersecurity status in key sectors and development of customized cybersecurity guidelines and (f) adoption of compliance standards and certification for SMEs, with training for auditors.

Strengthening Threat Intelligence, Monitoring, Prevention, Mitigation and Response. This will include support for (a) capacity building of the national CERT and the Security Operations Center (SOC); (b) upgrading of the national CERT's forensics lab with mobile kits and malware analysis capabilities; (c) capacity building for regular penetration tests, cyber risk analyses and security assessments of relevant agencies; (d) systems and software to enable threat intelligence, incident handling and response; a threat sharing platform; incident response platforms for sub-sector CERTs; a test lab and sensors on CIIP networks; (e) external audits, vulnerability and penetration testing; (f) technical capacity building for priority institutions in key sectors to reach ISO 27001 ISMS controls or similar certifications; (g) upgrading of cybersecurity infrastructure and systems in priority MDAs; (h) cyber drills for CNII and testing of Business and Disaster Continuity Plan with attack simulations; and (i) tools to support secure remote access by users including on their personal devices during the COVID 19 pandemic.

Building Cybersecurity Capacity and Digital Skills. This will support (a) capacity building for key stakeholders and decision makers; (b) cybersecurity digital skills in basic, secondary and tertiary education, in collaboration with Ministry of Education and universities (Phase I); (c) Cybersecurity Training Centers in universities to boost capacity of government officials and private sector; (d) certifications for a critical mass of cybersecurity experts in Government; and (g) capacity building for investigating, prosecuting and judicial officers.

Strengthening Child Online Protection (COP) to deliver (a) a child online protection statistical framework; (b) COP guidelines, toolkits, and an awareness campaign; (c) training for children, parents, guardians, educators and government; (d) support for preventative actions by ISPs, schools, and parents.

Strengthening Data Protection to deliver (a) data protection guidelines, toolkits, codes of practice and benchmarks; (b) data protection office IT systems (e.g. a registry of data processors and controllers; complaints and compliance management tools); (c) data protection assessments and compliance plans for key MDAs; (d) a customized training program for Data Protection Officers across priority MDAs; (e) technical assistance and support to establish and operationalize the Data Protection Office as an independent entity under NITA-U and (f) a data protection capacity building program for the justice, law and order sector, regulators, businesses, the ICT sector and the NGO sector.

Supporting Change Management and Communications to include a public, external-facing and an internal government-facing communications campaign on cybersecurity awareness.

Component 3: Promoting Digital Inclusion of Host Communities and Refugees (US\$ 57 million WHR)

This component will improve availability of core digital infrastructure in remote RHDs for the benefit of both refugees and the local population. In addition, digital demand side barriers will be addressed, including the affordability of mobile devices, and the need for improving basic digital skills. Beyond short-term pandemic resilience, digital inclusion



of refugees and host communities can accelerate post-COVID 19 recovery by reducing barriers that stand between these communities and opportunity. Through improved internet access and digital skills, the component aims to stimulate job creation and other opportunities, which will lay the groundwork for broader long-term social and economic benefits for these communities. While NITA-U will coordinate activities, OPM and MoICTNG will play an important technical role on policy and operational issues.

Subcomponent 3.1: Digital inclusion of host communities and refugees through enhanced connectivity (US\$ 37 million)

This sub-component aims to improve internet access in 12 RHDs to enable connectivity for public and humanitarian institutions serving refugees and RHD and address the need to expand last-mile connectivity to refugees and host population. These infrastructure investments will complement those in component 1, but pointedly focus on RHDs that are often underserved due to low purchasing power and remote locations. This will include:

