



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 23-Jun-2021 | Report No: PIDA29659



BASIC INFORMATION

A. Basic Project Data

Country Rwanda	Project ID P173373	Project Name Rwanda Digital Acceleration Project	Parent Project ID (if any)
Region AFRICA EAST	Estimated Appraisal Date 12-Jul-2021	Estimated Board Date 30-Sep-2021	Practice Area (Lead) Digital Development
Financing Instrument Investment Project Financing	Borrower(s) Republic of Rwanda	Implementing Agency Rwanda Information Society Authority (RISA)	

Proposed Development Objective(s)

Increase access to broadband, select digital public services and strengthen the digital innovation ecosystem

Components

- Digital Access and Inclusion
- Digital Public Service Delivery
- Digital Innovation and Entrepreneurship
- Project Management and Institutional Coordination

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	200.00
Total Financing	200.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	100.00
IDA Credit	50.00



IDA Grant	50.00
Non-World Bank Group Financing	
Other Sources	100.00
Asian Infrastructure Investment Bank	100.00

Environmental and Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context



Country Context

- 1. Rwanda is a small, low income, landlocked country located in East Africa, characterized by a predominantly rural population.** The country is densely populated, with approximately 12 million people living in a total area of 26,338 km². Rwanda's population is young (60 percent are under the age of 25) and increasingly urban, though the vast majority of Rwandans (82 percent¹) continue to reside in rural areas. Most people living in rural areas remain dependent on agriculture, which continues to employ approximately 61 percent of the population.²
- 2. In recent years, growth, and momentum towards poverty reduction, which has been driven by heavy public sector investment, has stalled.** Over the last two decades, Rwanda has emerged as one of the fastest growing economies on the African continent, with an 8-percent annual growth, resulting in meaningful poverty reduction that has been largely shared.³ These impressive growth figures owe to political stability, prudent macroeconomic policies, good governance, and sizable public investments⁴. However, recently, momentum has stalled⁵ and returns from public-led investments have been lower than expected.⁶ While Rwanda has made considerable progress in terms of improving the local investment climate, fares well in global doing business ranking,⁷ and scores low on corruption⁸, private investment and foreign direct investment (DFI) remain low at just 10 and 3 percent of Gross Domestic Product (GDP), respectively. Moreover, total factor productivity (TFP) is low when compared to Rwanda's income level.⁹ Boosting productivity, supporting private sector investment, economic diversification and wider off-farm job creation have thus emerged as key government priorities and fundamentals for ensuring growth, where digital adoption and innovation is expected to play a major role¹⁰
- 3. Meanwhile, the on-going Covid-19 pandemic now threatens to reverse past gains, increasing the impetus for 'building back better' and investing in enablers that will contribute to economic recovery and resilience.** Lockdown and other social distancing measures, critical to reducing infection rates, sharply curtailed economic activity, and increased government spending. The pandemic drove Rwanda into recession in 2020 for the first time since 1994, with growth contracting by 3.4 percent. GDP in real terms fell by 3.6 percent (y-o-y) in the third quarter of 2020.¹¹ While the pandemic affected all major sectors, services-related sectors (including travel and hospitality, and education) declined the most¹². However, the information communication technology (ICT) sector emerged as the stark exception, as it continued to grow by 29.3 percent in 2020. Increased government spending in response to the crisis has exacerbated challenges related to Rwanda's debt sustainability.¹³ Wider technology adoption that offers a means for governments, individuals, and businesses to better cope with social distancing, ensure business continuity, and prevent service interruptions is therefore viewed as essential to building back better.¹⁴
- 4. Supporting climate-smart infrastructure will also be critical as Rwanda has been identified as being highly vulnerable to climate change.** Rwanda ranks 153 out of 177 in the Notre Dame Global Adaptation Index (13th on vulnerability and 95th on readiness), indicating high vulnerability but low readiness to combat the effects of climatic change.¹⁵ High vulnerability¹⁶ stems from rising temperature levels and variable rainfall patterns, inducing flooding and landslides due to Rwanda's hilly terrain, but also impacting energy security (as hydropower has emerged as a key energy source), increasing vector borne disease transmission¹⁷, and damaging physical infrastructure including digital. Factors contributing to low readiness could include limited use of energy-efficient and resilient infrastructure, limited e-waste management and inadequate preparedness due to lack of climate change forecasting.¹⁸ Annual economic costs of climate change are therefore estimated at upwards of 1 percent of GDP each year by 2030.¹⁹
- 5. The country's vision to become a knowledge-based economy and upper middle-income country by 2035 is underpinned by its commitment to leveraging ICT to accelerate growth and poverty reduction.** The National



Strategy of Transformation (NST1-2017-24) identifies ICT as a cross-cutting enabler for development. Use of digital platforms is, for example, viewed as helping to spawn growth in services (financial, hospitality etc.), commercial transactions and increased access to markets. Investment in ICT thus emerges as a central tenet of this strategy, viewed as critical to bypassing more ‘traditional’ pathways to shared prosperity and growth

Sectoral and Institutional Context

6. The Government of Rwanda (GoR) has distinguished itself as one of the continent’s most ardent champions of the digital agenda, with sizable public investments made in digital infrastructure and public e-service expansion.

Rwanda is subsequently a regional frontrunner when it comes to mobile broadband networks coverage and in the global United Nations (UN) ‘e-government’ rankings.²⁰ It is also heralded as a ‘proof of concept’ country for adopting cutting-edge technologies such as drones for last-mile medical care provision or robotics for Covid-19 screening. Beginning as early as 2002, Rwanda began charting an ambitious course for achieving rapid digitization through a series of five-year national ICT strategies, culminating with the 2020 SMART Rwanda Master Plan (SRMP)²¹. This agenda is spearheaded by the GoR’s leadership at the highest level, the Ministry of Innovation and ICT (MINICT), and its implementing arm, the Rwanda Information Society Authority (RISA) and its new network of Chief Digital Officers (CDOs) appointed to lead sectoral digital transformation efforts in close collaboration with other Ministries, Departments and Agencies (MDAs).

7. A World Bank (WB) digital economy diagnostic, conducted in FY19,²² revealed that only modest progress has been made towards supporting uptake of broadband and digital public services on offer, but also in terms of expanding the country’s digital skills base, and supporting digital businesses at scale, including the development of locally relevant content and commercial e-services. This has, inter alia, limited the ability of most Rwandans to employ digitally enabled social distancing strategies, during the Covid-19 pandemic, placing a dampening impact on

¹ World Bank Indicators, 2019 based on United Nations Population Division’s World Urbanization Prospects: 2018 Revision

² International Labour Organization (ILO), ILOSTAT database. Data retrieved in June 21, 2020

³ Capita GDP has risen three-and-a-half-fold from US\$201 in 2000 to US\$801 in 2019. Gini Coefficient falling from 52.2 in 2006 to 42.9 in 2016. Rwanda Poverty Assessment, 2015, Poverty Global Practice, World Bank, based on Fifth Integrated Household Living Conditions Survey (EICV 5).

⁴ Public investments in infrastructure, construction, and trade increased from 4.9 percent in 2003 to about 9.4 percent in 2018. Today, Rwanda has one of the highest public sector investment-to-GDP ratios in the world. Rwanda Economic Update, January 2020, World Bank

⁵ 38 percent of Rwanda’s population still live below the national poverty line, and 16 percent in extreme poverty.

⁶ Rwanda Economic Update (REU), 2020, World Bank

⁷ As illustrated by Rwanda emerging as a top African performer in the WB’s Doing Business rankings: current ranked 38/190, 2020.

