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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROGRAM DOCUMENT ON A

PROPOSED LOAN

IN THE AMOUNT OF US$ 135,238,245 TO

THE MUNICIPALITY OF RIO DE JANEIRO

WITH A GUARANTEE OF THE FEDERATIVE REPUBLIC OF BRAZIL

FOR THE

RIO DE JANEIRO FISCAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT POLICY LOAN

October 20, 2023

Transport Global Practice
Latin America And Caribbean Region

Federative Republic of Brazil

GOVERNMENT FISCAL YEAR

January, 1 – December, 31

CURRENCY EQUIVALENTS

(Exchange Rate Effective as October 13, 2023)

Currency Unit

US$1.00: BRL 5.06

ABBREVIATIONS AND ACRONYMS

ASD	Adjustable and Sustainable Development	LAC	Latin America and the Caribbean
BCB	Brazil's Central Bank	LDO	*Lei de Diretrizes Orçamentárias* (Budget Guidelines Law)
BF	*Bolsa Família* (Brazil's flagship social safety net program)	LDP	Letter of Development Policy
BRT	Bus Rapid Transit	LEZ	Low Emission Zones
CAPAG	*Capacidade de pagamento* (credit worthiness scoring system)	LRF	*Lei de Responsabilidade Fiscal* (Fiscal Responsibility Law)
CCDR	Country Climate and Development Report	LRT	Light Transit Rail
CCPAR	*Companhia Carioca de Parcerias* (Rio's PPP Company)	LTS	Long Term Strategy
CEAM	*Centros Especializados de Atendimento à Mulher em Situação de Violência* (Specialized Care Centers for Women in Situation of Violence)	M&E	Monitoring and Evaluation
CEDAE	*Companhia Estadual de Águas e Esgotos do Rio de Janeiro* (State's Water and Sewage Company)	MRJ	Municipality of Rio de Janeiro
CGM	*Controladoria Geral do Município* (Municipal Comptroller General)	MPU	*Medidas de proteção urgentes* (Urgent Protective Measures)
CPF	Country Partnership Framework	NAP	National Adaptation Plan
CPI	Consumer Price Index	NCR	Net current revenues
COFINS	*Contribuição para o Financiamento da Seguridade Social* (Contribution for Social Security Financing) ()	NDC	Nationally Determined Contributions
DPL	Development Policy Loan	NMT	Non-motorized Transport
ESG	Environmental, Social and Governance		
FDI	Foreign Direct Investment	PA	Prior action
FINCON	Accounting and Budget Execution System	PAFs	*Programas Aplicativos Fiscais* (State-federal Fiscal Adjustment Programs)

FPM	*Fundo de Participação dos Municípios* (Municipal Participation Fund)	PDO	Project Development Objective
FTA	Free Trade Agreement	PDS	*Plano de Desenvolvimento Sustentável* (Sustainable Development and Climate Action Plan)
GDP	Gross Domestic Product	PEF	*Plano de Equilibrio Fiscal* (Fiscal Equilibrium plan)
GHG	Greenhouse Gases	PFM	Public Financial Management
GNFS	Goods and Non-factor Services	PIS	*Programa de Integração Social* (Social Integration Program)
GRID	Green, Resilient and Inclusive Development	PPP	Purchasing Power Parity
GRS	Grievance Redress Service	SCD	Systematic Country Diagnostic
IA-CM	Internal Audit-Capability Model	SDGs	Sustainable Development Goals
IADB	Inter-American Development Bank	SMFP	*Secretaria Municipal de Fazenda e Planejamento* (Secretariat of Finance and Planning)
IBGE	*Instituto Brasileiro de Geografia e Estatística* (Brazilian Institute of Geography and Statistics)	PREVI-RIO	Instituto de Previdência e Assistência do Rio de Janeiro (Institute of Social Security and Assistance of the Municipality of Rio de Janeiro)
IBRD	International Bank for Reconstruction and Development	SMTR	*Secretaria Municipal de* Transportes (Secretariat of Transport)
ICMS	*Imposto sobre Circulação de Mercadorias e Serviços* (Tax on the Circulation of Goods and Services)	SNG	Subnational Government
IDA	International Development Association	SPM	*Secretaria Especial de Políticas para as Mulheres* (Secretariat for Women's Promotion Policies)
IFC	International Finance Corporation	STN	*Secretaria do Tesouro Nacional* (Federal Treasury)
IFI	*Instituto Fiscal Independente* (Fiscal Independent Institute	TCM-Rio	*Tribunal de Contas do Município do Rio de Janeiro* (Municipality of Rio de Janeiro Audit Court)
IIA	Global Institute of Internal Auditors	TCU	*Tribunal de Contas da União* (Federal Audit Court)
IMF	International Monetary Fund	WB	World Bank
ISS	*Imposto Sobre* Serviços (Tax on Services)	WBG	World Bank Group

