



Concept Environmental and Social Review Summary

Concept Stage

(ESRS Concept Stage)

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I. BASIC INFORMATION

A. Basic Operation Data

Operation ID	Product	Operation Acronym	Approval Fiscal Year
P508221	Investment Project Financing (IPF)	SC Resilience	2026
Operation Name	Santa Catarina Climate Resilience		
Country/Region Code	Beneficiary country/countries (borrower, recipient)	Region	Practice Area (Lead)
Brazil	Brazil	LATIN AMERICA AND CARIBBEAN	Urban, Resilience and Land
Borrower(s)	Implementing Agency(ies)	Estimated Appraisal Date	Estimated Board Date
State of Santa Catarina	Secretariat for Civil Defense and Protection (SDC)	02-Jun-2025	31-Oct-2025
Estimated Concept Review Date	Total Project Cost		
15-Jan-2025	149,400,000.00		

Public Disclosure

Proposed Development Objective

To reduce the risk of climate related disasters in targeted areas of Santa Catarina and to strengthen institutional capacities to manage those risks

B. Is the operation being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project Activities

The Santa Catarina Climate Resilience project will implement the first phase of an ambitious, multi-year integrated climate and disaster risk management investment program led by the Santa Catarina Civil Defense Agency. The project will support risk mitigation infrastructure works, increase institutional capacity to assess and monitor disaster risks, develop strategies to support the most vulnerable populations and increase participation of the private sector disaster recovery. Specifically, the project will carry out various river improvement, control and slope stabilization works to mitigate the impacts of floods and landslides on the residents of the rapidly urbanizing Itajaí Valley, and other priority locations. The Project will also establish a foundation for future DRM investments in other parts of the state, through



supporting the development of disaster risk reduction plans, which will identify specific investment priorities and estimated costings. The focus through these plans will be on the protection of vulnerable communities, public infrastructure, health and school facilities. Finally, the project will expand the climate monitoring and early warning capacities in Santa Catarina, with the aim of increasing radar coverage to the entire state, and cooperation with neighboring states, and improving the interface between climate monitoring and local civil defense agencies at the municipal level. Support to the private sector will be explored through existing emergency support programs for SMEs.

D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings

Located in the Southern Region of Brazil, the state of Santa Catarina covers an area of 95,346.181 km² (1.12% of the national territory) and has a population of 7.61 million inhabitants (3.75% of the Brazilian population), of which 7.3% live in poverty and 5.2% currently benefit from conditional cash transfer programs (including 2,486 indigenous peoples). The population density is 79.50 inhabitants/km². Its Human Development Index (HDI) is 0.774, the 3rd highest in the country.

The Project's area of influence – the Itajaí-Açu River valley – comprises 54 municipalities (IDHM ranging between 0.670 and 0.845) and hosts a population of 1,985,340 people in a total area of 11,687 km² (152.8 inhabitants/km²), of which 420,000 people—mostly in conditions of greater socioeconomic vulnerability—live in 2,878 high/very high-risk areas for climate disasters. In 2021, the valley accounted for 22% of the state's GDP, but per capita GDP widely [BRL 5,769: BRL 166,226].

The state and the valley have been facing a variety of extreme hydrological events and geological disasters and, historically, is among the Brazilian states facing the greatest socioeconomic impacts related to the occurrence of climatic events. It ranks 2nd in the number of people directly affected by the occurrences recorded between 1991 and 2022 in the country, in damages involving public infrastructure, and in total material damages; the 4th in private and total damages and losses; the 5th in combined damages and losses; and the 7th in public losses. Floods, flash floods, inundations, and landslides account for approximately 47% of these occurrences and are responsible for 56% of material damages and economic losses. Considering only these disasters – of which a quarter occurred in the valley – the state ranks first in damages and losses and second in direct impacts. The valley concentrates 30% of the people affected by climatic disasters recorded in the state and approximately half of the economic losses.

D.2 Overview of Borrower's Institutional Capacity for Managing Environmental and Social Risks and Impacts

The Borrower – the Government of the State of Santa Catarina – has recently enhanced its experience with the Environmental and Social Standards of the World Bank's Environmental and Social Framework through the preparation of two operations: the Santa Catarina Rural Development Project for Sustainability and Innovation (P506142) and the Brazil Proactive, Safe, and Resilient Road Asset Management Program - State of Santa Catarina Project - Phase 3 (P504253).