⁸ Rwanda ranks 49/179 in the 2020 Corruption Perception index, published by Transparency International.

⁹ Country Private Sector Diagnostic, 2019, World Bank

¹⁰ Rwanda ICT Hub Strategy 2024

¹¹ Rwanda State of the Economy and Outlook, April 2021, NISR, World Bank Estimates

¹² Ibid

¹³ The widened fiscal deficit led to unprecedented increase in public debt, with the public debt reaching 71.7 percent of GDP in 2020 which is more than 13 percent higher than the 2019, or about 6 percent higher than the HIPC level. Rwanda State of the Economy & Outlook, April 2020.

¹⁴ Rwanda Economic Update, January 2020, Accelerating Digital Transformation in Rwanda (REU-15 2020)

¹⁵ See: <https://gain.nd.edu/our-work/country-index/rankings/>

¹⁶ Rwanda is ranked as highly vulnerable to climate change by the World Bank Climate Risk Assessment

¹⁷ Rwanda is susceptible to many diseases that are influenced by climatic factors such as malaria, meningitis, and cholera. Malaria affects the largest share of the population and is second in mortality (behind AIDS) responsible for 23.27% of all deaths, World Bank Climate Change Knowledge Portal

¹⁸ Examples include low use of fiber optic cables for last mile access and middle-mile networks, gaps in e-waste management, and lingering gaps in government digitization with many government records remaining in paper-based format yielding limited resilience in the event of climatic disasters. Rwanda also lacks adequate predictive capabilities to track and model climate data to enhance related policymaking and planning in relation to climate adaptation and planning.

¹⁹ The Economics of Climate Change in Rwanda, Stockholm Environment Institute

²⁰ Rank 120/193 in UN E-government Development Index (EDGI)

²¹ See: https://www.minict.gov.rw/fileadmin/user_upload/minict_user_upload/Documents/Policies/SMART_RWANDA_MASTERPLAN.pdf

²² REU-15, World Bank, 2020.



commercial activity but also interrupting GoR's ability to deliver public services digitally, without the need for physical presence. Building on investments made to date, the GoR is therefore eager to tackle the stark digital access and inclusion gaps that still exist by actively addressing key barriers, strengthening its capacity for offering more public services digitally and support digitally enabled productivity gains, crowding in private sector investment, through support for digital innovation and entrepreneurship – with the goal of preparing the country for a data-driven and e-service based economy capable of supporting sustainable recovery in a post-Covid context.

Need to improve digital access and inclusion, starting with wider adoption of broadband

- 8. Rwanda's 3G and 4G mobile networks remain underutilized, representing a major demand-side challenge, which in turn stifles further investments in infrastructure and e-services expansion and maintenance.** Roll-out of a 6,000km national fiber optic backbone, facilitated by public funding²³, has helped extend network coverage.²⁴ Current 3G and 4G network²⁵ coverage stands at 93 and 97 percent²⁶, respectively, compared with a regional average of just 76 percent. However, uptake of broadband on the demand side has not kept pace with gains on the supply side. Official figures put internet penetration at 63.1 percent, yet most existing internet users (43.8 percent) are still using low speed 2G mobile internet services, yielding a modest 19.2 percent mobile broadband internet subscription rate (with 13.5 percent on 3G and 5.7 percent on 4G networks). Rwanda's fixed broadband market remains nascent with penetration at just 0.14 percent, based on unique subscriptions.²⁷ Existing broadband users are predominately urban, pointing to a stark urban-rural digital divide on the demand-side.²⁸
- 9. Low smart devices ownership and digital literacy²⁶ represent major barriers to digital access and inclusion.** While a majority (67 percent) of households own a mobile device, these are predominately basic feature phones and not broadband-compatible smart devices.²⁹ Affordability is identified as the main barrier to wider devices access, with close to 80 percent of the Rwandan adult population (6 million, aged 16-64) currently unable to purchase a US\$30 smartphone based on current income and affordability benchmarks.³⁰ Meanwhile, high credit risk prevents a private sector-driven solution to the affordability challenge.³¹ National digital literacy stands at only 20 percent³², whereas reported computer literacy is a mere 9 percent. The GoR has sought to address this issue by piloting flagship digital literacy schemes such as the Digital Ambassadors Program (DAP)³³, and digital education initiatives such as smart

²³ In 2008, the government signed a deal with Korea Telecom to roll out a national fiber optic backbone at a cost of US\$40 million, financed by the sale of the historical operator Rwandatel for US\$100 million in October 2007

²⁴ 47 percent of the population live within 25km from the fiber backbone.

²⁵ Supported through a public co-investment in Korea Telecom Rwanda Network (KTRN), a joint venture between the GoR and Korea Telecom, and managed by Korea Telecom (KT) based on an exclusive license. Access to 4G wholesale capacity is open to all operators at cost-based prices.

²⁶ Statistics report for the telecom, media, and broadcasting sector as of fourth quarter of the year 2020, RURA

²⁷ Ibid

²⁸ 38 percent of urban households versus 12 percent of rural households have access to the internet, EICV 5, 2016-17

²⁹ EICV 5, 2016-17. Although the household survey did not collect information on types of devices, a survey by After Access (2017) found that 66 percent of users owned basic phones, 25 percent owned feature phones and only 9 percent owned smartphones.

³⁰ Based on household income figures and global affordability targets, and low-cost smartphones typically retailing from USDUS\$50 and above. Affordability is being considered as the ability to purchase a device if the cost of the device does not exceed 15% of the monthly income plus cost-of-service plan (assumed to be 2% of monthly income).

³¹ Facebook Connectivity Research, 2020, based on EICV 5 data.

³² Referenced in NISR/NFL Report 2019. Digital literacy here includes use of smartphones, tablets, and computers

³³ In 2017, the Government of Rwanda launched a novel flagship initiative called the 'Digital Ambassadors Program' (DAP), in partnership with the World Economic Forum and the Digital Opportunity Trust, to deliver basic digital skills training to 5 million Rwandans aged 15 years and above in order to reach the Government's target of 60% digital literacy by 2024. The present scheme is based on dispatching centrally trained young 'digital ambassadors' to impart digital literacy training at community level. So far the scheme has only been delivered in a few districts, but evaluation undertaken point to encouraging results in terms of readiness to use basic ICT tools, among women.



classrooms.³⁴ However, gaps remain: these schemes lack national coverage and also need to be adapted to segmented user-groups with distinct training needs.²⁹ Notably, stark rural, gendered, disability- and income-based gaps exist in relation to both device ownership³⁵, affordability, and literacy barriers³⁶.

10. Usage remains low among key user groups that would greatly benefit for increased connectivity and could begin to stimulate reliable and growing demand for broadband. Government schemes such as the One Government Network (OGN)³⁷ have sought to expand last-mile access to broadband on the public sector side, but large access gaps remain. Currently, 62 percent of all government offices remain without access to broadband, particularly local offices at district- and cell-level,³⁸ preventing decentralized use of digital government platforms and local access to digitally enabled public services in critical sectors such as health, education, and social protection. A recent mapping also concluded that 43 percent of all schools (1,796 in total) lack internet access³⁹, preventing the use of enabling digital tools in education and expanded digital skills training in basic and secondary education. Meanwhile, only 17 percent of households have internet access at home, with a pronounced gendered gap,⁴⁰ and very few of Rwanda's micro, small and medium sized (MSMEs) businesses are online, according to surveys conducted.⁴¹ Public access points could therefore also help bridge the last-mile connectivity access gap.

