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Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 23-Sep-2019 | Report No: PIDC27436

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Ethiopia	P171034		Ethiopia Digital Foundations Project (P171034)
Region	Estimated Appraisal Date	Estimated Board Date	Practice Area (Lead)
AFRICA	Aug 03, 2020	Sep 24, 2020	Digital Development
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Ministry of Finance	Ethiopian Communications Authority, Ministry of Innovation and Technology (MInT)	

Proposed Development Objective(s)

The Program Development Objective is increase access to affordable, high quality internet services for government, businesses and citizens, and to promote digital entrepreneurship and creation of digital jobs, under a Mobilizing Finance for Development approach..

Component 1 -- Digital Economy, enabling legal and regulatory environment -- seeks to strengthen the analog foundations of the digital economy, in particular policy-making, regulation and skills. The WBG has been supporting the Ministry of Finance with the reform of the telecommunication sector, in particular the passage of the new Communications Services Regulatoin Proclamation, the creation of an independent sector regulator, the partial privatization of the incumbent operator and the opening of the market to new operators. To implement these reforms, the Government has requested project preparation advance (PPA) that is being used to hire a transaction advisor to assist with the partial privatization of Ethio Telecom. The Government has also invited IFC to act as a transaction advisor for the award of two new full-service telecom licenses.

Component 2 -- Digital Connectivity -- seeks to assist Ethiopia in extending affordable broadband internet access to all firms, citizens and government entities by 2030 and doubling broadband penetration by 2021. Leveraging the moves towards market opening should help with reducing the digital divide and extending broadband coverage, under a Mobilizing Finance for Development (MFD) approach. But private sector investment alone may not be sufficient to cover all of rural Ethiopia and some level of capital expenditure may be necessary. Government can act as an anchor tenant to stimulate investment in new infrastructure and rural coverage of mobile broadband.

Component 3 - Nurturing digital entrepreneurship and industries. This component aims to build a healthy pipeline of digital entrepreneurs in Ethiopia and to lay the foundations for high-growth digital industries. The component is composed of gender-inclusive, ecosystem-level support to innovation hubs as well as entrepreneur-level support to aspiring college students as well as offline business owners who are ready to go online and adopt a digital business model. Since digital transformation is still at an early stage in Ethiopia, this component will also identify and document the key policy and regulatory constraints that prevent the healthy growth of digital entrepreneurs and businesses.

Specific project activities will focus on (i) Innovation Hub Support Program; (ii) Digital Entrepreneurship Bootcamps; and (iii) Adopting Digital Business Models.

A project implementation unit will be established initially in the Ministry of Finance, to oversee the telecom reform process, and may transfer later to the Ministry of Innovation and Technology (MInT), and will work in close collaboration with the Ethiopian Communications Authority (ECA).

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	303.00
Total Financing	303.00
of which IBRD/IDA	300.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	300.00
IDA Credit	300.00
Non-World Bank Group Financing	
Trust Funds	3.00
GLOBAL INFRASTRUCTURE FACILITY	3.00

Environmental and Social Risk Classification	Concept Review Decision
Substantial	Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Ethiopia is a landlocked African country that borders with Eritrea, Somalia, Kenya, South Sudan, Sudan, and Djibouti, which functions as its main port.** Ethiopia's large population of about 108 million (2018) with a forecast 2.3 percent annual growth rate makes it the second most populous nation in Africa, after Nigeria. According to the most recent household living standards survey, some 27 percent of Ethiopians lived below the international poverty line (US$1.9 per capita per day, 2011 PPP) in 2016, a decline from 34 percent in 2011. The reduction in poverty during this period was strong in urban areas, but substantially slower in rural areas where 80% of people live and parts of which were affected by the El Niño drought. However, urban unemployment increased in 2018 to 19 percent from 17 percent in 2016, in part due to the unrest in many areas of the country. During this time, the primary enrollment rate quadrupled, child mortality rate halved, and the number of people with access to clean water more than doubled. Average life expectancy has increased by about one year annually since 2000 and is now higher than the averages for both Sub-Saharan Africa (SSA) and low-income countries worldwide.

2. **With its demographic dividend, Ethiopia could be well positioned to become a thriving digital economy benefiting from the regional and global opportunities that this sector creates.** According to a 2016 World Bank report[1], Ethiopia offers a cost-attractive proposition for digital services – thanks to its large and growing student population, low labor costs and favorable access to major global markets. In Ethiopia, over 2 million job seekers enter the job market every year. The Government will need to create new sources of job creation since this young workforce (median age of 17.9) cannot be fully adsorbed by traditional sectors such as agriculture and manufacturing. The digital economy in Ethiopia has an untapped potential to increase exports, enhance incomes, create employment, especially for women and youth, and reap other social benefits. Countries that can compete effectively in the digital age will enable its citizens, businesses and government to reap digital dividends in the form of faster growth, lower transaction costs, more and better jobs. Digital technology adoption can also improve the productivity of traditional sectors, especially agriculture and manufacturing, as well as the transparency, efficiency and accountability of government. And with this inevitable trend, the risks of privacy, cyber security, intellectual property (IP), data privacy and protection must also be seriously considered and addressed.

3. **Ethiopia currently lags the continent's tech standouts — like Nigeria, Kenya and South Africa — that have become known for digital entrepreneurship in Africa.** To build up the pipeline of digital entrepreneurs[2] and nurture viable digital business models, Ethiopia has to address barriers including: the availability and reliability of digital infrastructure, digital payment and ID systems, nascent private sector participation in providing supporting infrastructure to entrepreneurs (e.g. quality incubation programs), lack of digital and business skills, lack of access to finance, cultural and behavioral taboos of failures, and regulatory issues. The general business environment is also weak as Ethiopia ranks 159th of 189 economies in the World Bank's *Doing Business* rankings (2018). The Commercial Code of Ethiopia, which was enacted in the 1960s, is not tailored to new digital technology-driven realities. The Investment Proclamation sets high minimum investment requirements for foreign investors for all sectors including digital entrepreneurship and digital financial services (minimum of USD 150,000 for investing in Joint Ventures and USD 200,000 for outright ownership). This discourages angel investors, equity financers and

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[1] World Bank. 2016. Assessing the potential for the Electronics and ICT Manufacturing Sector in Ethiopia.

