



FOR OFFICIAL USE ONLY

Report No: PAD00047

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF SDR 83.7 MILLION

(US\$110 MILLION EQUIVALENT)

OF WHICH US\$30 MILLION EQUIVALENT

FROM THE WINDOW FOR HOST COMMUNITIES AND REFUGEES

TO THE

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

AND A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 15.3 MILLION

(US\$20 MILLION EQUIVALENT)

TO THE

REPUBLIC OF DJIBOUTI

FOR AN

EASTERN AFRICA REGIONAL DIGITAL INTEGRATION PROJECT SOP-II

NOVEMBER 8, 2023

Digital Development Global Practice
Eastern and Southern Africa Region
Middle East and Northern Africa Region

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

CURRENCY EQUIVALENTS

(Exchange Rate Effective {September 30, 2023})

Currency Unit =

US\$1 = ETB 55.58

US\$1 = DJF 177.83

US\$1 = SDR 0.76

FISCAL YEAR

July 8 - July 7 (Ethiopia)

January 1 - December 31 (Djibouti)

Regional Vice President: Victoria Kwakwa

Regional Director: Christine Zhenwei Qiang

Country Director: Boutheina Guerhazi

Practice Managers: Maria Isabel A. S. Neto, Michel Rogy

Task Team Leaders: Tim Kelly, Lavanya Choudhary, Eric Dunand

ABBREVIATIONS AND ACRONYMS

AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
ANSIE	National Agency for State Information Systems (<i>Agence Nationale des Systèmes d'Information de l'Etat</i>) (Djibouti)
ARMD	Multi-Sectoral Regulatory Authority of Djibouti (<i>Autorité de Régulation Multisectorielle de Djibouti</i>)
AU	African Union
AWPB	Annual Work Plan and Budget
CBA	Cost-Benefit Analysis
CDN	Content Distribution Network
CERC	Contingent Emergency Response Component
CIIP	Critical Information Infrastructure Protection
CIRT	Cybersecurity Incident Response Team
CPF	Country Partnership Framework
CTM	Commercial Transaction Manual
DE4A	Digital Economy for Africa
DjIX	Djibouti Internet Exchange
EAC	East African Community
EAFS	External Assistance Fiduciary Sections
EARDIP	Eastern Africa Regional Digital Integration Project
ECA	Ethiopian Communications Authority
ECOWAS	Economic Community of West African States
EFY	Ethiopian Fiscal Year
EHS	Environmental, Health, and Safety
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
EthERNet	Ethiopian Research and Education Network
EU	European Union
FCS	Fragile and Conflict-Affected Situation
FCV	Fragility, Conflict, and Violence
FGE	Federal Government of Ethiopia
FM	Financial Management
Gbit/s	Gigabits per second
GBV	Gender-Based Violence
GCC	Gulf Cooperation Council
GCP	Global Challenge Program
GDP	Gross Domestic Product
HDI	Human Development Index
HEI	Higher Education Institution
HoA	Horn of Africa
ICT	Information and Communication Technologies
IDA	International Development Association
IDP	Internally Displaced Person
IEG	Independent Evaluation Group
IFC	International Finance Corporation
IFMIS	Integrated Financial Management Information System
IFR	Interim Financial Report
IGAD	InterGovernmental Authority on Development
INSA	Information Network Security Agency (Ethiopia)

IPF	Investment Project Financing
IPSAS	International Public Sector Accounting Standards
IRR	Internal Rate of Return
ISO	International Organization for Standardization
ISP	Internet Service Provider
ITU	International Telecommunication Union
IXP	Internet Exchange Point
kbit/s	Kilobits per second
KDEAP	Kenya Digital Economy Acceleration Project
KENET	Kenya Education Network Trust
Km	Kilometer
M&E	Monitoring and Evaluation
Mbit/s	Megabits per second
MCPT	Ministry of Communication, in charge of Posts and Telecommunications (<i>Ministère des Communications, chargé des Postes et des Télécommunications</i>) (Djibouti)
MDAs	Ministries, Departments, and Agencies
MDENI	Delegate Ministry in charge of Digital Economy and Innovation (<i>Ministère Délégué Chargé de l'Economie Numérique et de l'Innovation</i>) (Djibouti)
MEFI	Ministry of Economy and Finance, in charge of Industry (<i>Ministère de l'Économie et des Finances, chargé de l'Industrie</i>) (Djibouti)
MFD	Mobilizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
MInT	Ministry of Information and Technology (Ethiopia)
MOCT	Ministry of Communications and Technology
MoF	Ministry of Finance (Ethiopia)
MoU	Memorandum of Understanding
MTRI	Ministry of Trade and Regional Integration (Ethiopia)
NBE	National Bank of Ethiopia
NDC	Nationally Determined Contribution
NPV	Net Present Value
NREN	National Research and Education Network
OERs	Open Educational Resources
OFAG	Office of Federal Audit General
ONA	One Network Area
PCM	Private Capital Mobilization
PDO	Project Development Objective
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
PFS	Project Financial Statement
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
REC	Regional Economic Community
RRS	Refugees and Returnees Service (Ethiopia)
SEP	Stakeholder Engagement Plan
SNNPR	Southern Nations, Nationalities, and Peoples' Region (Ethiopia)
SOE	State-Owned Enterprise
SomaliREN	Somalia Research and Education Network
SOP	Series of Projects
STEM	Science, Technology, Engineering, and Mathematics
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance

TMG	Telecommunications Management Group Inc.
ToR	Terms of Reference
TVET	Technical and Vocational Education and Training
UCF	Unguaranteed Commercial Financing
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
WHR	IDA-20 Window on Host Communities and Refugees
WTO	World Trade Organization



TABLE OF CONTENTS

DATASHEET 1

I. STRATEGIC CONTEXT 1

A. Country Context1

B. Sectoral and Institutional Context2

C. Relevance to Higher Level Objectives6

D. Rationale for SOPII7

II. PROJECT DESCRIPTION 8

A. Project Development Objective8

B. Project Components9

C. Project Beneficiaries17

D. Results Chain17

E. Rationale for Bank Involvement and Role of Partners18

F. Lessons Learned and Reflected in the Project Design20

III. IMPLEMENTATION ARRANGEMENTS 21

A. Institutional and Implementation Arrangements21

B. Results Monitoring and Evaluation Arrangements21

C. Sustainability22

IV. PROJECT APPRAISAL SUMMARY 22

A. Technical, Economic and Financial Analysis22

B. Fiduciary24

C. Legal Operational Policies24

D. Environmental and Social25

V. GRIEVANCE REDRESS SERVICES 26

VI. KEY RISKS 27

VII. RESULTS FRAMEWORK AND MONITORING 29

ANNEX 1: Implementation Arrangements and Support Plan 33

ANNEX 2: Addressing the Gender Gap under EARDIP-SOP-II 42

ANNEX 3: Support for Climate Change Adaptation and Mitigation 43

ANNEX 4: Cross-Cutting Technology Policy Commitments under IDA-20 45



DATASHEET

BASIC INFORMATION

Project Beneficiary(ies) EASTERN AND SOUTHERN AFRICA	Operation Name Eastern Africa Regional Digital Integration Project SOP-II		
Operation ID P180931	Financing Instrument Investment Project Financing (IPF)	Environmental and Social Risk Classification Substantial	

Financing & Implementation Modalities

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

Expected Approval Date 01-Dec-2023	Expected Closing Date 07-Jan-2029
Bank/IFC Collaboration Yes	Joint Level Complementary or Interdependent project requiring active coordination

Proposed Development Objective(s)

advance digital market integration in the Eastern Africa region by increasing affordable access to regional broadband connectivity, strengthening the enabling environment and policy convergence for cross-border digital trade and data flows, and developing digital skills.



Components

Component Name	Cost (US\$)
Component 1. Connectivity Market Development and Integration	132,000,000.00
Component 2. Data Market Development and Integration	7,700,000.00
Component 3. Online Market Development and Integration	13,800,000.00
Component 4. Project Management and Implementation Support	6,500,000.00
Component 5: Contingent Emergency Response	0.00

Organizations

Borrower: Federal Democratic Republic of Ethiopia, Republic of Djibouti
 Ministry of Innovation and Technology (Ethiopia), Ministère de la
 Communications, Communication, chargé des Postes et des Télécommunications
 (Djibouti)

Implementing Agency: Communications, Communication, chargé des Postes et des Télécommunications
 (Djibouti)

PROJECT FINANCING DATA (US\$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)? Yes

Is this project Private Capital Enabling (PCE)? Yes

SUMMARY

Total Operation Cost	160.00
Total Financing	160.00
of which IBRD/IDA	130.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	130.00
IDA Credit	20.00



IDA Grant	110.00
Non-World Bank Group Financing	
Commercial Financing	30.00
Unguaranteed Commercial Financing	30.00

IDA Resources (US\$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
Regional	13.33	53.33	0.00	0.00	66.67
National Performance-Based Allocations (PBA)	6.67	26.67	0.00	0.00	33.33
Window for Host Communities and Refugees (WHR)	0.00	30.00	0.00	0.00	30.00
Total	20.00	110.00	0.00	0.00	130.00

Expected Disbursements (US\$, Millions)

WB Fiscal Year	2024	2025	2026	2027	2028	2029	2030	2031
Annual	3.36	20.14	30.93	30.32	30.23	12.87	0.00	0.00
Cumulative	3.36	23.50	54.43	84.75	114.98	127.85	127.85	127.85

PRACTICE AREA(S)

Practice Area (Lead)

Digital Development

Contributing Practice Areas

Macroeconomics, Trade and Investment

CLIMATE



Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

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

POLICY COMPLIANCE

Policy

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

Yes No

Does the project require any waivers of Bank policies?

Yes No

ENVIRONMENTAL AND SOCIAL

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

E & S Standards	Relevance
-----------------	-----------



ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

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

LEGAL

Legal Covenants

Sections and Description

Ethiopia. (i) The Recipient shall, within ninety (90) days of the Effective Date, establish and thereafter maintain, throughout the implementation of the Project, a Project Implementation Unit (PIU) and a Project Steering Committee (PSC); (ii) The Recipient shall, within ninety (90) days of the Effective Date, enter into a memorandum of understanding with Partner Agencies, in form and substance satisfactory to the Association, setting out their roles and responsibilities in the implementation of specific activities under Project, as detailed in the PIM; (iii) The Recipient shall, not later than 90 days after the Effective Date, enter into a memorandum of understanding (“Common Border Memorandum of Understanding” or “MoU) with the Republic of Djibouti, in form and substance satisfactory to the Association.x`

Djibouti. (i) The Recipient shall, within ninety (90) days of the Effective Date, establish and thereafter maintain, throughout the implementation of the Project a Project Steering Committee (PSC); (ii) The Recipient shall, within ninety (90) days of the Effective Date, maintain throughout the Project, the Project implementation unit with the mandate, composition, terms of reference and resources satisfactory to the Association; (iii) not later than 90 days after the Effective Date, recruit to the PIU, an environmental specialist, a social specialist, a sexual exploitation and abuse and sexual harassment consultant, and technical specialists with subject matter expertise in areas such as connectivity infrastructure and cybersecurity (as needed), as may be detailed in the PIM; (iv) not later than three (3) months after the establishment of NREN enter into a memorandum of understanding with NREN setting out its roles and responsibilities in the Project, as detailed in the PIM; and (v) not later than ninety (90) days after the latest of the Effective Dates between this Agreement and the Ethiopia Financing Agreement, enter into a memorandum of



understanding (“Common Border Memorandum of Understanding” or “MoU) with the Federal Democratic Republic of Ethiopia, in form and substance satisfactory to the Association.

Conditions

Type	Citation	Description	Financing Source
Disbursement	Schedul III B	Djibouti: no withdrawal shall be made under Category (2) unless and until the Association has received the Commercial Transactions Manual including: (i) the template form of a Sub-Project Agreement duly adopted by the Recipient, detailing the modalities for Sub-Projects; and (ii) draft bidding documents and proposed safeguards to ensure competitive tendering (including the award of licenses to winning bidders); all in form and substance satisfactory to the Association.	IBRD/IDA, Trust Funds
Effectiveness	Article V	Ethiopia. (a) the Association is satisfied that the Recipient has an adequate refugee protection framework; (b) the Recipient has prepared and adopted the Project Implementation Manual, in form and substance satisfactory to the Association; and (c) the Recipient has updated and redisclosed the Environmental and Social Management Framework (including the Labor	IBRD/IDA, Trust Funds



		Management Procedures (LMP) and the Underserved Local Communities Planning Framework) and the Resettlement Framework – all in form and substance satisfactory to the Association.	
Effectiveness	Article IV	Djibouti. The Recipient (a) has prepared and adopted the Project Implementation Manual, in form and substance satisfactory to the Association; (b) has adopted the Environmental and Social Management Framework (ESMF), the Labor Management Procedures, the Waste Management Plan, the Resettlement Framework, and the Biodiversity Management Plan – all in form and substance satisfactory to the Association; and (c) has appointed to the Project Implementation Unit, a Project coordinator, a financial management specialist, and a procurement specialist, with qualifications, experience and under terms of reference satisfactory to the Association.	IBRD/IDA
Disbursement	Schedule III B	Ethiopia. No withdrawal shall be made, under Category (2), unless and until: (i) the Association has received the Commercial Transactions Manual including: (A) the template	IBRD/IDA, Trust Funds



		<p>form of a Sub-Project Agreement duly adopted by the Recipient, detailing the modalities for Sub-Projects; and (B) draft bidding documents and proposed safeguards to ensure competitive tendering (including the award of licenses to winning bidders) - all in form and substance satisfactory to the Association; and (ii) the Recipient has recruited to the Project Implementation Unit, the following additional specialists - environmental specialist, social specialist, gender-based violence specialist, financial management specialist and procurement specialist - all with qualifications, experience and under terms of reference satisfactory to the Association</p>	
--	--	---	--



I. STRATEGIC CONTEXT

A. Country Context

- 1. The Eastern Africa¹ region, including Ethiopia and Djibouti, is home to about 384 million people, with the majority residing in rural areas and one-third living below the poverty line.** Approximately 72 percent of the population in the region resides in rural areas,² and an estimated one-third of the population, about 144 million people, live below the international poverty line of US\$1.90 a day.³ Wide socioeconomic disparities are seen across countries with gross domestic product (GDP) per capita ranging from US\$3,206 in Djibouti, US\$835 in Ethiopia, to US\$1,705 in Kenya,⁴ and Human Development Index (HDI) rankings ranging from 143 (out of 187) for Kenya⁵ to 171 for Djibouti and 173 for Ethiopia.
- 2. The region has been one of the fastest-growing economic regions in the continent, but growth has faltered in recent years, in part due to local imbalances and international shocks.** Before 2021, Ethiopia and Djibouti were among the fastest growing economies in the world, with GDP growth averaging 10 percent⁶ and 6 percent, respectively (2019/2020). Growth was largely driven by large public sector-led infrastructure investments, which have now faltered due to several factors. In Ethiopia, large public investments were funded by inexpensive external credit, which has resulted in macroeconomic imbalances and a severe foreign exchange crisis. Because of the COVID-19 pandemic and a dip in global trade, which has affected food imports, both countries are now experiencing increased inflation and slowed growth.
- 3. Half of the countries in the region, specifically in the Horn of Africa (HoA), are afflicted by fragility, conflict, and violence (FCV) and related increasing forced displacement in borderland areas creating a risky operating environment.** Ethiopia is emerging from a large-scale conflict⁷ that resulted in economic losses amounting to 5.5 percent of GDP, pressures on inflation, and mass displacement of people. This has been exacerbated with instability in neighboring South Sudan, ongoing armed groups in Somalia (Al Shabab), and an escalating crisis in Sudan,⁸ which has led to over 100,000 people fleeing the country and across borders, also entering Ethiopia.⁹ As a result, Ethiopia currently hosts approximately 3.5 million internally displaced persons (IDPs).¹⁰ Djibouti, which is seen as a transit country to the Middle East, hosts over

¹ Eastern Africa represents countries included in both 'East Africa' (Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda) and those in the 'Horn of Africa' (Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda).

² Population, young, and rural disaggregation estimates are based on 2019 World Bank (WB) staff calculations, WB Indicators. Djibouti is a noticeable exception with only 22 percent.

³ Poverty estimates are based on World Bank staff calculations and the latest available survey data. World Economic Indicators, Horn of Africa Regional Economic Memorandum (REM) 2021.

⁴ GDP per capita (constant 2015 US dollars) estimates are based on 2020 World Bank staff calculations.

⁵ HDI ranking data are based on United Nations Development Programme 2019 estimates (HDI).

⁶ Ministry of Finance (MoF), Ministry of Planning and Development, National Bank of Ethiopia (NBE)

⁷ Simmering tensions between the federal government and the regional government of Tigray (controlled by the Tigray People's Liberation Front [TPLF]) culminated in a military confrontation escalating to the outbreak of a violent conflict (2020–2022). In November 2022, a Peace Agreement was signed, which has started to pave the way for recovery.

⁸ An armed conflict between rival factions of the military government of Sudan began on April 15, 2023, when clashes broke out in cities, with the fighting concentrated around the capital city of Khartoum and the Darfur region.

⁹ International Organization for Migration Response overview, Sudan Crisis and Neighboring Countries, May 2023.

¹⁰ United Nations High Commissioner for Refugees (UNHCR), Country Operational Update, 2023.



36,000 refugees.¹¹ Protracted periods of civil war, insecurity, and weak political and governance capacity have created a risky operating environment in several countries that remain beyond the appetite of most international investors.

4. **Ethiopia hosts a significant refugee population, concentrated mainly in borderland areas with low digital connectivity.** Ethiopia hosted 942,792 refugees and asylum seekers as of August 2023, making it the third largest host country in Africa.¹² Most refugees live in 24 camps across five regional states (Gambela, Somali, Benishangul Gumuz, Afar, and Amhara). The unexpected arrival of 92,000 Somali refugees to the Somali region in February 2023 and 81,000 refugees from Sudan, starting in April 2023, have exacerbated socioeconomic challenges (such as access to food, healthcare and other related social protection programs) that had already become significant. Most of the refugee population in Ethiopia and their host communities are in areas with very low digital connectivity, resulting in low access to digital services (e.g., mobile money, access to communication facilities in times of emergency and limitations also in the delivery of humanitarian aid) and digital skills which limits employment opportunities, resulting in these groups facing a threat of digital exclusion.

5. **The region is also highly vulnerable to the effects of climate change and natural disasters, such as earthquakes.** The region's topography, high elevation along the rift valley, and long coastline, contribute to high climate variability and vulnerability. Rising temperatures and unpredictable rain patterns have resulted in severe flooding, extreme heat and persistent drought.¹³ In Djibouti, climate-induced natural disasters, such as coastal flooding in April 2021, can adversely affect physical, including digital, infrastructure,¹⁴ elevating the risks of network outages for communities (some 88 percent of the population resides by the coast). In Ethiopia, vulnerable communities (refugee camps) in disaster-prone borderland areas (climate 'hotspots'¹⁵) do not have access to good connectivity, limiting emergency response communication.