- **Expanding digital infrastructure and connectivity options in refugee hosting districts:** The project will finance about 1,000 km of NBI extension to cover 12 refugees hosting districts (RHD). The project will also finance 80 masts to enhance data and voice services in 6 RHDs across Northern Uganda. Financing will also be allocated to pre-purchase 7 Gbps of International Bandwidth to off-set the cost of internet provided to schools, health facilities and other public facilities located in refugee hosting districts. To maximize the positive effect of extending the NBI to RHD, the project will finance 700 km of in-community fiber networks in the 12 settlements with the aim to connect 500 humanitarian and public institutions, such as health facilities, schools and Base Camps (public coordination units in RHD). An estimated 172 Wi-Fi hotspots will distribute connectivity at institutions and serve community access points, such as outdoor markets. To reach beyond these community access points, the project will also help scale existing last-mile solutions in RHD facilitated by private, humanitarian or community organizations. A dedicated study will identify access gaps and barriers, mast locations, network configuration, locations for Wi-Fi hotspots and target institutions, and define the best mix of technology and partnerships for each locality. The study will also identify policy barriers or enablers to expand last-mile access.
- **Data center hosting:** This will address the requirements for secure refugee data hosting in a reliable data center facility to provide for data back up and disaster recovery. This will finance dedicated servers and other equipment (such as cooling) to be located in a new datacenter with controlled access as well as to support data back-up requirements through making arrangements for refugee data hosting in the existing datacenter facilities.

Subcomponent 3.2: Digital inclusion of refugees and host communities through access enablers (US\$ 20.0 M)

To reduce demand-side challenges, this sub-component will deploy various schemes to make mobile devices more affordable for host population and refugees. Once tested, such schemes could potentially be scaled up across Uganda, for the benefit of a wider population. The sub-component will also support digital skills development for refugees and host population, with a focus on Persons with Disabilities (PWDs) as well as for MSMEs, with a focus on jobs and post-COVID-19 recovery. To reduce e-waste and enhance access of affordable used devices, the sub-component will establish two e-waste management centers and complementary training on repair and maintenance of devices, to facilitate associated business opportunities. Finally, the sub-component will create linkages to programs in the energy and financial sector to explore complementarities for power and finance of mobile devices. The following will be supported:

- **Individual mobile devices access program:** Even if RHDs are connected to the national backbone infrastructure, refugees face multiple access barriers, including limited abilities to finance mobile devices and pay



for voice and data services. To date, 68 percent of refugee population have SIM cards⁵⁴, but often rely on cheap feature phones. In the Bidibidi settlement for example, 15 percent of men and only 4 percent of women own a smart-phone.⁵⁵ For 73 percent of the refugees, the cost of an Internet-enabled device is the key barrier.⁵⁶ To help mitigate this challenge, the project will support implementation of mobile device affordability and access schemes. Cross-government policy dialogue and a dedicated study will define the best modality to improve affordability of Internet enabled devices. The study will benefit from ongoing research and projects completed by the WB and partners. Potential options span de-risking micro-payments, pay-as-you-go models, subsidy and tax incentives and include public, private and humanitarian partners. Following study recommendations device access schemes and complementary activities such as telecentre will be developed and implemented in close collaboration with partners. Gender lens and feedback from female users will be incorporated into the design of the device affordability program.

- **Telecenters:** Recognizing that some refugees and host population regardless of affordability schemes will not have access to mobile devices for various reasons, the sub-component will support the establishment of Telecenters. A Total of 24 tele centers is planned to be established, with two centers with access to devices and internet in each targeted community.
- **E-waste management:** Besides improving access to new devices, UDAP will work to extend the life cycle of used devices. With a linkage to sub-component 1.2, this sub-component will finance two e-waste facilities near RHDs. Besides safe disposal of devices, training will be offered to selected groups (ensuring appropriate gender targeting) on how to refurbish and resell refurbished mobile devices, as well as maintenance and repair of mobile devices and associated business opportunities.
- **Skills:** To translate access into impact, digital skill training is an important part of component 3. While digital skills in Uganda are generally low, the 'digital divide' is even more pronounced amongst refugees.⁵⁷ To enhance the digital skill level, the project will support and scale successful digital skills programs targeting young adults and especially women. In addition, the project will refine and scale digital skills programs targeting MSME to enhance digital business models and digital business drivers such as access to financing and market information. This sub-component will play a key role in building the skills and business environment necessary to facilitate a digitally enabled COVID-19 socio-economic recovery in RHDs and will be gender-balanced.
- **Digitization support for People with Disabilities (PWDs):** Special attention will be provided to address the needs of PWDs to provide connectivity and Internet bandwidth to PWD centres, as well as provide digital capacity building. In addition, this component will provide assistive technologies and support the development of related content for PWDs in these communities.
- **Cyber-security:** Besides basic digital literacy skills linked to financial literacy, the training will also include sensitization on cyber security, on-line harassment and strategies to mitigate these risks. In addition, national initiatives such as the Child Online Protection (2.3.5) and Cyber Security awareness for school children (2.3.4) will also be implemented in RHD.