[2] Digital entrepreneurship can be defined as 'new ventures and the transformation of existing business by creating and using novel digital technologies". Digital Enterprises are characterized by a high intensity of utilization of new digital technologies (particularly social, mobile, analytics and cloud solutions) to improve business operations, invent new (digital) business models, sharpen business intelligence, and engage with customers and stakeholders through new (digital) channels'(Adapted from http://www.digitaleurope.org/Document-Download/Command/Core_Download/EntryId/770).

other forms of foreign investment in the digital entrepreneurship sector. There is inadequate protection of intellectual property rights (IPR). For example, government contracts that procure software solutions or customization from local firms require that the winning bidder submits the source codes to the procuring agency at the time of procurement and the bidders would automatically lose their IP on the source codes as part of the contract.

4. **In order to address some of these challenges, the Government of Ethiopia (GoE) has initiated reforms in key strategic sectors currently dominated by SOEs.** Sectors to be reformed include telecommunications, energy, aviation and logistics. They are being opened to foreign participation marking a major shift in Ethiopia's economic transformation**.** The implementation of these reforms should transform the economy by strengthening the role of the private sector, contributing to export expansion and moving towards a sustainable financing model for Ethiopia's growth and development. The government's objective is to sustain the growth momentum of the past decade needed to create jobs for its young and growing population with approximately 2 million new entrants joining the labor market each year. Telecommunications is of particular interest as it is a sector that has potential for attracting foreign investment and promoting private sector development, an increase in foreign currency reserves through trade in services, and economic diversification, innovation and creation of opportunities, in particular for the youth. The World Bank has approved a 3-year series of Development Policy Financing (which includes actions for the telecom sector) aligned with the broad reform agenda of the Government. Ethiopia's government aims to reach lower-middle-income status by 2025.

5. **In addition to the Communication Services Proclamation, that was approved by Parliament on 13 June 2019, and promulgated on September 2 2019, two other bills – a Proclamation that enables electronic transactions, and a Directive that enables digital payment – are expected to enter into force by end of 2019.** These three bills are long-awaited by the tech sector and are of relevance to unleashing the growth of the digital economy**.** As of September 2019, the electronic transaction proclamation is now being discussed by cabinets before passing to the Parliament for votes. The digital payment directive is now being discussed at the National Bank of Ethiopia.

Sectoral and Institutional Context

6. **Ethiopia is one of the last three countries in the world (along with Eritrea and Djibouti) to retain a national telecom monopoly on all telecommunications services.** Until the promulgation of the Communications Services Proclamation, the government's economic policy had been to maintain state ownership of enterprises in strategic sectors like telecommunications. The sector is currently heavily controlled by the state with both operations and regulations managed by the state institutions and a state-owned enterprise, Ethio Telecom, maintains a monopoly over fixed, mobile, internet and data communications. For many years, Ethio Telecom's monopolistic control stifled innovation, restricted network expansion and limited the scope of services on offer.

7. **As a result of the lack of reform, Ethiopia lags behind in key digital indicators when compared to its peers.** A country of more than 100 million people where 40 percent are aged under 15, internet use/access was a meager 15 percent at the end of 2016[3]. By comparison, internet usage in Kenya stood at 26 percent and Sudan at 28 percent at the same date. Mobile phone use and ownership is significantly behind that of Egypt, Kenya and even Sudan, which is amplified when examining the uptake of mobile broadband services (figure 1). This puts Ethiopia at a disadvantage as it is not yet able to reap the benefits of the digital economy emerging in other parts of the continent.

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[3] International Telecommunication Union, World Telecommunication/ICT Indicators Database.

Figure 1. Penetration rates, per 100 inhabitants, for selected countries, Q1 2019

	Ethiopia	Egypt	Kenya	Nigeria	Sudan
Mobile phone (2G/3G/4G)	44%	94.4%	100.8%	87%	73.4%
Mobile broadband (3G)	8.8%	36%	38%	28%	15.6%
Mobile broadband (4G)	0.17%	58.6%	8%	11%	4.8%
Household fixed broadband	0.7%	28.8%	2.8%	0.6%	0.6%

Source: TeleGeography (www.telegeography.com).

8. **In April 2018, the country appointed a new prime minister with a reformist agenda.** The GoE's intention is to liberalize the economy to spur competition in several critical sectors, including telecommunications, which have the potential to boost the economy. The Government sent a letter to the International Finance Corporation (IFC), dated August 29, 2019, requesting transaction support for the selection of two new full-service telecom licenses the Government intends to award. The GoE has decided to accomplish a telecoms sector deregulation and market liberalization agenda including part divestiture of Ethio Telecom (EthioTel) to attain the following objectives:
    * Economic growth through strong job creation (both direct and indirect) and economic stimulation fostered by competition between incumbent and new entrants;
    * Value extraction, revenue generation and asset monetization of existing state-owned telecom assets and spectrum rights;
    * Enable the emergence of a world-class ICT industry and related services; and
    * Network infrastructure investment stimulation to increase infrastructure quality for wholesale activity, and by new entrants to control infrastructure (esp. in mobile activities).

9. **EthioTel, previously known as the Ethiopian Telecommunications Corporation (ETC), is an integrated telecommunications services provider in Ethiopia, providing internet, mobile communications and telephony services.** EthioTel is fully owned by the GoE and maintains a monopoly over all telecommunication services including open-wire, microwave radio relay; radio communication in the HF, VHF, and UHF frequencies. EthioTel's critical infrastructure assets include two domestic satellites which provide the national trunk service and large long-distance fiber network organized in 13 rings and with around 22,000 kms of fiber[4] for its service operations which includes fixed line, mobile, Internet, data, voice, and other value-added services. EthioTel has some 7,100 cellular towers, connected largely by microwave rather than fiber, and provides around 85 percent of Ethiopians with at least 2G mobile coverage, 66 percent with 3G but just 4 percent with 4G. While EthioTel remains profitable (2018 revenue of approximately $1.3bn and EBITDA of $930million or 70 percent margin) and contributes considerable tax revenue and dividends (30 percent income tax and 50 percent of net income distributed as dividend to GoE in 2018), the sector has not grown as fast as it should have. Despite the heavy investment in recent years in the backbone fiber optic network, as well as updating mobile communications to third generation (3G) and fourth generation (4G), the wider economy has not benefited as much as might be expected.