B. Sectoral and Institutional Context

Regional connectivity market: Lack of affordable and accessible broadband connectivity

6. **Countries along the coast are set to benefit from increasing access to international connectivity capacity; however, deficits in cross-border, in-land fiber networks limit transmission across the region.** With proximity to the Red Sea, a thoroughfare for major existing and planned international submarine fiber optic cables, countries such as Somalia and Djibouti will see connectivity capacity intake more than double.¹⁶ Other landlocked countries such as Ethiopia and South Sudan rely on their coastal neighbors to access this capacity; however, the absence of diverse cross-border links and well-developed fiber optic backbone networks is limiting cost-effective distribution of international traffic and creating risks of single points of failure. Accordingly, in 2022, the international internet bandwidth used per inhabitant was only 3.7 kilobits per second (kbit/s) in Ethiopia. Although this is much higher in Djibouti, at 1.9 megabits per second (Mbit/s), relatively little of this benefits the local population but rather it contributes to international operations.

¹¹ UNHCR update on refugees and asylum seekers in Djibouti as of January 31, 2022.

¹² UNHCR's Ethiopia Update on Total Number of Refugees and Asylum Seekers as of August 31, 2023

¹³ In recent times, the HoA has endured three severe droughts (2010–2011, 2016–2017, and 2020–2022) with 19.4 million people being affected by food insecurity, malnourishment, and loss of livelihood, and about 30,000 people are annually affected by adverse effects of floods. *Source:* ReliefWeb.

¹⁴ Specific climate risks to digital and network infrastructure include flooding of buildings that house central network equipment, and silt damage, scoured cables and damaged foundations, and cable disruption from uprooted trees that damage fiber optic cables due to high precipitation. Meanwhile, high temperatures can cause infrastructure to degrade more quickly.

¹⁵ Regions identified as climate hotspots include, in Ethiopia- Afar, Somali, and Oromia regions which are often hit by severe droughts, and in Djibouti, coastal cities such as Djibouti city face high risk of flooding, climate risk country profile, World Bank

¹⁶ Eleven submarine cables currently land in the HoA region (in Djibouti and Somalia). By 2024, four more systems are expected to land in the HoA region—2Africa, Africa-1, and India-Europe Express (IEX) and Raman—which will provide the African market access to well over 500 terabytes per second of potential additional capacity, as per World Bank and Telecommunications Management Group (TMG). 2022. *HoA Missing Links Study*.



Optimizing the regional network is highly dependent on the readiness of onward connectivity on both sides of the border, underpinned by political will to instate cross-border fiber sharing agreements.

7. **Fragility and conflict dynamics have damaged key ICT infrastructure and resulted in mass displacement limiting incentives for market investments in connectivity.** Local conflict, notably in the Tigray, Amhara and Afar region of Ethiopia (2020–2022), has resulted in severe damages to infrastructures: 34 percent of all cell sites (3,473 cell towers), ICT equipment such as Local Area Network (LAN) cables in over 4,000 schools, and up to 2,500 kilometers (km) of fiber optic cable were burned, damaged, or destroyed. The total cost of full replacement of ICT infrastructure is estimated to be approximately US\$618 million.¹⁷ The local conflict in Ethiopia, coupled with regional political instability (notably in Sudan and Somalia) have resulted in mass displacement of people, particularly in rural, borderland areas. Refugees in the border regions of Somali and Gambela alone amount to over 680,000, not including the recent inflow of refugees from Somalia and Sudan. Insecurity and low disposable incomes have kept these areas off the digital grid with limited incentives for investment. The current levels of infrastructure investment, in middle- and last-mile networks, shows evidence of market failure and are unlikely to meet the growing demands in the absence of de-risking investments through the provision of subsidized capital. Investments in digital connectivity and skills can unlock critical needs for self-reliance of these borderland and conflict-affected communities, as well as their access to services and human capital.

8. **The HOA region is home to state-owned enterprises (SOEs), which have historically limited opportunities for private sector investments and failed to bring competitive price offerings to consumers.** The region includes two countries where SOEs have retained significant market power (Ethio Telecom¹⁸) or a virtual monopoly (Djibouti Telecom¹⁹) and which own, operate, and manage most of the existing telecom infrastructure in each country. Although both Ethiopia and Djibouti have only recently established their industry regulators for the ICT sector, in 2019²⁰ and 2021²¹ respectively, early steps of reform are beginning to be seen. For instance, in September 2019, Ethiopia passed a historic new law liberalizing its telecom market, and in July 2021 Djibouti made the decision to open Djibouti Telecom’s capital. While these steps mark a significant departure, they have lacked sufficient pace and momentum, and critical reforms, such as cost-oriented interconnection and infrastructure sharing, or open access, still lie ahead. As a result, the market continues to show evidence of limited competition largely on retail prices for broadband. The price of 2 GB of data is approximately 6.2 and 3.4 percent of gross national income (GNI) per capita per month in Djibouti and Ethiopia, respectively, above the Alliance for Affordable Internet target of 2 percent,²² and above that of regional and continental peers.

9. **There are also widespread disparities in the telecom regulatory and market landscape with potential for greater harmonization.** The region is home to countries with varying levels of connectivity infrastructure, which explains current price, performance, and broadband penetration differentials—with the latter ranging from 5 percent in South Sudan, 22 percent in Ethiopia, 37 percent in Djibouti to 48 percent in Kenya.²³ While Ethiopia and Djibouti face issues of nascent regulatory regimes and unaffordability of data, neighboring Somalia offers some of the lowest prices for broadband on the continent and Kenya benefits from an advanced modern regulatory authority, in operation since the 1990s. Given

¹⁷ Adapted from Federal Government of Ethiopia (FGE) and World Bank. Forthcoming. *Ethiopia Conflict Impact Assessment and Rehabilitation Project: Volume A - Damage and Needs Assessment*. Actual costs may be lower if equipment can be repaired rather than fully replaced.

¹⁸ A full-service telecom player, Safaricom Ethiopia that was licensed in June 2021 and started offering services in October 2022, has taken a considerable share of the data market, but has struggled to compete in the retail voice market as Ethio Telecom’s retail prices are currently below the wholesale rate for interconnection.

¹⁹ A wholesale fiber operator, AfriFiber, has been licensed but is yet to launch commercial operations. There is no competition in the retail market or in mobile communications.

²⁰ The ICT sector regulator in Ethiopia, Ethiopian Communications Authority, was created in 2019.

²¹ The Multisector Regulatory Authority of Djibouti (ARMD) was created in 2021 covering both ICT and energy, but it is not yet fully operational as of July 2023.

²² <https://a4ai.org/affordable-internet-is-1-for-2/>.

²³ Penetration rates are defined here as unique, active broadband subscriptions (mobile + fixed) per 100 inhabitants.



these contrasts and capacity gaps, there is a need to both strengthen and harmonize the existing policy and regulatory environment conducive to wider connectivity infrastructure investment and a more integrated connectivity market. At a wholesale level, this would, for example, imply a need for interoperability nationally and between backbone networks across adjacent countries, whereas at a retail level this could mean developing regional guidelines or standards on licenses, infrastructure sharing, or other policies; or expanding regional telecom initiatives aimed at progressively eliminating roaming charges such as the One Network Area (ONA) of the East African Community (EAC).²⁴

10. **Gender inequality in the use of digital technology and digital skills remains prominent.** A stark gender gap is recorded in literacy, due to lower school enrollment and completion rates. This is expected to have an adverse impact on digital skills,²⁵ access to digitally enabled services, and jobs. Based on available data, access to and use of information and communication technology (ICT) for women is limited, for instance, in Ethiopia, female-to-male internet and mobile use is estimated to be 0.7 and 0.6 respectively, while for Djibouti this is 0.8 and 0.9.²⁶ A paucity of sectoral gender-disaggregated data makes formulating effective and targeted responses in these countries challenging.

11. **Data traffic is increasing, but this is often routed through distant international locations, resulting in higher costs of data for consumers and lower quality of service.** The limited presence of local data exchanges and data centers is resulting in most of the domestic and regional data traffic being routed through international networks (via Europe, Middle East, and India), thus increasing the latency for data transmission and reducing the quality of service, and incurring additional costs, which are passed on to the end consumers. While Djibouti has established a Tier 3 carrier neutral data center, which also hosts the Djibouti internet exchange (DjIX),²⁷ neither country has yet attracted as many of the data content distribution networks (CDNs), data caches, and cloud providers, as other emerging internet hubs (Kenya and South Africa) have, due to limitations on private sector ownership and absence of a Data Protection Act.²⁸ As internet traffic steadily increases, a key consideration for improving affordable and quality connectivity in the HoA region will be to reduce the distance between end users and data content through expanding national or regional exchanges and data centers. Cross-border data exchanges will also require common principles in the treatment of cross-border data (for example, facilitating signature of Convention 108+²⁹ and implementation of data protection standards, such as ISO³⁰ 27007), to promote exchange of data across the region.

Regional data market: Absence of effective and secure data exchange

12. **Expanding data transmission, storage can create new risks to data privacy, and countries are only beginning to establish the guardrails of requisite institutional governance, and regulatory norms.** For instance, Ethiopia has yet to pass a Data Protection Act and related governance frameworks, though the Council of Ministers approved a draft in October 2023. Djibouti has recently developed a draft Digital Code³¹ mandating the creation of a Commission for Data Protection, though this is pending operationalization. Implementation of a trusted data ecosystem also requires

²⁴ In 2014, the EAC made a joint commitment toward the One Network Area, which initially eliminated voice roaming charges in Kenya, Rwanda, Uganda, and South Sudan and in 2015 expanded its efforts to encompass Short Message Service (SMS), data, and mobile money transactions.

²⁵ Digital skills is defined as a combination of the basic knowledge required to access digital technology (such as operate ICT devices, tools), as well as specialized learnings on topics within the ICT sector such as coding, web design, cybersecurity and data protection, among others.

²⁶ <https://www.digitalgendergaps.org/>.

²⁷ DjIX has 16 members, operators and CDN (Cloudflare) which exchanges about 5–6 Gigabits per second (Gbit/s) traffic daily.

²⁸ World Bank and TMG. 2022. *HoA Missing Links Study*.

²⁹ This refers to a Council of Europe Treaty (*Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data*) that protects the right to privacy of individuals, taking into account the increasing flow across borders and frontiers of personal data undergoing automatic processing. The Convention was signed in 1981 and modernized in 2018.

³⁰ International Organization for Standardization.

³¹ Digital Code and Law 164 of July 27, 2022



developing adequate capacity in Government for cybersecurity. While some countries rank above the global average in terms of cybersecurity preparedness, most countries in the region fall significantly below.³² Reportedly, in 2018, the cost of cybercrime was estimated to be US\$277 million in Ethiopia,³³ while Kenya lost US\$295 million,³⁴ equivalent to 0.4 percent of its GDP, to malicious cyber activities. Key obstacles in the region are the lack of cooperation mechanisms and the insufficient cybersecurity workforce, which undermine the development of adequate cybersecurity maturity.

Regional online market: Limited cross-border digital trade and e-services enablers such as digital skills

13. **The region is looking to accelerate trade facilitation, and regional economic communities (RECs) are stepping up their role as facilitators to advance the integration of digital markets.** Countries in the region stand to gain from economies of scale, network effects, and spillovers, to boost growth and job creation.³⁵ On this basis, the African Union (AU) and RECs such as the Intergovernmental Authority on Development (IGAD), to which both Ethiopia and Djibouti serve as member states, have taken steps to support the incremental integration of regional markets. The most comprehensive of these efforts is the signing of the African Continental Free Trade Area (AfCFTA) in 2018³⁶ by 54 African countries, which envisages, among other things, the adoption of continent-wide rules on e-commerce with wide-ranging expected welfare gains.³⁷ While Djibouti and Ethiopia have both ratified the agreement, other countries, such as South Sudan, are yet to do so. Even with ratification, support will be required at the national level to implement the e-commerce protocols. This support could also be expanded to aid countries such as Ethiopia, which is yet to accede to global trade agreements under the World Trade Organization (WTO) due to, primarily, limited liberalization of the telecom sector.³⁸

14. **Relatively few higher education institutions (HEIs), are equipped with adequate connectivity or have the capabilities to produce the requisite digital skills base.** Several countries in the region have gained from establishing National Research and Education Networks (NRENs) (for instance, Ethiopian Research and Education Network [EthERNET], Somalia Research and Education Network [SomaliREN] and the Kenya Education Network Trust [KENET]³⁹) that have been successful in expanding access to high-speed broadband connectivity to HEIs, although additional support is needed to reach universal coverage. On the other hand, Djibouti and South Sudan are yet to set-up NRENs. In addition to connectivity, digital skills are required to access digital tools. Presently, both the availability and quality of digital skills training in the region is limited, and universities across the region are ill-equipped with the requisite infrastructure, curricula, and trainers to deliver effective training and leverage online platforms to enhance training delivery. Further, skilled talent in newer specialized areas of cybersecurity and data management are increasingly needed in countries such as Djibouti,⁴⁰ but existing digital skills programs are yet to cater to this demand.

³² Djibouti and Ethiopia ranked 42 and 21 out of 43 countries in Africa (179 and 115 out of 182 countries, globally), with a score of 1.7 and 27.7 out of 100, respectively. ITU. 2021. [Global Cybersecurity Index 2020](#).

³³ Cybercrime and Cryptocurrency: An Analysis of Cybercrime and Cryptocurrency Use in Ethiopia. https://www.unodc.org/documents/data-and-analysis/Studies/TOC_cybercrime_and_cryptocurrency_ethiopia.pdf.

³⁴ Kenya Cybersecurity Report, Serianu 2018.

³⁵ World Bank. 2018. *Single Digital Market for East Africa*, estimated that further digital market integration within the EAC has the potential to boost the region's GDP by up to US\$2.6 billion and create up to 4.5 million new jobs.

³⁶ As of March 2023, 46 of the 54 signatories have deposited their instruments of AfCFTA ratification.

³⁷ UNECA (United Nations Economic Commission for Africa). 2020. *Creating a Unified Regional Market: Towards the Implementation of the African Continental Free Trade Area in East Africa*.

³⁸ Ethiopia has held observer status in the WTO since 1997. The country formally applied for accession in 2003, this is yet to materialize, in part due to the country lacking readiness to meet commitments of liberalizing the telecom, banking sectors.

³⁹ In Eastern Africa, six countries—Kenya, Burundi, Ethiopia, Uganda, Rwanda, and Tanzania—have existing NRENs. These are a part of the regional alliance of NRENs known as UbuntuNet-East, which has helped reduce the costs of connectivity to the higher education sector through regional cooperation. World Bank. 2016. *The Role and Status of NRENs in Africa*.

⁴⁰ World Bank. Forthcoming. *Digital Economy for Africa Diagnostic Assessment for Djibouti*.



C. Relevance to Higher Level Objectives

15. **The project is integral to the wider HoA Initiative and supports the AU’s ‘Agenda 2063’.** The project is aligned with the regional HoA Initiative, contributing to Pillar 1 (Improving Regional Infrastructure Connectivity), through financing cross-border regional infrastructure, and will also contribute to Pillar 2 (Economic and Trade Integration) by financing regional dataflows and exchanges, aligned with the HoA Trade Facilitation Roadmap⁴¹. The project will support Agenda 2063, which prioritizes the development of digital infrastructure and complements the AU’s Digital Transformation Strategy for Africa 2020–2030.⁴² The operationalization of that strategy is supported by the World Bank Group’s Digital Economy for Africa (DE4A) initiative. It will also contribute toward the World Bank Group’s IDA-20 digital commitments (as elaborated in Annex 4).

16. **At the country level, the project will support the implementation of the World Bank Group Country Partnership Frameworks (CPFs) and complement the ongoing national digital operations.** The Djibouti CPF (FY22–26, 147787-DJ)⁴³ notes that the telecom sector remains uncompetitive and would benefit from entry of the private sector to boost innovation and efficiency. The Ethiopia CPF (FY18–22, extended to FY23, 119576-ET)⁴⁴, recognizes the ICT sector as a key factor in advancing productivity and structural transformation. The project’s support on infrastructure deployment through competitive tendering and regulatory reform toward opening the market supports the CPF. The project will also complement existing IDA lending programs: *Digital Djibouti* (P174461), and *Digital Ethiopia* (P171034).

17. **The project also supports the World Bank Strategy for Fragility, Conflict, and Violence (FCV) (2020–2025) and related Government policies, including on refugee protection.** The FCV strategy recognizes the role of digital transformation in a holistic approach to promoting peace and reducing economic exclusion. Ethiopia is classified as fragile and conflict-afflicted situations (FCS), where the project will provide financial assistance targeting rural, remote, and post conflict regions and those affected by displacement with the aim of inclusive transformation. The project is also aligned with the regional integration strategy.⁴⁵ The Government of Ethiopia has affirmed its commitment to supporting refugee inclusion through its 2019 Refugee Proclamation, Out of Camp Policy, and April 2023 Strategy Note provided to the World Bank. The UNHCR refugee protection assessment update (dated February 2023), confirms that the protection framework for refugees continues to be adequate in Ethiopia till date. The Government of Ethiopia continues to implement its commitments made at the 2019 Global Refugee Forum, including supporting institutional mechanisms such as the dedicated agency-Refugee and Returnee Service (RRS), enacting revisions in the National Refugee Law (2019) to provide refugees with the right to work and live outside of camps, thereby upholding the country’s commitment towards an open-door asylum policy.

18. **The project will follow the World Bank’s Private Capital Mobilization (PCM) approach.** The project will strategically leverage public funds directly to mobilize private sector investment in the backbone, and access network expansion, in support of PCM, through competitive tendering processes. The project will also address key bottlenecks to commercial investments, through development of enabling legal and regulatory frameworks, and demand stimulus that

⁴¹ Horn of Africa Initiative. 2022. Regional Trade Facilitation Roadmap, 2022-25. <https://www.hoainitiative.org/wp-content/uploads/2022/06/HoAI-Trade-Facilitation-Roadmap-English.pdf>

⁴² The AU’s Digital Transformation Strategy sets out a bold digital vision for Africa, including ensuring that every individual, business, and government is digitally enabled by 2030, to encourage the region’s full participation in the global digital economy. See <https://au.int/en/documents/20200518/digital-transformation-strategy-africa-2020-2030>.

⁴³ WBG. 2021. *Djibouti - Country Partnership Framework for the Period FY22-FY26 (English)*. Report No. 147787-DJ. <http://documents.worldbank.org/curated/en/419571633105207198/Djibouti-Country-Partnership-Framework-for-the-Period-FY22-FY26>.

⁴⁴ WBG. 2017. *Ethiopia - Country partnership framework for the period FY18 - FY22*. Report No. 119576-ET. <http://documents.worldbank.org/curated/en/202771504883944180/Ethiopia-Country-partnership-framework-for-the-period-FY18-FY22>.

⁴⁵ Regional Integration and Cooperation Assistance Strategy - Update for the Period FY21–FY23 (Report No. 154458).



helps create markets in last-mile access networks in rural and borderland areas, addressing identified market failures (see Section II.E).

19. **The project directly supports World Bank’s Global Challenge Programs (GCPs), and it is aligned with the World Bank’s Green, Resilient, and Inclusive Development (GRID) agenda,⁴⁶ and IDA-20 Technology Policy Commitments.** The SOP and the Project will help the participating countries build digital foundations that accelerate digitization at scale in the sub-region in line with the GCPs’ “Accelerating Digitization” agenda. It will contribute notably to GRID’s Pillar 4 (Strengthening policies, institutions and investments for rebuilding better) through investments in resilient infrastructure (Component 1) and digital solutions for government (Component 2) that can allow for continuity of operations in times of crisis. It will help to fulfill five of the six IDA-20 cross-cutting technology policy commitments (see Annex 4).

