

## TC Document

### I. Basic Information for TC

▪ Country/Region:	BRAZIL
▪ TC Name:	Modal Shift for Zero Carbon Cargo and Passenger in Brazil
▪ TC Number:	BR-T1505
▪ Team Leader/Members:	Figueiredo De Castro M, Ana Beatriz (INE/TSP) Team Leader; Fioravanti, Reinaldo Daniel (INE/TSP) Alternate Team Leader; Monter Flores, Ernesto (INE/TSP) Alternate Team Leader; Agustin Elvira Mastache (INE/TSP); Celeste Marzo, Cristina (LEG/SGO); Irigoyen, Jose Luis (INE/ENE); Mix Vidal, Richard Alexander (INE/TSP); Munoz Garcia, Paloma (INE/TSP); Navacerrada Busquets, Pablo (INE/ENE); Noboa Lopez, Nathaly Sofia (INE/TSP); Renata Leal (INE/TSP)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	02 May 2022.
▪ Beneficiary:	Federal Republic of Brazil, through its Ministry of Infrastructure
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	United Kingdom Sustainable Infrastructure Program(SIP)
▪ IDB Funding Requested:	US\$1,600,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	24 months
▪ Required start date:	June 2022
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	INE/TSP-Transport
▪ Unit of Disbursement Responsibility:	CSC/CBR-Country Office Brazil
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Environmental sustainability; Gender equality; Institutional capacity and rule of law; Productivity and innovation; Social inclusion and equality

### II. Objective and Justification

- 2.1 **Objective.** The objective of this Technical Cooperation (TC) is to support the Brazilian Government in implementing the national decarbonization plan in the federal transport sector. The TC aims to achieve its objective by: (i) developing regulatory frameworks, transport logistics studies and supporting the coordination of territorial planning and pre-feasibility studies to facilitate investments in low carbon transportation modes and climate-resilience infrastructures; (ii) studies for piloting technologies/initiatives to support low carbon transition in Brazil; and (iii) updating elements of the Integrated Transport Plan, particularly National Logistics Plan and the General Plans of Public Actions or Partnerships, to meet the country's target for decarbonization.
- 2.2 Brazil's infrastructure gap represents a vast opportunity for new investments, especially in sectors where financial returns are highly associated with significant social and environmental co-benefits. Between 1990 and 2016, Brazil's annual average investment in infrastructure was just over 2% of its Gross Domestic Product

(GDP) and has been below 2% since 2016.<sup>1</sup> To reach the world's average, the country needs to invest around 4.7% of its GDP/year for the next 20 years. The transportation sector requires more investment than any other sector (1.92% of the GDP).<sup>2</sup>

- 2.3 The quality of Brazilian infrastructure and its services are significantly below other BRIC's (Brazil, Russia, India, and China) and Latin-American and Caribbean (LAC) countries. Although some advances can be seen throughout the editions of the Global Competitiveness Report, based on overall infrastructure quality, in 2019, Brazil ranked 78th out of the 141 countries surveyed by the World Economic Forum (WEF), with particularly inadequate results on roads and air transportation infrastructure quality.
- 2.4 **Transportation and logistics require improvements.** Transportation costs account for nearly 60% of Brazil's total logistics costs — roughly 12.3% of GDP compared with 7.8% in the United States' GDP. Although the country has one of the longest highway systems in the world (close to two million kilometres long), just about 12.3% of the system is paved. Of that fraction, only 38% are in good or excellent condition, 34% are in fair condition, and 28% are in poor condition.<sup>3</sup> Brazil's paved system suffers mostly from problems related to signage, pavement quality, and deficient engineering. The railway system is limited and suffers from operational bottlenecks, representing 18% of the total cargo flow. Obsolete equipment limits multimodal terminals, and shortfalls in capacity reduce the efficiency of Brazilian ports.
- 2.5 **Transportation is the largest non-land use greenhouse gas (GHG) emitter.** Nearly 41% of non-land use emissions' growth in Brazil, between 2000-2013, came from transportation. Freight and passenger transportation are the main drivers of these emissions. In 2019, the sector reached 196.5 MtCO<sub>2</sub> (40% from trucks and 31% from cars).<sup>4</sup>
- 2.6 **A significant portion of the current investments in Brazil are not as sustainable as they should be.** With the demands to improve existing transport and logistics infrastructure and services, and the need for new low carbon infrastructure projects, there is an opportunity to incorporate sustainability throughout the infrastructure cycle,<sup>5</sup> starting at the upstream level, including policies, plans, legislation, regulations, as well as the organizational set-up and capacities to incorporate sustainability criteria from the initial stage of the project.
- 2.7 **Investing in sustainable low carbon infrastructure leads to economic growth.** Analyses from the Organization for Economic Co-operation and Development (OECD) and International Monetary Fund (IMF) have shown that for every dollar of investment in infrastructure, there is an average 1.6x multiplier in the form of a boost of short-term employment combined with a long-term productivity gain in the economy. Further, the net benefit of building more resilient infrastructure in low- and middle-income countries would be around US\$4.2 trillion, with US\$4 in benefits for each US\$1 invested.<sup>6</sup> In Brazil, it has been estimated that inefficiencies (due to inadequate infrastructure) subtract around 10-15 percent from the country's GDP.<sup>7</sup> Investments in sustainable