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[5] There is still an ongoing debate in government agencies whether this target should include jobs in ICT sector or all "digital" jobs, and how to define "digital" jobs.

10. **Past efforts to improve the performance of EthioTel included a management contract with Orange Group (formerly France Telecom) from 2010 to 2013.** This arrangement initially improved the company's performance, though quality of service remained weak. Under the contract, management of EthioTel was outsourced in hopes of meeting the demands of the fast-growing country. The contract with Orange was also considered a first step towards the introduction of competition but was ended following a reversal of policy, with both sides dissatisfied with the arrangement. The GoE, through EthioTel, has also received substantial loans for investment in network infrastructure. In the last decade, US$3.1 billion of government guaranteed China EXIM Bank loans have been invested by EthioTel in telecom infrastructure and service expansion projects, with Huawei as the major vendor. These investments have led to a substantial increase in EthioTel's asset base and improved its service/network coverage. Ethio Telecom is estimated to retain debts of at least US$1.3 billion, and possibly higher. However, the lack of competitive bidding for these contracts suggests that the company paid above market prices for the infrastructure. EthioTel has commissioned its own asset valuation and inventory, from KPMG, which is expected to be completed by end November 2019.

11. **A liberalized telecommunications market, with private sector participation and a transparent regulatory regime is a pre-requisite for a thriving digital economy.** This would involve the separation of policy, regulatory and operational arms that were formerly all performed by the government. The Ministry of Innovation & Technology (MInT) which was created through a merger of the Ministry of Communication and Information Technology (MCIT) and the Ministry of Science and Technology (MoST) in October 2018, is charged with developing policy instruments, designing various programs, mobilizing resources, guiding and monitoring implementation thereof for the development of the country's telecom sector. MCIT previously handled both regulatory functions and operations, through its control of EthioTel and the postal service. With the creation of the new Ministry, and the passage of the Communication Services Proclamation, adopted by the House of People's Representatives on June 13, 2019 and published in the official gazette on September 2 2019, these functions are now separate. EthioTel, which was formerly part of MCIT, was also separated from Government at the same time, in preparation for its future partial privatization.

12. **The Ethiopian Communications Authority (ECA), created through the Communications Services Proclamation, will now have a substantial role in regulating an increasingly competitive sector.** Since 2010, regulatory functions had been carried out by the Regulation and Standardization Directorate within the MCIT, with its main tasks being for type approval of handsets and network equipment. In the World Bank Development Policy Operation on Growth and Competitiveness (P168566), which was approved by the Board in October 2019, the agreement by the Council of Ministers of the new Communication Services proclamation was set as one the release conditions for the second tranche of funding (US$600m). The separation of regulatory functions from the Ministry was proposed as one of the triggers for a second DPO in the series. The ECA was formally created when the Communication Services Proclamation was published on September 2, 2019, and its new Director-General was appointed on September 9. Board Members are expected to be nominated soon. In addition, the Information Network Security Agency (INSA) was re-established in January 2014 by Proclamation No. 808/2013 as an autonomous federal agency (having its own legal identity) with the mandate to ensure that information and computer-based infrastructures are secured to be enablers of national peace, democratization and development programs. The INSA reports to and is directly accountable to the prime minister. INSA's powers and duty as elaborated in the proclamation are broad including information security policy, forensic audits/investigations, cyber defense, regulation as well as control the import and export of information technology.

13. **The Ministry of Innovation & Technology (MInT) recognizes that the job creation potentials of improved digitalization can spread to the population through digital entrepreneurship in Ethiopia.** The Job Creation Commission (JCC) under the Prime Minister Office recently passed a national strategy on jobs: The target is three million new jobs to be created per year and MInT is responsible for 10%, i.e. 300,000 job creation target in the ICT sector[5]. Ministry of Trade and Industry in collaboration with UNIDO and other donor agencies recently commissioned a National Entrepreneurship Strategy 2020-2025. MInT is co-chairing the "Technology Exchange and Innovation" pillar of this entrepreneurship strategy together with Ministry of Science and Higher Education, supporting local entrepreneurs to proto-type their innovations and create quality ICT jobs for the youth.

14. **The digital entrepreneurial ecosystem in Ethiopia is still at a nascent stage and lacks quality entrepreneurship support.** A recent UNTAD report on Digital Economy[6] summarizes the current situation in Ethiopia well – four countries, Egypt, Kenya, Nigeria, and South Africa account for 60% of Africa's digital entrepreneurship; six second-tier countries account for another 20%; the remaining 44 countries account for the last 20% -- and Ethiopia is among the 44 countries. Industrial Parks Development Corporation (IPDC)-managed ICT park and other MInT, private or donor-funded incubators are providing incubation services (including working space and support programs) to entrepreneurs, but acceleration programs have been limited due to low survival rate of start-ups. The feedback from stakeholders is that the entrepreneurial ecosystem has plenty of short-term donor funding, and as soon as donations run out, the incubation centers operate with minimal functions or shut down. Hence, they are not providing consistent support to entrepreneurs to grow in the long run. Some incubation operators even expressed a fear of "innovation competition fatigue" -- there have been many innovation competitions done in recent years without true impact on entrepreneurs. Experienced serial investors and mentors are urgently needed, however, the current regulatory environment is not conducive for them to enter the Ethiopia market.

15. **Despite the challenges, peer-to-peer digital platforms for rides, food deliveries, accommodations start emerging and growing rapidly.** Ride, a local peer-to-peer ride sharing platform was established in 2016, and by 2018 it had already recorded profits, despite the difficult operating environment, e.g. geographically limited and unstable data coverage, lack of digital payment, unclear address system on digital maps. Many of the services sectors in Ethiopia are still plagued with market inefficiencies, and digital platform solutions that provide a more efficient matching and lower the transaction costs and time have proven popular among common citizens. The services sector will likely present more and more opportunities for digital solution providers in the country as connectivity and regulatory framework keep improving and citizens increasingly trust and use digital solutions in their daily life.

