



# Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 11-Nov-2021 | Report No: PIDC32608

**BASIC INFORMATION****A. Basic Project Data**

Country Sao Tome and Principe	Project ID P177158	Parent Project ID (if any)	Project Name Digital Sao Tome and Principe (P177158)
Region AFRICA EAST	Estimated Appraisal Date Mar 28, 2022	Estimated Board Date Jun 16, 2022	Practice Area (Lead) Digital Development
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Planning, Finance, and Blue Economy	Implementing Agency Ministry of Infrastructure, Natural Resources and Environment	

**Proposed Development Objective(s)**

To increase access and affordability of broadband internet services in Sao Tome and Principe, and improve government capacity to deliver services digitally.

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	13.00
<b>Total Financing</b>	13.00
<b>of which IBRD/IDA</b>	13.00
<b>Financing Gap</b>	0.00

**DETAILS****World Bank Group Financing**

International Development Association (IDA)	13.00
IDA Credit	13.00

Environmental and Social Risk Classification  
Substantial

Concept Review Decision  
Track II-The review did authorize the preparation to continue



## B. Introduction and Context

### Country Context

1. **São Tomé and Príncipe (STP) is a small island country of about 215,000 people off the coast of West Africa in the Gulf of Guinea.** The country's two main islands are São Tomé, the larger of the two, and Príncipe, which is home to about five percent of the country's population. 73 per cent of the country's population live in urban areas, including about a third of the population in and around the capital city.
2. **STP's economy has grown modestly over the past two decades. In contrast to the public sector, the private sector has remained weak and fails to generate the better-paid, higher-quality jobs needed to sustain progress in poverty reduction.** Príncipe has opted for a development model that prioritizes activities that respect nature, such as responsible tourism, rather than large-scale extractive activities. Most people are self-employed in low-productivity jobs, a key reason why poverty remains high in STP relative to international peers. Despite some progress in access to schooling, most citizens have only a basic education and they lack some of the key paths out of poverty, such as a strong social safety net or income from foreign remittances.
3. **STP has better poverty outcomes than most of its Sub-Saharan African (SSA) neighbors but is firmly on the lower end of outcomes compared to other Lower Middle-Income Countries (LMICs).** Based on estimates prepared for the 2021 Systematic Country Diagnostic (SCD), about a quarter of STP's population was living on less than \$1.90 per day before the COVID-19 pandemic, a poverty rate that, while below SSA's average (42.3 percent), is nearly double (81 percent higher) the average poverty rate of LMICs. This is particularly striking since STP's inequality in terms of consumption is not high relative to international comparisons and its GDP per capita level of US\$1,990 is close to the average for this group of countries, \$2,180.
4. **In addition to the standard challenges faced by other LMICs, STP faces challenges related to its size and geography common to other small island states.** STP's development challenges are typical of small island nations; the country's small population and land area limit its ability to diversify, constraining its growth and development outcomes, lowering economies of scale, and creating a greater need for public spending.
5. **As a remote, small island state, STP is also one of the most vulnerable countries to climate change and rising sea levels.** Geographical characteristics, including populations largely concentrated around the low-lying coastlines of the two main islands, make the country extremely vulnerable to natural and climate related disasters. Climate change imposes high costs and may even threaten the physical viability of some areas of both islands of STP. STP is especially vulnerable to adverse weather events, with a prolonged rainy season that exposes the country to increasing risk of storm surge, flooding, king tide ingress and extreme coastal erosion that will increase in frequency as a result of climate change.
6. **The island of Príncipe is burdened by double isolation.** Located 148 km from São Tomé, the maritime connection between the islands is irregular and insufficient. The air connection depends on favorable weather conditions



and is too expensive for most of the population. There are no regular connection services of any kind with Continental Africa.

