Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 29-Mar-2023 | Report No: PIDC35656

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Brazil	P180462		Espirito Santo Digital Acceleration Project (P180462)
Region	Estimated Appraisal Date	Estimated Board Date	Practice Area (Lead)
LATIN AMERICA AND CARIBBEAN	Oct 18, 2023	Dec 14, 2023	Digital Development
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Secretaria de Economia e Planejamento	Secretaria de Estado da Ciência, Tecnologia, Inovação, Educação Profissional,	

Proposed Development Objective(s)

To strengthen the digital infrastructure resilience, to modernize emergency management, and to improve digital public infrastructure in the State of Espirito Santo.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	76.52
Total Financing	76.52
of which IBRD/IDA	61.22
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	61.22
Non-World Bank Group Financing	
Counterpart Funding	15.30
Borrower/Recipient	15.30

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

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Brazil's economy continues to recover, with GDP growing at 2.9 percent in 2022, propelled by a successful COVID-19 vaccination campaign, rising demand for services, and fiscal stimulus**. GDP growth is expected to slow to 0.8 percent in 2023 due to the lagged effects of domestic monetary tightening, persistent inflation, and the deceleration of the global economy, and to mildly accelerate to 2.0 percent in 2024. With the economic recovery, poverty is expected to have gone down from 28.4 in 2021 to 25 percent in 2021, responding to increased job opportunities and expansion of the Bolsa Família cash transfer program. Further reduction in poverty levels may occur as the economy recovers but, despite the social gains of earlier decades, poverty and disparities remain prominent in the lives of many Brazilians in the absence of stronger investments in human capital among the less well-off.

2. **Espirito Santo posts a high (0.757) Human Development Index (HDI) relative to other Brazilian states, but inequalities persist.** The state spans a territorial extension of 46,090 sq km in the southeast region under the Atlantic Forest biome and encompasses 78 municipalities. It hosts a population of almost 4 million and is ranked Brazil's 13th most populated state. In 2020, Espírito Santo's GDP ranked 14th highest among the 27 states. While poverty in the State is lower than at national levels, inequality remains high. In 2021, approximately 25 percent of residents lived under the US$5.5 poverty line, and approximately 7.5 percent of the state population lived under the US$1.9 extreme poverty line.

3. **Brazil faces significant climate change impacts compounded by deforestation and land degradation.** Climate change is altering temperature and rainfall patterns in the country, resulting in reduced water availability and extended droughts, and could push another 800,000 to 3 million Brazilians into extreme poverty as soon as 2030. Continued deforestation in the Amazon and Cerrado biomes remains a matter of urgency, as it has increased land-use emissions - the main source of greenhouse (GHG) emissions in Brazil. Strengthening resilience to climate change and protection of natural assets, especially the fragile ecosystems of the Amazon and Cerrado, is essential for environmentally sustainable economic growth.

4. **More green, inclusive growth will be critical for Brazil's post-pandemic recovery, a paradigm shift that many subnational governments are aiming for.** A few State Governments have pledged to the *Race to Zero Global Campaign* by committing to decarbonize and achieve net zero CO2 emissions by 2050. Among them, the State Government of Espirito Santo issued a decree[1] in August 2021 announcing its plans to approve a State Climate Change Plan and a Strategic Plan for Emergency Actions to respond to extreme climatic events, as well as to update its greenhouse gas (GHG) inventory[2] within a 12-month period.

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[1] Available at https://www.legisweb.com.br/legislacao/?id=418076.

[2] The breakdown of emissions in Espirito Santo's latest GHG inventory (published in 2014 for base year 2006) was: Industrial Processes and Product Uses (40%), Energy (30%), Agriculture, Forestry and Other Land Use (23%) and Waste (7%).