11. There is room to enhance industry regulation in favor of wider access and sustainable infrastructure investment, through interventions that boost competition, service quality, inclusion, and environmental standards. Network service quality and data affordability remain factors that constrain access and usage that need to be addressed by the Rwanda Utilities Regulatory Authority (RURA). The average monthly price of 1.5GB of data was US\$4.26 in 2020,⁴² which is 6.8 percent of Gross National Income (GNI) and exceeds the global affordability targets⁴³, while average internet speeds are only 2Mbps.⁴⁴ Rwanda's hilly terrain and dispersed rural communities, along with weak demand, make investment in high-quality access networks an unattractive commercial prospect, prompting the need for proactive usage of tools such as the Universal Access Fund (UAF), and interventions that help reduce services costs, such as infrastructure sharing. The Covid-19 pandemic has also helped illustrate the role that telecommunications play in emergencies, prompted the need to consider means of improving disaster planning. Meanwhile, the Korea Telecoms Rwanda Network (KTRN) 4G wholesale monopoly arrangement has resulted in sub-optimal development of the 4G market segment, with limited resale by mobile network operators (MNOs), and subsequently weak reinvestment in the network upgrades and maintenance. There is a need for rigorous quality of service (QoS)

³⁴ See: <https://www.smartclassroom.nl/wp-content/uploads/2017/08/Brochure-Smart-Classrooms-Rwanda.pdf>

³⁵ Device ownership among rural households is 54 percent, compared with 82 percent for urban; ownership among female-headed households is at 46 percent compared to 71 for male-headed. The highest percentage of device ownership falls within the richest quintiles (86.5 percent), compared to 44 percent in the poorest. Based on data from The Fifth Integrated Household Living Conditions Survey (EICV 5), 2016-17.

³⁶ Digital literacy is 7 percent for women versus 11 percent for men; 26 percent among urban populations versus 4.6 percent for rural. Recent analysis of census and household data for the UN Flagship Report on Disability and Development shows households with persons with disabilities lag behind households without in relation to both mobile phone ownership and internet access.

³⁷ OGN is a tripartite arrangement between KTRN, GoR and Broadband System Corporation (BSC), a public internet services providers (ISP) that has sought to connecting public institutions with 4G wireless technology. Roll-out so far has predominately connected MDAs in urban areas, some public schools, hospitals and SACCOS. Government is looking to explore innovative and least-cost models for expanding access for public institutional, while crowding in more private sector participation, as part of a revamped and more competitive OGN scheme that also expands access to fiber.

³⁸ MINICT, 2019

³⁹ GIGA Mapping of school connectivity. See: <https://gigaconnect.org/rwanda/>

⁴⁰ 38 percent of urban households versus 12 percent of rural households), and gender gap in access to the internet as well (18.5 percent male headed households vs 3.2 percent female headed households have access to the internet)

⁴¹ Just over half (55 percent) of formal sector enterprises reported having internet access in 2016, Rwanda Economic Update, 2019

⁴² ICT Price Trends, 2020, ITU see: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2020/ITU_ICTPriceTrends_2020.pdf

⁴³ Alliance for Affordable Internet (AFAI). 2018. UN Broadband Commission Adopts A4AI '1 for 2' Affordability Target. News, January 23, 2018. Set at 2 percent of monthly median income.

⁴⁴ Average internet speed in Kenya is 10.1 mbps, Madagascar 24.9mbps, South Africa 6.4 mbps, Zimbabwe 2.9mbps, based on figures from Atlas, Data Cable, 2018



monitoring to ensure that operators fulfill their licensing obligations and end-users are offered attractive services that can help bolster uptake.

Need to enhance Government's ability to introduce fully transactional digital public services

12. The pandemic has also increased the impetus for expanding and improving GoR's e-services to enable uninterrupted critical public service provision, and access without the need for face-to-face interaction.

Government's online one-stop-shop platform for e-services, *Irembo*, currently provides access to almost 100 citizen-facing e-services; however, most still require some form of physical processing. Only a handful of services have been digitized end-to-end. To achieve the GoR's objective of providing "24-hour, self-service, cashless and paperless" government by 2024⁴⁵, there is a need to invest further in shared solutions, infrastructure and process reengineering that will allow GoR to scale fully transactional Government-to-Government (G2G), Government-to-Business (G2B), and Government-to-Person (G2P) e-services both at central government and sectoral level.

13. Increasing the number and quality of public digital services offered will require stronger government capacity for safely digitizing, storing, sharing, and analyzing data.

A recent inventory of public sector systems identified over 280 digital systems deployed by GoR at national and local level. Investment in a government data center has enabled the launch of a shared government cloud. However, considerable fragmentation remains in relation to data management, including how systems are integrated and data is shared, due to gaps in existing data formatting, standardization, interoperability, and data hosting solutions still in use, and in the absence of a governance enterprise architecture. Many key registries remain paper-based and while some data is being consolidated centrally, for example, through the National Institute of Statistics of Rwanda (NIRS), many valuable datasets are still stored across Government.⁴⁶ The 2017 Data Revolution Policy advocates for having a centralized data portal, capacity building in data management and the elimination of silo-based handling of data. Pooled data and stronger GoR capacity to utilize big data analytical techniques for predictive policy insights would also be instrumental to improving public service delivery. Meanwhile, making more data-sets public would help foster innovation, as data has become a key enabler of firm-level productivity and innovation.

14. Enabling digital authentication and identity verification services as a platform and shared service will also be a key building block for facilitating transactional services.

Today, an estimated 98 percent of adults above the age of 16 have a national identification (ID) card, which is required for accessing most services in Rwanda. However, the current ID system has limited capacity for deduplication, based on the existing biometrics collected at point of registration. The national population register (NPR) is linked to a decentralized civil registration system (CRVS), currently undergoing upgrade, with new birth and death registration modules being rolled out, which has increased birth the registration rate to 72 percent. However, thousands of legacy civil records in a paper format are yet to be digitized, adversely affecting the ability to fully leverage the foundational ID system already in place and improve services that require proof of vital events. Moreover, the emergence of the digital economy and scaling of e-services has created the need for digital identity credentials that can be verified remotely, as well as digital authentication and e-signature capabilities that can support fully remote transactions that require higher levels of assurance.

⁴⁵ ICT Sector Strategic Plan, 2018-2024, MINICT

⁴⁶ The data sets are stored in various files and standalone databases, are not available in standardized, clean and machine-readable formats through a shared government data hub or other interoperable mechanisms. Valuable datasets that could be harnessed include meteorological data held by Rwanda Meteorology Agency, tax systems data managed by Rwanda Revenue Authority and Irembo portal data managed by ROL, to name a few.



15. Rwanda will need to continue to build a secure online trust environment, supported by enhanced governance, operational and technical cybersecurity, and data protection capabilities to reduce related vulnerabilities and risks.

In 2018, cyber fraud in Rwanda led to economic losses amounting to approximately US\$6.6 million, caused by 113 identified cases. Moreover, the Rwanda Investigation Bureau (RIB) recorded a spike in cybercrime by 72 percent during the Covid-19 lockdown. Growing digital adoption and reliance on digital infrastructure and solutions will make the Rwandan economy increasingly vulnerable to cyber threats. Recognizing these challenges, Rwanda has introduced foundations for cybersecurity resilience,⁴⁷ including the establishment of the new National Cyber Security Agency (NCSA) in 2017, which houses the national Cyber Security Incident Response Team (CSIRT), but both would stand to benefit from significant capacity building. While GoR has adopted foundational laws on e-transactions and cybercrime, Rwanda still lacks a law on data protection and privacy. However, forthcoming legislation on data privacy and protection is due to be adopted, which will introduce a new supervisory authority for data protection that will also require significant capacity building to establish its operations, supporting movement toward a more robust trust environment, capable of fostering a reinforcing cycle of digital adoption.