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<sup>1</sup> IPEA, 2021.

<sup>2</sup> Bridging infrastructure gaps: has the world made progress?, McKinsey 2018

<sup>3</sup> Brazilian confederation of transport (CNT, for its acronym in Portuguese) survey of highways, 2018.

<sup>4</sup> ICCT Report, Brazil Freight Assessment September, 2021.

<sup>5</sup> Including the dimensions of social, environmental, economic, financial and institutional sustainability (IDB, 2018).

<sup>6</sup> World Bank, 2019.

<sup>7</sup> IMF, 2015.

infrastructure are a “win-win” for economies: they help increase productive capacity and lift economic growth rates, while strengthening a country’s resilience to withstand and even combat future climate risks.<sup>8</sup> Additionally, sustainable infrastructure boosts progress towards several Sustainable Development Goals.

- 2.8 **Post COVID-19 Sustainable Recovery.** Infrastructure is a central element for a post pandemic sustainable economic recovery. Infrastructure has secondary effects on other sectors of the economy and can boost their productivity as they recover from the pandemic crisis. However, the efficiency of infrastructure investment affects its multiplier effect. Sustainable low carbon infrastructure can help address such issues and increase Brazil’s resilience to future shocks, including those related to climate impacts. Recommendations for a sustainable recovery indicate that efforts should be directed towards the maintenance and upgrade of existing infrastructure assets, followed by the prioritization of new projects, and the re-evaluation of infrastructure developments plans. This TC supports these efforts, as it focuses on how transport and logistics projects can be improved to deliver better services, while incorporating sustainability elements that address climate change mitigation and adaptation.
- 2.9 In this context, this TC will provide support to the Ministry of Infrastructure (MINFRA) and build on work being developed with the MINFRA under the TC “Sustainable Transport and Logistics in Brazil (InfraLog)” (ATN/PI-18669-BR), by continuing and strengthening the work carried out for the strategic and sustainable plan for transport and logistics infrastructure, adding the application of innovative solutions and providing new instruments and tools for the delivery of an updated National Logistics Plan to meet Decarbonization Targets.
- 2.10 **IDB Strategic Alignment.** This TC is consistent with the Update to the Institutional Strategy 2020-2023 (AB-3190-2) and is aligned with the development challenge of: (i) social inclusion and equality, as it promotes the inclusion of vulnerable populations in sustainable, safe and inclusive mobility strategies; and (ii) productivity and innovation, as it increases resource mobilization by aiding government and catalysing private financing. It is also consistent with the cross-cutting issues of: (i) gender equality and diversity, as it includes a gender perspective in the development of trainings and other activities; (ii) climate change and environmental sustainability, as it supports the shift to low carbon transport infrastructure and improved logistics efficiency; and (iii) institutional capacity and rule of law, as it will strengthen capacities at Federal Government agencies with training activities. The TC is also aligned with the IDB Group Country Strategy with Brazil 2019-2022 (GN-2973), as it contributes to: (i) promote greater economic competitiveness; (ii) increase the role of the private sector by improving the business environment; and (iii) facilitate Public-Private investment in infrastructure. Transportation and logistics are also mentioned as a priority in this Strategy, particularly the development of **multimodal transport systems, -climate resilience- infrastructure, and efficiency improvements that support competitiveness**. This operation is also aligned with the IDB's Infrastructure Strategy: Sustainable Infrastructure for Competitiveness and Inclusive Growth (GN-2710-5). It is also aligned with the objectives and eligibility criteria of the United Kingdom's Sustainable Infrastructure Program (UK SIP),<sup>9</sup> in accordance with the provisions of document GN-2903. This TC is also aligned with Indicator 3.5 of the Corporate Results

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<sup>8</sup> World Bank, 2019.

<sup>9</sup> This intervention mostly delivers on the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> indicators from the SIP's log frame.

Framework —Climate finance in IDB Group operations (% of approved/committed amount).