Component 4: Project Management (US\$7 million: US\$4 million IDA; US\$3 million WHR)

31. This component will finance project management including procurement; financial management; monitoring and evaluation (M&E); and environmental and social safeguards' management. This will include funding individual

⁵⁴ UCC Feb 2020, OPM (ProGres Version 4), February 2020, GSMA Mobile Connectivity Index, 2019

⁵⁵ <https://www.gsma.com/mobilefordevelopment/country/uganda/the-digital-lives-of-refugees-lessons-from-uganda/>

⁵⁶ <https://www.gsma.com/mobilefordevelopment/country/uganda/the-digital-lives-of-refugees-lessons-from-uganda>

⁵⁷ 2019, GSMA The Digital Lives of Refugees



consultants’ support for (i) the implementation of the project, (ii) institutional strengthening of NITA-U, the implementing agency, and the partner agencies, including Ministry of ICT and National Guidance and NEMA, and (iii) coordination with refugee management organizations like OPM, UNHCR and the CRRF Secretariat. Processes for digital service development and delivery within government MDAs will be enhanced through the component, for example by strengthening centralized support and standardization functions of NITA-U. If necessary, this component will also fund TA to support M&E and accounting.

Component 5: Contingency Emergency Response Component (US\$0 million)

32. Contingent Emergency Response Component (CERC). A CERC is included in the project in accordance with paragraphs 12 and 13 of the Investment Project Financing (IPF) Operational Policy (OP) 10.00, pertaining to Situations of Urgent Need of Assistance and Capacity Constraints. This will allow for rapid reallocation of/[credit/grant] uncommitted funds in the event of an eligible emergency as defined in OP 8.00. An Annex to the Project Operations Manual (‘CERC Annex’) will be prepared within three months of credit/grant effectiveness and the Project’s ESMF includes the CERC E&S assessment and initial requirements. For the CERC to be activated, and financing to be provided, the GoU will need (i) to submit a request letter for CERC activation and the evidence required to determine eligibility of the emergency, as defined in the CERC Annex; and (ii) an Emergency Action Plan, including the emergency expenditures to be financed; and (iii) to meet the environmental and social requirements as agreed in the Emergency Action Plan and ESCP. WHR funds reallocated to the CERC will only be used to benefit refugees and host communities.

Legal Operational Policies	
	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

33. The project has positive environmental and climate change interventions in subcomponents promoting innovative management of e-waste. Due to the poor waste management practices in the country, waste is unsorted, mixed waste often burned contributing to release of CO2 during combustion and persistent organic pollutants or at times e-waste have ended up at municipal dump sites. The design of the project recognizes the current challenges in managing e-waste and the likely increase in the volumes of e-waste generated and thus mitigating these risks through investments in e-waste collection and management centers. While aiming to improve e-services in the country, the project will contribute towards climate change mitigation by reducing greenhouse gas emissions that would have arisen from transportation. Additionally, environmentally sound management of e-waste reduces on the potential release of methane gas from landfills.

34. The likely environmental, health and safety effects of the program activities are expected to be localized and temporary in nature, limited to minimal vegetation clearances to enable pitting of poles/masts for antennae, construction of data centers infrastructures, occupational and community health and safety concerns during digging of trenched for laying fiber optics, end-of-life power back-up



batteries and e-waste that may be generated from institutions that will be connected to the network. There will also be noise pollution from back generators, Emission to air from vehicle fleet and backup generators, risks of exposure to electromagnetic fields from proximity to transmitting antennas emitting radio waves and microwaves and other occupational health and safety risks from working at elevation for overhead cables and antennae installation, confined space entry when trenching and motor vehicle safety aspects. There are also occupational risks specific to optical fiber cables such as permanent eye damage due to exposure to laser light during cable connection and inspection activities, likely exposure of workers to microscopic glass fiber shards/glasses that can penetrate human skin, eye and can be inhaled and associated hazards like fire risks due to presence of flammable materials in high-powered laser installation areas.