The assessments conducted by the Bank in preparation for these two operations highlighted the client's high institutional capacity for managing environmental and social risks and impacts and concluded that the use of the Borrower's Environmental and Social (E&S) Framework allows for the achievement of outcomes materially consistent with the objectives and requirements of the World Bank's Environmental and Social Standards.



The State Secretariat for Protection and Civil Defense (SDC) will be the central executing agency for the Project and has a broad and skilled technical staff, consisting of 126 employees. Project activities will be licensed by the State Institute of Environment (IMA), which operates under the country and state robust regulatory framework and –for the types of the proposed works– requires environmental and social impact assessments (ESIA) and public consultations with potentially affected populations (some of which have already been carried out).

During project preparation, the task team will assess the ESIA's conducted in compliance with the Borrower's law and the procedures in place to manage E&S risks and impacts to check whether they can be used (in a whole or in part) for E&S risk management under the Project and to define additional material measures for E&S risk management (as needed).

II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC)

High

A.1 Environmental Risk Rating

High

The project includes both structural and non-structural measures for disaster risk reduction and enhancing local flood resilience. Activities for risk assessment and planning, early warning systems, and local resilience and institutional strengthening will benefit community and environment by reducing vulnerability to climate-related risks and minimizing potential disaster impacts. Implementing these components may cause impacts from construction activities, such as resource use, air and water pollution, and waste generation. These impacts are expected to be short-term, localized, and easily mitigated with simple procedures standardized by the applicable environmental legislation. However, the works planned for infrastructure for flood mitigation, as such river improvement works and the construction of large flood control dams in rural areas, can have significant environmental impacts. Those construction activities can cause air and water pollution, generate waste and noise, and lead to soil erosion. The use of raw materials and heavy machinery can exacerbate environmental degradation. Dams disrupt ecosystems by fragmenting habitats, impeding river flow, and impacting aquatic migration. Reservoir creation will flood protected areas, and vegetation removal will be necessary. Dredging increases water turbidity, releases pollutants, and requires proper management of contaminated dredged material. These works are classified as complex under federal and state legislation, requiring a three-stage environmental licensing process, an ESIA, and specific plans for mitigation and compensation (ESMP). During the preparation phase, the task team will assess whether the potential impacts and risks were sufficiently addressed in the environmental licensing process and the associated ESIA. They will also identify any additional measures, studies, or activities needed for proper assessment and management of the project's impacts.

Substantial

A.2 Social Risk Rating

The Project comprises works in existing, new and under construction dams (located in rural areas), dredging works on the Itajaí-Açu river channel, and sloping containment works for reducing areas exposed to floods and landslides in the Vale do Itajaí mesorregion. It also comprises technical assistance activities that will reduce exposure and enhance response to climate-related disasters –institutional capacity building and the acquisition of equipment for state and



municipal agencies in charge of disaster risk-prevention and response and enhancing the state disaster warning and monitoring system, risk mapping studies, and awareness raising campaigns and community mobilization and preparedness for disaster response. It expects to benefit around 420,000 people from 54 municipalities. These benefits will reach the most the low-income and socially vulnerable population living in at risk flooding areas at peri-urban and rural settings that are increasingly exposed to climate-related disasters and hold lower capacity to cope with adverse impacts. On the negative side, social risks and impacts commonly associated with the typology of the proposed construction works include: a) Temporary disturbances on neighboring communities due to the traffic of heavy machinery with adverse impacts on road safety, the generation of noise, vibration and dust and the temporary project induced labor influx; b) Land expropriation, cyclical or permanent land use changes and restrictions, physical and economic displacement; c) Landscape change and compromising of cultural heritage (particularly, unknown archeological sites); and d) Potential community health and safety risks caused by emergency situations during the dam’s operation phase. Given the location of the proposed works, none of these risks is expected to be of high magnitude and they can be avoided, minimized or mitigated through well-known measures.

B. Relevance of Standards and Policies at Concept Stage

B.1 Relevance of Environmental and Social Standards

ESS1 - Assessment and Management of Environmental and Social Risks and Impacts Relevant

The project aims to invest in infrastructure to prevent and mitigate floods, including dams and river improvement works. The focus will be on the Middle and Upper Itajaí-Açu River Valleys, part of the Itajaí-Açu River basin, characterized by hilly terrain, fragmented Atlantic Forest areas, urbanization, agriculture, and significant flood risks. During due diligence, the team will emphasize analyzing studies on cumulative impacts in the basin and assess the presence of vulnerable groups and whether the projects have associated facilities that need consideration. In SC, environmental licensing for complex works follows CONSEMA No 98/2017, which involves evaluating activities based on their environmental impact on physical, biological, and socioeconomic environments and requires various studies and detailed mitigation and compensation measures. The team will review the licensing process and ESIA to identify if additional activities or studies are needed to meet ESS1 objectives.