Need to strengthen the digital innovation and entrepreneurship ecosystem

16. Rwanda boasts one of the most favorable business environments on the continent yet lacks growth of digital innovation and digital businesses at scale.⁴⁸

While a handful of successful digital startups have emerged, including success stories like Zipline, most startups have a high fail rate, limiting their potential for providing a meaningful contribution to productivity gains, e-services expansion and job creation.⁴⁹ While the digital innovation and entrepreneurship ecosystem currently benefits from active support from the GoR and the donor community, as demonstrated by the build-out of critical support infrastructure for aspiring digital innovators, such as Kigali Innovation City (KIC) as well as pre-incubator kLAb-FabLab, heavy reliance on public and donor funding raises concerns related to the long-term sustainability and performance of ecosystem support organizations (ESO).

17. While Kigali is home to a growing community of ESOs, the digital innovation ecosystem remains uncoordinated and primarily focused on pre-incubation, with limited international linkages and inadequate access to early-stage financing.

Though Kigali has one of the highest ratios of ESOs per inhabitant in the region,⁵⁰ a burgeoning entrepreneurial ecosystem has still been slow to develop. Most ESOs are focused on supporting early-stage startups and not commercialization. As a result, few startups successfully scale. Young, digitally enabled companies tend to be more productive than incumbents, but less able to weather adverse demand shocks such as the Covid-19 pandemic. This implies disproportionate losses to aggregate productivity if the impact of related shock cannot be mitigated among startups.⁵¹ Rwanda also lacks many of the diverse funding channels available in more developed entrepreneurial markets, such as venture capital funding, angel investors, and seed-stage investment. Moreover, access to new credit has declined during Covid-19.⁵² There is thus room to build on Rwanda's favorable reputation

⁴⁷ Rwanda has a National Cyber Security Policy (2015), a National Cyber Security Strategic Plan (2015) and has passed a National Cyber Security Bill in 2017. An Internet Security Center (ISC) monitors the status of Internet security, the National Public Key Infrastructure (PKI) provides confidentiality, integrity, authenticity and non-repudiation of e-transactions and a National Computer Security Incident Response Team (CSIRT), mandated with preventing and responding to cybersecurity incidents in the public and private cyberspace, has been active since 2014.

⁴⁸ Rwanda, Ease of Doing Business Rank 14/190, World Bank, 2020

⁴⁹ For instance, digital platforms employ only 24,000 people in Rwanda – compared to 2.9 million in Nigeria, 1.29 million in South Africa and 286,000 in Kenya; See:

⁵⁰ Connecting the Kigali Entrepreneurial Ecosystem, Credit Suisse, Swiss contact, 2020

⁵¹ COVID-19-Outbreak-Support-to-Firms, 2020, World Bank

⁵² Decreased by 8.2 percent in 2020, according to Rwanda State of the Economy & Outlook, April 2020



for being an easy, safe and stable place to do business – encouraging more investment activity and elevating Rwanda’s status as a regional hub in East Africa – given the inherently small size of the domestic market.

18. However, Rwanda lacks the requisite level of advanced and highly specialized digital skills needed to propel cross-sectoral digital transformation and fuel the digital innovation ecosystem. A shortage of highly qualified developers forces local companies to look for talent overseas. Potential employers also point to a mismatch between skills supply and demand, stemming from weak industry-academia collaboration, as well as the inadequate quality and availability of local training. The GoR has sought to address this by, for example, partnering with for-profit training providers such as Andela to offer advanced coding bootcamps, encouraging world-renowned academic institutions such as Carnegie Mellon University to establish a local campus in Kigali, and launching the Rwanda Coding Academy (RCA) in 2019 to provide training at Technical and Vocational Education and Training (TVET) level.⁵³ While these efforts are a step in the right direction, there is a need for sustainably scaling quality digital skills training, while ensuring active private sector participation, and student access.

19. Supporting wider digital inclusion and participation will also require interventions sensitive to existing gender gaps and barriers faced by people with disabilities. Currently, only 26 percent of those employed in the ICT sector are women. As noted above, barriers exist in access and use of internet owing to, for example, weaker device ownership⁵⁴, lower digital literacy and awareness⁵⁵, which translate to weaker access to the digital dividends stemming from higher adoption and participating in the digital economy. While there is a dedicated Gender Monitoring Office (GMO) that recognizes the need for collecting gender disaggregated data, most key ICT metrics are not consistently gender-disaggregated. Moreover, while 4 percent of the population are persons with disabilities, with a greater share located in rural areas⁵⁶, access to assisted technologies is weak.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

Increase access to broadband, select digital public services and strengthen the digital innovation ecosystem

Key Results

The achievement of the PDO will be measured by the following results indicators:

Increase access to broadband: Internet penetration rate (mobile + fixed) (of which, percent female)

Increase access to select digital public services: Number of fully transactional G2P, G2B and G2G e-services that are introduced, upgraded, or enabled

Strengthen the digital innovation ecosystem: Number of startups creating a digital technology solution (of which percentage female owned)

⁵³ GoR and the Swiss Agency for Development and Cooperation (SDC) recently launched the RCA in partnership with the MINICT, Ministry of Education, and Rwanda Polytechnic. It is hybrid of both general education and TVET. It teaches software development, embedded systems programming, and cybersecurity. The RCA aim to address the “shortage of specialized and hands-on workforce” by producing a pool of top-end experts. RCA takes in students that have completed ordinary level (Lower Secondary) and offers three-year programs. See: <http://www.rca.ac.rw/about-us.php>

⁵⁴ National Institute for Statistics Rwanda (NISR) (EICV5, Gender Thematic Report, December 2018)

⁵⁵ GSMA. Digital Identity Opportunities for Women: Insights from Nigeria, Bangladesh, and Rwanda. May 2019.

<https://www.gsma.com/mobilefordevelopment/resources/digital-identity-opportunities-for-women-insights-from-nigeria-bangladesh-and-rwanda/>

⁵⁶ ECIV5, NISR, 2019



D. Project Description

Component 1: Digital Access and Inclusion

(US\$60.5million: of which US\$30.25 million from IDA and US\$30.25 million from AIIB)

20. This component will increase digital access and inclusion through investment in digital access enablers, focusing on under-served areas and groups. A series of interventions that address identified demand-side barriers hampering access to high-quality broadband will be financed. This includes support for smart device affordability financing schemes, an umbrella digital literacy initiative, as well as a local connectivity access scheme targeting unconnected government offices, schools, hospitals, and marketplaces. Activities supported will help connect more users to high-speed internet, and subsequently enable wider access to and demand for data-driven public and commercial e-services (financed under Components 2 and 3). Financing provided will support wider local readiness for Covid-19 response and recovery, as digital tools and systems have proved critical to an agile response, where digital access is viewed as a basic pre-requisite. By providing catalytic funding to stimulate demand by key user-groups and in low-income market segments the project hopes to crowd in more private sector investment on the supply-side. Upstream support for an enabling legal, regulatory and policy environment for competitive broadband market development will also be provided, with a view of stimulating wider access, quality, affordability and sustainability, resulting in a more vibrant broadband market that can support wider access and service expansion.