- 35.** The other risk is exposure of the project to exogenous climate risks. Uganda faces various climate and natural disaster risks, largely related to variability in precipitation and temperatures. The fiber optics will be routed to avoid traversing ecologically sensitive and protected areas like wildlife reserve, national parks, forests and wetlands. Additionally, the project will include measures to mitigate the impacts on vulnerable populations such as strengthening the adaptive capacity of rural communities, including against climate change shocks. For example, improving the affordability, reach, and use of digital technologies for rural residents would allow remote communities to leverage productivity-enhancing technologies in agriculture, thereby reducing their vulnerability to weather variations and climate shocks. The safeguards instruments developed under the project will provide mitigation measures for addressing these risks and impacts.
- 36.** The project will be subject to the WB Environmental and Social Framework and its set of 10 Environmental and Social Standards (ESSs). The Government has prepared environmental and social instruments that will guide the management of risks and impacts associated with the project, namely, (a) Environmental and Social Management Framework (ESMF), including a Social Assessment, (b) Resettlement Policy Framework (RPF), (c) Vulnerable and Marginalized Group Framework, (d) Stakeholder Engagement Framework, (e) Labor Management Procedures and (f) Environmental and Social Commitment Plan. Site specific ESIA/ESMPs will be prepared for the subprojects during implementation. The project will also apply requirements of the WBG Environmental Health and Safety Guidelines (EHSGs) mainly to civil works activities and construction contractors to ensure compliance with ESMPs.
- 37.** Project risks have been assessed in accordance with ESS1 and mitigation measures proposed through the project ESMF. Preparation of framework instruments has been adopted as the specific activities and actual sites will only be defined during project implementation. The project will benefit several stakeholders including men and women/girls, elderly, People with Disabilities, RHDs, youth through expansion Infrastructure and rural connectivity networks. To ensure stakeholder buy-in, a stakeholder Engagement framework inclusive of a community GRM has been prepared as prescribed under ESS 10. The SEF will facilitate comprehensive flow of information, influence project design through consultations and resolve community grievances as well as facilitate partner coordination.
- 38.** The project civil works activities like linear site-specific excavation of transit corridors for the fiber-optic network, and construction of auxiliary infrastructure require employment of direct workers



under NITA and the Partner Agencies, MDAs and local governments, contracted workers to provide skilled labor, primary supply workers and community workers who will provide unskilled labor. To manage the risks related to labor and working conditions under ESS2, the client has prepared Labor Management. The project will elect a worker's Grievance Management committee to address workers complaints arising out of duty. The project will undergo a GBV Risk assessment and based on the rating, prepare proportionate risk mitigation strategies to curb Gender Based Violence (GBV), Violence Against Children (VAC), Sexual Harassment and Exploitation (SHE), and the spread of HIV/AIDS and STIs.

- 39.** Land acquisition arising out of civil works will be carried out in line with the requirement of ESS5 on land Acquisition, Restrictions on land use and involuntary resettlement where there could be re-alignments. The implementing agency is preparing for disclosure the project Resettlement Policy Framework (RPF) to inform the land acquisition principles, eligibility and methodology for the subsequent Resettlement Action Plans (RAPs) where necessary. The scope of the project is Countrywide and therefore may impact and affect Vulnerable and Marginalized groups categorized under ESS7. In Uganda these are the Batwa in Kisoro, Bundibugyo, Kasese and Kanungu Districts and the IK and Tepeth in the Karamoja Region. Following a Social Assessment, the project has prepared a VMGF and community specific VMGFs will be prepared on confirmation of the project sites. The VMGF outlines the processes and principles of determining the proposed investment impacts on vulnerable groups and the necessary steps of undertaking public consultations and a VMGF, grievance handling mechanism.
- 40.** Uganda has national laws and institutions for environmental and social risks management. There are, however, weaknesses in the national environmental system performance related to institutional linkages, staffing level, and budget allocation, as well as human resource skills. The capacity of NITA-U to supervise, implement, monitor and report on Environment and social risks was assessed during project preparation and it was established that NITA-U does not have the required inhouse environmental and social safeguards capacity. To strengthen the capacity for safeguards compliance, NITA-U will recruit one Environmental and one Social Specialists within six months of the project effectiveness and capacity building activities on applicable ESSs will be supported by the Bank. The two specialists will work closely to develop specific plans based on the framework documents prepared. NITA-U will track and report on the performance of environmental and social risks management as per the terms of the ESCP and financing agreement.
- 41.** Despite the main project implementation agencies experience in delivering similar operations, the environmental and social risk rating are substantial due to the potentially complex implementation arrangement for the various subcomponents and the wide geographical scope of the project that spreads across the country. Given the nature of the anticipated civil works, land acquisition and involuntary displacement, the risks are expected to be minimal and addressed through ESMF and RPF. Risks associated with influx of labor, particularly in RHDs and those that might affect members of Vulnerable and Marginalized Groups will be addressed through the elaboration of an ESMF and VMGF. Stakeholder engagement and effective grievance redress will be crucial to ensure smooth project implementation.