Sectoral and Institutional Context

6. **Brazil has a developed digital sector but with a significant urban-rural connectivity gap. The country counts on 20,8 fixed broadband subscriptions per 100 inhabitants[3] with Espírito Santo being in line with the national average (19,8).** Mobile subscriptions are more developed with 99,8 subscribers per 100 inhabitants at the national level[4] while Espirito Santo counts on 98,8.[5] The state has three high-speed fiber optic networks connecting public agencies: Metro-ES, Anel da Enseada and Metro-Gvix[6] all public owned and managed by PRODEST. Currently the network reaches 24 municipalities, and the State is already implementing the plan to connect the remaining 54. Promoting open access to allow Internet Service Providers (ISPs) to access PRODEST fiber network could help to close the coverage gap in the state reaching households and businesses currently uncovered.

7. **The main reason in the State for not being connected is the lack of digital skills.** Almost half of the unconnected are offline because they do not know how to use the internet (44%), with other reasons being scarce interest (27%) and affordability issues (13%).[7] The State is in line with the national and regional averages that also report limited digital literacy as the principal obstacle to closing the usage gap. This data is particularly concerning considering the State digital transformation plan which would leave part of the population behind in case the usage gap was not addressed, widening existing inequalities.

8. **PRODEST owns and manages one TIER 3 data center located in Vitoria which currently hosts most state data and operates as colocation facility for other public bodies in addition to the activities of computing and network**. As of today, it has only 20% of capacity left. The Government continues to increase its provision of public services digitally, rapidly increasing the volume of data to be stored and analyzed. The absence of a backup facility raises a significant risk as the data center represents "a single point of failure" in case of cyber-attacks, extreme climate events or natural disasters.

9. **Brazil has made important advances to make available digital services to the population that helped to boost savings and promote efficiency.** Brazil was ranked 16th in the OECD's digital government ranking, presenting a digital government index higher than the average of the Organization's countries (OECD, 2020). One most important milestones in the Brazilian journey was the launch of the gov.br portal in 2019. The "gov.br" intended to be the unique and centralized portal to access federal government services online. Its two-phase deployment was overseen by the *Secretaria de Governo Digital*. In the first phase, the portal aimed to integrate all the federal government services. A second phase planned to migrate state governments' services to the platform by the end of 2021[8]. The project is progressing quickly: as of May 2021, 4,318 services from 194 public agencies were available via the platform[9] (68% of which are already digitalized) and services were accessed through the platform 150 million times in April 2021. The federal government estimates that the digital transformation has saved about US$ 360 million annually in 19 and 2020 (R$ 2 billion).

10. **Despite advances at the federal level, Espirito Santo still has challenges in taking advantage of the digital transformation.** In 2022, Espirito Santo ranked 11 of 26 states in the State and District Government Ranking on Digital

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[3] 39.362.575 individuals and 5.080.371 legal entities. Anatel, December 2022.

[4] 197.309.652 individuals and 54.678.333 legal entities. Anatel, December 2022.

[5] 3.756.356 individuals and 706.017 legal entities. Anatel, December 2022.

[6] https://www.bnamericas.com/en/news/brazils-espirito-santo-investing-in-fiber-expansion

[7] Brazilian Institute of Geography and Statistics (IBGE), 2021.

[8] Ibid.

[9] http://painelservicos.servicos.gov.br/ (Accessed May 22, 2020)

Service Offering compared to the fifth position in 2021[10]. With the lack and low quality of services, interoperability and data exchange has been low. In 2015, the *Instituto de Tecnologia da Informação e Comunicação do Espírito Santo* (PRODEST), launched the one-stop-shop platform *Acesso Cidadão* to facilitate digital and secure access to services. *Acesso Cidadão* is a platform that allows authentication and identification of individuals aiming to access digital services from the state. Although the platform offers services from 19 agencies, still needs to scale up by increasing the number of digital services and by adding new functionalities to the authentication platform such a chat bot and the introduction of artificial intelligence features.

11.   **Under the new administration the Secretary of State of the Government has an ambitious plan to strengthen digital public infrastructure in the State**. The new administration plans to digitize end-to-end 289 services and improve 291 services already digitized while enhancing a new digital authentication platform to facilitate secure and reliable access to services. In addition, the government plans to improve the current interoperability platform to increase the number of agencies sharing information while optimizing the current developed APIs. In addition, new cybersecurity functionalities will be included to strengthen the cyber resilience of the platform and data ecosystem.