#### Sectoral and Institutional Context

7. **The digital economy presents significant opportunities for STP, and is an important avenue to help STP overcome some of its small island isolation challenges and provides economic opportunities for the country.** Improved digital connectivity can help boost access to finance, improve marketing and services connected to international clients and tourists, and improve service delivery. It can facilitate the provision of remote education and telehealth services, reducing the need for inhabitants of Principe to travel to Sao Tome. Improving connectivity to the Island of Principe can assist also with the development of the tourism industry and improve communications between the islands.
8. **The COVID-19 pandemic has also highlighted the need for accelerating digital adoption in STP as means of boosting resilience.** Greater digital adoption would, for example, allow for economic exchange to continue to take place via e-commerce and digital payments, reducing market disruption, support business continuity and uninterrupted delivery of critical basic services such as distance learning and e-health solutions.
9. **Despite investments in connectivity, STP's digital economy remains nascent, lacking both supply of digital services and demand.** While the country has made progress in rolling out digital infrastructure through investment in international connectivity, most of the foundational building blocks needed to propel digital transformation at scale are still under-developed or missing. Despite the efforts of the Government to date, STP has not been able to realize the full benefits from its investments in digital infrastructure to achieve broad adoption of the internet. Mobile (3G) broadband services reach 95 percent of the population in major cities, and approximately 85 percent of the population uses a mobile phone. However, only about 36 percent of the population currently uses mobile broadband, and data consumption per capita is at relatively low levels as indicated by the small quantity of international bandwidth consumed relative to comparable nations. Fixed broadband penetration stands at about 13.5 percent. About half the fixed broadband subscribers are businesses, indicating that only about 2-3 percent of households have fixed broadband.
10. **The recently-conducted STP Digital Economy Assessment (DEA) report highlighted a number of priority areas to build the foundations of a digital economy in the country.** These include: (i) consolidation of the country's digital infrastructure by providing a reliable link to Principe and improving digital inclusion; (ii) strengthening STP's regulatory capacity to support greater competition in the telecom sector; (iii) support for digital transformation of government, including development of key platforms that provide a solid foundation for Government to Citizen (G2C) services and a whole of government approach; (iv) provide support to the development of strong foundations and IT systems to support the development of DFS ; and (v) developing digital skills.
11. **STP has taken some important steps toward developing the infrastructure needed for its digital economy, however existing international connectivity is unreliable, and Principe's digital connectivity with Sao Tome (which is connected to the international network) is expected to reach maximum capacity in 2-3 years.** In 2012,



in order to improve its international connectivity, STP switched from satellite links to the Africa Coast to Europe (ACE), submarine fiber-optic cable system. This gave Sao Tome island access to an effectively inexhaustible source of low-cost international capacity (given the small population and the high design capacity of the cable). Cable outages and other service interruptions have however been relatively frequent on the ACE cable (at least 4 in the last 12 months) and can take weeks to repair. This has been a major setback in providing reliable internet connectivity in STP (voice services are backed up via satellite links). To date, further redundancy has been provided through the southern leg of the ACE system, which became operational in June 2021. However the prevalence of new, diverse cable networks being built in the region brings opportunity to further improve resilience and redundancy of international connectivity to both Sao Tome and Principe through new international routes. It may also provide new revenue opportunities for the telecommunications sector as a traffic exchange between major regional cable networks. Additionally, the inter-island microwave radio link deployed in 2015 is nearing capacity for the dominant operator, Companhia Santomense de Telecomunicações (CST), and is unreliable, especially during seasonal precipitation lasting from September through May, and the second operator's excess capacity would not provide sufficient capacity for the long-term and would reduce competition in the market. Both operators have recognized that more long-term, sustainable capacity is required to serve Principe's population and businesses with high-speed broadband.