Relationship to CPF

16. **The proposed project is in line with the main objective of the Ethiopia Country Partnership Framework (CPF) FY18 - FY22,** which is to support a spatially inclusive approach to development, to provide quality services to all areas. Digital connectivity and digital industries would provide game-changing opportunities to advance spatially inclusive development in Ethiopia; including reducing the existing asymmetries between rural and urban areas in terms of service delivery, economic opportunities and social cohesion. Therefore, the proposed project would support the CPF objective to increase investment in secondary cities and transport corridors, to create market access for farmers and employment opportunities (Objective 1.4).

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[5] There is still an ongoing debate in government agencies whether this target should include jobs in ICT sector or all "digital" jobs, and how to define "digital" jobs.
[6] UNCTAD. 2019. *Digital Economy Report 2019*

17. **The proposed project would also fully leverage the Mobilizing Finance for Development (MFD) approach** through support of the liberalization of the telecom sector. This would be in-line with the CPF's objective to promote new approaches to sustainable infrastructure financing and debt management adopted (Objective 1.5). Through parallel efforts of the IFC, the proposed project would support the government to increase private participation into the broader digital economy. The IFC and the World Bank are working closely together as Ethiopia is amongst the priority countries of the WBG Digital Infrastructure Initiative. Ethiopia is one of the African countries targeted for close cooperation, following successful work together in Comoros.

C. Proposed Development Objective(s)

The Program Development Objective is to increase access to affordable, high quality internet services for government, businesses and citizens, and to promote digital skills and entrepreneurship, under a Mobilizing Finance for Development approach.

Key Results (From PCN)
18. **The achievement of the PDO could be measured by the results indicators below:**
Increase in number of people provided with access to broadband internet under the project.
(a) Percentage of population covered by at least 3G mobile network signal.
(b) Broadband download speed (Mbit/s), on fixed and mobile networks.
(c) Broadband internet prices per month, fixed and mobile, in US$ and as a % of a country's average monthly GNI per capita.
(d) Number of digital entrepreneurs in the innovation hubs that receive second round of seed funding, of which, percentage female.
(e) Number of people using a digital platform for commercial services, of which percentage female.
(f) Number of government officials trained on Digital Economy, enabling legal and regulatory environment, of which percentage female

D. Concept Description

19. The *Ethiopia Digital Foundations Program* is intended to develop Ethiopia's Digital Economy, to help the country to compete effectively in the digital age, and to enable its citizens, businesses and government to reap digital dividends[7] in the form of faster growth, lower transaction costs, more jobs and greater efficiency. To do that, the country will need to strengthen first its "analog foundations" to support the digital economy, notably the laws and regulation that shape the digital ecosystem, as well as the capacity of senior government officials tasked with designing, implementing and evaluating these, and to introduce market competition, private sector participation and independent sector regulation. This corresponds to component 1 of the program on *Digital Economy, Enabling Legal and Regulatory Environment*. Secondly, the country will need to expand and strengthen its basic digital infrastructure, especially fiber network and mobile broadband, towards achieving the African Union goal of universal affordable and quality broadband access by 2030., supported by the WBG under its Digital Economy for

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[7] World Bank. 2016. *World Development Report: Digital Dividends*.

Africa initiative. A particular area of focus will be enhancing broadband mobile coverage in rural areas and better serving universities and government offices in provincial areas. This will be the main objective of component 2 of the program, on *Digital Connectivity*. Third, the country will need to generate new jobs through its investment in digital technologies, and this will also require building up the skills of the wider population as well as creating an ecosystem in which new digital start-ups can thrive. There is also a need to ensure that offline citizens, also benefit from the push towards the digital economy. This corresponds to component 3 of the program on *Digital Entrepreneurship and Industries*.

Component 1: Digital Economy, enabling legal and regulatory environment (~US$40m)

20. The aim of this component is to strengthen the analog foundations of the digital economy, in particular policy-making, and regulation for the telecommunications sector and for the development of digital entrepreneurship, which is tackled in component 3. A strong telecommunications sector is built on market competition, private sector participation and independent regulation – all of which have been lacking in Ethiopia to date. Indeed, Ethiopia was one of the last countries in the world to open its telecom market to competition, to permit private or foreign ownership, and to transition away from state control to arms-length regulation of the sector. However, since policy changes announced in June 2018, the pace of change has quickened. With support from the World Bank Group, the Government committed to a series of policy measures to liberalise the sector. These were reinforced by prior actions and triggers in the US$1.2bn *Growth and Competiveness* DPO[8], approved by the Board in October 2018 and now fully disbursed. The policy actions were approved by the Council of Ministers in September 2018 and commit the Government to:

a) Reform the market structure by passage of a new law governing the communication sector (Communications Services Proclamation, approved by the House of People's Representatives on June 13, 2019, promulgated on September 2, 2019)) and establishment of an independent sector regulator (Ethiopian Communications Authority (ECA)).
b) Implementing a functional (accounting) separation of Ethio Telecom, the incumbent operator, into infrastructure and services arms, so as to better facilitate competitive market entry though transparent wholesale prices;
c) Partial Privatization of Ethio Telecom, with the sale of up to 49 percent of the company to a strategic partner/investor;
d) Market liberalization, with the entry of two new full-service telecom operators, through a competitive award process, which the Government hopes to complete by March 2020. This would be followed later by other license awards, notably for specialist tower companies, wholesale fiber network providers and date center operators.

1.1 Restructuring Ethio Telecom

21. **In moving towards a more liberalised telecom market in Ethiopia**, the Government has requested support from IFC in the award of two new full-service telecommunication licenses. In order that the incumbent, Ethio Telecom, is able to compete, the GoE wishes to proceed in a synchronized process with technical assistance to Ethio Telecom to implement the functional separation and to proceed with the partial privatization. Potential investors in Ethio Telecom are likely also to be potentially interested in the award of two new licenses, so announcing both opportunities to the market at the same time should help to achieve the best possible prices. The Government also wants to avoid the potential risk of Ethio Telecom being "left behind" by the market opening. To fund the technical assistance, and the transaction advisory for the competition transaction led by

IFC, the GoE has requested funding from the GIF, while for privatization, the Government has requested a PPA under this program. To accelerate the process, it may also draw upon existing lending under a different IDA program which would then be reimbursed once the PPA, and/or IDA lending under the main *Digital Ethiopia* program, becomes available.