12.   **The state of Espírito Santo has had a functioning emergency center since 2004, which has physical and technological infrastructure to provide basic emergency services, but the infrastructure is insufficient and covers emergencies in only 20 municipalities out of 78**. In July 2004, the emergency center was created to integrate, in a single physical and digital structure, the daily work of the Fire Department, Municipal Civil Guard of Vitória, Department of Justice, and Federal Highway Police and Civil Police. In 2010, the emergency center was expanded to involve more agencies and provide a more agile and efficient response in case of emergencies. Currently, the emergency center operates on one floor of the Secretariat of Public Security and Social Defense (SESP), with more than 50 people from 7 agencies (e.g., Mobile First-Aid Service, Department of Motor Vehicles, Justice Department, Municipal Guard, State Police, among others) responding to an average of 11,500 calls per day, generating a daily average of 2,400 occurrences. All the calls come from four different lines 190, 197, 193 e 191, that citizens use to report an emergency and/or cases of violence. The emergency central uses software for managing emergency calls implemented in 2004 that has not been updated.

13.   **Brazil has a developed regulatory and policy framework for the telecom industry led by the Brazilian Ministry of Communication (Ministério das Comunicações, MiniCom) and the National Telecommunications Agency (Agência Nacional de Telecomunicações, ANATEL).** Minicom is responsible for the formulation of national telecommunications policy and institutional communication at the federal level. ANATEL is the main body in charge of regulating the telecommunications industry, a financially autonomous, administratively independent organization under the umbrella of MiniCom, but with no hierarchical subordination to the Ministry.

14.   **In Espirito Santo, the Secretary of Science, Technology, Innovation and Professional Education (SECTI) promotes and supports the development of scientific research, technology, innovation, and professional education and has a key role in the project.** SECTI aims to improve the quality of life of the population through the promotion of knowledge, economic growth, and social inclusion.

15.   **PRODEST, the Institute of Information, Technology, and Communication is a public company that operates under the State Government of Espírito Santo.** It is responsible for providing technological and communication solutions to various

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[10] https://www.abep-tic.org.br/indice-abep-de-oferta-de-servicos-2022

government agencies, such as hardware and software management, data center management, network management, and digital security. Its mission is to propose, test and innovate in information and communication technology solutions, collaborating to promote an agile State, integrated, and connected to society.[11] The organization is linked to the State Secretariat for Management and Human Resources (Secretaria de Estado de Gestão e Recursos Humanos, Seger).

C. Proposed Development Objective(s)

The proposed PDO is to strengthen the digital infrastructure foundations, modernize emergency management, to improve digital public infrastructure in the State of Espirito Santo.

Key Results

Achievement of the Project's results will be measured through the following proposed PDO-level indicators:

a. Number of data centers built according to energy-efficient standards.
b. Number of agencies sharing information through data sharing mechanism solution of the state.
c. Number of individuals creating a digital account in the authentication platform (*Acesso Cidadão*).
   - Number of women creating a digital account.
   - Share of calls made to the emergency response service answered in less than 5 seconds.
   - Average duration of the connection time in an emergency, urgency, or related information request call.

D. Project Description

The Project will comprise four components summarized as follows:

Component 1 – Resilient data infrastructure

16. **This component will strengthen the data infrastructure resiliency of Espirito Santo providing the State with a backup public owned data center.** The increasing production of data requires the establishment of storage facilities which meet the appropriate cybersecurity standards and provide the storage and computing power required to analyze and get insights from those data. The Project will finance the construction of a data center which will be owned and managed by PRODEST. The facility will be built following a demand and technical assessment and part of its role will be to act as a backup facility of the PRODEST datacenter in Vitoria in addition to support core data storage and computing needs of the State. The proposed component will include, among others: (a) support the development of a resilient backup data center, helping to increase the resiliency and redundancy of the existing data infrastructure in Espirito Santo while helping PRODEST to deal with a growing demand for data storage and computing services, (b) technical assistance to define the data center's design and operations based on international guiding principles and standards; (c) funding for technical operational support service in the supervision of services and works for the implementation of the resilient data center built within this component; and (d) digital skills training to better equip individuals to adapt to the digital economy and online activities.