20. **The project will support the countries in achieving their Nationally Determined Contributions (NDCs) and contribute to efforts of climate change mitigation and adaptation.** In their latest NDC submitted to the United Nations Framework Convention on Climate Change, Ethiopia⁴⁷ and Djibouti⁴⁸ commit to reduce their greenhouse gas (GHG) emissions by 69 percent and 40 percent, respectively, by 2030, with 80 percent (Ethiopia) and 70 percent (Djibouti) of this commitment conditioned on the support of the international community.⁴⁹ In both Ethiopia and Djibouti, one of the key mitigation actions identified in the National Adaptation Plans (NAPs) is prioritizing renewable energy solutions, which the project will contribute toward, for instance by replacing diesel generator cellular base stations with solar powered ones and replacing copper cables with fiber in post-conflict areas.⁵⁰ On adaptation, NDCs outline the need for building resilience in the infrastructure and rural, vulnerable communities to climate disasters. Here the project will help support (a) targeted coverage of climate hot-spots (flood-prone areas in Ethiopia and coastal areas in Djibouti) and populations; and (b) emergency communication response facilities for climate related emergencies in vulnerable remote areas (rural, remote borderland areas with refugee host communities in Ethiopia). For Djibouti, a key priority is developing a ‘*National Strategy for a Green Economy*’ and for Ethiopia preparing a NAP implementation roadmap for the ICT sector,⁵¹ for which the project will provide technical assistance (TA) towards developing.

D. Rationale for SOP II

21. **The project is the second in a Series of Project (SOP) approach to be implemented over time with the objective of advancing regional digital market integration.** Activities of the SOP have been designed to support creating an integrated regional digital network and market by focusing on select countries and participating RECs, based on availability of IDA funds, meeting eligibility criteria and countries’ readiness and commitment⁵² to the broader SOP objective. SOP-I (EARDIP, P176181) provides financing for countries with the lowest levels of digital development (Somalia and South

⁴⁶ <https://thedocs.worldbank.org/en/doc/9385bfef1c330ed6ed972dd9e70d0fb7-0200022021/original/DC2021-0004-Green-Resilient-final.pdf>

⁴⁷ July 2021.

⁴⁸ November 2016.

⁴⁹ Source: Ethiopia NDC July 2021 Submission, Djibouti first NDC submission, 2016, <https://unfccc.int/NDCREG>.

⁵⁰ Research has shown that coaxial cables consume more energy than fiber optic cables; copper networks consume about 3.5 W at full 100 m reach capability while fiber networks may use less than 1 W to transmit the 10 GbE signal over 300 m. See [How Fiber Can Help Make the Network Greener](#). Fiber is also 70–80 percent more reliable than copper, which results in approximately 60 percent fewer maintenance callouts and other operational savings between 40 percent and 60 percent; see Godlovitch, Ilsa, Peter Kroon, Sonia Strube Martins, and Fabian Eltges. 2019. “[Copper Switch-off, A European Benchmark](#).” *FTTH Council Europe Conference*, Amsterdam, page 8.

⁵¹ NAP implementation roadmaps exist for the agriculture, forestry, health, transport, energy, industry, and waste sectors, defining priorities for 2025–20230.

⁵² Readiness, or commitment, is based on (a) agreement and commitment to key policies or features of the regional program, (b) a strategic national plan to implement relevant actions under the regional program, (c) adequate implementation capacity and leadership in the country for moving forward the specific measures/actions relevant to the program, (d) willingness to share information with other participants in the program, and (e) satisfactory monitoring and evaluation (M&E) arrangements that will aid in providing feedback on program performance as well as other relevant factors such as national IDA availability and the feasibility of World Bank support in the country.



Sudan) and grants to two RECs (EAC and IGAD), primarily toward establishing connectivity infrastructure and harmonizing ICT regulations across the region. These up-front investments will benefit SOP-II, which will be implemented in parallel. Common activities being carried out across the SOP will benefit from knowledge sharing. SOP-II will focus on expanding the program to Djibouti and Ethiopia (Table 1).

Table 1. SOP Overview, SOP-I, SOP-II

	SOP-I	SOP-II
Program Objective	To advance digital market integration in the Eastern Africa region by increasing affordable access to regional broadband connectivity and strengthening the enabling environment for cross-border digital services.	
Recipients	Somalia, South Sudan, EAC, and IGAD	Ethiopia and Djibouti
IDA Financing	US\$172 million	US\$130 million
Duration	2023–2028	2024–2029

22. **The SOP will complement other ongoing and pipeline regional operations in the HoA.** The project builds on and complements ongoing support under Ethiopia Digital Foundations Project (P171034) and Djibouti Digital Foundations Project (P174461). For instance, support for creating a more competitive telecom market is being provided in Ethiopia through supporting the partial privatization of Ethio Telecom, and in both countries creating a strong telecom regulator and issuing additional licenses. The project will leverage the results from the ongoing operations, and further support in developing the market. The Kenya Digital Economy Acceleration Project (KDEAP; P170941) is providing US\$70 million in additional regional funds for supporting Kenya’s participation in these activities, for instance, building the cross-border fiber link between South Sudan and Kenya on the Kenya side—a key complement to EARDIP support. Investments in improving cross-border infrastructure will also assist with other HoA initiatives, particularly those that are infrastructure based. Wherever possible, digital infrastructure investments will be coordinated with other infrastructure investments in the HoA region. At the continental level, this SOP, including the Project, complement a similar series of projects in West and Central Africa planned to be supported by the World Bank, including the forthcoming West Africa Regional Digital Integration Program (WARDIP)

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

23. The Series of Projects (SOP) development objective is *to promote the expansion of an integrated digital market across Eastern Africa by increasing cross-border broadband connectivity, data flows and digital trade in the region.*

The development objective of SOP-II is to *advance digital market integration in the Eastern Africa region by increasing affordable access to regional broadband connectivity, strengthening the enabling environment and policy convergence for cross-border digital trade and data flows, and developing digital skills.*⁵³

PDO Level Indicators

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

- (a) Increasing affordable access to regional broadband connectivity

⁵³ For reference, the SOP-I PDO is *to advance digital market integration in the Eastern Africa region by increasing affordable access to regional broadband connectivity and strengthening the enabling environment for cross-border digital services.*



- People provided with enhanced access to broadband internet, of which females, in Djibouti and Ethiopia, and of which refugees, host community members, in Ethiopia (number)
 - Mobile broadband price (monthly, 2 GB) as a percentage of gross national income per capita, in Djibouti and Ethiopia (percentage)
- (b) Strengthening the enabling environment for cross-border digital trade and data flows
- Volume of international data traffic⁵⁴ (used international internet bandwidth per inhabitant), in Djibouti and Ethiopia (in kbit/s)
- (c) Developing digital skills
- Beneficiaries with new or improved income opportunities because of digital skills training under the project, of which, females, in Djibouti and Ethiopia and of which refugees and host community, in Ethiopia (number).

B. Project Components

25. **As with SOP-I, the SOP-II Project is designed around three integrated and mutually reinforcing components, which reflect the distinct but interconnected layers of an integrated regional digital market.** The allocation of funds for SOP-I and SOP-II, including the WHR allocation, is indicated in table 2.

Component 1: Connectivity Market Development and Integration (US\$132 million, including US\$102 million IDA equivalent; and US\$30 million in UCF)

26. **This component will help develop the regional broadband connectivity market through financing bridging existing network coverage and access gaps, supporting rehabilitation of damaged infrastructure, and strengthening the enabling regulatory environment.** Support provided will address strategic network coverage and access gaps, particularly in vulnerable areas such as borderland and post conflict-affected regions and enhance network redundancy through financing cable route diversity allowing the region to meet increasing demand for internet bandwidth. Cross-border, national backbone and backhaul, and access network infrastructure will be partially financed where there is a market failure, through de-risking efforts, via reverse auctions and demand aggregation, with targets for PCM. The project will also explore additional incentives to attract the private sector, such as leveraging potential downstream support from IFC or the IDA Private Sector Window for financing and MIGA for guarantees—if deemed feasible during project implementation. Upstream support for an enabling regulatory environment for competitive broadband market development through licensing arrangements will also be provided, including embedding standards for climate change resilience, and encouraging a gender lens in ICT policies.

Subcomponent 1.1: Cross-border and national backbone network connectivity (US\$41.8 million, including US\$26.8 million IDA equivalent; and US\$15 million in UCF)

27. **This subcomponent will support the deployment of key additional cross-border and backbone fiber links to improve the resilience, coverage, and integration of regional connectivity networks.** Financing support will be provided to build strategic links or segments of links that are not commercially viable, through a range of modalities to encourage private sector investment such as reverse auctions, pre-purchase of internet capacity and others to be detailed in a

⁵⁴ Ideally, at a later date, once IXPs are well established, it will be possible to disaggregate traffic by route, to gain a better understanding of the impact on bilateral data flows and trade. IECD and Packetclearinghouse.net are working on this in countries with well-established IXPs.



Commercial Transaction Manual (CTM).⁵⁵ Operators will be expected to own, co-finance, design, build, and operate the network infrastructure. Infrastructure deployment will be based on key principles⁵⁶ of flexibility, technology neutrality, providing services on an open access basis while offering reasonable wholesale rates to support affordable service expansion to be detailed in the CTM. Project financing will cover the following:

Table 2. Project Costs and Financing Sources for the SOP, with phase I and phase II (US\$, million equivalent)

Component	Phase-I					Phase-II				SOP Total
	RECs (EAC, IGAD)	South Sudan	Somalia	UCF	Total	Djibouti	Ethiopia (of which WHR)	UCF	Total	
Component 1. Connectivity Market Development and Integration	5.6	48.0	50.0	30.0	133.6	17.5	84.5	30.0	132.0	265.6
1.1. Cross-border and national backbone network connectivity	0.0	36.2	30.6	30.0	96.8	8.8	18.0	15.0	41.8	138.6
1.2. Last mile connectivity, including in borderland areas	0.0	9.0	15.4	0.0	24.4	7.7	62.0 (26.0)	15.0	84.7	109.1
1.3. Enabling legal, regulatory, and institutional ICT environment	5.6	2.7	4.0	0.0	12.3	1.0	4.5	0.0	5.5	17.8
Component 2. Data Market Development and Integration	8.3	4.0	6.8	0.0	19.1	1.0	6.7	0.0	7.7	26.8
2.1. Cybersecurity frameworks, infrastructure, and capacity	4.5	1.7	2.2	0.0	8.4	0.8	6.0	0.0	6.8	15.2
2.2. Data exchange, governance, and protection	3.8	2.2	4.6	0.0	10.6	0.2	0.7	0.0	0.9	11.5
Component 3. Online Market Development and Integration	6.9	6.3	7.0	0.0	20.2	0.5	13.3	0.0	13.8	34.0
3.1. Digital enablers for cross-border trade and service delivery	6.9	0.9	1.7	0.0	9.5	0.0	1.3	0.0	1.3	10.8
3.2. Research and education networks and training for digital skills	0.0	5.4	5.2	0.0	10.6	0.5	12.0 (3.0)	0.0	12.5	23.1
Component 4. Project Management and Implementation Support	4.2	8.7	16.2	0.0	29.1	1.0	5.5 (1.0)	0.0	6.5	35.6
Component 5: Contingent Emergency Response	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	25.0	67.0	80.0	30.0	202.0	20.0	110.0 (30.0)	30.0	160.0	362.0

Note: UCF refers to Unguaranteed Commercial Financing. Financing for RECs and countries in SOP-I and SOP II includes both national and regional IDA allocations. It is expected to be disbursed mainly in the last two years of project implementation. Table 3, IDA financing, provides financing split by IDA window (National PBA, Regional and WHR).

⁵⁵ The CTM will be developed through in-depth industry consultations to identify sustainable commercial models for each of the priority routes and will include (a) guidelines for developing the deployment options including public-private partnerships or other models with the operators (particularly for ensuring optimization of the recipient resources in those partnerships), (b) obligations of the operators in return for contributions from the recipient, (c) principles to follow to ensure open and non-discriminatory access to infrastructure built through the project, (d) principles that ensure reasonable prices for the end user, (e) the necessary amendments to the regulatory environment, and (f) the template form of the agreement.

⁵⁶ Key principles on infrastructure deployment could include competitive tender processes, non-exclusivity or open access, maximizing private sector participation, and provision of dark fiber to HEIs and government institutions, among others.



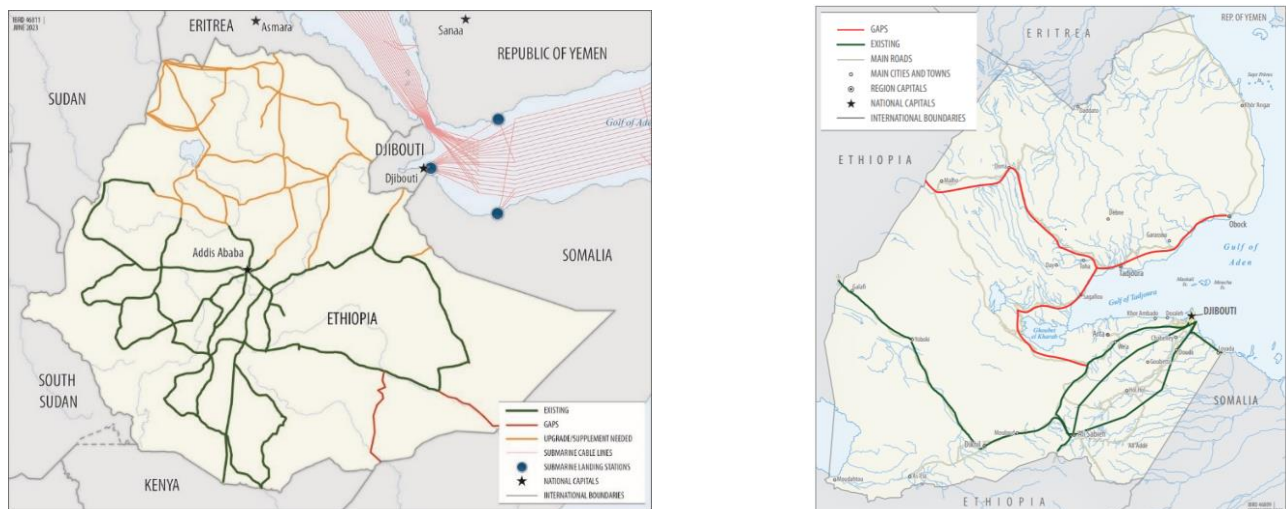
(a) Up-front Technical assistance (TA) to prepare the CTM, including preparing related bidding documents and support for launching and administering the commercial transactions (These activities will target both Ethiopia and Djibouti).

(b) TA for feasibility studies, including surveys and detailed network design including targeting climate hot-spots,⁵⁷ including drafting technical specifications for prioritized routes, identifying sites to be connected along the priority routes,⁵⁸ leveraging parallel deployment of linear infrastructure (for example, roads, electricity distribution networks, and so on) wherever possible (Ethiopia and Djibouti).

(c) Financing of new construction, repair, and upgrade of cross-border terrestrial links and national backbone network infrastructure by following international best-practice guidelines on climate resilience and embedding climate adaptation measures (figure 1). This will be subject to a disbursement condition by the adoption of a CTM.

- **Ethiopia:** Up to 1,500km of fiber,⁵⁹ covering:
 - Cross-border links between Ethiopia and (i) Djibouti - between Halli and Balho (74 km); (ii) bordering Eritrea - between Adwa-Mitsiwa-Asmara (275 km) and Halli to Assab (207 km); and (iii) Somalia - between Imi to Dolo (300 km) and Gode to Beledweyne (210 km).
 - Upgrade, repair, and parallel deployment along the borders with Djibouti, Kenya, Somalia, and South Sudan.
- **Djibouti.** Up to 300 km of fiber for the cross-border link with Northeast frontier of Ethiopia between Balho and Djibouti city's existing link, approximately 250 km, and upgrade of connections toward Galilé in the South and Galafi on the West.

Figure 1. Priority Fiber Optic Missing Links for Ethiopia and Djibouti



Source: Adapted from World Bank and TMG. 2022⁶⁰.

⁵⁷ Survey work will take account of climate-related risks, such as flash floods, coastal flooding etc.

⁵⁸ A series of prefeasibility studies (including an HoA Missing Links Study) and diagnostic assessments (Digital Economy for Africa [DE4A] Djibouti) have been conducted to identify network gaps. The TA envisioned will build on the findings of these earlier assessments.

⁵⁹ For both countries, selection of routes is informed by the feasibility study carried out during project preparation (World Bank and TMG, 2022) as well as stakeholder consultations.

⁶⁰ World Bank and Telecom Management Group. 2022. Missing Links in the Horn of Africa.



Subcomponent 1.2: Last mile connectivity, including in borderland areas (US\$84.7 million, including US\$69.7 million IDA equivalent and US\$15 million in UCF)

28. **This subcomponent will connect rural, borderland areas and support rehabilitation of conflict-damaged infrastructure, where the commercial incentives are insufficient to propel infrastructure investment.** By providing catalytic funding to stimulate demand by key user groups (including in refugee camps and surrounding host communities, conflict-affected areas in Ethiopia, in HEIs, schools and hospitals, and locations in rural and borderland areas), as well as towards post-conflict re-construction, this subcomponent will address existing market failures. The financed infrastructure will adopt a range of technologies and be low-carbon and climate-resilient (Annex 3), and it will be deployed using a range of modalities, including multi-round reverse auctions and bulk pre-purchase of internet capacity,⁶¹ and/or licensing arrangements that aim to maximize private sector financing. The regions targeted represent the highest refugee-hosting regions in Ethiopia (Gambela and Somali) comprising over 50 percent of Ethiopia's total refugee population (Annex 5) and those directly impacted by the conflict in Northern Ethiopia (Tigray, Afar) and by drought (Somali) where customized digital solutions will be provided to aid in transforming the way humanitarian aid is delivered, as well as expand digital access among vulnerable groups. Project financing will cover the following:

(a) Financing rehabilitation and augmentation of digital infrastructure in the conflict-affected area, notably in Tigray, Afar, and Amhara, but also in Benishangul Gumuz and Oromia; including rehabilitating cell towers, fiber optic links, transmission networks, emergency communication facilities (including access to extreme weather alerts), and digital connectivity, as well as infrastructure in universities, and related ICT devices (These activities will target Ethiopia).

(b) Financing for fiber backhaul and last-mile cellular networks in borderland areas, including covering refugee camps, and their host communities, targeting also climate hot-spots.⁶²

- **Ethiopia.** Establishing/upgrading digital infrastructure including but not limited to, mobile broadband, emergency response facilities (such as satellite terminals), low-cost online access points, e-Government equipment, ICT devices and other needs based on customized digital solutions particularly for host communities and refugees in refugee-hosting *woredas* in Somali region (8 camps) bordering Somalia, Gambela (14 camps) bordering South Sudan, and Afar region (3 camps) bordering Eritrea and Djibouti. The project will also potentially target camps in the Tigray region⁶³ and areas with new refugee settlements or camps. Prepurchase of internet capacity will be used to support internet use in refugee camps and host communities, under a “government as anchor tenant” approach to encourage private sector investment.

- **Djibouti.** (i) Deploying 12 fiber extensions to fourth generation mobile technology (4G) cell towers, broadband IP microwave hops, and core network upgrade; and (ii) building new fiber segments up to 120 km in Dikhil, Tadjourah, and covering sites in Obock.