22. **Technical Assistance and Support for the partial privatization of Ethio Telecom** is likely to include:

- Recruitment of a Transactions Advisor (firm) to manage the privatization transaction, including completing the inventory of assets and valuation (started using Trust Funds under the Ethiopia Telecom Reform program, P168536), preparation of a data room, organizing a roadshow for potential investors, conducting a bidding process and advising the GoE on the selection of a strategic partner;
- Assisting the Ethiopian Communications Authority (ECA) in developing a licensing framework for the liberalized market, including issuing a license for Ethio Telecom;
- Assisting ECA with ensuring that Ethio Telecom implements a functional separation of its assets between infrastructure and services arms, so that the infrastructure arm can price and sell wholesale services (eg voice and data connectivity) to all market players under non-discriminatory arrangements;
- Upon request, assisting the GoE in developing and implementing a social plan, potentially from the proceeds of the private investment, to help Ethio Telecom in reducing its workforce and outsourcing non-core activities. Estimates from the firm Roland Berger, hired by the WBG to conduct and in initial market assessment of Ethio Telecom, indicate that it would need to shed around 10,000 full-time equivalent (FTE) staff, or around 42 percent of its current workforce, to be on a par with a benchmark sample of telecom operators in nine other comparable countries;
- Assisting the GoE in developing and managing a communications plan, for the wider telecoms reform process and especially for the privatization, targeted in particular at Ethio Telecom management and staff, and other stakeholders, to ensure broad public support for the strategy being followed.

1.2   Strengthening independent ICT sector regulation

23. Closely associated with the overall process of telecom reform is the need **to strengthen the sector regulator, the ECA,** so that it can function effectively as an independent, transparent and efficient regulatory body. Previously, a Directorate for Regulation and Standardization had existed within the former line Ministry, the MCIT. In October 2018, this Ministry was merged with former MoST to create a new MInT. The staff of ECA[9] are expected to be drawn from the former Directorate, but some functions may be absorbed also from Ethio Telecom, which currently manages spectrum and internet domain names. Other staff will need to be recruited and there is a particular need for international regulatory expertise. The former Directorate had few regulatory responsibilities in a monopoly market, beyond that of type approval for handsets. By contrast, ECA will be responsible for a broad range of activities, as set out in the new Communications Services Proclamation 1948/2019, adopted by the House of People's Representatives on June 13, 2019. The support to be provided to ECA, under the *Digital Ethiopia* program, will be geared towards helping it carry out these tasks in the newly-competitive market, including:

- Assisting ECA to become established, including providing seed funding to rent office space,, define terms of reference and recruit staff, hire expert consultants on specific topics, develop an organization structure, draft a

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[9] ECA was formally created on September 2, 2019 with the publication of the Communications Proclamation, and with the nomination of its Director-General and Deputy Director-General. Seven Board Members will be appointed by the Prime Minister.

manual of procedures (including for public consultations on draft decisions), develop a training/capacity building plan, acquire basic IT equipment and office furniture etc;

- Assisting ECA to conduct a competitive procedure for selection of two new full-service operators, in close cooperation with the transaction advisor (IFC), including conducting stakeholder consultations, developing draft licenses and allocating scarce resources to the new market entrants, including spectrum, rights of way and numbers;
- Assisting ECA to issue further licenses in specific market segments, including broadcasting (eg FM radio licenses), telecoms infrastructure (eg mobile antenna, fiber backbone), internet service providers, satellite service providers etc;
- Assisting ECA in its role of managing spectrum, including acquiring relevant equipment for spectrum monitoring, allocating spectrum to specific services and assigning licenses, participating in regional and international spectrum management bodies etc;
- Assisting ECA in its role of monitoring market development, including helping to establish an ICT indicators unit, (including coverage and digital infrastructure maps), conducting market surveys, defining significant market power, publishing on its website sector data, defining guidelines for data protection and privacy etc;
- General capacity building and regulatory strengthening;
- Building a dispute resolution mechanism; and
- Building capacity for managing the Universal Service Fund (USF) including operational manual and governance structure; funding mechanism, market gap assessment and conducting pilot auctions for selecting telecom operators in rural areas (supporting the rural broadband activity under sub-component 2.3 which will be implemented under the auspices of ECA).

1.3   Supporting the development of the Digital Economy

24. Beyond the main focus of this component on the restructuring of Ethio Telecom and strengthening the regulatory authority, there are a number of other tasks associated with creating a vibrant, inclusive and safe digital economy in Ethiopia, and where the project can provide support or act as a complement. These include:

- Digital Platforms – creating, strengthening and regulating digital platforms, in both the public and private spheres, to enable the efficient functioning of the economy. This would include, for instance, developing regulations to support the development of eCommerce, developing a citizen-facing platform for Digital Government and providing guidelines on data protection, cybersecurity and privacy. There are a number of other WBG programs in these areas, such as technical assistance for digital ID or development of a Government eProcurement platform; and good collaboration will be established.
- Digital Financial Services, where Ethiopia is currently lagging well behind other countries of the region.[10] While the extension of digital financial inclusion is likely to be the subject of a parallel IDA lending program on financial sector strengthening and access (P171627), there will nevertheless be a need for close collaboration from the *Digital Ethiopia* program. For instance, ECA will need to work closely with the Ministry of Finance and the National Bank of Ethiopia (NBE) in the regulation of operators on mobile money services.
- Digital Jobs. The Government has committed to creating some 300'000 new jobs in the digital sector, and Component 3 will be specifically geared towards helping in achieving this goal. But there are also policy and regulatory actions that will need to be implemented to facilitate this process. The Job Creation Commissioner has requested that the project finance a systematic study of existing legislation in different sectors of the

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[10] According to the 2017 World Bank Findex survey, Ethiopia has the lowest level of usage of mobile money (at just 0.32 per cent of those aged 15+) of all the African countries surveyed and also the lowest level of female participation (just 10 per cent of the total).