12. **STP's digital infrastructure is constrained by cost, competition, and insufficient power supply. The sector is constrained by lack of competition: none yet exists in the fixed broadband market, and very little in the mobile sector.** The second operator Unitel STP has less than a tenth of the market, and had been rapidly losing subscribers to the dominant incumbent CST a mixed private-publicly owned entity. While fixed broadband prices have gone down in STP since 2013, the high cost of services coupled with limited demand discourages infrastructure investments to broaden access to networks. STP is ranked 132nd out of 176 countries in the ITU's latest ICT Development Index (IDI) (2017), with an IDI score of 3.1 that is significantly lower than the one of other similar island economies such as Cabo Verde and the Maldives. Unpredictable power outages are an additional barrier to developing a thriving digital economy ecosystem.
13. **STP's Government has taken a fragmented approach to digitization, which has delayed the implementation of digital foundations and solutions to address service delivery challenges.** The country lags internationally across several ICT-related e-Government surveys (see Figure 1). It ranks (i) 155th out of 193 countries in the United Nations E-Government Index (EGDI 2020); (ii) 179th out of 193 countries in the E-Participation Index (EPI 2018); and (iii) 166th out of 178 countries in the Open Data Inventory (ODIN 2018). While STP has some digital platforms and services, including a digital ID system, most processes services are analog and manual. There is also no central data center in STP and shared digital infrastructure and interoperability are non-existent, with individual servers and databases scattered across government ministries.
14. **Relevant national laws on personal data protection and cybercrime exist; however, a comprehensive legal framework, an essential foundation to support digital transformation, is still at an initial stage.** Cybersecurity and data protection nonetheless remain a concern as the technology and processes required to operationalize these digital guardrails have yet to be implemented. The most notable gaps in the legal framework regard identification, digital signatures and freedom of information.



15. **The Government of STP published in 2020 its National digital government strategy frames and integrates a set of digital transformation initiatives to improve the provision of digital public services.** The strategy focuses on 9 sectors to provide government-to-citizen (G2C) services. To support the development of these initiatives, a series of structuring pillars is proposed: technological, legislative, and administrative. Amongst the various initiatives, are proposed a national data center, a GOV.ST Single Portal, digital identity and authentication platforms, amongst others. The Government of STP has begun implementing some of the initiatives in partnership with UNDP. Once the building blocks of connectivity, identification, interoperability/data exchange, and payments (the "digital stack") are in place, there is potential for the STP government to be a driver of digital transformation in strategic sectors.
16. **STP has made remarkable strides in its civil registration (CR) over the last decade, reaching near universal coverage, but an inclusive digital identification (ID) system is still needed.** STP identified in the 2020 National Digital Government strategy the need for a digital ID and an authentication platform to enable secure electronic transactions and inclusive access to online services. An inclusive and trusted digital ID system that enables identity verification for online and in-person transactions would be a key building block for developing effective delivery of digital services by both government and the private sector.
17. **A number of demand-side barriers also explain low service adoption and low demand for digital infrastructure and services expansion.** Affordability remains a challenge given low purchasing power. The price of 1.5 GB of data as a share of the average monthly income was 6 percent in 2020, and a fixed broadband package about 19 percent, representing a major barrier to access for most users. Prices of digital devices are also unaffordable for most. Low basic digital literacy is also a factor that deters wider usage, and the low perceived value of digital technology is a barrier, driven by the shortage of relevant content and services available. The ITU's Internet Price Basket shows that a mobile voice and data plan with 1.5Gb of data per month would cost about 6 percent of monthly income in 2020.

#### Relationship to CPF

18. **The project supports the priorities of the 2021 Systematic Country Diagnostic (SCD), which identifies 'inclusive digital development' as a cross-cutting opportunity.** It also contributes to the achievement of Priority 4, "Creating an enabling environment to boost job-generating private investment". The most recent Country Partnership Strategy (CPS) for STP, CPS FY14–FY18 (Report No. 83144-ST), was broadened and extended by two years (to FY20) under a 2019 Performance and Learning Review (Report No: 112944-STP). It remains relevant in the current context and the project will support the achievement of Outcome 6: Improved regional broadband connectivity under Theme 1: Supporting Macroeconomic Stability and National Competitiveness. Expanded access to broadband and digital platforms will help foster greater access to information and services that boost human capital and strengthen the social contract between Government and the public. Wider adoption of broadband is expected to fuel economic growth, foster greater economic exchange, as well as market integration. Finally, the COVID-19 pandemic has illustrated that digital adoption is foundational to greater resilience.
19. **The project is also aligned with IDA19 policy commitments and Digital Economy for Africa (DE4A) Initiative.** IDA19 policy commitments supported include amongst others (i) helping to close the digital infrastructure gap,



and double broadband penetration, and (ii) Supporting adoption of universally accessible digital government solutions. Finally, building on the FY21 country DEA, the project supports the operationalization of the WB's DE4A Initiative that seeks to ensure that every African individual, business and government is digitally enabled by 2030, and sets key targets related to broadband access and e-services delivery.