ESS10 - Stakeholder Engagement and Information Disclosure Relevant

During preparation, the Borrower will prepare a Stakeholder Engagement Plan (SEP) comprising: a) the identification of key stakeholders (including potentially affected people and, among them, the presence of disadvantaged and vulnerable social groups), b) the need to make relevant information about the project available to each relevant stakeholder in a timely and culturally adequate manner as well as to promote their engagement during Project preparation and implementation, and c) the establishment of an accessible channel through which all stakeholders can raise their concerns and grievances with regards to the Project and reach resolution. The task team will assess if the Grievance Mechanism the Borrower has in place can be used as the channel mentioned in (c). The Borrower will begin a public consultation of a draft version of the SEP prior to Appraisal and then updated, and the final version of the SEP will be disclosed within 30 days after the Project date of effectiveness.

ESS2 - Labor and Working Conditions Relevant

Public Disclosure



The Project will involve direct and contracted workers, which contingent cannot be estimated yet. The Brazilian labor legislation addresses all elements considered under ESS2 – working conditions, management of worker relationships, protection of the work force, veto to child and forced labor, occupational health and safety standards, and well-established channels for raising concerns related with workplace conditions – in a manner consistent with its objectives and requirements. This legislation is well enforced and overseen by state and judicial agencies. During preparation, the task team will assess the risks project workers are expected to face under ongoing and future works, assess how adequately they are protected of these risks under the country labor laws and procedures, and identify additional measures needed to ensure their protection (if needed). These material measures will be included in the Project’s ESCP.

ESS3 - Resource Efficiency and Pollution Prevention and Management

Relevant

Flood management and river improvement projects can lead to air pollution, construction waste, noise, and water pollution. Riverbank stabilization and construction activities can cause land degradation and increased soil erosion. The use of raw materials and machinery can further contribute to environmental degradation. Modifying river channels can result in erosion and sedimentation both on-site and downstream. Additionally, significant amounts of dredged material, often contaminated, must be properly managed throughout the dredging process, including storage, transportation, and disposal. During the preparation phase, the task team will evaluate whether these potential impacts and risks were adequately addressed in the environmental licensing process and the ESIA prepared for each project. This assessment will help identify any additional measures or studies needed to ensure proper assessment and management.

ESS4 - Community Health and Safety

Relevant

The project encompasses dredging works in the Itajaí river channel and four new/under construction flood contention dams and improvements in two existing dams. These dams are defined as large dams and located in rural areas. According with the Brazilian law, the licensing of construction and operation of dams require ESIA and ESMP. The Brazilian technical standards for construction of dams (Interministerial Ordinance 246/1998) and the National Policy on Dam Safety (Laws 12,334/10 and 14,066/20) are mostly in line with the requirements of ESS4. Measures taken by the Borrower to ensure dam safety will be assessed and an independent panel of experts will be hired for reviewing their design, construction, and start of operations. The expected temporary project induced labor influx will not occur in hard-to-supervise or extremely poor areas and potential adverse impacts on environmental services will be assessed during preparation. The ESCP will include measures to address these risks.

ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Relevant

The construction of flood containment dams, dredging and slope stabilization works require land acquisition and may lead to involuntary resettlement. The information gathered at this concept stage shows that some of land acquisition has already been carried out. During project preparation the task team will a) gather further information on the number of affected people, the processes and procedures followed according the country’s law and the eventual existence of pending cases and b) assess their material consistency with ESS5 objectives/requirements. The ESCP will require the Borrower to a) provide a “de facto report” on these previous processes within 90 days after the date of Project effectiveness and agree on taking corrective measures (as needed), b) prepare Resettlement Plans following



ESS5 principles/requirements whenever new works require land acquisition leading to physical and economic displacement and c) complete their implementation prior to start these works.