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FEDERATIVE REPUBLIC OF BRAZIL

RIO DE JANEIRO FISCAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT POLICY LOAN

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SUMMARY OF PROPOSED FINANCING AND PROGRAM

BASIC INFORMATION

Project ID	Programmatic	If programmatic, position in series
P179182	Yes	2nd in a series of 2

Proposed Development Objective(s)

The Program Development Objective of this programmatic series is to support the Municipality of Rio de Janeiro in: (i) strengthening fiscal management to improve medium-term fiscal sustainability; and (ii) accelerating the transition towards a low-carbon, resilient and inclusive urban development .

Organizations

Borrower:	MUNICIPALITY OF RIO DE JANEIRO
Implementing Agency:	Secretaria Municipal de Fazenda e Planejamento, Secretaria Municipal de Transportes

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Financing	**135.24**

DETAILS

International Bank for Reconstruction and Development (IBRD)	135.24

INSTITUTIONAL DATA

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Overall Risk Rating

Moderate

Results

Indicator Name	Baseline	Target
RI1. Current savings (current spending as percentage of current revenues - CAPAG indicator) (%)	100 (2020)	Less than 95 (2024)
RI2. Liquidity (Financial Obligations from Non-Earmarked Resources as percentage of gross cash balance - CAPAG indicator) (%)	-188 (2020)	Less than 100 (2024)
RI3. Percentage increase in the number of essential activities implementation of the IA-CM level 2 (%)	38 (2022)	80 (2024)
RI4. ISS revenue (Millions of 2021 Real)	6,482 (2020)	6,689 (2024)
RI5. Number of carbon credits generated in Rio de Janeiro (Tons)	0 (2020)	600,000 (2024)
RI6. Pension Contributions in real terms (Millions of 2021 Real)	4,241 (2020)	4,676 (2024)
RI7. Ridership in the BRT system (Number of passengers)	60.4 million (2021)	80 million[1] (2024)
RI8. Percentage of sexual harassment complaints submitted to the new tracking and response system that are responded (%)	NA (2020)	At least 75 (2024)
RI9. Services provided by the Specialized Network for Combating Violence Against Women[2]	2,346 (2021)	8,200 (2024)
RI10. High and medium capacity mass transit stations connected with cycleways (%)	20 (2020)	At least 40 (2024)
RI11. Rate of traffic deaths per 100,000 inhabitants	9 (Dec 2019)	8 (Dec 2024)
RI12. Monthly bicycle trips in the Low Emission District (Rio's Bike-sharing Scheme)	65,000 (Sep 2021)	85,000 (Sep 2024)
RI13. Reduction in GHG emissions (%)	- (2017)	5 (2024)

[1] Excluding the *Transbrasil* line, to be inaugurated in December 2023. RI 7 target revised from an increase by 40 percent to an increase by 33 percent in BRT ridership to reflect the slight delay in the BRT operation bidding process.
[2] Provided by the following 8 units in 2024: *2 CEAMs, 1 Abrigo Sigiloso, 2 NEAPs and 3 NEAMs.*

IBRD PROGRAM DOCUMENT FOR A PROPOSED LOAN IN THE AMOUNT OF US$ 135,238,245 TO THE MUNICIPALITY OF RIO DE JANEIRO FOR THE RIO DE JANEIRO FISCAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT POLICY LOAN

1. INTRODUCTION AND COUNTRY CONTEXT

The proposed Rio de Janeiro Fiscal Management and Sustainable Development Policy Loan (ASD-DPL) 2 for the Municipality of Rio de Janeiro (MRJ) is the second in a series of two programmatic DPLs. The series supports the MRJ in (i) strengthening fiscal management to improve medium-term fiscal sustainability; and (ii) accelerating the transition towards a low-carbon, climate-resilient, and inclusive urban development. The first DPL in the series, for US$135,238,245, was approved on June 16, 2022. This second DPL in the series, for US$135,238,245, builds on the first by deepening reforms to strengthen fiscal management and accountability and advance the transition toward a low-carbon, climate-resilient, and inclusive urban development in alignment with its Sustainable Development Goals Agenda[3]. This DPL series supported the Municipality of Rio de Janeiro in becoming the first participant in the federal government's Fiscal Equilibrium Plan (PEF), that became effective in December 2021, and in meeting its yearly fiscal targets. It complements other World Bank (WB) operations that help implement a strategic federal program for the fiscal recovery of subnational entities, while making progress on environmental sustainability. This operation is fully aligned with the Green, Resilient and Inclusive Development (GRID) approach[4], promoting improved public sector resilience and green and inclusive urban development.