Subcomponent 1.3. Enabling legal, regulatory, and institutional ICT environment (US\$5.5 million IDA equivalent)

29. **This subcomponent will provide upstream enabling policy and regulatory support, as well as capacity building to the newly established telecom sector regulatory authorities.** Complementing ongoing support being provided by

⁶¹ Prepurchase of internet bandwidth from operators, under indefeasible right -of-use contracts, bundled with maintenance costs, spanning 5–15 years, will serve as an investment guarantee needed to incentivize private sector capital expenses investment in the rollout of last-mile access networks that connect targeted locations. It will also benefit the wider consumer base in the vicinity of connected locations, with the Governments of Ethiopia and Djibouti serving as the anchor tenants required for enhanced service provision.

⁶² Increased coverage from cellular services will increase the number of people able to receive extreme weather alerts, for instance, as part of climate change adaptation.

⁶³ The situation of refugees in the Tigray region has not been assessed yet. Due to the conflict in Northern Ethiopia, refugees formerly in Tigray were relocated by RRS to camps in other regions like Amhara. The RRS is presently preparing to re-engage in the Tigray region and the EARDIP SOP-II will extend to refugee-hosting *woredas* in Tigray as the situation permits.



national digital projects, further support will be extended to national line ministries to develop ICT sector guidelines, including a gender and climate lens. Support will be provided for activities to build capacity at the newly established telecom sector regulatory authorities in Ethiopia and Djibouti to ensure effective implementation and supervision of ICT investments, including universal service objectives, and also allow them to partake in regional initiatives with the RECs. Project financing will cover the following:

- (a) TA to design effective ICT and broadband frameworks, including policies and plans (sector plans and master plans) at national and regional levels that integrate inclusion, with gender equality and accessibility for people with disabilities, complementing support provided under national programs (These activities will target both Djibouti, Ethiopia).
- (b) TA for the development of regional guidelines and national protocols for the greening of digital infrastructure, including the reduction of GHG emissions and adaptation to potential climate impacts, for instance through the exploitation of renewable energy and through the development of e-Waste management plans and guidelines on integrating climate resilience for connectivity and data infrastructure (Djibouti, Ethiopia).
- (c) TA, capacity building, and systems⁶⁴ for ECA and ARMD on options for setting up universal service funds, and to support the effective alignment, implementation, and sustainability of connectivity investments under the project through technical training, covering software and ICT use, and additional advisory services, including for policymakers (Djibouti, Ethiopia).
- (d) Financing, TA and capacity building to expand the EAC ONA initiative through membership of the two countries in ONA allowing the elimination of roaming charges for mobile phones between participating countries. (Djibouti, Ethiopia)
- (e) TA for capacity-building training to strengthen and guarantee the effectiveness of the regulatory authority, specifically towards i) implementing the regulation of security practices of companies and internet service providers (both countries); ii) guaranteeing the protection of users' privacy in relation to operators (how to put into practice Book 1 of Djibouti's Digital Code focused on the protection of personal data) (Djibouti).

Component 2. Data Market Development and Integration (US\$7.7 million IDA equivalent)

30. **This component will foster the development of a regional data market by enabling more affordable, secure, and seamless data exchange and sharing across borders.** It will finance the design of regional data infrastructure to reduce the latency and costs of data sharing within the region, as well as build on the regional harmonization efforts under SOP-I and enhance and harmonize data governance through improved national and regional frameworks, including in areas such as cross-border data flows. Financing will also be provided to strengthen cybersecurity incident response. Capacity-building workshops and training will be provided for representatives of the public and private sectors.⁶⁵

Subcomponent 2.1. Cybersecurity frameworks, infrastructure and capacity (US\$6 million IDA equivalent)

31. **This subcomponent will strengthen cybersecurity governance, critical information infrastructure protection, and incident response capabilities in the region.** Project financing will cover the following:

⁶⁴ ECA has requested support for mapping and monitoring network coverage to track fulfilment of universal service obligations by operators. Energy efficient equipment will be used, in compliance with international standards, and disposal of legacy materials will follow climate-informed e-Waste policies with regard to repair, recycling, reuse principles.

⁶⁵ All training and workshops conducted will be in formats compliant with accessibility standards (appropriate headers, landmarks, labeling, alternative text, and so on).



- (a) TA to conduct a national Cybersecurity Capacity Maturity Model assessment and develop national and sectoral cybersecurity strategies,⁶⁶ and related implementation plans (These activities will target both Ethiopia).
- (b) TA to enhance critical information infrastructure protection, including conducting a national cybersecurity risk assessment, identifying key critical information infrastructure, and developing a risk management framework and related cybersecurity baselines (Ethiopia).
- (c) TA for capacity building, and systems (hardware and software) for strengthening the existing Cybersecurity Incident Response Team (CIRT)⁶⁷ through (i) conducting a CIRT maturity assessment and enhancement plan and (ii) assessing and enhancing sectoral incident response capabilities (Ethiopia).
- (d) TA and financing toward cybersecurity training, workshops, and awareness campaigns targeting public and private sector employees, ICT professionals, and the public. This might include working with dedicated national or regional cybersecurity training centers in the region (Ethiopia).
- (e) TA for a feasibility study for establishing regionally oriented training centers on cybersecurity; and cyber-criminality (Djibouti).

Subcomponent 2.2. Data exchange, governance, and protection (US\$0.9 million equivalent)

32. **This subcomponent will support investments in enabling data infrastructure and data governance frameworks that facilitate cost-effective and secure data exchange in the region.** It will build on the regional harmonization efforts under SOP-I and focus on identifying avenues for regional data hosting and enabling and promoting interoperability. Project financing will cover the following:

- (a) TA and subsequent financing to assess regional data hosting (including adoption of a cloud-based approach and green standards) and data management needs, looking at demand and supply, regional demand aggregation, need for disaster recovery sites (in climate-safe locations), and options for attracting private sector investment and scope for strategic partnerships (Ethiopia, Djibouti).
- (b) Financing certifications for the national IXP⁶⁸ (Ethiopia).
- (c) TA and capacity building to harmonize national legal, strategic, and institutional frameworks for data sharing within the region, based on common principles in the treatment of cross-border data (for example, facilitating signature of Convention 108+), to promote interoperability of data across the region through implementation of robust data protection standards, such as ISO 27007, by public and private entities (Ethiopia).
- (d) The provision of technical assistance and support to assess the feasibility and scope for creating a sovereign cloud. (Djibouti).

Component 3. Online Market Development and Integration (US\$13.8 million IDA equivalent)

33. **This component will aim to build the regional online market by reducing barriers to cross-border digital trade and investing in key enablers for digital skills development.** Activities will support the development of national governance frameworks on e-commerce (including harmonization with regional frameworks) and facilitate the countries'

⁶⁶ Cybersecurity strategies are expected to complement the ongoing cybersecurity policy efforts, including Digital Ethiopia 2025 and the working draft of the National Cybersecurity Strategy developed by the efforts of the Information Network Security Agency (INSA). This contributes toward the development of a national cybersecurity policy.

⁶⁷ Ethio CERT was established in 2012 and is a member of the Forum of Incident Response and Security Team (FIRST).

⁶⁸ A federated national system of IXPs is being financed under the Ethiopia Digital Foundations Project (P171034).



participation in regional and global trade agreements. This component will also develop the regional digital skills base more broadly, through support for establishing and expanding NRENs and digital skills training programs.

Subcomponent 3.1. Digital enablers for cross-border trade and service delivery (US\$1.3 million IDA equivalent)

34. **This subcomponent will enhance readiness to expand digitally enabled cross-border trade and service delivery, by introducing key enablers.** With a view to supporting the e-Commerce Protocol under AfCFTA and leveraging the development of an e-commerce Strategy for IGAD under SOP-I, this subcomponent will support a regional approach to digital trade through enhancing e-commerce strategies and capacity building for national trade ministries. Project financing will cover the following:

- (a) TA and capacity building toward implementing Ethiopia's national e-Commerce Strategy,⁶⁹ which is being prepared, and developing a regulatory framework for e-commerce with a focus on improving readiness to participate in regional trade agreements such as AfCFTA for the Ministry of Innovation and Technology (MINT), Ministry of Finance and the Ministry of Trade and Regional Integration (MTRI) (These activities will target Ethiopia).
- (b) TA to the Ethiopian Government to prepare an offer on digital services under the General Agreement on Trade in Services to facilitate Ethiopia's participation in the WTO (Ethiopia).

Subcomponent 3.2. Research and education networks and training for digital skills (US\$12 million IDA equivalent)

35. **This subcomponent will support the development of the digital skills base through strengthening the NREN in Ethiopia (EthERNet) and establishing a new one in Djibouti.** It will enable the expansion and strengthening of the regional infrastructure supporting HEIs, regional training centers and schools by promoting closer regional collaboration among NRENs, allowing for economies of scale and knowledge transfer. In collaboration with the Education Global Practice, and in accordance with the recommendations of Ethiopia's Digital Skills' Country Action Plan⁷⁰, support will be provided to enhance the capacity of universities and TVETs,⁷¹ in partnership with NRENs and governments, to deliver digital skills programs for university students, government officials and refugees and members of host communities. All skills' programs will be encouraged to adapt pedagogical tools and techniques with a view to being accessible for people with disabilities. Digital skills' training along with provision of connectivity supported under subcomponent 1.2 is expected to unlock access to financial inclusion, social protection schemes, services such as education, and livelihood opportunities, particularly for refugees and host communities. Project financing will cover the following:

- (a) Financing support for the establishment of a Djibouti NREN, including through prepurchase of international internet access; payment of membership fees for the European Union (EU) AfricaConnect Phase 4 program⁷²; purchase of network equipment and campus Wi-Fi networks; and support for staffing, equipment, and business planning for sustainability (Djibouti).
- (b) Financing for collaboration between NRENs in the region, notably KENET, EthERNet, SomaliREN, and the new national NRENs to be established in Djibouti and South Sudan through regional capacity-building initiatives (study

⁶⁹ The e-Commerce Strategy is being jointly developed by MINT and MTRI with support from the Tony Blair Institute.

⁷⁰ Ministry of Education. 2021. Digital Skills Action Plan.

⁷¹ In Ethiopia, TVETs are part of the Ministry of Labor and Skills while other HEIs are part of the MoE.

⁷² <https://africaconnect3.net/>. Phase 3 ends in June 2023, but countries will be eligible to join the EU AfricaConnect Phase 4, to start in 2024.



tours and workshops), demand aggregations, extension of Eduroam⁷³ and regional access to open educational resources (Djibouti, Ethiopia).

- (c) TA for the development of a long-term business plan for sustainable EthERNET, Ethio ICT Park, and talent centers expansion (Ethiopia).
- (d) Financing toward connecting and providing ICT equipment (following best practice energy efficiency standards) to up to additional 50 national universities⁷⁴ and a minimum of seven TVET regional centers of excellence.⁷⁵ In Ethiopia, in addition, priority institutions in *woredas* hosting refugees targeted under sub-component 1.2 will be connected and ICT equipment provided. Criteria for selection of universities, and support packages will be defined based on government prioritization, and competitive selection mechanisms (Ethiopia).
- (e) Financing for the design and implementation of new and expanded digital skills programs⁷⁶ aimed at expanding the availability of digital skills trainings focusing on basic digital skills courses and specialized courses on cybersecurity, cloud technologies, data center management and data protection, through existing HEIs, targeting university students and civil servants,⁷⁷ through UNHCR targeting refugees, members of host communities and female beneficiaries through a custom pilot digital skills program (Ethiopia).

Component 4. Project Management and Implementation Support (US\$6.5 million IDA equivalent)

36. **This component will finance project management and implementation of project-associated activities.** The project will be implemented through the existing national Project Implementation Units (PIUs) in Ethiopia (within MInT) and Djibouti (within MCPT) that were both established in 2021 through ongoing World Bank-financed projects.⁷⁸ This component will cover operating costs for the project and help strengthen and expand the technical and functional capacity of the existing PIUs, including through the recruitment of additional expert consultants in key areas and the facilitation of on-the-job learning and competency transfer. Expanding capacity of existing PIUs will also entail bringing on board additional partner agencies such as the RSS (in Ethiopia), along with UNHCR in an advisory capacity to support on activities supporting refugees and host communities. It will support independent audits and M&E (including collection and analysis of gender-disaggregated data) and enable collaboration between regional (IGAD) and national PIUs through joint trainings, reverse missions, and participation in regional forums and exchanges. This component will also support Environmental and Social Framework (ESF) compliance, with a particular emphasis on addressing the high security-related risks associated with the deployment of infrastructure and civil works, including hosting stakeholder consultations, a robust grievance redress mechanism, and development of site-specific environmental and social plans, especially in *woredas* hosting refugees.

Component 5. Contingent Emergency Response Component (US\$0)

37. **This component will allow for rapid reallocation of uncommitted IDA funds in the event of an eligible emergency declared in one of the participating countries.** A Contingency Emergency Response Component (CERC) annex to the Project Implementation Manual (PIM) is currently being prepared to guide the activation and implementation of the CERC,

⁷³ Eduroam is an international Wi-Fi internet access roaming service for users in research, higher education and further education.

⁷⁴ Already, some 40 universities and 30 TVETs are being connected with high-speed connectivity under Digital Ethiopia (P171034).

⁷⁵ East Africa Skills for Transformation and Regional Integration Project, EASTRIP (P163399) has designated seven TVETs as regional centers of excellence which are being supported with programs for ICT skills and require complementary support on connectivity and ICT equipment.

⁷⁶ Digital Ethiopia (P171034) is funding the rollout of training in International Computer Driver's License (ICDL) and international certificate program for digital competency, and this can be expanded under EARDIP SOP-II and also extended to Djibouti.

⁷⁷ In selecting HEIs with whom to work, the project will take account of the Regional Centers of Excellence established under *East Africa Skills for Transformation and Regional Integration Project*, (EASTRIP; P163399) and African Centers of Excellence-II (ACE-II; P151847).

⁷⁸ Digital Ethiopia (P171034) and Digital Djibouti (P174461).



including agreed on steps needed for activation of CERC. For the CERC to be activated and financing to be provided, the recipient will need to (a) submit a request letter for CERC activation and the evidence required to determine eligibility of the emergency, as defined in the CERC annex; (b) submit an Emergency Action Plan, including the emergency expenditures to be financed; and (c) meet the environmental and social requirements as agreed in the Emergency Action Plan and Environmental and Social Commitment Plan (ESCP). Any WHR resources that are moved to the CERC will only be used to benefit refugees and host communities.

C. Project Beneficiaries

38. **The project will benefit people of the region, targeting specifically youth and women, refugees, businesses, and public sector Ministries, Departments, and Agencies (MDAs).**

- (a) **Citizens.** Broadband network coverage (of the population⁷⁹) is expected to increase from 85 to 98 percent of the total population in Ethiopia and from 90 to near 100 percent in Djibouti, and approximately 11,000 students⁸⁰, of whom at least 30 percent are women, 25 percent are members of refugees and host community groups⁸¹ each, also including persons with disabilities⁸², will also benefit directly from digital skills trainings (conducted using accessible techniques and tools).
- (b) **Refugees, host communities.** Refugees in approximately 26 refugee camps in the Gambela, Somali, and Afar regions of Ethiopia (approximately 740,000 in total) and their host communities (approximately 1,600,000) within the *woredas* where they are hosted, will benefit indirectly from enhanced network coverage and new access to mobile and emergency response ICT infrastructure. Specifically, 500,000 refugees (68 percent of the refugee population) and 500,000 members of host communities (31 percent of the host community) will benefit directly with new or enhanced access to internet connectivity. Further a minimum of 2,500 individuals from the refugee and host communities each will be provided trainings in digital skills.
- (c) **Businesses.** ICT service providers, including mobile network operators, wholesale fiber network operators, and Internet Service Providers (ISPs), will directly benefit from the project through contracts for infrastructure deployment and internet prepurchase as well as local procurement of ICT services, awarded on a competitive basis.
- (d) **Public sector.** MDAs, particularly line ministries for ICT and trade, and ICT regulatory bodies in Ethiopia and Djibouti, will directly benefit from targeted financial and TA. Public institutions (including unconnected government offices, universities, and TVETs) will also benefit from improved access to connectivity.

D. Results Chain

39. **The project's Theory of Change explains how the project's activities respond to key challenges to achieve the desired outcomes while noting those assumptions that apply (Figure 2).** Component 1 responds to the regional gaps in connectivity access; the digital divide between urban and rural, borderland areas including refugee camps, host communities; and issues of service affordability by expanding broadband infrastructure and stimulating private sector investment. Support on digital access for refugees and host communities is expected to address the need for more efficient, and transparent delivery of humanitarian aid (e.g., better targeting and communication with beneficiaries using mobile technologies) and is expected to contribute towards improved social protection programs. Component 2 addresses issues of weak data exchange and cybersecurity risks through financing hardware, software, and TA toward establishing a

⁷⁹ Note that population coverage is generally much higher than the actual number of subscribers but lower than the territory covered.

⁸⁰ Approximately one quarter of the population of Ethiopia and Djibouti are students.

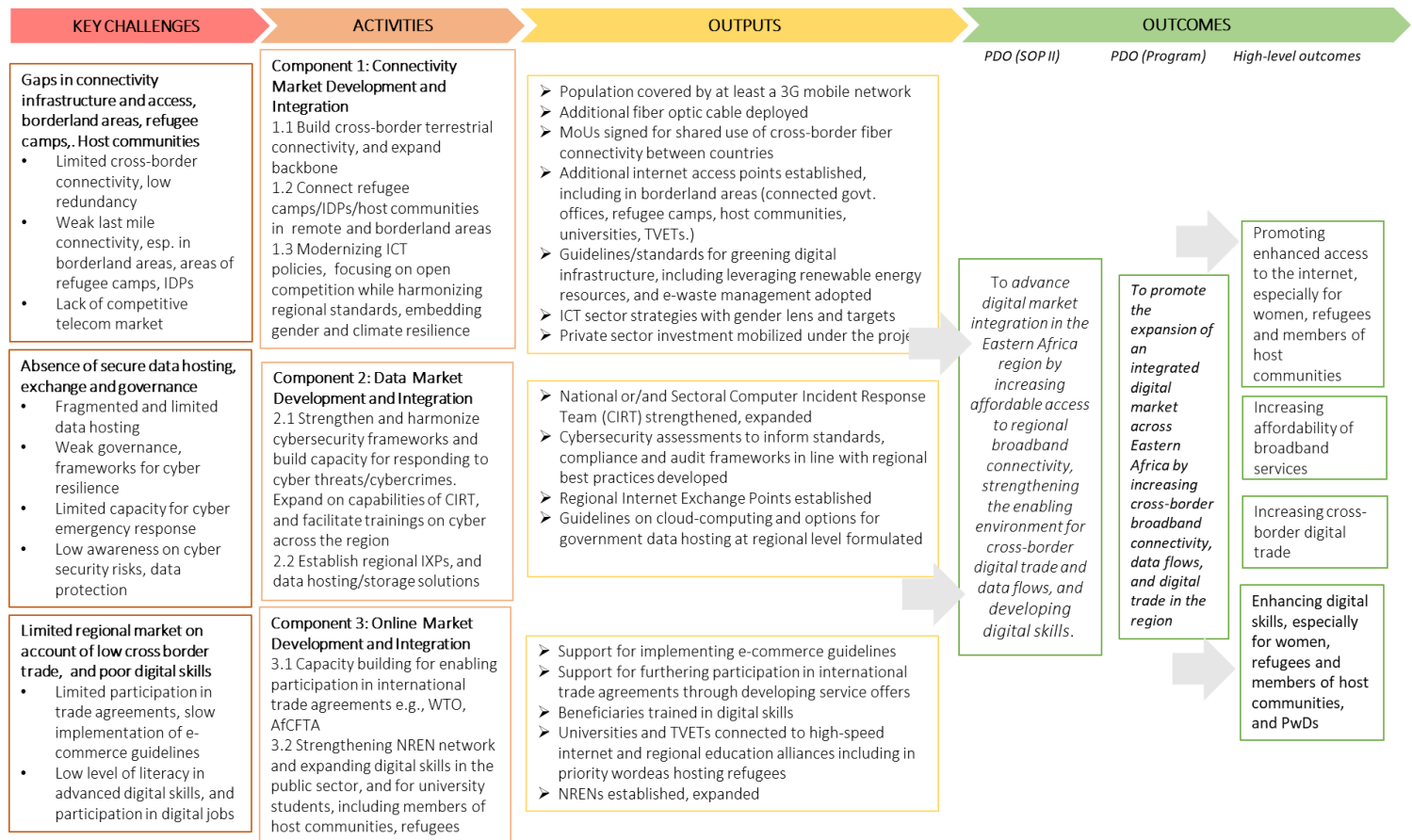
⁸¹ Up to five per cent of the population of Ethiopia are refugees or members of hot communities.