Sub-component 1.1: Access to affordable smart devices

(US\$15million: of which US\$7.5 million from IDA and US\$7.5 million from AIIB)

21. This sub-component will provide financing support to facilitate device purchase by low-income household and key user-groups. Activities financed will target users currently unable to afford upfront the purchase of a smart device and secure the needed credit. Prioritized user-group will include Rwanda's poorest households, as well as teachers and students. The scheme will be led by RISA, leveraging support from the Development Bank of Rwanda (BRD), who will act as a financial intermediary to allow for the use of commercial financing instruments and set-up of a device fund. Various financial instruments will be considered, and a phased approach is envisaged, including initially piloting, evaluation and incremental scale-up over time that builds on lessons learnt from related schemes in-country and elsewhere. The project will finance an in-depth market assessment and feasibility study to refine key design elements, based on local context, including how to sustain the fund beyond the life of the project. Key approaches considered include grant-based subsidies for Rwanda's poorest households, with targeting, eligibility and subsidy levels based on the stratified household income classification *Ubehede* system, existing device ownership mapping⁵⁷ and other GoR social assistance schemes in place (including links to digitization of safety nets payments), as well as guarantees to manage the challenges associated with high credit risk and cost, but others interventions will also be explored. Key activities to be financed include:

- (a) **Technical assistance (TA) and capacity building for fund development** to allow for the establishment of a device affordability fund at the BRD. A fund-specific project implementation manual will be developed detailing financial instruments implemented and disbursed, including eligibility criteria and processing requirements.
- (b) **Capitalization of a device affordability fund and operationalization of related financing schemes**, where the project will cover the costs of the financial instruments deployed, and any other relevant operational costs.

⁵⁷ An inventory of device ownership among related household was recently conducted by RISA.



- (c) **Independent verification**, whereby the project would finance a third-party verification agent to verify compliance for the financing schemes.
- (d) **Communication and outreach** through campaigns, sharing success stories and lessons learned to publicize the device affordability scheme to key stakeholders and targeted beneficiaries.

Sub-component 1.2: Digital literacy for all

(US\$8million: of which US\$4 million from IDA and US\$4 million from AIIB)

22. This sub-component will help tackle Rwanda’s lingering digital literacy gap through a national digital literacy scheme that will enable end-users to access and use digital devices and data-driven services safely and effectively. This activity will help expand the national coverage of Rwanda’s existing flagship DAP, with the aim of training more people in digital literacy across all 2,148 cells. A revamped iteration of the existing scheme (version 2.0) will be scaled, and run by the RISA, building in more sustainability, inclusion, and performance-based management, including tailored and task-based training approaches sensitive to gender and persons with disabilities. The scheme will also be broadened to enable the participation of more non-profit and for-profit digital skills providers. The initiative will be anchored in an overarching digital skills assessment and new national digital skills framework, developed in close collaboration with the MINICT, MINEDUC and digital skills providers. Key activities to be financed include:

- (a) **TA for development of a digital skills and monitoring and evaluation (M&E) framework**, aligned with global best practices and featuring continued evaluation of the DAP.
- (b) **Financing development and operationalization of the new DAP 2.0. model**, covering incremental operating costs, training, and equipment, and setting up a shared digital skills training platform allowing partner agencies to contribute through training material, shared M&E tools, building in more sustainability.

Sub-component 1.3: Last mile connectivity access

(US\$33.5 million: of which US\$16.75 million from IDA and US\$16.75 million from AIIB)

23. This sub-component will expand access to high-speed internet among select public institutions, as well as targeted public spaces to enable wider digital service provision. Financing will connect select government offices, school, hospitals and citizen service access points with broadband, and support movement toward a more resilient, secure and centrally managed dedicated government network (GovNet), connecting public sector organizations at central, district, sector and cell-level that currently lack high-speed internet access. The GoR is also keen to connect key commercial centers with public Wi-Fi that can stimulate greater commercial digital service usage. Demand aggregation and pre-purchase of capacity will be leveraged to catalyze infrastructure investment. Upfront purchase of internet bandwidth from private sector operators, under indefeasible right of use (IRU) OpEx contracts, spanning 10-15 years⁵⁸, will serve as the investment guarantee needed to incentivize private sector CapEx investment in the roll-out of last-mile access network that connect target locations, but also benefit the wider consumer base in the vicinity of connected locations, with GoR serving as the anchor tenant required for enhanced service provision. A market study will support a comprehensive needs assessment and refine the implementation approach. Key activities to be financed include:

⁵⁸ Although the lease of capacity would extend for ten years, any operations and maintenance costs that go beyond the closing date of the project, as well as additional bandwidth purchased after the closing date, would fall under the responsibility of the GoR.



- (a) **Support for network planning and management:** RISA will receive targeted TA to support network planning, development of technical specifications and capacity requirement to develop a closed virtual network, and central Networks Operations Center (NOC) to enhance its management of GovNet.
- (b) **Connectivity capacity purchase for select public institutions and priority locations,** awarded on a competitive basis, covering the provision of international internet bandwidth and various geographic lots, featuring minimum capacity and technical requirements for targeted institutional and locations.
- (c) **Enabling ICT infrastructure for target institutions** for facilitating internet access and use. Institutions such as public schools prioritized for connectivity access will be supported with electricity and basic IT equipment for teaching.

Sub-component 1.4: Legal, regulatory, and institutional capacity for broadband market development

(US\$4million: of which US\$2 million from IDA and US\$2 million from AIIB)

24. This sub-component will provide upstream enabling legal, regulatory support, as well as capacity building to stimulate broadband market development, focusing on the telecommunication sector. It will support modernization of the legal, regulatory, and institutional frameworks governing the telecoms sector, with financing for TA, training, systems and equipment acquisition needed to support regulatory reform in selected areas, with the aim of boosting competition, access, inclusion through service expansion, innovation and adoption of emerging technology. Areas for support identified include: (i) quality of service (QoS) monitoring; (ii) number portability; (iii) strengthening of the Universal Access Fund (UAF) through strategic planning that will be auxiliary to supporting and sustaining investments under sub-components 1.1, 1.2 and 1.3 beyond the project lifecycle; (iv) emerging technologies;⁶⁷ (iv) operationalization of recommendations and guidelines that will stem from a new broadband policy, spectrum management and infrastructure sharing models (shortly due to be supported through bank-executed IFC TA); and (v) support for climate change adaptation through specialized trainings for MDAs on emergency response preparedness, operational support for current e-waste management strategy, and development of climate-resilient and energy-efficient infrastructure standards. TA will also be provided to enable the collection of gender-disaggregated data. The MINICT, RISA and RURA are expected to be the main beneficiaries of activities financed under this sub-component.

Component 2: Digital public service delivery

(US\$100million: of which US\$50 million from IDA and US\$50 million from AIIB)

25. This component will strengthen the GoR's ability to securely deliver more digital services, allowing for increased resilience and adaptability to health, climate, and other shocks. Activities financed aim to respond to the Covid-19 crisis by 'building back better' through investments that strengthen GoR's ability to deliver services that are secure, data-driven, paperless, and cashless, and that improve both the front-end user-experience of digital public services as well as back-end government efficiency. This will be achieved by developing shared frameworks on issues such as interoperability, and by leveraging re-usable and shared digital infrastructure and platforms for digital identification and other trust services, as well as data management that (a) enable expansion of sectoral digitization and e-service initiatives; (b) allow the GoR to scale the provision of just-in-time critical G2G, G2B and G2P e-services; and (c) support big data analytics that inform policy making, planning and e-service development. An enabling



environment for securely scaling e-services will also be supported through investments that strengthen GoR's technical and operational capacity for managing risks related to cybersecurity and data protection.