economy that might be hindering digital job creation. For instance, the law obliges vendors to offer a storefront and toilet facilities even if they sell exclusively online.
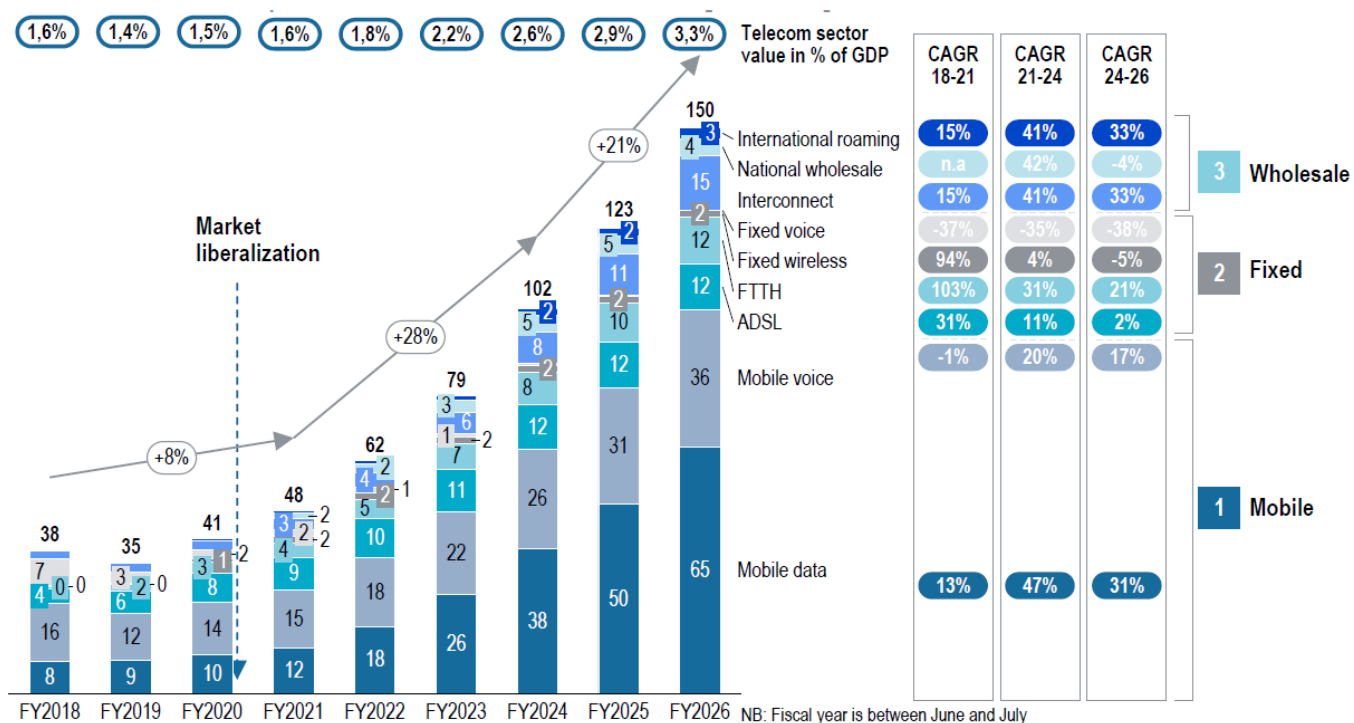
- Capacity building. The project will develop and implement a capacity building program for senior government officials.

Component 2: Digital Connectivity (~US$200m)

25. The objective of this component is to crowd-in private sector investments to improve regional and domestic fiber-optic connectivity infrastructure, connect public institutions, and priority target groups to broadband internet at affordable rates, and to bring down the overall cost of internet services under a MFD approach. This subcomponent will support the following activities:

- **Connecting MDAs:** the pre-purchase of international bandwidth for the Government and priority target groups to incentivize private sector investment in internet connectivity (first mile, middle mile and last mile). The aim would be to encourage private operators to roll-out fiber-optic networks in selected pilot areas that are considered commercially unviable. The component, with underlying support from Component 1 (Enabling Environment), will promote cross-sector infrastructure sharing (for example, roads, railways, electricity transmission lines, and gas pipelines), where possible, to address gaps in the national backbone of optical fiber links, fiber connections to cell towers and increased redundancy and resilience in existing fiber links.
- **Connecting higher education:** a specific focus on the connectivity needs of the higher education sector, in collaboration with EthERNet, the Ethiopian Research and Education Network, including pre-purchase of internet capacity for universities, colleges, research institutes and TVETs, as well as support for campus networks and capacity-building.
- **Rural Broadband:** improving the level of coverage of rural broadband (3G/4G/5G) by creating incentives for private operators to develop cell towers and provide mobile broadband coverage in areas not currently served, and to upgrade existing 2G services to 3G and above.

Figure 1: Telecom market revenue growth projections for Ethiopia, 2018-2026, in Ethiopian Birr, bn

Telecom sector value in % of GDP: 1,6% | 1,4% | 1,5% | 1,6% | 1,8% | 2,2% | 2,6% | 2,9% | 3,3%

Market liberalization

+8%   +28%   +21%

	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026
Total	38	35	41	48	62	79	102	123	150

FY2026 breakdown:
- International roaming: 3
- National wholesale: 4
- Interconnect: 15
- Fixed voice: 2
- Fixed wireless: 12
- FTTH: 12
- ADSL: (included)
- Mobile voice: 36
- Mobile data: 65

	CAGR 18-21	CAGR 21-24	CAGR 24-26	
International roaming	15%	41%	33%	3 Wholesale
National wholesale	n.a	42%	-4%	
Interconnect	15%	41%	33%	
Fixed voice	-37%	-35%	-38%	2 Fixed
Fixed wireless	94%	4%	-5%	
FTTH	103%	31%	21%	
ADSL	31%	11%	2%	
Mobile voice	-1%	20%	17%	1 Mobile
Mobile data	13%	47%	31%	

NB: Fiscal year is between June and July

Source: Roland Berger.

Notes: ETB = Ethiopian Birr; FTTH = Fiber to the home; ADSL = Asymmetric Digital Subscriber Line; CAGR = Compound Annual Growth Rate.