⁸² Up to 15 percent of the population of Djibouti and Ethiopia and persons with disabilities.



trusted and secure data environment. Component 3 helps build an integrated online market through facilitating regional trade and investing in digital skills, bringing more people online including refugees and members of host communities. Component 4 supports project management and ensures that capacity is developed throughout public institutions to ensure sustainability. Key assumptions include the following: (a) no political or economic shocks will change the underlying economic and fiscal environment or, if they do, project implementation will not be affected, as the project does not rely on government counterpart funding; (b) governments remain committed to supporting competition and adopting proposed legal and regulatory frameworks, including on refugee protection; (c) the private sector is willing to invest in expanding infrastructure and will direct that investment in areas targeted by the project; and (d) citizens including target groups of students, refugees and host community members choose to subscribe to the newly available services with the existing sensitization efforts carried on through universities, and partner agencies such as UNHCR.

Figure 2. Results Chain



E. Rationale for Bank Involvement and Role of Partners

40. The World Bank is uniquely positioned to support the region’s digital transformation as the proposed ecosystem approach for integration of digital markets has been tested in several World Bank interventions. The project builds on the first generation of regional digital investment operations, including the Regional Communications Infrastructure Program (RCIP, P094103) implemented in Eastern and Southern Africa, the West African Regional Communications Infrastructure Program (WARCIP, P116273), and the Central Africa Backbone Project (CAB, P108368). These operations have helped lay the foundation for incrementally supporting the integration of regional digital markets, through early investments in connectivity infrastructure, expanding the region’s access to cheaper international connectivity.



41. **Development partners have been consulted throughout project preparation to ensure coordination.** The project is proposed as an integral part of the broader HoA Regional Initiative, implemented together with the AfDB and EU. A high degree of complementarity is also expected with other planned HoA lending programs. Consultations included technical discussions with development finance institutions, notably the HoA Initiative Secretariat, AfDB on its Horn of Africa Digital Integration Project, the EU on its Initiative for Digital Government and Cybersecurity, the International Telecommunication Union (ITU) on its support for affordable access to broadband, Smart Africa’s internet bulk internet capacity purchase program, and the EU AfricaConnect program for NRENs. Finally, regarding the project’s support for refugees and host communities, particularly in Afar and Somali regions, the project will complement support from the PROSPECTS group (PROSPECTS partners in Ethiopia include ILO, UNHCR, UNICEF, World Bank, and the IFC).⁸³

42. **A World Bank Group-wide approach will be leveraged to address market failures and stimulate and crowd in the private sector.** Research across deployment of broadband infrastructure has shown⁸⁴ how certain environments may exhibit a market failure due to scarcity of capital, excessive uncertainty, insecurity, crowding out by SOEs, and undervaluation of public good benefits. This is characteristic of markets in both Djibouti and Ethiopia, where all these conditions hold. In this case, public sector investment may be required to stimulate demand and de-risk investments to crowd in additional capital from the private sector. Like the two national programs, this project has been designed to attract contributions in the form of UCF. The project will also explore additional incentives to attract the private sector, such as leveraging potential downstream support from IFC or the IDA Private Sector Window for financing or MIGA for guarantees—if deemed feasible --during project implementation.⁸⁵

Project Cost and Financing

43. **IDA financing.** The project will be financed through IDA grant in the amount of US\$110 million to Ethiopia and an IDA Credit in the amount of US\$20 million to Djibouti. The IDA grants and credit provided to the two countries will be financed by both national and regional IDA, based on a 2:1 financing ratio. Further, the IDA grant to Ethiopia includes US\$30 million provided through the WHR window. See Table 3 below for details of financing split.

Table 3: IDA Project Financing

Country	IDA CREDIT		IDA GRANT			TOTAL
	National PBA	Regional Window	National PBA	Regional Window	WHR Window	
Djibouti	US\$6.67 million	US\$13.3 million	--	--	--	US\$20 million
Ethiopia	--	--	US\$26.67 million	US\$53.33 million	US\$30 million	US\$110 million

44. **PCM.** Financing (US\$96.5 million equivalent) in cross-border and backbone connectivity (under Subcomponents 1.1 and 1.2) is expected to catalyze direct private sector investment in broadband infrastructure in the amount of approximately US\$30 million equivalent in unguaranteed commercial financing (UCF) across the two countries covered by the project. Early estimations through consultations with private sector providers and government counterparts reveal differing potential public-private financing ratios in the two countries. These reflect the varying levels of development (GDP and HDI), market size (population and revenue generated by users), and security context (FCS status), as well as

⁸³ The project design will benefit from experiences in the ongoing Uganda Digital Acceleration Program (P171305) which also targets refugees and host communities.

⁸⁴ World Bank. 2018. *Innovative Business Models for Expanding Fiber-Optic Networks and Closing the Access Gaps.*

⁸⁵ Examples include IFC’s equity investment in the Safaricom Ethiopia consortium and its proposed investment in Raxio, a data center hosting company.



private sector interest⁸⁶ and appetite⁸⁷ for investment in the two countries. In Ethiopia, public financing (US\$82 million) is expected to catalyze direct private sector investment of approximately US\$25 million in broadband infrastructure. The public-private financing ratio is expected to be approximately 3:1. In Djibouti, public financing (US\$16.5 million) is expected to catalyze direct private sector investment of approximately US\$5 million in broadband infrastructure. The public-private financing ratio is expected to be approximately 3:1.

45. **A conservative approach was applied to the PCM calculations.** While public-private sector financing ratios in comparative schemes in Tanzania (1:2), the Comoros (1:1.5), and elsewhere are known to be higher, conservative estimates have been taken due to (a) the low average revenue per user; (b) the impact of unstable foreign exchange rates and national shortages of foreign currency on investment costs, including equipment imported from abroad in Ethiopia; (c) lack of a fully competitive markets and risks of licensing restrictions; (d) the FCS context of Ethiopia, especially the target beneficiaries of refugee camps and host communities, with volatile political and security environments both affecting the investment climate and inflating deployment costs; and (e) low private sector appetite to invest capital up front within the time frame of project duration (five years).

F. Lessons Learned and Reflected in the Project Design

46. **The project design draws on key insights highlighted by comprehensive analytical work related to digital economy and digital market integration.** The project builds on the key findings of the Digital Economy for Africa (DE4A) Initiative conducted in several countries including Djibouti.⁸⁸ The project design is also informed by the two recent World Development Reports, *Digital Dividends*⁸⁹ and *Data for Better Lives*;⁹⁰ the *Single Digital Market for East Africa* report;⁹¹ the *Digital Infrastructure Moonshot for Africa* report with the United Nations Broadband Commission and the *Global Broadband Plan for Refugee Inclusion* with UNHCR and Tent.org.⁹² Two prefeasibility studies were conducted to inform the design of this project, with support from World Bank Trust Funds: Horn of Africa Broadband Missing Links Study,⁹³ and the Regional Digital Roadmap Study⁹⁴.

47. **The project also draws on the lessons learned from past World Bank digital development investment operations.** The project supports reform of the analog foundations of the digital economy, notably in regulation of telecom and digital financial services, as a key complement to physical infrastructure investments, responding to a key finding from

⁸⁶ Private sector interest has been determined based on (a) early conversations with incumbent and expected new entrant private sector telecom providers in the respective countries, (b) evaluation of existing private sector investments in backbone infrastructure (for example, Safaricom and AfriFiber have made significant investments since 2022 in the mobile and fiber network markets in Ethiopia and Djibouti, respectively), and (c) consultations with the regulatory agencies to discuss potential licensing arrangements permitting entry of new players (for example, ECA in Ethiopia is considering issuing new ISP licenses).

⁸⁷ Appetite for private sector investment is evaluated by looking at the total telecommunications sector revenue in the country and determining the percentage that may be available for investment in the backbone network. The total telecommunications sector revenue is tabulated by estimating the sector's contribution to GDP or a ground-up analysis of average revenues per user and market size. Industry investment standards are estimated to be approximately 15–20 percent of the sector's total revenues. It is further assumed that a majority of investment is likely to go toward access networks, that is, 50–70 percent, and the remainder (up to 30 percent) will be open for investing in backbone networks. Based on this analysis, and with sector revenues of up to US\$1 billion and US\$20 million for Ethiopia and Djibouti, respectively, the financial appetite is tabulated. Sources: Stakeholder consultations and internal assessments

⁸⁸ World Bank. DE4A website. <https://www.worldbank.org/en/programs/all-africa-digital-transformation>.

⁸⁹ World Bank. 2016. *World Development Report 2016: Digital Dividends*. Washington, DC: World Bank.

⁹⁰ World Bank. 2021. *World Development Report 2021: Data for Better Lives*. Washington, DC: World Bank.

⁹¹ World Bank. 2019. *A Single Digital Market for East Africa*. Washington, DC: World Bank.

⁹² UN Broadband Commission. 2020. *Connecting Africa through Broadband: A Strategy for Doubling Connectivity by 2021 and Reaching Universal Access by 2030*. Geneva: UN Broadband Commission.

⁹³ See: <https://www.hoainitiative.org/missing-broadband-links-in-the-horn-of-africa-region/>

⁹⁴ World Bank, MacMillan Keck and Acacia Economics. 2022. *Roadmap for Regional Digital Integration in Eastern Africa*.



IEG⁹⁵. The report highlights the need for a stronger focus on demand-side investments in digital skills and applications development, building on gains in internet connectivity to produce tangible results. The successful investment modalities of matching investments, reverse auctions and pre-purchase of internet capacity, used in projects in Malawi and Tanzania, are being leveraged in the project design. The project will also identify and incorporate any early lessons from existing ongoing digital projects supporting refugees and host communities such as the Uganda Digital Acceleration Project (P171305).

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

48. **National level.** In line with the implementation arrangements for SOP-1, SOP-II will work with two separate PIUs, hosted by the MCPT in Djibouti and MInT in Ethiopia, which are currently implementing national projects (see Annex 1 and figure 1.1), albeit supplemented with additional experts, as required to carry out operational functions. For instance, in Djibouti, the PIU is expected to be expanded through the hiring of a project coordinator, a procurement specialist, a financial management (FM) specialist, and key thematic experts (as needed) by effectiveness. For Ethiopia, additionally, a specialist in refugee affairs will be recruited. Each PIU will perform their work with their respective ‘partner agencies’ (MInT, ECA, EthERNET and RSS in Ethiopia; MCPT, MDENI and ARMD in Djibouti) to guide implementation of specific activities and resolve any technical issues or related decision-making for implementation and supervision. In Ethiopia, the PIU will also be supported by UNHCR in an advisory capacity. Coordination arrangements will be set out in the Project Implementation Manual (PIM) and through memoranda of understanding (MoUs) signed between the PIU and partner agencies. The PIUs will report to their PSC in each country, which will provide the function of oversight and supervision. IGAD will also provide observers for the PSCs.

49. **Regional level.** Through SOP-I, support is being provided to set up the PIUs and Project Steering Committee (PSC) at the REC level in both the EAC and IGAD. A Project Coordination Committee (PCC) will be set up to facilitate interaction between the two RECs and encourage coordination between the RECs and the national-level PIUs under both SOP-I and SOP-II. The PCC will allow for coordination on activities between the two SOP as well, notably for component 2 on coordination of cybersecurity and data protection.

50. **Regional-national level collaboration.** The PIUs will also interact with IGAD, at the regional level, as both Djibouti and Ethiopia are IGAD members. Although neither country is an EAC member, they are nevertheless expected to benefit from work on regional harmonization carried out at the EAC level, for instance through observer status or by incorporating regional protocols into national guidelines, e.g., on cross-border fiber crossings and arrangements for ‘no man’s land’.⁹⁶ IGAD’s close collaboration with EAC under SOP-I will allow for IGAD member states to benefit indirectly. (Figure 1.1 in Annex 1 depicts the reporting lines).

B. Results Monitoring and Evaluation Arrangements

51. **The M&E system is designed to assess whether implementation of the project is on track to achieve its objectives and expected results.** Progress in the achievement of project results will be measured by tracking the indicators established in the Results Framework. In Ethiopia, data will also be geographically-disaggregated by those *woredas* hosting refugee camps. National-level PIUs will bear the primary responsibility for M&E and will establish standardized formats and

⁹⁵ Independent Evaluation Group (IEG). 2011. *Capturing Technology for Development*. <https://ieg.worldbankgroup.org/evaluations/capturing-technology-development>.

⁹⁶ See, for example, East Africa Communications Organisation (EACO). 2021. *EACO Infrastructure Sharing Guidelines*. [https://eaco.int/admin/docs/publications/EACO%20Infrastructure%20sharing%20Guidelines_%20July%202021%20\(1\).pdf](https://eaco.int/admin/docs/publications/EACO%20Infrastructure%20sharing%20Guidelines_%20July%202021%20(1).pdf).



guidelines for data collection and reporting, supplemented by satellite data and surveys, as required (for instance to gather gender statistics), and will organize training sessions for project stakeholders in their use.

C. Sustainability

52. The design of the project builds in a number of mechanisms to ensure sustainability, as indicated in table 4.

Table 4. Sustainability Mechanisms by Project Component

Component	Sustainability Mechanisms
Component 1. Connectivity Market Development and Integration	<p>(a) The financing model adopted for connectivity expansion (Subcomponents 1.1 and 1.2) will mobilize additional financing through competitive bidding among network operators, ensuring value for money, while shifting the financial risk associated with operation/maintenance of infrastructure to network operators and ISPs.</p> <p>(b) The borderlands initiative (Subcomponent 1.2), expanding connectivity for public institutions and refugee camps and their host communities in borderland areas, will be facilitated through a competitive bidding process that awards long-term supply contracts for internet capacity to winning bidders and awards long-term indefeasible rights of use (IRU) contracts that continue beyond the project closing date to the winning bidders, with up-front payment of operations and maintenance costs.</p>
Component 2. Data Market Development and Integration	<p>(a) TA and investments in regional harmonization of data infrastructure (IXPs, CDNs, and data centers in Subcomponent 2.1) will complement investments at the national level.</p> <p>(b) Benefits of capacity developed in training of government officials (on data governance, cybersecurity, and so on in Subcomponent 2.2) within MDAs will be retained after project closing.</p>
Component 3. Online Market Development and Integration	<p>(a) The model of supporting regional connectivity through NRENs (Subcomponent 3.2), and the new NREN in Djibouti, will allow for demand aggregation and achieving economies of scale and knowledge transfer that will outlive the project.</p> <p>(b) Digital skills programs (Subcomponent 3.2) will create a wider digital consumer base, boosting demand and incentivizing expanded and continued digital services provision by network operators and ISPs.</p>
Component 4. Project Management and Implementation Support	<p>(a) Implementation will leverage existing PIUs to avoid creating an additional burden on the Government.</p> <p>(b) Capacity building within the Government through training will allow for sustainable continuation of the activities beyond the project life cycle.</p>

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

53. A cost-benefit analysis reveals financial viability. A CBA⁹⁷ model was used to run a cash flow and financial analysis that features three different scenarios: optimistic,⁹⁸ pessimistic,⁹⁹ and neutral. Where possible, the model also ran a sensitivity analysis at the country level to quantify the benefits and costs attributable to the project against current baseline indicators, taking into account exchange rate distortions. In the neutral scenario, the overall NPV is estimated at

⁹⁷ The CBA model relies on available secondary data and reasonable assumptions, based on experience, and additional evidence sourced from consultations, interviews conducted, and other single digital markets interventions. The model assumes 80 percent of financing will be in USD, and 20 percent in national currency expenditure.

⁹⁸ In the optimistic scenario, the NPV is expected to reach US\$181 million and the IRR is expected to be 62 percent.

⁹⁹ Even under the pessimistic scenario, the NPV is still expected to reach US\$87.45 million and the IRR is expected to be 38 percent.



US\$138.82 million (compared with an investment of US\$130 million) with an IRR of 51 percent over a 10-year period, with a discount rate of 7 percent.

54. **At the national level, the activities in Components 1, 2, and 3 are expected to contribute to sustainable economic growth, through better equipped and trained digitally enabled citizens.** Component 1 is expected to stimulate GDP and job growth in the countries¹⁰⁰ through investments in backbone and last-mile infrastructure, particularly in borderland areas with host communities, refugee camps which remain largely without access. Component 2 is expected to reduce possible economic losses and disruptions stemming from increasing cyberattacks, through investments in data protection and cybersecurity. Component 3 will result in higher employability and salaries among project beneficiaries, through investments in NREN and digital skills. Digital skills programs for vulnerable communities, such as refugees and host communities, will allow new income and employment opportunities for groups traditionally out of the workforce. Given baseline information on levels of digital literacy, and salaries for refugees and host communities is not available it is difficult to estimate benefits accruing specifically for this group. Country level averages have been taken for analysis.

55. **At the regional level, spillover effects are expected to accrue from increased GDP on account of greater cross-border digital trade, and higher taxes and consumer surplus owing to the reduction in prices for connectivity.** Cross-border digital trade and harmonized regulations (Sub-Component 3.1) are anticipated to promote increased regional trade flow and trade in digital services. Investments in cross-border connectivity are projected to reduce unit prices, resulting in higher consumer surplus. Comparable interventions in other regions such as the Economic Community of West African States (ECOWAS),¹⁰¹ EU, and the Gulf Cooperation Council (GCC), have demonstrated significant consumer surplus figures per inhabitant.¹⁰² Following a similar model, the total consumer surplus for Ethiopia and Djibouti is estimated to reach US\$116.5 million between 2023 and 2029, with a consumer surplus per inhabitant of US\$0.4 under the neutral scenario.

56. **The operation is aligned with the goals of the Paris Agreement on both mitigation and adaptation.**

- (a) **Assessment and reduction of adaptation risks.** The project will manage the main risks of flooding, intense rainfall, and extreme heat by developing guidelines for climate-resilient digital infrastructure, using climate-resilient fiber optic cables, and enhancing climate-resilience of the population by targeting climate vulnerable areas and communities (coastal floods, drought-prone) and strengthening emergency communication facilities to respond to climate emergencies.
- (b) **Assessment and reduction of mitigation risks.** The project will contribute to the low-carbon development pathway goals of Paris Alignment by embedding energy efficiency requirements in the deployment of cross-border, national backbone, and last-mile network connectivity. Moreover, new IT equipment and related digital infrastructure will follow best practices for energy efficiency and international standards. All new cell towers will be supplied with solar power and battery storage. On mitigation, the operation will assist the countries' transition to low-carbon development pathways.