Sub-component 2.1: Digital identification, authentication, and trust services

(US\$39.3million: of which US\$19.65 million from IDA and US\$19.65 million from AfDB)

26. This sub-component will strengthen existing national ID and civil registration systems to support enhanced service delivery, by introducing new mechanisms that enable people to verify their identity remotely and thus carry out fully digital transactions. Support will be provided to NIDA to strengthen the existing foundational ID ecosystem, allowing the GoR to introduce more sophisticated transactional services that require more robust identity verification. By offering related ID-services as a platform and public good, investments made will also help catalyze private sector service innovation that similarly require better ways to authenticate and digitally verify identities. Activities financed will advance Rwanda's alignment with the ten *Principles on Identification for Sustainable Development*⁵⁹ and other international best practices to maximize the socioeconomic benefits and development impacts that stem from a trusted and inclusive ID system. Key activities to be financed include:

- (a) **Enhancements to the existing National ID system** by: (a) extending national ID coverage to children aged 5 to 16 (with consent for parents and guardians); and (b) expanding biometric deduplication and identity verification capabilities based on up to ten fingerprints and through the addition of iris, which will improve accuracy, efficiency and accessibility of both national ID registration and the quality of authentication services, and include financing for related registration campaigns, registration kits, software upgrades etc.
- (b) **New identity verification mechanisms added to the national ID system for in-person service delivery** by scaling the use of fingerprint-based identity verification solutions that have been piloted in the context of birth registration⁶⁰ to more transactions, including registration of other vital events.
- (c) **New digital authentication and e-signature capabilities for secure and trusted remote transactions**, financing architecture and software development, infrastructure, process design and information security frameworks for secure digital authentication, allowing remote access to e-services by providing officially recognized digital IDs in a 'soft' format that could be integrated into public and private sector e-services. This activity will leverage Rwanda's existing national public key infrastructure (PKI) and upgrade it as necessary.
- (d) **Independent grievance redressal mechanism for ID-related services** enabling citizens and residents to seek recourse in the event of ID-related registration or usage issues.
- (e) **Capacity building and awareness raising** to increase people's ability to obtain and effectively use their digital IDs and promote private sector participation.
- (f) **Digitalization and indexing of civil registration archives**, such as birth and death certificates, marriage registration forms and other supporting documents that are currently only available in paper format to strengthening the CVRS.

⁵⁹ <https://id4d.worldbank.org/principles>

⁶⁰ Financed by the Rwanda Strengthening Social Protection Project (P162646).



- (g) **Implementation of strategically selected use cases**, with carefully selected MDAs, by integrating the identity verification, digital ID and e-signature capabilities supported by the project to demonstrate their practical value and transformational impact.

Sub-component 2.2: Government data management, sharing and analytics

(US\$8.9million: of which US\$19.65 million from IDA and US\$19.65 million from AIIB)

27. This sub-component will improve the GoR's ability to securely manage, share, analyze and harness data for improved service delivery, policy development and planning, on the back of shared data frameworks, platforms, infrastructure and big data analytic capabilities. Stronger capacity for managing, sharing, and analyzing government data will play an integral role in enhancing GoR's ability to expand and improve its e-service offering. Activities financed are designed to fully capture the opportunity presented by big data and lay the foundation for the introduction of more advanced use cases in big data analytics, including leveraging predictive capabilities to support forecasting. Support provided will primarily be anchored at RISA, and include the development of shared data governance frameworks, shared government data infrastructure, whole-of-government data interoperability structures, pooled data analytics capacity, featuring the creation of a central 'Government Data Hub' envisioned as a collaborative platform for better use of digital data by government. Key activities to be financed include:

- (a) **Developing national and big data governance and management frameworks**, including TA to support the development of enabling legal, strategic and policy frameworks through feasibility studies, data sharing guidelines, templates, standards, and protocols as well as related training.
- (b) **Operationalizing the Government Data Hub**, including financing related software, hardware, hosting and technical assistance for deploying and operationalizing the hub at RISA, in close collaboration with sectoral MDAs that produce large amounts of data.⁶¹ Further, support for cataloguing and tagging, cleaning and formatting government data for upload, and anonymizing data for release will also be provided. This will also allow government to make data sets public.
- (c) **Financing upgrade of the Government Enterprise Service Bus (GESB)**, operated by RISA to enable seamless back-end data exchange between various MDAs. Support will be provided for training on the GESB's maintenance and operation, as well as any technical assistance required to support systems integration.
- (d) **Implementation of strategically selected big data use cases** to demonstrate the value of big data analytics in priority sectors (e.g., Health, Education, Social Protection and Agriculture), including those supporting climate change adaptation.

Sub-component 2.3: e-Services in key sectors

(US\$32.3million: of which US\$16.15 million from IDA and US\$16.15 million from AIIB)

28. This sub-component will expand the availability of high-quality transactional e-services in key sectors. Priority sectors identified include health, social protection, agriculture, local government, as well as trade and industry. Support provided will cover both (a) just-in-time support for the roll-out of demand-driven G2G, G2B and G2P e-

⁶¹ MDAs that produce large amounts of data are typically Ministries of Agriculture, Education, Finance and Health, as well as meteorological, mapping and disaster preparedness agencies.



services primed for full digitization that leverage and demonstrate the value of using reusable and shared infrastructure and solutions financed by the project; as well as (b) more comprehensive and in-depth flagship sectoral digitization initiatives that involve the development of sector specific back-end systems (but building on shared frameworks and infrastructure) and sector-wide business processes re-engineering. Funding related to category (a) e-services will be allocated on an annual basis, following a structured prioritization exercise with sectoral MDAs, and due consideration to both readiness and expected impact. Meanwhile, the flagship digitization initiatives selected in health and social protection sectors, based on their expected high-level contribution to COVID-19 response and recovery, will showcase how sector-wide digitization can facilitate cross-cutting transformation of service delivery. RISA will be spearheading all e-services financed, working closely with respective MDAs, through its sectoral Chief Digital Officers and dedicated technical committees established. Cybersecurity, data privacy, and secure data-sharing principles, informed consent and user-centric design will be mainstreamed for all e-services financed under this sub-component, with special attention given to ensuring access by vulnerable groups. To ensure adequate technical capacity at RISA, MINICT and within sectoral MDAs to launch, maintain and upgrade respective e-services and back-end systems financed, this sub-component will also cover an extensive digital skills training program for the civil service staff. Key activities to be financed include:

- (a) **Support for strategic planning and design of e-services** for both the digital flagships initiatives in key sectors, as well as demand-driven citizen-, business- and government-facing e-services, including end-user consultations.
- (b) **Development of select e-services in key sectors.** Financing provided will cover aspects such as software development, systems integration, IT equipment, data hosting requirements, technical and end-user training, as needed. Some priority e-services have already been identified for implementation in year one, including support for a new e-Parliament system, a Unified Registry System, and a Building Permit Management Information System.
- (c) **Flagship sectoral digitization initiative: Health.** Help transform service delivery in the health sector by enabling the full digitization and integration of existing and health systems introduced⁶² across multiple points of care, supporting its set-up and use at more health posts.
- (d) **Flagship sectoral digitization initiative: Social protection.** focus on streamlining and digitizing G2P payments for social transfers, digitization of SACCOs, including existing paper-based records and support for related systems financing.
- (e) **Comprehensive capacity building and change management through skills assessment and training** to creating a cadre of digitally savvy government leaders and IT professionals to facilitate the successful development, deployment, and maintenance of e-services.