### C. Proposed Development Objective(s)

**The proposed development objective is to increase access and affordability of broadband internet services in Sao Tome and Principe, and improve government capacity to deliver services digitally.**

Key Results (From PCN)

#### 20. The following indicators will be considered for measuring achievements of the PDO:

- Access and affordability of broadband services
  - Average monthly retail price of high-speed internet service (1 megabits per second per month, in US\$)
  - Fixed Internet Broadband Subscriptions per 100 inhabitants, by speed (SDG indicator 17.6.2)
  - International Internet bandwidth per inhabitant (bits/second/inhabitant) (ITU)
  - Percent of population of Principe with a broadband Internet subscription (mobile and fixed)
- Improve government capacity to deliver public services:
  - United Nations Online Service Index (UN E-Government Development Index – EGDI)

### D. Concept Description

#### 21. The proposed project is designed to strengthen the digital foundations of Sao Tome and Principe by increasing high-speed internet access and improving government capacity to provide and deliver digital public services.

The project is composed of the following components:

22. **Component 1: Digital connectivity** (indicative amount US\$ 8.5 million). This component will focus on supporting wider access and adoption of broadband through financing for the connection of the Island of Principe to the international submarine cable network, broadband market reform, and digital inclusion enablers. The component will focus on supporting wider access and adoption of broadband through financing for the connection of the Island of Principe to the international submarine cable network and broadband market reform. By strengthening the enabling environment for broadband market development and data-enabled services, activities financed will help catalyze further private sector investment in infrastructure and services expansion.

23. Proposed subcomponents include:

- (i) *Enabling environment for broadband market development and digital access.* This sub-component will seek to develop the policy, legal, regulatory, and governance frameworks conducive to enabling a more competitive and vibrant broadband market that offers both expanded network coverage and affordable quality commercial service provision in support of universal digital access targets.
- (ii) *Connectivity to Principe.* This subcomponent will aim to boost broadband access in Principe through financing of connectivity to the island. A number of options will be considered, principally focusing on



connecting Sao Tome and Principe islands via submarine cable but also evaluating alternative options such as upgrading the existing microwave connection or satellite. As well as evaluating the connection between Sao Tome and Principe, it will also include an assessment of the current infrastructure and options for resilience to the ACE cable, including opportunities to connect to larger upcoming regional systems that are in the pipeline.

- (iii) *Digital inclusion enablers.* This subcomponent will aim to accelerate broadband uptake by addressing demand-side barriers that hamper digital access, including digital literacy and device affordability.

24. **Component 2: Enablers for digital public service delivery** (indicative amount US\$ 4.0 million). This component will focus on supporting greater government capacity to provide services digitally through targeted investments in digital enablers including policy, governance frameworks, and foundations of shared government digital infrastructure and services. Activities are aligned with STP’s national Digital Government Strategy and complementary to existing initiatives. By enhancing the digital capabilities of STP’s public administration the project will expand the country’s capacity to provide digital and citizen-centric services.

25. Proposed subcomponents include:

- (i) *Institutional coordination, legal and governance frameworks:* This sub-component will support coordination on the digital economy and the development of shared governance, strategic, regulatory and legal frameworks that enable secure digital service delivery.
- (ii) *Shared digital services:* This sub-component will strengthen the digital capabilities of STP’s public administration and support investments in the foundations of shared digital infrastructure and services to enable greater and secure use of digital tools. These include data protection and cybersecurity capabilities, upgrading STP’s digital ID system to enable inclusive and secure online authentication to access public services, and digital skills for civil servants.

26. **Component 3: Institutional Coordination and Project Management** (indicative amount US\$ 500,000). This component will finance project management and coordination, including procurement, financial management, monitoring and evaluation, as well as environmental and social safeguards management.

27. **Component 4: Contingent Emergency Response Component (CERC)** (amount US\$ 0). This component will support the Government of STP in swiftly responding to an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with a natural or man-made crisis or disaster.