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[11] https://prodest.es.gov.br/missao-visao-e-valores

Component 2: Strengthening of Digital Public Infrastructure (DPI) to improve service delivery to individuals, businesses, and government.

17. **This component aims to support the implementation and effective use of improved data exchange mechanisms and digital services for individuals, businesses, and government agencies in the state through a centralized and intelligent platform.** Improvements will be prioritized areas to ensure enhanced accessibility and quality. This component will include, among others: (a) support to strengthen the digital public infrastructure, including the design of a digital strategy action plan, developing digital solutions for authentication, the redesign of digital interfaces, and communication campaigns; (b) implementation of the interoperability platform; (c) optimizing the currently developed APIs; (d) creating a data standard repository; (e) creating and regulating a data-sharing procedure; and (f) conducting an independent data protection risk assessment.

Component 3: Modernize Emergency Management System.

18. **This component will support the expansion and modernization of the operational management processes of the, social defense, and justice system and public security in the State of Espírito Santo through the construction of the Espiritu Santo Emergency Response Center which provides for the implementation of its own, large, and permanent physical structure to operate ordinary and extraordinary response activities, including the management of major events and the management of highly complex crises.** The proposed component would serve to improve the critical capacity and infrastructure for emergency planning and response through the implementation of a single response system for emergency calls which will allow the population to access the centralized emergency response Center more quickly and will consequently increase the efficiency on the provision of the emergency service while reducing the time of response. This component will include, among others: (a) feasibility studies for the construction and operationalization of the Espirito Santo Emergency Response Center; (b) building infrastructure to control and support the emergency response system and appropriate routing; (c) the infrastructure, equipment, terminal and specialized software and hardware necessary to guarantee the correct provision of emergency services; and (d) funding for technical operational support service in the supervision of services and works.

Component 4: Project Management

19. **This component will provide support for the management and implementation of the project, including:** (a) project coordination; (b) procurement and financial management (FM); (c) implementation of environmental and social risk management measures; (d) Monitoring and Evaluation (M&E); (e) support of training and advisory / audit services needed; and (f) public information, citizen engagement (CE), communication.

COMPONENT 5: Contingent Emergency Response Component

20. **This component will provide support to the government to swiftly respond to an immediate eligible crisis, including climate or natural disasters and public health emergencies.**

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

21. **The Political and Governance risk is rated moderate. In the 2022 October State election, the same party coalition won the election and there is a continuation of the authorities in the State, including the Governor and the Secretary of State.** The approved Carta Consulta continues to be a priority for the new administration, as corroborated in the Bank mission in March 2023. Likewise, investments in Digital infrastructure have been highlighted for the authorities as one of the high priorities for the following four years of mandate. The Government team is drafting the decree that authorizes the credit operation and formalizes the implementation arrangements ahead of the end of project appraisal. This decree will be examined and approved by the Legislative Assembly of the State of Espírito Santo.

22. **Technical Design is rated Substantial. The risk rating after mitigation measures is Moderate**. While the key technical components that will be financed under the project are at advanced pre-feasibility stages, the specific coordination mechanism between the different entities must be defined during the project's preparation. Coordination is particularly relevant for the successful implementation of the emergency response system. Mitigation measures include formally engaging public servants in the State with experience implementing similar WB financed projects (I.e., Disaster Management Center) and in the current operation of the emergency central. Lessons learned from that project's implementation will be implemented for both components 1 and 3.