Sub-component 2.4: Cybersecurity resilience and data protection

(US\$19.5million: of which US\$9.75 million from IDA and US\$9.75 million from AfDB)

29. This sub-component will strengthen the GoR's capacity to mitigate risks associated with the expansion of digital public services by enhancing its capabilities to detect, prevent, respond, mitigate, and recover from cybersecurity attacks as well as manage data protection. It will support the development of a robust enabling environment

⁶² A number of information systems have been put in place including: the integrated routine reporting Health Management Information System (HMIS), Electronic Medical Records (EMR), Logistics Management Information System (eLMIS), Mobile Community based information System (RapidSMS), Health Resource Tracking Tool (HRTT), Laboratory Information System (LIS), Blood Bank Information System (eProgesa), Product Regulatory Information Management System (PRIMS) and Telemedicine Network.



through strengthened cybersecurity governance and institutional frameworks, technical and operational capabilities, as well as cyber skills development for a trusted online transactions environment and the security and resilience of digital infrastructure and systems. It will also lay the foundations for safeguarding data protection in compliance with forthcoming legislation, by supporting the establishment and operationalization of a Data Protection Office (DPO)⁶³. Key activities to be financed include:

- (a) **Strengthened cybersecurity management capacity**, which will feature support for the newly established NCSA and existing Rwanda Computer Security Incident Response Team (CSIRT).
- (b) **Foundations for data protection operationalization** that will finance (i) the development of governance and institutional frameworks (ii) the DPO's technical and operational capacity and (iii) capacity building and awareness raising programs.

Component 3: Digital Innovation and Entrepreneurship

(US\$29.5million: of which US\$14.75 million from IDA and US\$14.75 million from AIIB)

30. This component will strengthen the local digital entrepreneurship ecosystem and talent base. Activities financed will support better innovation ecosystem coordination, better service provision by ESOs, expand access to early-stage financing, and promoted advanced digital innovation capabilities. By strengthening the local entrepreneurial and innovation ecosystem, this component will contribute to the Covid-19 pandemic response and recovery by supporting startups that can aid the development of data-driven, digital products and services relevant to the response. Activities financed will leverage and complement the interventions proposed under Component 2 by also encouraging the use of new public dataset made available and public goods introduced. A stronger local entrepreneurship ecosystem will also aide in developing locally relevant content and services that can help stimulate digital adoption and uptake of digital services, auxiliary to interventions under Component 1.

Sub-component 3.1: Regional digital entrepreneurship hub

(US\$22million: of which US\$11 million from IDA and US\$11 million from AIIB)

31. This sub-component aims to improve the survival and growth rates of technology-enabled startups in Rwanda and strengthen Rwanda's position as a regional 'test bed' for innovation. Support will be provided to create an enabling strategic, policy, regulatory and institutional environment that is conducive to stimulating growth of digital innovation, businesses and startups, positioning Rwanda as a regional digital entrepreneurship hub. Mechanisms to strengthen the quality, sustainability, and range of ESOs and related services available will be financed, including support for acceleration services that can strengthen international market linkages. All support provided will consider the challenges that startups and young firms have been facing due to the Covid-19 pandemic. Interventions made will help create a more robust and attractive pipeline of viable startups poised for scale-up and strengthen Rwanda's innovation capacity, contributing to wider job creation and productivity gains critical to COVID-19 recovery. Key activities to be financed include:

- (a) **Enabling strategies, policies and institutions for digital innovation**, Support will also be provided to MINICT, RISA, the Rwanda Development Board (RDB) and Kigali Innovation City (KIC), with financing for training, TA, operating costs associated with industry consultation etc.

⁶³ The current draft law suggests that the DPO will be established at the NCSA.



- (b) **Performance-based grants for ESOs that serve digital startups**, which aim to encourage quality-based and self-sustaining ESO models that offer better services, and entrepreneurship support programs.
- (c) **International accelerator that serves digital startups**, with financing support provided to attract a high-quality international player to the local market.
- (d) **Early-stage finance mobilization for digital innovation**, including support for investment events, training programs and establishment of an early-stage financing window to be managed by a suitable financial intermediary.

Sub-component 3.2: Next generation capabilities for the digital economy

(US\$7.5million: of which US\$3.75 million from IDA and US\$3.75 million from AIIB)

32. This sub-component will equip young Rwandans with advanced 21st-century digital skills, boosting local capacity to contribute to digital entrepreneurship and innovation. A two-pronged approach will be adopted; on the one hand supporting wider access to digital skills within traditional tertiary education and supporting business-models for advanced digital skills provision on the other. By building the local digital talent pipeline and equipping Rwandans with skills for jobs of the future, this sub-component will actively help stem the rise in unemployment expected on account of Covid-19. Key activities to be financed include:

- (a) **Further development of the Rwanda Coding Academy (RCA)**, managed by the MINICT, allowing the RCA to scale and develop a more effective operating and training model.
- (b) **Performance-based grants for technology bootcamps** and other innovative digital technology skills training models that support their expansion and operations.
- (c) **Ph.D. scholarships for highly specialized digital training**, such as AI, robotics, blockchain, awarded on a yearly and competitive basis. Supported scholars will be required to support digital government initiatives.

Component 4: Project Management

(US\$10million: of which US\$5 million from IDA and US\$5 million from AIIB)

33. This component will finance project management associated with administering the project. It will finance the operational and staffing costs of the Single Project Implementation Unit (SPIU), including the hiring of expert consultants in key areas such as project management, technical advisory and implementation support. Operational costs would also be covered, including support for capacity building and training. This component will also cover continuous stakeholder consultation costs, and any larger M&E work undertaken.

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

The project will be implemented at a national scale and will promote digital inclusion, enhance digital adoption, and bring more Rwandans online. The project will also support the development of critical enabling digital platforms and data-driven solutions to expand the adoption of digitally enabled services. The project Digital Inclusion component builds on the progress made under Regional Communications Infrastructure Program (RCIP-2) (P106369), which supported Rwanda in rolling out the national broadband infrastructure and promote increased access to connectivity. The project may include a number of environmental and social risks, which are currently rated at a Moderate level. However, if not managed, such risks may lead to e-waste pollution and subsequent unintentional releases of toxic emissions; occupational and community health and safety risks related to construction/rehabilitation of buildings and installation of internet connectivity infrastructure at schools, hospitals, local government offices, and academic institutions.

The project design proactively includes measures to plan for the management of such risks, which may occur beyond the lifespan of the project. Under Component 1.1, the project will assist the government to pilot electronic waste solutions, including e-waste management programs and e-recycling centers. Special focus will be placed on women, persons with disabilities, and other vulnerable groups, such as refugees. Under component 2.2 on enhancing data ecosystem development, the project will support data collection and analysis related to critical challenges, including emergencies caused by climate change (and health epidemics). The project will have an overall positive impact on the country's population, as it is expected to reduce costs and enhance the reliability of digital access; increase the efficiency of public service delivery through the support of digitalization of public services. A gender analysis conducted during project preparation assessed gender disparities in reference to digital adoption and access. The assessment informed project design to bridge key gender gaps identified, and gender-disaggregated data wherever possible.

To ensure maximum inclusion, a segmented approach will be explored under this project, including a grant scheme to target the very poorest households. The project will expand and contribute to citizen services access points, particularly in underserved rural areas, connecting schools, hospitals, and local government offices and this is also likely to improve the inclusion of rural poor in the digital economy. Through connecting schools, the project will also support ongoing efforts to improve basic education in Rwanda, enabling digital tools to be more readily leveraged to boost teaching quality and facilitate the delivery of digital skills training in schools. Overall, the activities connected with the Digital Acceleration Project will be site-specific and generating impacts that are of moderate social significance that can be mitigated. The Project will support the sector in developing standards and procedures regarding potential risks by digital infrastructure, including the need for small-scale land acquisition and community health and safety, for instance, construction of cell towers in rural areas. On social inclusion, as noted above, the project is actively looking to bridge the existing digital divide, by expanding access to underserved areas and groups (under component 1). However, the Client will also need to develop appropriate approaches to address risks of an increased digital divide under components 2 and 3; e.g. by supporting digital innovation in key sectors such as agriculture, disability-inclusive digital platforms which can be supported by the project.