Sub-component 2.1   Connecting Ministries, Departments and Agencies

26. This component will provide support for the Government to make an upfront commitment to the pre-purchase of international Internet bandwidth from private sector operators under an indefeasible right of use (IRU) contract, over a period of 5-10 years. This will help create incentives to crowd-in private investments in domestic and cross-border connectivity, as well as to aggregate demand for internet services in targeted public institutions, such as MDAs health centers, etc. The locations to be served, and the user requirements for internet bandwidth would be determined based on a feasibility study, which is currently being undertaken by MInT, and in consultation with relevant sector ministries. The award of bandwidth contracts would be based on a competitive bidding process. Existing infrastructure, or new infrastructure to be built by licenses operators, will be used to transmit the bandwidth capacity. Thus, the funding would be used for the purchase of capacity, not of infrastructure (ie OPEX not CAPEX).

27. The overall aim of this sub-component is to leverage strategic public investments and incentives to improve access to high-speed, affordable connectivity for government, citizens, and businesses across Ethiopia. Newly introduced private operators may lack the incentives to extend the national backbone to rural, remote, and impoverished areas. There is a need therefore to go beyond the current backbone and to push providers towards universal broadband connectivity for the entire country. The sub-component will support a more direct intervention to encourage private sector infrastructure deployment in geographical areas which do not offer sufficient short- to medium-term returns or are considered too risky to attract investment from the private sector alone. There is also a need to exert competitive pricing pressure, create network redundancy, and increase capacity along the most well-trafficked network routes that are currently served by a limited number of

providers. As has been successfully done in several other countries in Africa, such as Malawi and Tanzania, the Government can purchase a large volume of international bandwidth and related services for MDAs over a 10-year period through a competitive bidding process. Future telecom operators and Internet service providers (ISPs) will be able to connect to the core network on an open access basis and will benefit from significantly reduced costs for wholesale bandwidth. This will also enable providers to launch new services, with a reduced cost structure, which should in turn enable retail price reductions.

Sub-component 2.2   Connecting Higher Education

28.   As an extension of the drive to all government MDAs, a dedicated sub-component of the program will focus on connecting higher education institutions, including universities, colleges, research institutions and TVETs. Improving connectivity for higher education institutions is critical to empower the next generation of digital leaders for the private sector and government. Ethiopian universities currently lack sufficient connectivity to enable adequate access to the best global information and research collaboration. Where connectivity is available, it is often at low-quality, at low speeds, and covers only a limited number of buildings on university campuses. Providing high quality internet access for the estimated 22 million Ethiopians in the 15-24 year range will support the provision of high quality education, and will enhance opportunities for training and employment (providing a platform for the objectives of Component 3 on Digital Entrepreneurship and industries). This sub-component will work with EthERNet, Ethiopia's National Research and Education Network (NREN). The organization currently connects 36 higher education universities, but plans to connect over 100 more universities in Ethiopia. Further, of the roughly 1,500 TVETs, only 25 are connected. As a member of the UbuntuNet Alliance, EthERNet can access low-cost international connectivity, academic content, and training opportunities as part of Africa Connect 3 initiative, which is supported by the European Union (EU). This will allow EthERNet and the universities in the consortium to access low-cost connectivity, online education content and training. More specifically, this sub-component will finance:

- Pre-payment of EthERNet's membership fees for the Africa Connect 3 program;
- International and domestic connectivity to member higher education institutions across Ethiopia;
- Campus wide WiFI networks to reach university departments, libraries, dormitories etc;
- Support to EthERNet technical staff;
- Network equipment to support points of presence, and data caches, around Ethiopia; and
- Capacity building for EthERNet.

Sub-component 2.3   Rural Broadband

29.   The biggest challenge to achieving universal broadband access in Ethiopia is the last mile, particularly in rural areas. Areas of low population density or low average incomes will not likely provide sufficient returns to drive affordable, private sector broadband services rollout without additional government incentives and coordination. Although Ethiopia has achieved a creditable 95 per cent coverage for 2G mobile services, this still leaves more than 5 million Ethiopians without any ICT access. Furthermore, almost 40 million Ethiopians live in areas that are unserved by mobile broadband coverage (3G and above), and effectively unable to access the internet. Reaching this unserved population will be a key challenging in achieving and inclusive digital economy. It is proposed to identify those rural areas that are currently underserved, and where the private sector is unlikely to invest without some degree of subsidy. These zones would then be subject to a competitive bidding process, among mobile network operators and tower companies, with coverage contracts awarded to those seeking the lowest level of subsidy to offer mobile broadband services (a so-called "reverse subsidy auction"). The objective is to bring populations within range of mobile broadband, with the private sector taking the lead, and the project providing capital expenditures subsidies. The bidding process would be managed by the ECA which has the mandate for universal service. This approach is consistent with the philosophy of mobilizing

finance for development (MFD) and where it has been used in WBG-financed projects elsewhere, notably Cote d'Ivoire and Tanzania, each US$1 of public investment typically leverages US$2 of private sector investment.

30. This component will leverage recent and emerging technological business model innovations in broadband service delivery and financial resources to incentivize and enable the private sector to deploy affordable broadband internet services to rural areas. The component will support the following:
- Establishing a Universal Service Fund (USF), with contributions from licensed operators, under the management oversight of ECA; and with the possibility of using pay or-play mechanisms
- A gap analysis to better understand the areas of poor coverage in the country ("whitespots") and to provide digital coverage maps, and
- Financing of least-cost subsidy 'reverse auction' mechanism for private sector deployment of shared infrastructure and mobile broadband services in low-coverage areas.

Component 3 – Nurturing digital entrepreneurship and industries (~US$50m)

31. This component aims to nurture a healthy pipeline of digital entrepreneurs in Ethiopia and lay the foundations for high-growth digital industries. The component is comprised of gender-inclusive, ecosystem-level support to innovation hubs as well as entrepreneur-level support to aspiring college students as well as offline business owners who are ready to go online adopt a digital business model. Since digital transformation is still at an early stage in Ethiopia, this component will also identify and document the key policy and regulatory constraints that prevent the healthy growth of digital entrepreneurs and businesses. The constraints and lessons learned under this component can then be used to inform subsequent lending and TA engagements.