¹⁰⁰ A 10 percent increase in mobile broadband penetration in developing countries is associated with a 2.46 percent increase in GDP growth. Source: ITU (International Telecommunication Union). 2020. *How Broadband, Digitization and ICT Regulation Impact the Global Economy: Global Econometric Modelling*. Geneva: ITU.

¹⁰¹ Source: Western Africa ECOWAS Regional Communications. 2018. *Towards Integration of Infrastructure and Services*. World Bank Digital Development.

¹⁰² World Bank. 2022. *Good Practices and Global Trends in Digital Trade Regulation: Presenting a New Database on Digital Trade Regulatory Readiness*; Consumer surplus outcomes were as follows on a per-inhabitant basis: US\$0.6 for ECOWAS, US\$5.0 for EU, and US\$1.8 for GCC.



B. Fiduciary

(i) Financial Management

57. **FM capacity assessments.** FM assessments were undertaken for the implementing agencies (MInT, in Ethiopia, as well as MCPT, in Djibouti) in accordance with the FM Manual for World Bank Investment Project Financing Operations, reissued on September 7, 2021, effective March 1, 2010. The conclusion of the FM assessment is that the project’s financial management arrangements meet the World Bank’s minimum requirements under Bank Policy and Bank Directive on IPF and FM Manual.

58. **The overall FM risk is rated as Substantial given the rating is in Ethiopia and Moderate for Djibouti,** after mitigation measures. Key risks for Ethiopia include high staff turnover and shortage of qualified accountants and auditors in the public bodies (an inherent capacity limitation); a weak internal audit function; slow project implementation and unrealistic planning/budgeting which led to low budget utilization; audit opinions and findings on the financial statements of the Ministry that raise concerns in recent years; and lack of adoption of International Public Sector Accounting Standards (IPSAS). Djibouti’s risks are similar (except for IPSAS adoption) but also include lack of experience in implementing World Bank-financed projects including in auditing by the Supreme Audit Institution (SAI). Risk mitigation measures for both countries include building additional capacity in the existing PIUs, develop FM Manuals outlining in detail the FM arrangements and procedures and related measures. A detailed FM assessment, and a description of implementation arrangements, are provided in Annex 1.

(ii) Procurement

59. **Procurement capacity assessments.** Procurement capacity assessments were undertaken for the implementing agencies (MInT, in Ethiopia, as well as MCPT, in Djibouti) in accordance with the World Bank Procurement Risk Assessment and Management System. Procurement under the project will be carried out in accordance with the World Bank’s *Procurement Regulations for IPF Borrowers; Procurement in Investment Project Financing for Goods, Works, Non-Consulting, and Consulting Services*, dated July 1, 2016, and updated in the fifth edition of September 2023.

60. **Procurement risk in both countries is rated as Substantial.** Key procurement risks are related to agencies’ s inner capacity for handling procurement processes, limited local markets and lack of adequate competition, proper application of the new guidance on rated criteria for procurement of works and goods when approaching international markets, contract management and monitoring using STEP. Associated mitigation measures would consist of enhancing PIU’s capacity by assigning additional qualified staff, using innovative procurement approaches based on adequate market assessment, and providing technical and procurement support, including on applying rated criteria and contract management

C. Legal Operational Policies

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



D. Environmental and Social

61. **The environmental risk is rated *Substantial*.** Environmental risks are primarily linked to the FCV contextual risk in Ethiopia and the environmental, health, and safety (EHS) risks of the project that are applicable to both Ethiopia and Djibouti and are linked to the following: (a) construction and installation of linear infrastructure such the installation of fixed line components, access roads to transmission towers, and other fixed infrastructure which may disrupt terrestrial habitats; (b) investments in digital infrastructure (Component 1) can have various EHS risks during the construction and operation phases as outlined in the ‘WBG EHS guidelines for telecommunications’; (c) operations and maintenance activities may also result in the generation of electronic wastes and poor e-waste handling could expose people to toxins; (d) operations may further require the use of backup power systems consisting of a combination of batteries (typically lead-acid batteries) contributing to local emissions (Component 1); and (e) occupational health and safety issues include elevated and overhead work, confined space entry, and electrical and motor vehicle safety challenges (Components 1 and 3). Mitigating measures include stakeholder consultations, carried out in December 2022, preparation of an e-waste management plan, capacity building, and other measures including preparing an Environmental and Social Management Framework (ESMF) and other key ESF instruments, and Resettlement Framework, which were disclosed on October 19, 2023 for Ethiopia¹⁰³ and are an effectiveness condition for Djibouti.

62. **The social risk is rated *Substantial*.** Risks are primarily linked to a) acquisition of land and potentially physical and/or economic resettlement for the construction of broadband (in Ethiopia), and those with smaller land plots or informal rights to land use (Subcomponents 1.1, 1.2, and 3.2) b) Construction of infrastructure resulting in labor influx (which may affect community health and safety, including transmission of communicable diseases), conflict between workers and the community, and risks associated with sexual exploitation and abuse (SEA) and sexual harassment (SH) (1.1 and 1.2) for which a plan has been developed; c) Risks to project workers and the use of security personnel by contractors on work sites (1.1 and 1.2) d) Risks to labor, including the potential use of child or forced labor by contractors or in the supply chain (1.1 and 1.2) and e) risks to data security to ensure inclusion and maintain that data collected cannot be used as a basis for discrimination given investments in data infrastructure (IXPs, data centers, and others; 2.2). Mitigation measures include reviewing and reassessing the social risks during the project life cycle, ensuring stakeholder engagement to avoid elite capture, and preparing necessary ESF instruments (see ESF instruments below). Further, all TA activities supported through the project will need to be in line with the World Bank Operations Environmental and Social Review Committee *Advisory Note on Technical Assistance* and the ESF of May 21, 2019.

63. **The SEA/SH risk is rated *Moderate*.** The identified risks are primarily linked to (a) infrastructure deployment in Ethiopia in rural, remote areas, which see sporadic conflict and are hard to access creating risks for SEA/SH (Component 1) and (b) labor influx and presence of worker camps in both countries. Country-level SEA/SH mitigation measures and action plans were disclosed on October 19, 2023, for Ethiopia and as an effectiveness condition in Djibouti.

64. **Security risk management.** For Ethiopia, a security risk assessment and the corresponding Security Risk and Management Plan (SRAMP) have been prepared. In addition, local site-specific assessments and evaluation of potential security risks will help in determining the level and types of security arrangements required to be put in place. If contractors need to hire security personnel, the use of security (with preference for use of security compliant with international ISO 18788, International Code of Conduct Association standards) pursuant to the ESS4 (Community Health and Safety) and ESS1 (Assessment and Management of Environmental and Social Risks and Impacts) will be outlined in the provisions of the contract. The bidding documents will include provisions related to the facilitation of security aspects to

¹⁰³ ESF instruments are disclosed on the Ethiopia website at: www.dfp.gov.et and on the World Bank website.



ensure the protection of workers, equipment, and structures during the implementation of the project. A budget has been allocated for the implementation of the plan, including allowances for training.

65. **ESF instruments.** Based on the project scope and risks identified during project preparation (see separate Appraisal - Environmental and Social Review Summary for full details), recipients have prepared a series of instruments. An Environmental and Social Commitments Plan (ESCP) and Stakeholder Engagement Plan (SEP) have been prepared, reviewed by the World Bank and disclosed.¹⁰⁴ Ethiopia has also disclosed a Resettlement Framework, an ESMF, including, as annexes, Labor Management Procedures (LMP) and a Prevention and Response Action Plan for Gender Based Violence (GBV), Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH), a Social Assessment (SA) and an SRAMP.¹⁰⁵ For Djibouti, the remaining instruments are to be disclosed by effectiveness.

66. **Citizen engagement.** The project has integrated citizen engagement mechanisms such as direct consultations with stakeholders and multi-level grievance mechanism procedures for the effective uptake and resolution of complaints. Citizen engagement through effective grievance redress mechanisms will also be monitored by tracking the 'percentage of grievances registered that received an adequate response within 30 days' for Ethiopia and Djibouti. Consultations with MDAs, HEIs, industry operators, and population groups such as representatives of refugees, host communities were conducted during preparation and will continue during implementation.

67. **GRM:** The two PIUs will use an adapted version of the GRM used in the national projects. In Ethiopia, the GRM and citizen engagement plans will ensure that refugees are adequately consulted and able to access the GRM – including vulnerable demographics within refugee communities. In both countries, the GRM will be detailed in the PIM, and a citizen engagement results indicator measuring the performance of the GRM is included for both countries. disaggregated by refugees in Ethiopia for monitoring purposes.

V. GRIEVANCE REDRESS SERVICES

68. Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank's Accountability Mechanism, visit <https://accountability.worldbank.org>.

¹⁰⁴ For Djibouti, the ESCP and SEP were disclosed on September 21, 2023, at: <https://communication.gouv.dj/titre-de-projetprojet-numerique-regionale-en-afrique-de-lest/>. For Ethiopia, they were disclosed on October 6, 2023, at: www.dfp.gov.et, and the negotiated ESCP rediscovered on October 19, 2023.

¹⁰⁵ For Ethiopia, the ESMF and annexes were disclosed on October 12, 2023, at www.dfp.gov.et.



VI. KEY RISKS

69. **The overall risk rating of the project is rated *Substantial*, after the adoption of mitigation measures, based on the following factors.**

70. **The macroeconomic risk is rated *Substantial*.** Both Djibouti and Ethiopia are struggling to recover from the 2020 recession, induced in part by the COVID-19 pandemic, and now face overlapping challenges to economic growth, global food shortages, and local droughts, which are severely affecting supply chains and contributing to inflation. Ethiopia in particular is suffering from a severe shortage of foreign exchange, with foreign reserves covering less than two months' worth of imports, and exchange rate distortion. Macroeconomic trends will affect the ability of telecom operators to import the necessary equipment for infrastructure deployment, which is imported and purchased in US dollars, as well as the diminished appetite for investment. These factors will also affect citizens' ability to afford new broadband services. As a mitigating measure, the project will provide gap financing and TA to expand licensing provisions to encourage private sector players to co-invest and deploy broadband infrastructure, thereby reducing the reliance on public sector financing.

71. **The political and governance risk is rated *Substantial*.** While Ethiopia is emerging from a period of internal conflict, which began in 2020 and concluded with a peace treaty signed in November 2022, it has been classified, since 2021, as FCS due to ongoing sporadic conflict and weak governance. Although Djibouti graduated from the FCS categorization in 2020, the environment remains fragile post-national elections held in 2021. Project activities in both countries will require political buy-in, for instance, and cross-border fiber-sharing arrangements or MoUs agreed upon between neighbors. In Ethiopia, agreements would be required between the nine national regional states and two administrative councils about resource distribution and autonomy. Further, a lack of adequate safeguards on data protection (bills on data protection are still at a draft stage in Djibouti and Ethiopia) and governance on cybersecurity (overlapping mandates between MInT and INSA in Ethiopia, and potentially between MCPT, and MDENI in Djibouti) creates risks. Mitigating measures include (a) facilitating cross-country dialogue to formalize MoUs; (b) leveraging other projects and instruments to support with data protection- the Ethiopia Digital ID Project (P179040) will help establish a data protection authority, and similarly for Djibouti, under the Digital Djibouti Project (P174461); and (c) cybersecurity support will be restricted to civilian aspects exclusively and will be delivered as part of, and under the mandate of MInT (in Ethiopia) and MDENI (in Djibouti). While Ethiopia continues to maintain the refugee protection framework, increasing inflow of refugees from the region could cause localized tensions. Stakeholder consultations at both national and sub-regional level will be carried out to ensure smooth implementation.

72. **The institutional capacity for implementation and sustainability risk is rated *Substantial*.** Although both countries have existing PIUs already serving national digital programs, the capacity does not run deep. The *Digital Ethiopia* PIU, in particular, lost virtually all its staff, in September 2022, when their salaries were cut by 80 percent, in line with the MoF guidelines, and the project is only now recovering. To mitigate this risk, the project has made provisions to supplement capacity in the existing PIUs and cover comprehensive advisory services to help manage/oversee major commercial transactions and provide quality assurance in connection with implementation of key investments. MInT has limited experience in working on activities designed to support refugees, which can impact quality implementation. As a mitigation measure, a focal point from RRS will be expected to engage with MInT, and RRS will be represented in the PSC for oversight.

73. **The fiduciary risk is rated *Substantial*.** This rating reflects challenges the project may face at the country level and in coordination with the REC. Limited fiduciary capacity and gaps in related frameworks elevate procurement and FM risks, which are rated as Substantial. The project can help address these risks by (a) building the capacity of PIUs through comprehensive training and hiring additional FM and procurement staff; (b) establishing adequate internal



controls and complaint mechanisms; and (c) ensuring consistent project implementation support, leveraging a risk-based approach, including through prior procurement review.

74. **The environment and social risks are rated *Substantial*.** The risks and mitigation measures are discussed in paragraphs 61-62. On the environmental side, the main risk is associated with construction of fiber networks while on the social side it is the risks to data protection and cybersecurity. In both cases, the mitigation measures are addressed in the ESF instruments that have been prepared and through recruitment of environmental and social experts for the PIU.

75. **The stakeholder risk is rated *High*.** Vested interest groups may offer significant opposition to the project, as the telecom market in the region in both countries is still highly concentrated with limited competition, despite the market entry of AfriFiber and the Safaricom consortium in Djibouti and Ethiopia, respectively. Lack of a competitive environment, including delays in issuing of licenses, can affect the interest and appetite of private telecom providers to invest, creating risks of meeting targets for PCM and a shortfall in UCF. One of the key risks in project implementation is the near dominance of the market by SOEs, specifically Djibouti Telecom and Ethio Telecom, which, until 2021, enjoyed a full monopoly in their respective markets and still exercise significant market power. Infrastructure investment under the project should contribute to a more competitive market. Several risk mitigation measures are being considered including (i) Ongoing support under national programs to the privatization of SOEs; (ii) Disbursement conditions related to competitive tendering; and (iii) Strengthening of regulators. All refugee hosting regions will be served to curtail any tensions between varying groups, and localized consultations with the groups, including through RRS, and UNHCR as needed will be carried out. A local GRM mechanism for the refugee and host communities' group will be rolled out and monitored.

76. **'Other' risks, mainly associated with security, are rated *Substantial*.** Sporadic regional outbreaks of violence have continued in Ethiopia and tensions still run high, particularly in certain areas. Infrastructure deployment envisioned for post conflict areas would be subject to higher threat levels, including the loss of life to implementing contractors or government bodies on the ground. Infrastructure financed by the project could also be damaged. As mitigation measures, the project will engage in localized consultations with *woredas* in the national regional states in Ethiopia, adopt a phased and agile approach to infrastructure deployment where a criterion of permissiveness will determine the sequencing of implementation on the ground, and guided by the SRAMP. Flexibility will be built into contracting to allow for a stop-start approach, if the threat profile changes. Regarding support for refugees, the current refugee protection environment in the country remains adequate however additional inflows, recent gaps in food aid, the ongoing drought situation, and cross-border security challenges from neighboring countries within a tumultuous region, all pose risks to project implementation. While several of these factors cannot be entirely mitigated, the project will liaise with other World Bank-financed projects and partners to ensure coherence of support for prevention in these areas.



VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Period 2	Closing Period
Increasing affordable access to regional broadband connectivity			
Mobile broadband data (Monthly, 2GB) as a percentage of gross national income per capita - Ethiopia (Percentage)			
Jun/2022	Dec/2025	Dec/2027	Dec/2028
3.44	3.00	2.5	2.0
People provided with new or enhanced access to broadband internet -Ethiopia (Number)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
0	2000000	8000000	10000000
➤Of which females (Number)			
0	1000000	4000000	5000000
➤Of which refugees (Number)			
0	100000	400000	500000
➤Of which members of host communities (Number)			
0	100000	400000	500000
Mobile broadband data (Monthly, 2GB) as a percentage of gross national income per capita - Djibouti (Percentage)			
Jun/2022	Dec/2025	Dec/2027	Jun/2028
6.2	5.5	4.5	4.0
People provided with new or enhanced access to broadband internet (Number) ^{CRI}			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
0	2005000	8015000	10020000
People provided with new or enhanced access to broadband internet- Djibouti (Number)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
0	5000	15000	20000
➤of which females (Number)			
0	2500	7500	10000



Strengthening the enabling environment for cross-border data flows, and digital skills development			
Volume of international data traffic (Used international bandwidth in kbit/s/per inhabitant) -Ethiopia (Number)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
3.7	7	12	15.0
Volume of international data traffic (Used international bandwidth in kbit/s/per inhabitant) -Djibouti (Number)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
1900	3000	4000	5000
Beneficiaries with new or improved income opportunities as a result of digital skills training - Ethiopia (Number)			
Jun/2023	Dec/2025	Dec/2027	Jun/2028
0	200	800	10000
➤of which females (Number)			
0	1000	4000	5000
➤of which refugees (Number)			
0	500	2000	2500
➤Of which members of host communities (Number)			
0	500	2000	2500
Beneficiaries with new or improved income opportunities as a result of digital skills training - Djibouti (Number)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	250	750	1000
➤of which, females (Number)			
0	125	375	500

Intermediate Indicators by Components

Baseline	Period 1	Period 2	Closing Period
Component 1. Connectivity Market Development and Integration			
Population covered by at least a 3G mobile network -Ethiopia (Percentage)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
94	95	97	98
Population covered by at least a 3G mobile network - Djibouti (Percentage)			
Dec/2022	Dec/2025	Dec/2027	Dec/2028
77	85	95	98
Additional fiber optic cable deployed - Ethiopia (Kilometers)			



Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	250	1250	1500
Additional fiber optic cable deployed- Djibouti (Kilometers)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	50	250	300
Cross-border MoUs signed to facilitate cooperation/collaboration towards establishing arrangements for shared use of fiber connectivity between countries (Number)			
Jun/2023			Dec/2028
0			2
Public Institutions benefitting from new or improved internet access under the project - Ethiopia (Number)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	10	40	50
Public Institutions benefitting from new or improved internet access under the project - Djibouti (Number)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	2	8	10
Private sector investment mobilized under the project (in US\$) (Amount(USD))			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	5000000	20000000	30000000
ICT strategy, guidelines developed that include targets for gender and greening digital infrastructure - Ethiopia (Yes/No)			
Jun/2023			Dec/2028
No			Yes
ICT strategy, guidelines developed that include targets for gender and greening digital infrastructure - Djibouti (Yes/No)			
Jun/2023			Dec/2028
No			Yes
Component 2. Data Market Development and Integration			
Guidelines on regional data hosting needs and requirements developed (Yes/No)			
Jun/2023			Dec/2028
No			Yes
National Cybersecurity Strategy and implementation plan developed - Ethiopia (Yes/No)			
Jun/2023			Dec/2028
No			Yes
Sectoral cybersecurity incident response capabilities established and enhanced - Ethiopia (Yes/No)			
Jun/2023			Dec/2028
No			Yes
Component 3. Online Market Development and Integration			