1. **Rio de Janeiro, with a population of 6.7 million, has the second largest economy among municipalities in Brazil, and one of the largest in LAC.**[5] Its economy accounts for 4.4 percent of the Brazilian economy, or almost 12 percent if the metropolitan area is considered. It is headquarters to Brazilian oil, mining, and telecommunications companies; an important scientific hub; Brazil’s second largest financial sector (after Sao Paulo); and a key tourist destination. Services and industry account for almost 86.5 and 13.5 percent of the municipality’s value added, respectively, in 2020.

2. **The COVID-19 pandemic worsened Rio's public finances, further reducing the municipality's capacity to invest in advancing its environmental, social, and economic objectives, including low-carbon, resilient and inclusive urban development.** MRJ fiscal balances weakened even before the pandemic, due to the rapid growth of personnel expenses (up 2.4 percent per year in real terms over 2015-19) and declining revenues (down 1.7 percent per year in real terms in the period). Investments fell from a peak of US$959 million in 2015 to only US$138 million in 2019. In 2020, the crisis reduced services sector activity and increased the city’s unemployment rate to a peak of 16.4 percent in late 2020. Although emergency federal fiscal support helped Rio to safeguard investments in 2020, its declining revenues resulted in an increase of its personnel expenditures to 60.8 percent of the Net Current Revenues (NCR) (above the Fiscal Responsibility Law – LRF limit) and an accumulation of arrears of US$1.3 billion in 2020. Supported by reforms under this DPL series, Rio’s fiscal balances improved significantly in 2021 and 2022 and arrears were repaid in full. Rio improved its credit rating under the Federal Treasury methodology for “capacity to pay” (CAPAG) from C in

[3] The Sustainable Development and Climate Action Plan for the City of Rio de Janeiro has as its central objective the construction of municipal policies aligned with the Sustainable Development Goals of the 2030 Agenda, and thus guide the actions of the MRJ throughout the different administrations.
[4] *https://openknowledge.worldbank.org/bitstream/handle/10986/36322/Green-Resilient-and-Inclusive-Development.pdf?sequence=5&isAllowed=y*
[5] Rio’s economy is also large when compared to other LAC countries. Its GDP in 2019 (latest data available for the municipality) was bigger than that of many of the economies in the LAC region, including Bolivia, Belize, Costa Rica, Dominican Republic, El Salvador, Dominica, Guatemala, Grenada, Guyana, Honduras, Haiti, Jamaica, Nicaragua, Panama, Paraguay, St. Lucia, St. Vincent and the Grenadines, Suriname, and Uruguay.

2020 to B in 2022. Most fiscal measures implemented in 2021 have medium-term fiscal effects and will continue to strengthen the Municipality's finances over 2023-26.

3. **Rio de Janeiro plays a significant role in Brazil's carbon footprint, particularly through its transport sector, and is well positioned to accelerate low-carbon urban development.** Brazil ranks amongst the world's top ten greenhouse gas (GHG) emitters, mainly due to land use change and agriculture, but the contribution of the transportation sector grew to about 13 percent of total emissions by 2020[6]. Rio's transport sector is the largest source of emissions in the city, at 35.4 percent of the total in 2019 – followed by the stationary energy sector (34.1 percent)[7]. Demand for the bus system gradually declined from 2015, falling sharply in 2020 during the pandemic, while car and motorcycle use increased by 11 and 30 percent, respectively. A lack of dedicated infrastructure for non-motorized transport, such as bike lanes, has impeded a shift to more low-carbon mobility patterns. Policies promoted under DPL1 have begun to transform the sector and encourage individuals to shift from cars and motorcycles to public transportation and active mobility options. Ridership in the municipal transport system has started to rise, especially on the Bus Rapid Transit (BRT) system.