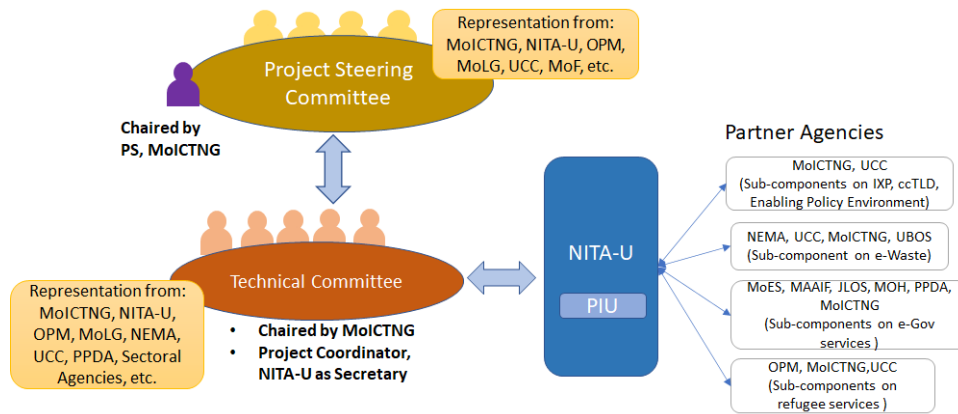


E. Implementation

Institutional and Implementation Arrangements

42. The institutional and implementation arrangements of this project will draw upon lessons learned and largely follow the implementation arrangements currently in place for the RCIP-5 project. In the implementation of the project, NITA-U will be responsible for the overall implementation of the Project on behalf of the Government. Strategic guidance and oversight role will be provided by the MoICTNG. Representatives from the other critical stakeholders such as NEMA, UCC, PPDA, OPM, will constitute both the Steering and Technical Committee.

Figure 1: Proposed Implementation Arrangements



A high-level **Project Steering Committee (PSC)** will oversee the project at the strategic level. It will be chaired by the PS of MoICTNG and comprised of Permanent Secretaries of MoFPED, OPM, MoLG, and MoICTNG, Executive Directors of NITA, and PPDA. The PS of MoICTNG is also the National Coordinator of Digital Transformation Programme under NDP III in which all other PS’s are members. The PSC is expected to meet as often as required but at least once a quarter to provide strategic guidance and oversight to the Technical Committee, make policy decisions, and address project implementation issues.

43. A multi-institutional **Technical Committee (TC)** will be established to provide technical guidance in scoping, design and implementation of the project. In addition, the TC will monitor and track project implementation as well as apprise the Project Steering Committee (PSC) of project progress. The TC will be chaired by the MoICTNG with the Project Coordinator (from NITA-U) who will also serve as secretary for this TC. The TC will comprise subject matter technical specialists from NITA-U, MoICTNG, MoLG, OPM, NEMA, UCC, PPDA, and other sectoral agencies like MoES, MAAIF, JLOS, MoH, and the Comprehensive Refugee Response Framework Secretariat for its role across refugees and RHDs. The Project Coordinator will ensure inter-institutional collaboration and coordination among different agencies. Ad-hoc project implementation teams (PIT) will be established for the purposes of implementing specific activities of the project. The PIT, represented by key stakeholders from partner agencies, will be guided by the decisions of the TC. The TC will meet at least once a month to ensure timely and smooth implementation progress.



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APPROVAL

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