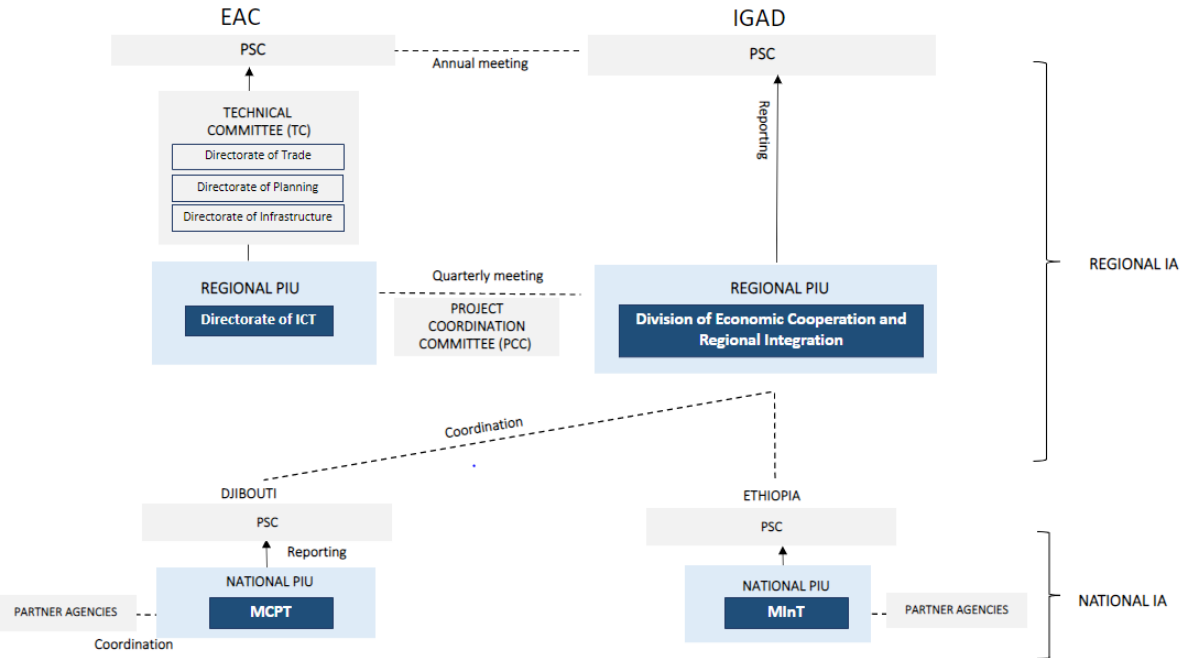
Ethiopia has developed an offer on digital services under the General Agreement on Trade in Services, at the WTO (Yes/No)			
Jun/2023			Dec/2028
No			Yes
Djibouti has established a National Research and Education Network (NREN) (Yes/No)			
Jun/2023			Dec/2028
No			Yes
Additional Educational Institutions connected to high-speed internet - Ethiopia (Number)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	10	40	50
Universities and TVETs connected to high-speed internet, and the regional education alliance network - Djibouti (Number)			
Jun/2023	Dec/2025	Dec/2027	Dec/2028
0	1	4	5
Component 4. Project Management and Implementation Support			
Citizen engagement: Grievances registered that receive an adequate response within 30 days - Ethiopia (Percentage)			
Jun/2023			Dec/2028
0			60
➤Of which those received from refugees and host community members (Percentage)			
0			60
Citizen engagement: Grievances registered that receive an adequate response within 30 days - Djibouti (Percentage)			
Jun/2023			Dec/2028
0			60
Component 5: Contingent Emergency Response			



ANNEX 1: Implementation Arrangements and Support Plan

(I) Project Institution and Implementation Arrangements

Figure 1.1. Regional- and National-Level Implementation Arrangements



Note: EAC and IGAD PIUs and PSC established already under SOP-I.

Table 1.1. National Level Implementation Arrangements

	Ethiopia	Djibouti
Implementing Agency	MinT	MCPT
PIU	<p>Existing PIU at MinT. Leveraging the existing <i>Digital Ethiopia</i> PIU. The government will supplement the capacity of the PIU with additional staff and consultants to support the project implementation with key functions on procurement implementation, preparation of bidding documents, evaluation of bids, and so on) and provision of technical expertise on specialized topic areas such as connectivity, cybersecurity, refugees and so on.</p>	<p>Existing PIU at MCPT. Leveraging the existing <i>Digital Djibouti</i> PIU. The capacity of the existing PIU to be supplemented through recruitment of one each of the following assistant: project coordinator, FM specialist, procurement specialist, and technical specialists with subject matter expertise in areas such as connectivity infrastructure, and cybersecurity (as needed). The positions of project coordinator, procurement specialist and FM specialists are expected to be nominated by effectiveness.</p>
	<p>Responsibilities. Each PIU will be responsible for project implementation, including overseeing project-related fiduciary functions and M&E and environmental and social commitments. It will also act as the single point of contact for the regional PIU at IGAD to facilitate collaboration on designing and implementing common activities. The PIUs will submit project reports to a PSC and the World Bank and engage with the partner agencies on specific matters requiring technical expertise/input on an ad hoc basis. The detailed composition and role of the PIU will be set forth in the individual country PIMs.</p>	



	Ethiopia	Djibouti
PSC	Chair: Minister of Innovation and Technology Vice-Chair: ECA Director-General Secretariat: PIU Coordinator Members: MInT, RRS, ECA, MTRI, EthERNet, INSA, MoF and IGAD representative. Observers: UNHCR	Co-Chair: MCPT and MEF Secretariat: PIU Coordinator Members: MCPT, MDENI, ANSIE, ARMD, MEFI, NREN Representative and IGAD representative
	Responsibilities: (a) Approval of the Annual Work Plan and Budget (AWPB); (b) biannual review of project progress; (c) review of procurement evaluations and approval; and (d) provision of strategic guidance and recommendations to the PIU and, for Ethiopia, the Technical Committee(s) related to project implementation. The mandate for the PSC, including the required participants for quorum, will be detailed further in the national PIMs, to be prepared by effectiveness.	
Partner agencies (beneficiaries and implementing partners)	Agencies: MInT (sub-components 1.1 and 2.1); ECA (1.1, 1.2, 1.3 and 2.2), MTRI (3.1), EthERNet (3.2), RRS (all activities pertaining to refugees, host communities support under sub-components 1.2 and 3.2).	Agencies: MCPT (Components 1, 2 and 3), ARMD (Component 1), MDENI (Component 2), and future NREN (Subcomponent 3.2).
	Responsibilities: Each partner agency will assist the PIU in implementing specific activities and will take the lead in preparing bidding documents for key procurement, evaluation of bids, quality control, and contract management. The PIU will interact with partner agencies based on the arrangements detailed in the PIM, and, for the future NREN, an MoU with the MCPT, that will specify roles and responsibilities, including financial support to be provided to partner agencies as needed. Both the PIU and Partner Agencies will report to the PSC. The roles and responsibilities for the Partner Agencies will be detailed further in the country-level PIMs (additional details in the PIMs).	

(II) Financial Management

1. FM assessments were carried out for EARDIP SOP-II in Djibouti and Ethiopia, in accordance with the FM Manual for World Bank Investment Project Financing (IPF) Operations¹⁰⁶. FM assessment teams visited the proposed implementing entities (MinT in Ethiopia and MCPT in Djibouti).

Planning and Budgeting

2. Budget arrangements for the project. For Ethiopia, the project will follow the FGE’s budgeting procedure and calendar in Ethiopia. The existing PIU at MInT will prepare a realistic consolidated AWPB for the project, based on the project’s objectives and resources. Once the budget is prepared and approved by the PSC, it will be submitted to the World Bank for ‘no objection’ (no later than March 31 of each year). The project annual budget will be proclaimed under MInT. The existing budget monitoring system both at the transaction and reporting levels will be continued during project implementation. At the reporting level, the budget utilization of the project will be monitored at least quarterly with the budget variances adequately explained in the quarterly IFRs. In Djibouti, where the MCPT is in charge of the Digital Djibouti project (P174461), the project is still at the early stages of implementation and with delays in setting up project, but there are risks associated with unrealistic budgeting. To mitigate these risks, the PIU will be strengthened to take on management of EARDIP-SOP-II. MCPT will prepare also the AWPB for the project, based on the project’s objectives and resources, and submit to the World Bank for No objections. Budget control mechanisms will also be applicable for Djibouti.

¹⁰⁶ The FM Manual was reissued on September 7, 2021, effective March 1, 2020, and taking into account the supporting guidance note as well as the requirements of the WB Policy and WB Directive on IPF.



Accounting and Staffing

3. **Accounting arrangements for the project.** The FGE's accounting policies (modified cash basis) and procedures will apply for the project in Ethiopia and IPSAS will be applicable to Djibouti. Separate accounts for the project will be maintained at the MInT and MCTP. An FM Manual will be prepared for this project, based on the existing *Digital Ethiopia* manual. For both countries, a chart of accounts that will accommodate the requirements of the project will be designed. Regarding accounting system, for Ethiopia, the project is expected to apply an accounting system (be it IFMIS or Peachtree) that captures the project records at the component, subcomponent, and activity levels. Similarly, for Djibouti, MCTP will use the same on-going project accounting system for project purposes to record day-to-day transactions and produce reports. In addition, for Ethiopia to comply with the Government's reporting requirements, the project will have to maintain records through the IFMIS. Staffing is discussed below.

4. **Accounting records during the overlapping period.** As the existing PIUs in both countries will be used to manage the project, there is a risk of mixing up accounting records during the overlapping project period. To mitigate this risk, appropriate controls must be designed and implemented, including preparing separate AWPBs clearly showing delineations; providing separate No objections to the AWPB; assigning separate accountants from the PIU to each project; maintaining separate accounting records and document filing systems for each project, clearly indicating the two projects on payment vouchers and supporting documents; using different 'PAID' stamps for each project; separate reporting and separate audit; and so on. Report (IFRs and audit report) reviews and FM supervisions will be used to check for this. These measures minimize the risk of double dipping or overlapping.

5. **Staffing.** At MInT all positions in finance and related functions are filled but there are capacity limitations, which needs to be addressed. The existing World Bank-financed project has adequate staffing to handle both the existing and proposed project, but workloads should be evaluated as this the new project becomes operational. A key challenge observed is the salary scale set by the MoF for project staff, which is lower than market rates and hence may lead to difficulties for the new project to retain/recruit qualified and capable finance staff. In Djibouti, MCTP will utilize the staff currently responsible for the implementation of the ongoing project *Digital Djibouti*, which includes a full-time financial officer who will be handling project FM aspects. Additional FM staff will be recruited as needed to absorb the workload arising from the project. Training in FM need to be planned and implemented for both countries through Project resources.

Internal Control and Internal Audit

6. **Internal control.** In Ethiopia, the existing project in MInT implements the FGE's system and procedures¹⁰⁷. Internal controls in general are strong at MInT including payroll, segregation of duties, cash management and to some extent fixed asset management. The IFMIS is assisting in the implementation of the internal controls. However, there are several internal control weaknesses identified by internal and external auditors that should be taken seriously and properly addressed. In Djibouti, the MCPT follows the public finance rules and regulations promulgated by the constitution and various subsequent laws and decrees issued by the Ministry of Finance and the Ministry of Budget. These rules are specific and do not cover comprehensively all internal controls aspects. There is no integrated accounting system within the public spectrum, however there is a budgeting system to record budget progress.

7. **Internal Audit.** At the federal level in Ethiopia, the MoF oversees the internal audit function across all budgetary institutions. MInT has an internal audit function led by the Internal Audit Executive. The approved structure includes five auditor positions, and there are currently no vacant positions at the unit, but they are not adequate and also there are capacity limitations. In addition, it is noted that the team currently focuses on financial audit only and lacks experience on the specifics of World Bank-financed projects. The unit has reviewed the books of accounts of the existing World Bank project for six months of the EFY 2014 (2021/2022). The internal auditors issued a separate audit report for the project

¹⁰⁷ The Government's internal control procedures are incorporated in the financial administration proclamation, regulation, directives, and various manuals (budget, accounting, disbursement, cash management, procurement, and so on).



audit, which did not raise any reportable findings. In Djibouti, there is no formal regulated internal audit function within the public sector. Public institutions, and in some limited cases, would recruit individual consultants or private firms to undertake internal audit.

8. **Project Internal Control arrangements:** All the applicable Government internal control policies and procedures will be applied for the project. In addition, for Ethiopia, an FM manual will be prepared for the project. For Ethiopia, the internal audit units will audit the project and produce a report. For Djibouti, MCPT will be recruiting individual consultants to provide internal audit oversight for the Project. Copies of the project documents (PAD, PIM, Financing Agreement, and FM Manual) will be provided to the internal auditors for reference. FM and related training will be provided to the internal auditors to enhance their capacity.

Financial Reporting

9. **Financial reporting arrangements for the Project.** MInT in Ethiopia and MCPT in Djibouti will be responsible for the preparation of project financial reports – both quarterly unaudited IFRs and annual Project Financial Statements (PFS). Quarterly IFRs will be submitted by respective Ministries to the World Bank within 45 days after the end of the quarter. The format and content of the IFR will be agreed between the World Bank and the respective Ministries and included as part of the DFIL. In addition, the Ministries (through the PIUs) will also prepare its annual PFS within three months after the end of the accounting year in accordance with accounting standards acceptable to the World Bank and submit them to the project's external auditors.

External Auditing

10. **Entity audit.** MInT is audited by the SAI, Office of Federal Audit General (OFAG). The audits revealed adverse opinions, due to long-outstanding receivables and payables, noncompliance with procurement policies and procedures, and the absence of supporting documents for expenditures, among others. The management of MInT is following up on the audit issues by preparing action plans to address each of the audit findings. For Djibouti, the MCPT is audited by the Supreme Audit Institution (SAI) of Djibouti. However, given the limited human resources capacities at the SAI, MCPT is not audited on a regular basis and the audit process might not be comprehensive.

11. **Project audit.** The existing project accounts have been audited by external auditors with unmodified/unqualified audit opinion and minor issues raised in the Management Letter, which the project team is following up on to address. For Djibouti, the project implemented by the MCPT had the first project audit covering fiscal year 2022 which was submitted on time with an unqualified opinion and few minor issues raised in the management letter which are being followed up on.

12. **External audit arrangement for the project:** For the project, for both countries, it is a requirement to conduct an annual audit of the annual PFS. For both countries, the Project Audit Report (annual audited financial statements, with an audit opinion including a Management Letter) will be submitted to the World Bank within six months from the end of the fiscal year. The PFS will be prepared in accordance with the standards indicated in the audit ToR that was agreed during negotiations. For Ethiopia, audit will be carried out by either the OFAG or a qualified auditor nominated by OFAG and acceptable to the World Bank. For Djibouti, audit will be carried out by an external private auditor and acceptable to the World Bank. The audit will be carried out in accordance with the International Standards of Auditing (ISA) issued by the International Federation of Accountants (IFAC). The project will prepare action plan and status report for rectification of audit findings (if any). In accordance with the World Bank's policies¹⁰⁸, the Bank requires that the client disclose the audited financial statements in a manner acceptable to the World Bank and the World Bank also discloses them.

¹⁰⁸ The World Bank Policy on Access to Information



Governance and Fraud & Anti-corruption

13. In Ethiopia, most public bodies at federal level/regional have an Anti-corruption officer who has the responsibility of acting up on suspected fraud, waste or misuse of project resources or property. Employees of the public bodies can complain to the officers on any concerns they have with regards to governance and corruption issues. Major risks are not identified but the internal control weaknesses/risks noted at entity level need to be mitigated using FM Manual and robust staffing arrangements including capacity building and close supervisions. In Djibouti, the oversight for procurement processes is conducted through the centralized National Procurement Commission for every contract above DjF 5 million (\$28,000). World Bank financed-projects are also subject to annual independent financial audits as well as audit by Government institutions, including court of account even if not done on a regular basis.

Risk Assessment and Supervision Plan

14. The overall FM residual of the Project is **Substantial**. The FM risk of the project in Ethiopia is considered **Substantial**, while in Djibouti the residual risk is considered **Moderate** after mitigation measures have been applied. The preliminary mitigating measures proposed in the action plan will help to reduce the risk of the project once implemented and applied during project implementation.

15. For both countries, the project will be subject to FM on-site supervisions, based on risks assessed. Afterwards, FM ISR and risk ratings will be recalibrated accordingly. In addition, a review of quarterly IFRs and annual audited financial statements will be conducted. In Djibouti, the financial management of the project will be supervised by the World Bank in conjunction with its overall supervision of the project and carried out at least twice a year. All supporting documentation should be obtained to support the conclusions recorded in the FM supervision.

Disbursement Arrangements

16. **Funds flow and disbursement arrangements.** In Ethiopia, the project will follow channel two fund flow mechanism of the Government whereby funds from IDA will flow directly to MIn. IDA funds will be deposited into separate Designated Account to be opened and managed by MInT at the NBE. Funds from the designated US dollar account will be further transferred into a pooled Ethiopian birr account to be opened and managed by MInT. It is envisaged that only MInT will be implementing activities and that other agencies are partner agencies or beneficiaries. As such, funds will flow only to MInT, not to these other agencies. The role of these agencies will be clarified in the PIM. During implementation, if there is a need to transfer resources to these agencies for some implementation of activities (as per the PIM), then an FM assessment will be conducted by MInT, in collaboration with the World Bank. In Djibouti, the IDA funds will flow to MCPT and will be deposited in a Designated account at a commercial bank acceptable to the WB. In both countries, the authorized ceiling of the Designated Account will be two quarters of forecast expenditure based on the approved AWPB. Based on the results of FM assessments (taking account of any risk mitigation measures) funds may flow to these agencies in local currency. FM Manuals to be developed will also take this into consideration and will be updated as such.

17. **Disbursement methods.** The project for both countries may follow one or a combination of the following disbursement methods: advance to the Designated Account (DA), direct payment, reimbursement, and special commitment. For advance to the DA and reimbursement methods, the project will use IFRs as the report-based disbursement methods. Disbursement will be made quarterly to the DA to cover cash requirements for the next six months based on a six-monthly expenditure forecast (prepared based on the approved AWPB), which is expected to be reported as part of the quarterly IFRs. The initial advance will be made on the basis of a six-month forecast prepared from the approved AWPB. Details on disbursement is shown in the Disbursement and Financial Information Letter (DFIL).

(iii) Procurement arrangements.

18. **Applicable Procurement Rules and Procedures.** Procurement under the project will be carried out in accordance with the WB's *Procurement Regulations for IPF Borrowers; Procurement in Investment Project Financing for Goods, Works,*



Non-Consulting, and Consulting Services, fifth edition of September 2023. Furthermore, the WB's *Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants*, revised as of July 1, 2016; and the provisions stipulated in the General Conditions of the Legal Agreement shall apply.

19. **Procurement Documents:** The World Bank's latest Standard Procurement Documents (SPDs) will be used for procurement of goods, works, Consulting, and non-consulting services while approaching the international market. The SPDs are available on the World Bank external website: ww.worldbank.org/procurement/standard documents. For procurements from the national market, the Borrower country may use the respective national procurement procedure, as agreed in the Procurement Plan, subject to addressing the conditions stated in the Procurement Regulation paragraphs 5.3 and 5.4 (a to i).

20. **Project Procurement Strategy for Development (PPSD), Procurement Plan (PP) and Systematic Tracking of Exchanges in Procurement (STEP).** The clients in both countries prepared PPSDs and PPs for the first 18 months of project implementation. The Bank advised the client to carry out a more detailed market assessment, as part of the preparation of the CTM, and to define a fit-for-purpose procurement approach and resubmit before undertaking procurement activities under the disbursement condition. The clients will use the World Bank's online tool (STEP) for procurement planning, processing, monitoring, contract management, reporting and record keeping.

Procurement Capacity Assessments.