4. **Rio de Janeiro faces significant climate adaptation challenges due to its geography, which renders it vulnerable to climate-related disasters like heavy rainfall and floods, but it has prepared a consistent long-term climate action program.** About 45 percent of the city—particularly poorer areas with informal housing—is at risk of landslides. Heatwaves have a more pronounced impact on the lower-income northern region of the city, disproportionately affecting vulnerable populations. Extreme weather events can disrupt essential services like water, energy, and transportation and cause loss of life. In 2010, major rainfall and landslides in the metropolitan region of Rio de Janeiro in 2010 left more than 300 people dead and 5,000 displaced. This led MRJ to inaugurate an Operations Control Center (COR) in 2010 with integrated systems capable of issuing alerts to the population, especially in the favelas located on hills. The number of deaths decreased, but people continue to be affected by rains and flooding. With projected increases in temperature and changes in rainfall patterns in the southeast of the country, including Rio, the frequency and severity of climate-induced natural disasters will escalate; about 10 percent of the city could be affected by rising sea levels by 2080[8]. To address these challenges, DPL1 supported adaptation and mitigation measures, such as Rio's Sustainable Development and Climate Action Plan, measures that promote public and non-motorized transportation, and the establishment of the first Low-Emission Zone in Brazil. The reforms supported in this operation build upon these actions.

5. **The program supported by the DPL series focuses on strengthening fiscal management to improve medium-term fiscal sustainability, and accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development.** DPL1 in the series supported Rio's efforts to strengthen fiscal sustainability while supporting the shift to a low-carbon and more inclusive urban development. DPL2 further strengthens fiscal management and accountability systems, incentivizes carbon-neutral businesses in the city, and advances the structural transition of the transport sector within the municipality's overall green economy reactivation agenda. It also supports reforms that will contribute to making long-term and private financing available to realize these development goals. The program is structured around two pillars:

i. **The first pillar of this DPL seeks to strengthen public management to improve medium-term fiscal sustainability of the MRJ.** Building on reforms supported under DPL1, this operation seeks to: (i) improve

[6] In 2020, transport activity represented 45 percent (179.8.5 Mt of CO2e) of GHG emissions for the energy sector, or 13 percent of total emissions, due to its high dependence on fossil fuels. World Bank. (2023). Country Climate and Development Report (CCDR) for Brazil.

[7] *Monitoramento das Emissões de Gases de Efeito Estufa da Cidade do Rio de Janeiro 2012 a 2019, SISCLIMA*. Instituto Pereira Passos, Prefeitura da Cidade do Rio de Janeiro, 2021.

[8] Rio de Janeiro's Sustainable Development and Climate Action Plan, *https://www.rio.rj.gov.br/web/planejamento/pds-em-capitulos*

fiscal accountability, (ii) support a tax incentive to firms that make progress on climate mitigation outcomes, and (iii) strengthen pension record management and audits. Key expected results from the measures of this pillar in the programmatic series include: (i) a reduction in the ratio of current expenditures to current revenues from 100 percent in 2020 to less than 95 percent by 2024; (ii) a real increase in tax on services revenues of 3.2 percent between 2020 and 2024; (iii) an increase in real pension revenues from BRL4.2 billion in 2020 to BRL4.7 billion in 2024 (10.25 percent real increase); and (iv) 600,000 tons of carbon credits generated in Rio by 2024.

ii. **The second pillar of this DPL seeks to accelerate the transition towards a low-carbon, climate-resilient and inclusive urban development.** Supported reforms are expected to increase the reliance on inclusive and greener mobility modes by (i) further strengthening the sustainability and operational efficiency of public transport services, changing the operational model of the Bus Rapid Transit (BRT) system; (ii) improving the mobility and accessibility of the lower-income population; and (ii) shifting away from private internal combustion motorized modes, by enacting decrees that institute the Cycleway Expansion Plan and the Road Safety Plan. Pilar 2 also aims to increase the safety of women in transport, by supporting (iv) a law that provides a transport allowance to enable female survivors of domestic violence to access specialized referral services. Finally, it promotes (v) a decree to further strengthen the green transformation of the Low Emission District. Key expected results include an increase of at least 33 percent in ridership in the BRT system by 2024, at least 40 percent of mass transit stations being connected to cycleways, a drop in traffic fatalities by 12.5 per cent by 2024, and a 5 percent reduction in GHG emissions by 2024 when compared to the 2017 baseline.

2. MACROECONOMIC POLICY FRAMEWORK

2.1. RECENT ECONOMIC DEVELOPMENTS

6. **After a strong rebound in 2021 and 2022 from the COVID-19 crisis, driven by the vaccination campaign and federal income support to the poor, growth remained solid in early 2023.** GDP grew 1.9 percent on a quarter-on-quarter basis in 2023Q1 – the highest quarterly growth since Q4 2020, mainly driven by the strong growth in agriculture. On the demand side, household consumption and government consumption registered 0.2 percent and 0.3 percent growth, respectively, due to the fiscal stimulus and income transfer support, despite monetary tightening and higher families' indebtedness. Investments fell by 3.4 percent, imports decreased 7.1 percent and exports registered a slight fall (0.4 percent), resulting in a positive contribution of net exports to growth (0.9 p.p.).