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

Relevant

The construction of dams and river dredging significantly impact biodiversity and protected areas. All project activities are within the Atlantic Forest Biome and must comply with Law 11,428/2006 (including forest inventories, fauna and flora assessments, forest fragmentation analysis) during environmental licensing. The Botuverá dam will flood 2 hectares of the Serra do Itajaí National Park. An environmental compensation, approved by IBAMA and Congress, expanded the park by nearly 160 hectares. During preparation, the task team will evaluate if impacts were properly addressed in the licensing process and the ESIA prepared for each work. Proposed offsets will be verified to meet ESS6 requirements. Additional measures to ensure proper impact assessment and management will be added to the ESCP.

ESS7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

TBD

Holding an area of 37,018 hectares, the Laklãno Indigenous Land (IL) extends over four municipalities within the Hercílio river (a tributary of the Itajaí-Açu river) basin. It hosts a population of around 3,800 inhabitants, who belong to the Xokleng and the Guarani peoples. The existing flood management system of the Itajaí-Açu river encompasses one dam (the North Dam) owned by the federal government and constructed in the early 1990's nearby the Laklãno IL. This dam is not included in the scope of the Project and is not an Associated Facility. Thus, the Laklãno is outside of the footprint or area of influence of Project activities. During the due diligence process, impacts in the whole Itajaí-Açu river basin will be assessed in detail, and it will be confirmed whether IPs are present in the project's area of influence.

ESS8 - Cultural Heritage

Relevant

The Project will not interfere with intangible cultural heritage. However, its construction works involve excavations, movement of earth and flooding of areas where previously unknown cultural heritage may be encountered. The probability of finding archaeological sites is high as there are already 2,111 archaeological sites registered by IPHAN – the federal agency in charge of cultural heritage register and protection– in Santa Catarina (<https://sicg.iphan.gov.br/>). Hence, a chance finds procedure –in line with the requirements of the country's legislation and ESS 8– must be defined and include in all bidding documents for hiring the contractors that will implement construction works that involve excavations, movement of earth, flooding or other changes in the physical environment.

ESS9 - Financial Intermediaries

Not Currently Relevant

There are no Financial Intermediaries involved in Project implementation.

B.2 Legal Operational Policies that Apply



OP 7.50 Operations on International Waterways	No
OP 7.60 Operations in Disputed Areas	No

B.3 Other Salient Features

Use of Borrower Framework	TBD
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An Overview Assessment of the Brazilian Environment and Social Framework (BESF) –exclusively considering the regulatory framework approved at the federal level– is ongoing. Its early findings point out a few gaps with the ESF on: a) community workers (ESS2); b) the requirements of i) replacement costs in situations lacking a functioning real-estate marketing, ii) consultation with host communities in resettlement programs and iii) assistance for temporary loss of wage of affected commercial business employees (ESS5); and c) concepts of “modified, natural and critical habitats” (ESS6), though the BESF requires adherence to the “like-for-like or better” principle for biodiversity offset. The relevance of these gaps under the framework of the subnational borrower will be further assessed and any material measures to address them agreed on the ESCP. The BESF will be used as far as it allows the achievement of outcomes materially consistent with the objectives of the ESF.

Use of Common Approach	No
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There are no financing partners.

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required by Appraisal?

In accordance with the E&S approach described above, the Bank’s due diligence will include a thorough review of all ESIA and related documents prepared during the project design, as well as their respective environmental licenses. Based on current information, it is assumed that all works will require the preparation of an ESIA, by Brazilian environmental legislation and most of the works planned in the project already have ESIA and ESPM evaluated and approved by the responsible state agency. In some cases, the ESIA are still being prepared. In this context, the task team will evaluate, on a case-by-case basis, either the terms of reference or the studies conducted to ensure they address all relevant aspects of the applicable standards. This review will encompass documents prepared directly by the Borrower or conducted by independent specialists, with the assistance of retained E&S consultancies.

If the preparation process identifies that the ESIA require gap-filling measures, the E&S team will develop a tailored study preparation timeline for each case. This approach will prioritize ongoing projects and expedite the completion of studies for new projects. The agreed milestones for preparing the studies and finalizing the compensation and mitigation programs will be detailed in the ESCP.

The Borrower will propose, publicly disclose and start consultation with relevant stakeholders on the Stakeholder Engagement Plan (SEP).

Public Disclosure



As mentioned, the task team will also further assess – during project preparation – the potential (though unexpected) impacts of the project in the whole Itajai-Açu river basin and consider potential interferences in the Laklãno Indigenous Land, which is located outside the direct geographic area of intervention.

III. CONTACT POINT

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Public Disclosure