23. **The environmental and social risk ratings are recommended to be classified as moderate.** Adverse environmental and social impacts are related to the civil works from the construction and maintenance of the Centralized Emergency Response Center and Data Center. Although these impacts are site-specific, temporary, and reversible, and the mitigation measures are well established, the implementing agencies do not have previous experience with the ESF, and the scope and location of activities are not fully defined at the current stage. In other to minimize exclusion of the most vulnerable from benefitting from the Project, especially due to the digital divide, the Project will also develop a robust consultation strategy that will cover the whole state as well as representatives of disadvantaged groups, including Indigenous Peoples, rural communities, and people with disabilities during project preparation and implementation.

24. **Institutional capacity for implementation and sustainability is rated moderate.** Although all proposed Project activities would respond to State strategic priorities reflected in different planning instruments, programs and studies, there are capacity gaps and challenges of integration that may jeopardize implementation of activities and long-term sustainability. In addition, there will be a need for coordination between and the different entities implementing each component and for the implementation of component 3 since the various emergency first response units (Police, Health, State Secretariat of Justice, Mobile Emergency Care Service, Fire Departments, among others) would need to agree on protocols, data sharing mechanisms and procedures to manage data emergency response units. The Project will mitigate this risk by investing in capacity building activities across all management levels and would promote adequate operation and implementation of its functions.

E. Implementation

Institutional and Implementation Arrangements

25. **The Brazilian State of Espirito Santo will be the borrower of the loan, and the Institute of Information, Technology, and Communication, PRODEST, a public company that operates under the State Government of Espírito Santo, will be the implementing agency for the project.** The World Bank assessed PRODEST's fiduciary, environmental, and social management capacities as adequate for this project. PRODEST will prepare annual Procurement and Implementation Plans; ensure compliance with WB financial management (FM) and procurement regulations and environmental and social requirements; manage procurement following the Procurement Plan; oversee technical inputs from all institutions involved in the project; and engage with the World Bank and monitor and report on progress.

26. **The project's implementation builds upon lessons learned from implementation of previous and ongoing projects, such as the Strengthening data infrastructure to close the digital gap in Argentina Project (P178609), the Peru Centralized Emergency Response System Project (P170658) and the Uganda Digital Acceleration Program (P171305).** The design of this Project is based on replicating common solutions and lessons learned across countries with a common objective and framework. The project benefits from the WBG's experience in managing regional and national digital and ICT projects as well as from implementation of telecommunications sector reform, development and regional connectivity projects in the Caribbean, Europe and Central Asia, South Asia, and East Asia-Pacific. Moreover, the project will leverage the lessons learned during the preparation and the first phases of implementation of P178609, particularly in relation to the financing of public owned data centers and to the design of digital skills trainings. Finally, it will rely on the lessons learnt from the ongoing project in Peru about the establishment of an Emergency Response Center Building. Specific lessons reflected in the design include a focus on: (a) country priorities and ownership; (b) a strong policy/regulatory environment and safeguards for citizens; (c) a flexible program that is able to adapt to a changing environment; and (d) strong but lean implementation arrangements with effective performance monitoring.

27. **Coordination is key, especially for components 2 and 3**. Coordination between agencies to define criteria and relevance of digital services that would be digitalized is critical to creating an effective and actionable roadmap to strengthen digital public infrastructure. Similarly, defining coordination bodies within the first response units that would be involved in the construction and operation of the emergency center is critical to ensure that protocols, data sharing mechanisms and procedures comply with the requirements from all agencies and promote mutual agreements as it was shown in the Centralized Emergency Response System Project (P170658).

28. **Knowing the context and having a flexible approach could facilitate project implementation.** Based on the Integrated Water and Landscape Management Program of Espírito Santo State (P130682) Centralized Emergency Response System Project (P170658), the team has learned that each context would be different while conducting the procurement process and it is necessary to be flexible to adapt to each context. A deep understanding of the political and private sector context could help to better define the procurement processes and expedite the implementation.

29. **Aligning objectives from different public agencies could boost the results of expanding the public owned data infrastructure.** Involving public sector agencies whose services will rely on PRODEST data centers and defining common practices in data storage and analysis could generate synergies and achieve better outcomes.

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