Ethiopia

21. **Procurement Regulatory framework and management capability:** MinT established a procurement unit staffed with 9 procurement staff including the team leader. In addition, the ministry established a PIU that supports the permanent procurement structure in implementing the ongoing project Digital foundation project (P171034). However, the procurement experts in the PIU carry out various complex and ongoing procurement activities and are unlikely to have idle capacity to handle additional workload associated with the new project. Most importantly, due to uncompetitive incentive, the PIU has not been able attract and retain experienced procurement experts which will continue to manifest in the new project unless appropriate measures are taken.

22. **Integrity and Oversight:** Public Procurement and Property Authority (PPPA) is a regulatory body with responsibilities for procurement oversight, capacity building, procurement audit and procurement policy & advisory role at federal level. It was noted that PPPA has carried out procurement audit in MiNT in the past two years and recommendation had been discussed with the management. In addition, the Office of Auditor General carry out external audit annually which is reported to the highest echelon in the government structure. Though the complaint handling procedure is clearly stipulated and documented, MiNT's performance in managing procurement complaints in the past has not been satisfactory. There was limitation in handling complaint consistently, timely and comprehensively as per agreed procedure.

23. **Procurement Process and Market Readiness:** Procurement plan is normally prepared based on the annual work plan and PPSD (as appropriate). However, due to lack of adequate market assessment and limitation in updating information frequently, preparing realistic procurement plans has been a challenge in the ongoing project. The national procedure clearly stipulates the procedures for procurement processing under different procurement methods available for use in which open competitive procedure is the default method. However, the national SBDs are inconsistent with the current market dynamics and require updating. Besides, due to limited capacity on contracts administration, many contracts are exposed to time and cost overruns. In terms of market, the major procurements (IT infrastructure,



equipment, cyber security software, technical supports etc.) could be sourced from the international market which is well established and competitive. The local IT market has limited capacity to supply large volume IT equipment either from stock or import from abroad timely due to shortage of foreign currency.

24. **Procurement Complexity** There are no procurement activities that require complex arrangement. However, most of the procurement activities require strong technical capacity in defining appropriate technical specifications, preparing bidding documents, evaluation, and contract management. In addition, as most of the procurements require the involvement and support from the beneficiary institutions, establishing functional arrangement for coordination and accountability is critical.

25. **Summary of the PPSD:** The client prepared the PPSD though not supported by adequate market assessment. As per the current version of the PPSD, the client envisaged 4 works procurement activities (estimated cost ranging from US\$1 million to US\$8 million), 3 Goods procurement activities (estimated cost ranging from US\$1.5 million to US\$4 million), 8 consultancy service activities (with estimated cost ranging from US\$200k to US\$4 million) and 3 non consulting services (with estimated cost ranging from US\$500k to US\$3.5 million). The procurement approaches targeted local and international market and some of the activities will apply rated criteria. It is agreed that the client will update the PPSD with market analysis, and undertake more detailed research when preparing the CTM for the key, large and complex procurement and resubmitted before the project procurements under the disbursement condition are undertaken.

Djibouti

26. **Procurement Regulatory framework and management capability:** The national procurement system is generally in line with international procurement standards, but there are still some limitations, such as an ineffective complaint mechanism and a lack of provisions on safeguard standards. At the project level, procurement is centralized at the National Procurement Commission, with close coordination of the PIU at all stages of the procurement process. The accountability of the PIU is clearly defined. The project procurement has experience in Bank procurement procedures but there is a risk of work overload with one person managing these two projects in parallel.

Integrity and Oversight

27. Djibouti Digital Foundations, which is still in its early stage of implementation. It has been noted that open competition was chosen in most contracts. Procedures for all stages of the procurement process are clearly described in the procurement documents and complied with, including E&S aspects of contract provisions. The usage of STEP, particularly the module of contract management, still has some shortcomings and not up to date. The market for providers of digital solutions and infrastructure is generally deemed limited. The procurement strategy will privilege open competition approaching the international market as much as possible, except for upgrading the already existing/installed equipment, which may justify direct selection.

28. **Summary of PPSD and Procurement Complexity:** The PPSD was prepared by the client with support from the World Bank. As per the current version of the PPSD, procurement will mainly involve technical assistance, some technical equipment for upgrading connectivity network, and works for construction, repair, upgrade of cross-border terrestrial links, and national backbone network infrastructure. With the Djibouti threshold for international competition settled at US\$2 million for works and US\$0.3 million for goods, some contracts will approach the international market with the mandatory use of rated criteria. From the current PPSD, 7 contracts are planned with their estimated amounts ranging from US\$0.6 million to US\$5.6 million. This will require strong technical capacity and the World Bank will provide its support. The PPSD also identified 19 other small contracts (12 consulting services for firms, 5 consulting services for



individual consultants and 2 goods) with estimated mount less than 0.3 million per contract. There are no procurement activities that require complex arrangement or review by OPRC.

Procurement risks and associated mitigation measures in the two countries

29. Key risks include a) inadequate technical and procurement capacity in preparing quality procurement documents; b) lack of adequate experience in applying rated criteria; c) protracted procurement decision making that leads to complaint and cancellation of bidding processes; d) Limited contract management capacity and inadequate coordination with beneficiary institutions; and e) inadequate experience in the use of STEP; (e) Inability of the client in Ethiopia to attract and retain qualified procurement and technical experts; and (f) Limited local market in Ethiopia and low competition due to security concerns, shortage of foreign currency and inflation. Risk mitigation measures include (i) enhancing the procurement and technical capacity in the PIUs by assigning additional qualified experts; (ii) enhancing procurement supervision and accountability mechanisms; (iii) improving contract management capacity and coordination among various players; (iv) providing additional procurement training including training on STEP; (v) hiring required procurement and technical experts based on market rates; (vi) Applying innovative procurement approach based on adequate market assessment wherever appropriate; (vii) the World Bank will provide oversight through “Prior” and “post” review procedures and support through regular missions.

Implementation Support Plan and Resource Requirements

30. **The proposed strategy and approach for implementation support has been tailored to strengthen the capacity of the implementing agencies and their partners.** There will be strong coordination between the World Bank and the implementing agencies in the day-to-day administrative management and implementation of the project. Formal implementation support missions and field visits will be carried out, jointly with the Government, every three to six months. Initially, these missions will focus on strengthening project management and fiduciary capacity at the implementing agencies, developing operational guidelines, and preparing for the activities in the AWPB Procurement Plan for the first 18 months. Later, missions will focus on reviewing implementation progress and achieving results and sustainability. A midterm review will be carried out 36 months after effectiveness, to take stock of progress and make any needed adjustments to the project design. Targeted technical, FM, and procurement-related review missions will be undertaken, which will initially feature training for related PIU staff. Ongoing dialogue with the implementing agencies, including through videoconferencing and email, will ensure continuous support and monitoring. The implementation support plan will be reviewed on an annual basis to ensure that it is adequately aligned with support needs. The estimated level of annual support required by the World Bank is identified in table A1.



Table A1. Implementation Support Plan and Skills Required

Time	Focus	Skills Needed
First 12 months	<ul style="list-style-type: none">• Support for speedy project effectiveness• TA for strategies, studies, and implementation roadmaps that will shape the approach to key activities under Component 1, for example, for preparing the CTM• TA for development of ToR/bidding documents for major activities and 'no objection' through STEP	<ul style="list-style-type: none">• Task team leader• Technical specialists: digital development specialist - infrastructure (two or more), digital development specialist - platforms and data (one); digital development specialists - cybersecurity and data protection (one)• Fiduciary specialists (FM/procurement and disbursement/M&E)• ESF specialists, including gender
Ongoing	<ul style="list-style-type: none">• Ongoing technical support for Components 1, 2, and 3• Fiduciary, environmental and social standards, and project management support	<ul style="list-style-type: none">• As above



ANNEX 2: Addressing the Gender Gap under EARDIP-SOP-II

Table A2. Analysis of Digital Gender Gaps, Djibouti and Ethiopia

Analysis of Gender Gaps	Action	Results
<p>Low female broadband adoption, owing to limited network coverage and safe and affordable access points, particularly for women and girls within refugee camps.</p> <p>In Ethiopia, only 14 percent of women versus 20 percent men use the internet.¹⁰⁹ In Djibouti, only 52 percent women versus 60 percent men use the internet.¹¹⁰</p>	<p>Boost women’s access to broadband through envisioned targeting of proposed network and connectivity access investments.</p> <ul style="list-style-type: none"> • Ensure that connectivity access points are established in locations that are safe and accessible for women (for example, Wi-Fi hotspots in public buildings where female employees work, university campuses for female students, community centers, refugee camps) 	<p>Project M&E tracking</p> <p>The project will support countries to begin collecting gender-disaggregated data, share of population with an active broadband internet subscription, mobile and fixed subscriptions, of which, percentage female.</p> <p>Baseline = 0 Target = 30 percent</p>
<p>Women lack voice and agency in national decision-making, resulting in the needs of women and girls being poorly reflected in national strategies related to ICT.</p> <p>In Ethiopia, the forthcoming “<i>National Digital Inclusion Strategy</i>” can specify gender inclusion targets.</p>	<p>Develop/support implementation of ICT policies that are gender inclusive</p> <ul style="list-style-type: none"> • Ensure stakeholder consultations with women in drafting key policies, and project development, including through women participating in national/regional workshops/events. • Review existing regional/national ICT frameworks and include a gender lens and incorporate gender targets 	<p>Intermediate indicator</p> <p>National ICT Strategy developed/implemented, including a gender lens and respective targets.</p> <p>Baseline = No Target = Yes</p>
<p>Women face starker barriers to improved employment opportunities, due to larger gender gaps in digital skills attainment. While data on digital skills is limited, consultations reveal how overall lower literacy rates and educational attainment translate into lower digital skills. For instance, the average years of schooling for female to male in Ethiopia is 0.63, and gender gaps in literacy stand at 25 percent. Further, the share of Science, Technology, Engineering, and Mathematics (STEM) occupations in Ethiopia is 36 percent.¹¹¹ In Djibouti (2017), only 17 percent of the population have basic skills in ICT and only 5 percent have advanced competencies.¹¹²</p>	<p>Provide flexible and customized ICT training to women, with a focus on practical skills that improve their access to employment</p> <ul style="list-style-type: none"> • Following consultations with women and civil society organizations, curate and develop certified digital skills trainings for women and girls relevant for two audiences, that is, students and government employees/civil servants with specialized trainings on cybersecurity and other topic areas for government officials and students, and foundational digital skills trainings in universities for students • Deliver digital skills training in locations that are convenient and safe for women, at times suitable for women 	<p>PDO indicator</p> <p>Share of beneficiaries with new or improved income opportunities as a result of digital skills training, of which the percentage female.</p> <p>Baseline = 0 Target = 30 percent</p>

¹⁰⁹ <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>.

¹¹⁰ Ibid.

¹¹¹ <https://ilostat.ilo.org/how-many-women-work-in-stem/>.

¹¹² <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>.



ANNEX 3: Support for Climate Change Adaptation and Mitigation

No.	Activity	Amount (US\$)	Category
<i>Component 1: Connectivity Market Development and Integration</i>			
Para	Sub-component 1.1: Cross-border and national backbone network connectivity	Budget	Procurement
28 (b)	TA for feasibility studies, including surveys and detailed network design including prioritizing climate hot-spots, and recommending climate resilient technology solutions such as use of fiber optic vs copper, incorporating redundant connectivity routes to all locations to ensure business continuity, others	\$3m	Consulting Services
28 (c)	Financing of new construction, repair, and upgrade of cross-border terrestrial links and national backbone network infrastructure using climate resilient technology such as fiber optic, others. The Project will aim to build resilience through the design of digital public infrastructure that will take account of the projected increase in floods and other extreme climate events. Special design provisions will ensure continuity of connectivity services at times of natural disasters e.g., by introducing network redundancy to improve resilience. The construction of passive elements of the network (e.g., cable ducts, shelters for equipment) will factor in network redundancy by minimizing single points of failure in digital networks. This includes choices of whether to deploy cables underground or overhead, for example, to mitigate against the risks of flooding, based on the location-specific risks to be determined at the time of implementation	US\$15m	Mixed (Equipment, Works)
Sub-component 1.2: Last mile connectivity, including in borderland areas			
29 (a)	Financing rehabilitation and augmentation of digital infrastructure in the conflict-affected area, including emergency communication facilities (such as access to extreme weather alerts), <ul style="list-style-type: none"> Replacing copper with fiber optics in post-conflict areas; replacing diesel generator cellular base stations with solar powered; new IT equipment and related digital infrastructure will follow best international practices for energy efficiency. 	\$30m	Mixed (Equipment, TA, Works)
29 (b)	Financing for fiber backhaul and last-mile cellular networks integrating climate risk and low-carbon considerations targeting vulnerable climate hot-spots (cellular coverage with to climate hotspots will enable beneficiaries to receive extreme weather alerts) <ul style="list-style-type: none"> All new cell towers will be supplied with solar power and battery storage (40 percent financing) Establishing climate emergency response facilities (such as satellite terminals) and Integrating climate-risk considerations in digital infrastructure (such as embedding elevation or strengthening the base of cell towers to withstand any floods, embedding network redundancy to minimize the number of single points of failure in connectivity networks etc). The procurement of network equipment will leverage the use of energy-efficient technologies and measures to support energy conservation and reduce GHG emissions, where possible, such as by using routers or other equipment with automatic switch-off mechanisms and those that conserve power when not in use. All telecommunications equipment will be certified, by Energy Star or equivalent standards surpassing the current energy efficiency standards, and in accordance with recommendations from The European Commission's Joint Research Centre (JRC) report Best Environmental Management Practice in the Telecommunications and ICT Services Sector. (60 percent)	\$45m	Mixed (Equipment, TA, Works)
Sub-component 1.3: Enabling legal, regulatory, and institutional ICT environment			



30 (b)	TA for the development of regional guidelines and national protocols for the greening of digital infrastructure, including the reduction of GHG emissions and adaptation to potential climate impacts, for instance through the exploitation of renewable energy and through the development of e-Waste management (recycle, reuse) plans and guidelines on integrating climate resilience for connectivity and data infrastructure. (Ethiopia, Djibouti)	\$1m	Consulting services
<i>Component 2: Data Market Development and Integration</i>			
<i>Sub-component 2.2: Data exchange, governance, and protection</i>			
33 (a)	TA to assess regional data hosting (including adoption of a cloud-based approach and with climate risk and low carbon considerations standards) and data management needs, looking at demand and supply, regional demand aggregation, need for disaster recovery sites (in climate-safe locations). Current data management and hosting practices in Ethiopia and Djibouti are vulnerable to floods and other extreme climate events that could lead to large-scale data loss due to absence of adequate backup and fragmented data hosting practices. The TA will include climate-risk assessment to identify flood-safe location for data hosting and technical and financial feasibility for embedding automated backup and disaster recovery to avoid data loss in the event of climate calamities. It will also include energy efficiency considerations guided by international best practices such as ITU-T recommendations for Green ICT infrastructure.	\$1m	Consulting services
<i>Component 3: Online Market Development and Integration</i>			
<i>Su-component 3.2: Research and education networks and training for digital skills</i>			
36 (d)	Financing providing ICT equipment (certified by Energy Star or equivalent standards, which would surpass the energy efficiency levels of existing equipment) to up to additional 50 national universities and a minimum of seven TVET regional centers of excellence; developing climate-oriented training content on leveraging digital tools and services as an adaptation mechanism in the event of climate shocks.	\$5m	Equipment



ANNEX 4: Cross-Cutting Technology Policy Commitments under IDA-20

IDA-20 theme	Focus area	Policy commitments	Contribution of the proposed operation
1. Jobs and Economic Transformation [IDA20 Special Theme]	Expanding broadband access and usage for jobs of the future	To close the connectivity gap, IDA will support 17 IDA countries, including those that will benefit from IFC's support under the IDA Private Sector Window to develop digital infrastructure, to increase inclusive, secure, and affordable access to and usage of broadband connectivity, among which are six landlocked countries, four small states, and nine FCS countries.	Component 1 (Connectivity Market Development and Integration) will expand broadband connectivity through deployment of middle mile and last mile connectivity infrastructure, including in borderland areas covering vulnerable populations of refugees. In addition, this component will strengthen the ICT enabling environment in participating countries and at the regional level to boost competitiveness and private sector participation, hence improving broadband affordability and reliability.
	Positioning more firms for recovery, including through the adoption of digital technology	Support programs in 15 IDA countries, to strengthen private sector recovery and transformation that are well targeted, inclusive of small and medium-sized enterprises, and support the adoption of digital technologies, with monitoring to capture distributional impacts and effectiveness. To support this, IFC will increase digital infrastructure, with due consideration of cybersecurity and related issues, and its venture capital work in IDA and FCS countries.	Component 3 (Online Market Development and Integration) will support individuals, businesses, and governments in participating countries to access and deliver services online through investments that enhance cross-border payments, digital trade, and e-service delivery. Adoption of digital technologies will be supported through (a) the design and implementation of digital skills training programs, (b) development of e-commerce strategies and its implementation, and (c) regulatory harmonization that facilitates greater cross-border trade.
2. Gender and Development [IDA20 Special Theme]	Closing the gap in digital technology (See also Annex 3)	At least 30 IDA20 operations in digital development, financial inclusion, and agriculture will increase women's access to and usage of digital technology to close gender gaps in access and usage.	Component 1 (Connectivity Market Development and Integration) will support the creation of safeguards/code of conduct against GBV/sexual exploitation in contracting/subcontracting for infrastructure deployment. It will also help countries adopt a gender lens in national ICT policies. Component 2 (Data Market Development and Integration) will promote gender-specific outcomes in data protection and cybersecurity to increase online safety for women and girls. Component 3 (Online Market Development and Integration) will promote gender assessments in national frameworks focused on digital payments and inclusion, and include digital skills training for citizens and public sector employees with participation targets for female beneficiaries. Component 4 (Project Management and Implementation Support) will support monitoring and evaluation of gendered efforts through systematic collection of gender-disaggregated data for key ICT metrics.
3. Human Development [IDA20 Special Theme]	Expanding adaptive social protection and building resilience to shocks	To ensure inclusive and effective response against shocks and crises, support at least 20 IDA countries' resilience by building adaptive social protection systems, including the use of digital technologies.	- Sub-component 1.2 (Borderlands project) will support resilience of refugee camps and their host communities through improved internet access and access to mobile money for receiving remittances and social protection payments
	Expanding access to core services for persons with disabilities	To promote inclusive societies, support at least 18 IDA countries to meet the needs of persons with disabilities by implementing the principles of universal access through projects in education, health, social protection, water, urban areas, digital development, and/or transport.	- Sub-component 1.2 (Borderlands project) and Sub-component 3.2 (Digital skills) includes provision of support for persons with disabilities, including through use of assistive technologies to support training in both basic and advanced digital skills.



4. Governance and Institutions [IDA20 Cross-Cutting Issue]	Enabling digital government services	Support at least 15-20 IDA countries to adopt universally accessible GovTech policies, regulations, or solutions to enable digital government services.	Component 3 (Online Market Development and Integration) will support participating countries in setting up platforms, and human capacity needed for government digital operations, and to build on these core enablers to make public services widely accessible online. It will finance digital skills training for public sector employees Component 2 (Data Market Development and Integration) will strengthen cybersecurity, protecting individuals and institutions from online harm, and also safeguard data through investments in data protection standards, and backup and recovery modes for data storage. These steps are aimed at protecting critical infrastructure and supporting continuity of government operations in times of external shocks and crisis.
--	--------------------------------------	---	---