E. Implementation



Institutional and Implementation Arrangements

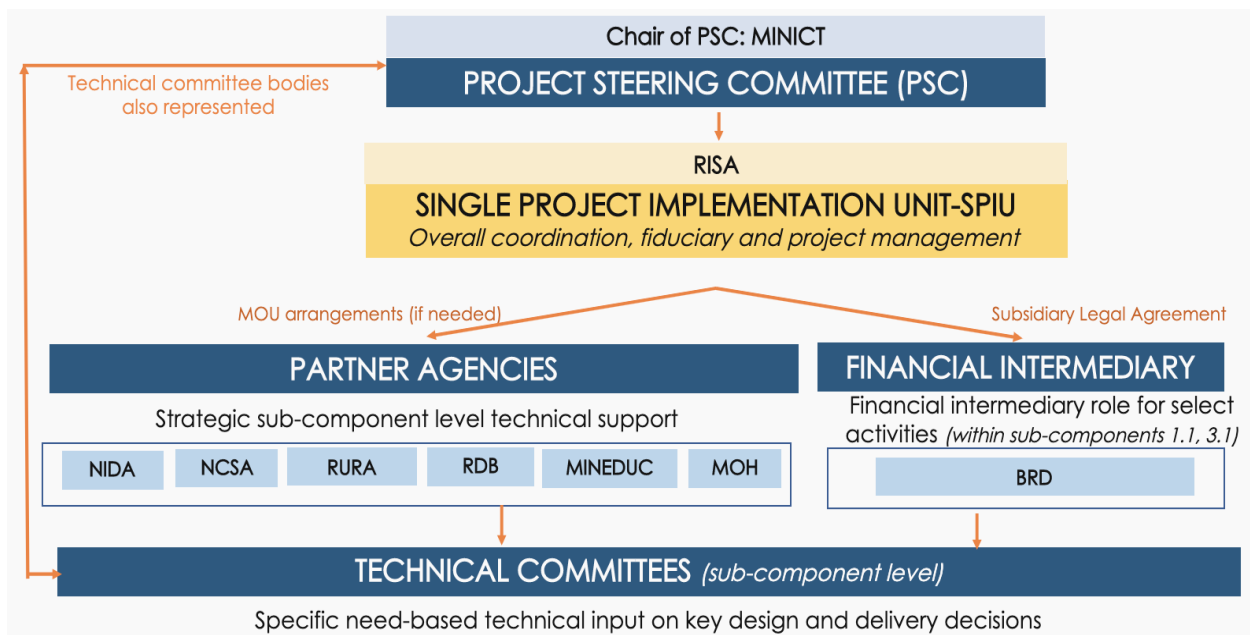
- 34. A Single Project Implementation Unit (SPIU) will be set up and operationalized within the Rwanda Information Society Authority (RISA)⁶⁴ through the approved project preparation advance (PPA).** A majority of the SPIU staff have already been hired. The SPIU will act as the main implementing agency and oversee all project-related fiduciary functions, including managing financial management (FM), procurement, as well as project-related M&E, environmental and social (E&S) commitments, etc. The SPIU will be staffed with requisite experts, including Coordinator, FM, Procurement, E&S, M&E and technical areas covered by the project. The proposed SPIU structure is aligned with guidelines provided by the Ministry of Public Service and Labour (MIFOTRA). The project will ensure that technical experts hired transfer and provide hands-on training to RISA staff to ensure sustainability at project closure. See Figure 1.
- 35. While the SPIU at RISA will maintain overall responsibility for the management of all project activities, it will work closely with six key MDA-partners that are set to be the main beneficiaries and technical counterparts for planned investments.** These include RURA (for sub-component 1.4 – regulatory support), NIDA (for sub-component 2.1 – ID), MINEDUC (for select activities under sub-components 1.2 – digital skills framework, 1.3 – connecting schools, and 3.2 – quality assurance of advanced digital skills training), MOH (for select activities under sub-components 1.3 – connecting hospitals, 2.2 – selected big data use-cases in health and 2.3 – flagship e-health initiative), NCSA (for sub-component 2.4 – cybersecurity), and RDB (for sub-component 3.1 – digital entrepreneurship). These MDAs are expected to contribute with technical inputs on a day-to-day basis, working closely with technical experts embedded in the SPIU, including supporting RISA on technical aspects of procurement-related process, aid in quality assurance and sign-off of key deliverables, and provide input needed to support effective M&E framework management. Detailed roles and responsibilities, and terms of engagement will be captured in the project implementations manual (PIM) being drafted, which will be refined further during project appraisal and finalized ahead of project effectiveness, on the basis of which memoranda of understanding (MoUs) will be established between the SPIU and the partner MDAs, at the start of the project implementation, as needed.
- 36. Specific activities under sub-components 1.1 and 3.1 will need to be implemented by a financial intermediary (FI). The BRD has been selected as the suitable FI given its mandate and track record.** Delegated responsibility will be subject to a subsidiary legal agreement pertaining to specific activities under sub-components 1.1 (financial instruments associated with the affordable device scheme) and 3.1 (early-stage financing), and an activity-specific PIM. The BRD is currently supporting several WB-financed projects, making it a suitable partner familiar with WB guidelines and processes. Specifically, the BRD has experience of analyzing risk and managing loan guarantee programs and has the mandate to establish additional specialist financial intermediaries. There is, however, a need to strengthen the BRD’s capabilities particularly on the risk capital side. Related capacity building to strengthen this function will be provided through the project.
- 37. A Project Steering Committee (PSC) will provide strategic oversight and supervision for the project, which will approve annual work plans and budgets for the project and be leveraged to make any key strategic decisions required.** The PSC will be chaired by the MINICT⁶⁵ and the Chief Executive Officer (CEO) of RISA will be its Secretary. Its members will include NIDA, RURA, NCSA, and RDB (required for quorum), and the MOH, MINEDUC, MINALOC as members at large. In addition, the PSC will also include representatives from the private sector through the Private Sector Federation-ICT Chamber to facilitate continuous dialogue with the private sector. The mandate of the PSC will include (i) approval of annual budgets and work plans; (ii) quarterly review of project progress and (ii) provision of strategic guidance and recommendations related to project implementation and/or any restructuring needed. In



the event of disagreements at PSC-level, arbitration will be provided by the MINICT. The Terms of Reference for the PSC will be detailed further in the PIM being developed.

38. The SPIU will also be supported by a series of dedicated sub-component specific ‘technical committees’ (TCs) that can be convened, as needed, to address any key technical design decisions. These TCs will convene relevant government MDAs deemed key to supporting successful implementation and stakeholder management to take key technical decisions that require wider agreement. TCs can escalate issues, as needed, to the (PSC). TCs will be chaired by RISA SPIU technical specialists and co-chaired by MDAs designated as core technical partners (noted in the paragraph above). A select number of TC members will also be represented on the PSC, as they play a consistent role across the project’s sub-components and activities.

Figure 1: Project implementation arrangements



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⁶⁴ See: <https://www.risa.rw/home/>

⁶⁵ Represented either by the Minister or delegated to the Permanent Secretary.



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