Sub-component 3.1: Innovation Hub Support Program

32. This sub-component will provide budgetary support, in the form of competitively awarded grants to innovation hubs, allowing them to run quality incubation/acceleration programs. Many evaluation studies and experience of World Bank *info*Dev projects[11] show that in a nascent digital ecosystem, when short-term public or donor funding is available, many incubators and accelerators can be built. However, when public finance or donation runs out, the lack of general funding for overheads and operational costs can result in lags in developing teams, systems, operational strategies and programs to support digital entrepreneurs. In addition, publicly-run incubation centers in Ethiopia are plagued with a low occupancy rate, under-utilization, and a lack of support programs. Privately-run incubation centers on the other hand are faced with capacity issues, not able to scale. For example, the two most famous and biggestprivately-owned incubation centers in Addis – ICE Addis and BlueMoon – are taking just two rounds of applications from enterpreneurs each year, and each round can only accept 10-20 new applicants among hundreds of proposals. Elsewhere in Africa, innovation hubs, or "tech hubs" are booming. The GSMA reports there were more than 600 tech hubs in Africa in mid 2019[12] compared with fewer than 200 when the World Bank conducted a similar survey five years earlier.[13] Encouraging publicly and privately-owned incubators to collaborate on providing support programs and sharing the co-working space

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[11] InfoDev. 2015. Business Analytics Toolkit for Tech Hubs: Lessons Learned from infoDev's mLabs and mHubs. InfoDev. 2014. The Business Models of mLabs and mHubs: An Evaluation of InfoDev's Mobile Innovation Support Pilots.

[12] See https://www.gsma.com/mobilefordevelopment/blog/618-active-tech-hubs-the-backbone-of-africas-tech-ecosystem/.

[13] Kelly, Tim and Rachel Firestone. 2015. How Tech Hubs are Helping to Drive Economic Growth in Africa. WDR16 Background Paper, at: http://pubdocs.worldbank.org/pubdocs/publicdoc/2016/1/895381452529897772/WDR16-BP-How-Tech-Hubs-are-helping-to-Drive-Economic-Growth-in-Africa-Kelly-Firestone.pdf.

through budgetary incentives (including the potential use of Disbursement Linked Indicators (DLIs) that apply benchmark conditions to the relaunse of grant tranches) can be tested further.

Sub-component 3.2 Digital Entrepreneurship Bootcamps

33. This sub-component will connect innovation hubs and universities to provide entrepruership bootcamps to allow college students to have hands-on experience in trasnforming new ideas to viable business models. This bootcamp can also include programming, business skill and soft skill training. It aims to mainstream a start-up culture among youth, and build a healthy pipeline of potential digital entrepreneurs. The design of this sub-component will draw lessons learned from other entrepreneuruship bootcamps, including female digital entrperneurship training activities[14]. To increase the sustainability of the program, successful graduates from the bootcamps are encouraged to move on to incubation stage that is supported by sub-component 3.1. Subject to discussions with MiNT, Ministry of Science and Higher Education and individual universities, some of the trainings can be systemized into a digital entreprenerushipcourse offering at universities.

Sub-component 3.3 Adopting Digital Business ModelsFrom

34. This sub-component will prepare the workforce in traditonal industries to adopt digital business models to increase access to markets and technology. Despite the infrastructure and regulatory challenges, peer-to-peer (P2P) digital platforms have been growing rapidly in Ethiopia, especially in Addis. They span across many commercial services sectors, such as ride-sharing, accomodation, retail, delivery and maid services. The lower transaction costs and convenience enabled by P2P platforms is an appealing feature to Ethiopian citizens due to the prevailing inefficiency in many parts of the services sector , e.g. the cost using 'Ride' for taxi service is on average 20% less than a similar offline service and Ride is already making profits despite being a 3-year-old firm. The price difference demonstrates the huge potential of adopting digital business models in addressing market inefficiencies in Ethiopia.. This sub-component will provide entrepreneurship training to individual business owners who aspire to go from offline to online. The training is usually provided by private companies with industry-specific training materials. For example, for sellers who would like to become star sellers on e-commerce platforms, there are training programs that teach sellers on writing accurate product descriptions, taking professional photos, interacting with customers professionally, accpeting digial payments, managing financial accounts and customer ratings, and managing inventory. Similarly in the ride-sharing industry, many drivers in Addis still lack basic map-reading skills on phones, and relies on phone calls to locate the customers -- an analog adoption of the digital solutions which fails to unlock the full potential of new digital business models. It is hoped that with scalable trainings to potential digital business owners to provide quality services, citizens in Ethiopia will start building the trust and habit to use digital solutions in their daily life, which in turn will create a condusive environment for digital industries to survive and grow. This sub-component also prepares the workforce to explore other means of making a living e.g. by providing part-time services through online platform (i.e. gig-economy), especially for disadvantaged groups, such as women or ethnic minorities who have spare physical or human capacity.

35. This component will be implemented in close collaboration with the Ethiopia Competitiveness and Jobs Creation IPF (P143302) where there is an SME linkage component that can collaborate with the innovation hubs in Addis to provide digital solutions to the industry clusters, including those located in industrial parks. Digital Financial

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[14] For example, there is a WB global assessment of women-centered bootcamps and digital skills training under the "Umbrella Facility for Gender Equality".

Services, including digital payment and access to finance are critical foundations to viable digital business models. To this end, this component will also collaborate with the new lending program on financial sector strengthening and access (P171627) , especially exploring the potential to set up a First-Loss Facility, in collaboration with local commercial banks, national and international development banks to increase access to finance and build a healthy pipeline of investable start-ups.

36. The project will require coordinated implementation through a variety of Ethiopian agencies. This component would consist of support to finance project management related issues including project coordination, procurement, financial management, monitoring & evaluation, project communication, and environmental and social safeguards. This component would also provide support through office equipment, incremental operating costs, and audits. The project will emphasize gender equity in recruitment and retention by ensuring inclusion of women in all decision-making bodies under the project.

Component 4: Project Management (~US$10 million)
37. Subject to the Fiduciary Assessment, it is envisioned for the Project Implementation Unit (PIU) to be initially be set up at the Ministry of Finance while the focus is mainly on the telecom reform transactions, and transferred later to the telecom reform transactions, and transferred later to the Ministry of Innovation and Technology (MInT).

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

Summary of Screening of Environmental and Social Risks and Impacts

Note: To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document.
Please delete this note when finalizing the document.

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