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	





28. **The environmental risk at this stage is considered Substantial due to the analysis of the project's likely environmental risks and impacts combined with the current borrower's capacity in E&S risk management.** The potential environmental risks are mainly related to connectivity solutions under component 1, including the deployment of a submarine cable to connect Sao Tome Island to Principe Island and the respective landing sites (cable trenches and a cable station). The potential environmental risks are related to: a) risks to the submarine biodiversity and ecosystem from laying of the cable; b) occupational and community health and safety risks e.g. transmission of communicable diseases (HIV/AIDS and COVID-19); and c) waste management (including hazardous) and safe disposal of any construction debris and d) use of security personnel to protect the ship. The construction of the submarine cable landing sites may also generate some impacts on sensitive coastal and marine habitats and species. These constructions investments relatively small and are unlikely to affect built heritage, intangible heritage, or natural heritage. No significant risk and impacts are expected during operation phase, the Cable Landing Station will generate minimal quantities of domestic solid waste and wastewater. Component 2 will finance hardware to help lay digital government foundations to securely deliver public services digitally, such purchase of new Information Communication and Technology (ICT) is not expected to exceed de minimis threshold for management of e-Waste management issues. However, a simple Code of Practices for e-Waste will be prepared. Component 1, 2 and 3 all include Technical Assistance activities such as trainings and workshops classified as Type-3 (capacity building) that have diffuse and induced impacts, often playing out over a longer term, however the Type-2 activities (policies, plans & strategies) including policy and regulatory reforms on access to digital services and connectivity options study may have potential significant downstream E&S impacts, as such the Terms of Reference will be reviewed and approved by WB to ensure that it considers adequate assessment of environmental and social implications and that the advice provided through the TA for addressing those implications is consistent with the ESF. With regard to Borrower's capacity to manage environmental risk, AFAP who shall retain the E&S management of the project will recruit an environmental specialist to ensure that potential adverse environmental risks and impacts are well managed. Since the project exact location are not known, an ESMF including Labor Management Plan, Code of Practice for e-Waste Management, Security Risk Assessment (and possible a Security Management Plan) and Biodiversity Management Plan to mitigate the above risks and impact will be prepared, consulted upon and disclosed by Appraisal.
29. **The social risk is classified as Moderate based on the nature of its planned activities.** While the overall social benefits of the project are expected to be positive, connectivity works could result in social risks and potential impacts including: (i) small scale negative impacts related to involuntary resettlement due to land acquisition, physical and economic displacement; (ii) potential Occupational Health and Safety (OHS) and Community Health and Safety risks; (iii) possible low SEA/SH risks resulting from works; (iv) minor labor influx risks, including sexually transmitted infections (STIs), teenage pregnancy, early marriage and child labor; (v) potential for risks and impacts on cultural heritage as the exact location of the submarine cable and landing sites are yet to be determined; (vi) social inclusion negative impacts, such as issues related to new digital services accessibility, especially for disabled, elderly, illiterate and the poor; (vii) mismanagement of digitalized citizen data in the creation of a Digital ID service, such as privacy concerns, discrimination, and possibility for abuse; and (viii) risks related to security concerns for the marine operation, including low piracy risks. These risks and corresponding mitigation measures will be set out in the Project's Environmental and Social Management Framework (ESMF), which will include Labor Management Procedures (including a Project workers-specific GRM), a GBV/SEA/SH Assessment and, if GBV/SEA/SH risks will be rated higher than Low, a GBV/SEA/SH Action Plan. The ESMF will also include a Social Assessment to analyze security and data management citizen data risks and their corresponding mitigation measures. A Stakeholder Engagement Plan (SEP), which will be developed incorporating a stakeholder mapping and ensure that a Project Grievance Redress Mechanism (GRM), including



GBV/SEA/SH-specific measures to collect and handle potential GBV/SEA/SH cases safely and ethically, is in place for addressing concerns and grievances during the Project implementation. A Resettlement Policy Framework (RPF) will be developed to address involuntary resettlement risks and impacts. The activities and sub-activities under the respective components will be assessed in greater detail during Project preparation to verify the current environmental and social risk classification, which will be reviewed and revised as needed. Any necessary environmental and social actions to meet the ESSs will be outlined in the ESCP. Regarding the management of social risks, AFAP will hire a full-time social development specialist to coordinate and supervise the social risks agenda.

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**APPROVAL**

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**Approved By**

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