- 2.11 **Vision 2025.**<sup>10</sup> This TC is aligned with the immediate opportunities defined by the Bank's Vision 2025, particularly the one related to climate change and the increase in resilience, adaptation, and mitigation. This alignment will be achieved by reducing GHG emissions generated by the transition to low carbon transportation. Additionally, this TC is aligned with the priorities of Digital Economy, Support for SMEs, and Regional Integration by incorporating and promoting new and innovative technologies, digital transformation in the public sector and among Logistics providers. By using digital technologies, transport sectors raise their performance by increasing efficiency, associated with task automation and cost reduction, thus generating greater global competitiveness and regional integration.
- 2.12 **Alignment to Government Policy and Plans.** The operation is aligned with the Brazilian Federal Government's desire to attract investments in infrastructure. This TC accords with the Brazilian Regional Development Policy, updated by Decree No. 9.810 of 2019, which guides the action of the federal government in seeking to reduce economic and social inequalities while taking into consideration sustainability among its priority objectives.<sup>11</sup> This TC is aligned with the Integrated Transport Planning concept, that establishes the framework of the Brazilian Transport Plan, and with the Brazilian National Logistics Plan 2035 (NLP 2035). The NLP 2035 contemplates the integrated strategic planning of all modes of transport. In addition, the NLP will subsidize the preparation of Strategic Sectorial Plans, which will have robust technological and informational tools for prioritizing and implementing actions and projects with greater assertiveness. One of the main principles of the NLP is to promote Sustainable Infrastructure with social and environmental responsibility. Also, the TC is consistent with Brazil's commitment to economy-wide greenhouse gas emission reductions of 37% in 2025 and 43% in 2030 with reference to 2005 in key infrastructure sectors, as stated in its Nationally Determined Contribution (NDC).<sup>12</sup>

### III. Description of activities/components and budget

- 3.1 The project activities will be organized in 3 components, as described below:
- 3.2 **Component 1: Regulatory Framework, Transport and Territorial planning and pre-feasibility studies (US\$600,000.00).** This component will finance: (i) diagnosis (including collection, processing, organization and availability of data), benchmarking, and harmonization of regulatory frameworks to facilitate low carbon investments in large capacity freight and passenger modes of transport (rail, waterways, etc.) and networks, including public and private investments; (ii) analysis of alternatives in transport regulation at the federal level for decarbonization and climate resilience infrastructure; (iii) studies for improvement of transport logistics infrastructure, and transport and territorial planning and management, with introduction of sustainability, low carbon, and climate resilience infrastructure parameters; (iv) pre-feasibility studies for new projects of low carbon / sustainable cargo or passenger large capacity modes of transport (rail, waterways etc.) prioritized by federal and state governments; and

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<sup>10</sup> [Vision 2025 Reinvest in the Americas: A Decade of Opportunity.](#)

<sup>11</sup> National Regional Development Policy ([MDR, 2020](#)).

<sup>12</sup> Updates NDC ([Government of Brazil, 2020](#)).

(v) support for the design of regulatory and contract provisions for concession programs.

- 3.3 **Component 2: Adoption of Technologies to support low carbon transition (US\$500,000.00).** This component will finance: (i) a strategy for the adoption of technologies to improve sustainability as well as efficiency of low carbon large capacity modes of transport (rail, waterways etc.) sustainability and logistic services, including the assessment of low-carbon fuel options, such as ethanol and electrification; and (ii) hiring of consulting services related to the application of innovations, including Logistics as a Service (LaaS)<sup>13</sup> in support of one low carbon pilot project. This component also will support knowledge and best practices dissemination activities (creation of blogs, videos, and monographs). The activities under this component will include the development of trainings and workshops to strengthen the capacities at the Federal Government agencies, that will consider topics related with gender and diversity perspective, and people with disabilities.
- 3.4 **Component 3: Update the National Logistics Plan to meet Zero Decarbonization Target (US\$500,000.00).** This component will support the update of the elements of the Integrated Transport Plan, particularly National Logistics Plan (NLP) and the General Plans of Public Actions or Partnership, that sets a long-term vision for transport infrastructure in Brazil. The NLP provides a diagnosis of the current transport matrix and identifies needs and opportunities to address transports gaps, while increasing transport efficiency and the reduction of GHG emissions, at regional and national level. They include: (i) preparation of a benchmark study on international best practices related to sustainability / climate resilience infrastructure and low carbon activities, planning, logistics performance, financing, operation, and services; (ii) introduction of social-environmental performance indicators and territorial management elements into climate resilience infrastructure and low carbon transport-related public policies, plans and programs; (iii) introduction of thematic bond taxonomies into Ministry of Infrastructure project pipeline; and (iv) deliver the National Logistics Plan and General Plans of Public Actions or Partnership embedded with sustainability indicators and performance measurements to be monitored throughout the years, and whose implementation will lead to the decarbonization of the sector with a large quantity of climate resilience transport infrastructure.
- 3.5 **Budget.** The proposed technical assistance budget is US\$1,600,000, funded by the United Kingdom's Sustainable Infrastructure Program (UK SIP) and divided among three components as shown in the following table:

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<sup>13</sup> Logistics as a Service is the "Integration of various form of logistics services and assets into a single digital platform accessible on demand and based on the concept of sharing economy". The integration of the different services and stakeholders of Logistics in a single platform allows the provision of service on demand, and at the same time, constitute as a "control tower" for traffic authorities, policymakers and for the shippers themselves, improving the efficiency of logistics movements, reducing congestion and emissions.

**Indicative Budget (US\$)**

<b>Activity / Component</b>	<b>Description</b>	<b>UK SIP Funding</b>	<b>Total Funding</b>
Component I	Draft Regulatory Framework, & parameters for transport and territorial planning	\$200,000.00	\$200,000.00
	Pre-feasibility studies for public and private investments	\$400,000.00	\$400,000.00
Component II	Strategy to support low carbon transition including assessment of Technologies	\$200,000.00	\$200,000.00
	Pilots implementing Innovative solutions	\$300,000.00	\$300,000.00
Component III	Update the National Logistics Plan and related plans to meet Decarbonization Target	\$500,000.00	\$500,000.00
<b>Total</b>		<b>\$1,600,000.00</b>	<b>\$1,600,000.00</b>

**IV. Executing agency and execution structure**

- 4.1 At the request of the Government of Brazil, the IDB will execute the technical assistance given the Bank's ample experience providing technical assistance to policy makers, as well as the possibility to generate economies of scale from the hiring processes. The administrative and technical supervision of the proposed technical assistance program will be under the responsibility of the Transport Division (INE/TSP). The activities will be conducted in close coordination with the beneficiary and focal points in the Brazil Country Office (CSC/CBR) which will have a key role in the national dialogue.
- 4.2 The Bank has adequate systems to guarantee the proper execution of the operation and ensure the sustainability of the implementation of the project in line with the "Operational Guidelines for Technical Cooperation Products" (GN-2629-1), the Bank Policy on Technical Cooperation (GN-2470-2), and Procedures for the Processing of Technical Cooperation Operations and Related Matters (OP-619-4 Annex II, C 2.2). Likewise, the TC team has the necessary experience to ensure compliance with the relevant procurement policies and procedures.
- 4.3 The Bank will be responsible for the selection and hiring of all consulting services. All activities to be executed under this TC have been included in the Procurement Plan (see Annex II) and will be contracted in accordance with Bank policies as follows: (i) AM-650 for Individual consultants; (ii) GN-2765-4 and Guidelines OP-1155-4 for Consulting Firms for services of an intellectual nature; and (iii) GN-2303-20 for logistics and other related services. The funding for this operation will be used to hire consultancy services, as well as to pay for travel costs of consultants and the organization of dissemination and training events (non-consultancy services). The Bank shall own the intellectual property rights of all products developed within the scope of this TC, which may be made available to the public under the creative commons license. The Bank will grant a specific license to the beneficiary through specific contractual commitments prepared at the beneficiary's request.
- 4.4 To ensure a proper execution of the proposed program, the project team will organize launching, midterm and final review meetings/conferences with the beneficiaries and

their consultants for each of the phases contemplated in the design and implementation of their respective systems. The project team will also fulfil all the annual and periodical monitoring requirements established by the Bank, under current policies and procedures for this type of operation.

- 4.5 A reflexive evaluation of the program will be conducted by the project team before the end of the disbursement period to assess whether the outputs of the program were achieved.

**V. Major issues**

- 5.1 A possible implementation risk of this TC is the lack of appropriate engagement of the beneficiary, providing full access and participation of their personnel into the TC activities as well as of their commitment toward the sustainable recovery especially considering COVID 19 priorities. This will be mitigated by securing, prior to the TC begins implementation, of proper buy-in of activities at the management level, so there is a clear mandate to conduct the proposed activities.

**VI. Exceptions to Bank policy**

- 6.1 There are no exemptions to the Bank policies present in this TC.

**VII. Environmental and Social Strategy**

- 7.1 This TC has been classified as Category "N/A".

**Required Annexes:**

- [Request from the Client - BR-T1505](#)
- [Results Matrix - BR-T1505](#)
- [Terms of Reference - BR-T1505](#)
- [Procurement Plan - BR-T1505](#)