7. **Poverty is estimated to have decreased from 28.4 percent in 2021 to 24.3 percent in 2022 (at US$6.85/day, 2017 PPP).** This was due to a stronger labor market and a major expansion in coverage (48 percent growth in 2022) and average benefits (170 percent growth in 2022) of income transfer programs. Unemployment dropped to 7.9 percent in 2022, a level not seen since 2015. However, as growth slowed, the unemployment rate rose to 8.3 percent in May 2023. The labor force participation rate fell from 62.5 percent in May 2022 to 61.5 percent in May 2023, remaining below its pre-pandemic level of 63.3 percent. The informality rate, however, declined slightly to 38.9 percent in May 2023, from 40.1 percent in May 2022.

8. **CPI-inflation moderated to 3.2 percent in June 2023 from 12.1 percent in April 2022, falling within the central bank's inflation target interval (3.25 percent with a +/-1.5 tolerance interval).** Food, fuels, and energy prices declined, but annual core and services inflation – though falling - remained high at 6.0 and 6.2 percent, respectively, reflecting persistent price inertia. Inflation expectations moderated to 4.9 percent for 2023 and 3.9 percent for 2024. Brazil's Central Bank (BCB) lowered the policy interest rate 12.75 percent in

September 2023 (down from the 13.75 peak up to July). Credit growth slowed due to the lagged effects of monetary tightening and rising bank spreads. The financial sector in Brazil remained stable and liquid, with strong buffers, as the capital-asset ratio reached 15.8 percent in March 2023, comfortably exceeding the regulatory minimum (8 percent international and 10.5 percent in Brazil).

9. **The external position remained strong through May 2023, with the current account deficit fully covered by FDI inflows.** The 12-month current account deficit fell to 2.5 percent of GDP in May 2023 (US$ 48.5 billion) after reaching 3.4 percent of GDP in September 2022. The 12-month net FDI inflows were 2.8 percent of GDP (US$54.7 billion), fully covering the current account deficit. International reserves stood at 17.3 percent of GDP (US$343.5 billion) in May 2023, above the level of December 2022. The Central Bank FX position was partially offset by currency swap operations of US$100.4 billion, resulting in a net FX long position of US$243.2 billion (12.3 percent of GDP). Brazil's external position is buffered by the country's moderate exposure to currency depreciation since the share of foreign currency-denominated public debt is low at 5.9 percent of GDP, and gross reserves are sufficient to cover 14 months of imports and 300 percent of the short-term debt. The external financing needs in 2022 were moderate at 10.6 percent of GDP, 3.4 percentage points below their 2020 peak. The high interest differential has provided significant support to the exchange rate, which has appreciated from R$/US$ 5.58 in December 2021 to R$/US$ 4.82 in June 2023.

10. **After improvement in 2022, fiscal balances have shown signs of deterioration in 2023 as economic activity slowed, one-off revenues vanished, and social transfers increased.** The 12-month primary surplus of the public sector reached 0.4 percent of GDP in May 2023, from 1.3 percent of GDP in 2022. From January to May 2023, Central Government's total revenues shrank 1.2 percent in real terms, in line with lower economic activity and commodity prices, while total expenditures rose 5.1 percent in real terms, due to higher income transfer programs and pensions payments related to minimal wage increases. The tightened monetary policy is reflected in higher financing costs, with nominal interest payments reaching 6.8 percent of GDP in May 2023, up from 6.0 percent in 2022. Consequently, the overall fiscal deficit grew to 6.4 percent of GDP in May 2023 (from 4.6 percent in 2022). The general government's gross debt increased to 73.6 percent in May 2023, following the reduction to 72.9 percent in 2022.

2.2. MACROECONOMIC OUTLOOK AND DEBT SUSTAINABILITY

11. **GDP is expected to grow to 2.1 percent in 2023 and 1.3 percent in 2024, and then pick up to 2.4 percent in 2025.** Strong growth in 2023 is expected to be supported by high agriculture sector growth, a strong carry-over effect from Q1 2023 (2.4 percent), and strong private consumption growth, supported by a strong labor market and continued income transfers under the *Bolsa Família* program. The expected deceleration of economic activity in the second semester of 2023 due to the lagged effects of monetary policy will result in a reduced carry-over effect for 2024 and a lower growth for the year. However, as inflationary pressures diminish in 2023 and 2024, the Central Bank is expected to continue gradually ease monetary policy. The easing of monetary policy will accelerate the economic activity in 2024 and 2025, reflecting in a higher GDP growth in 2025. Poverty rate is expected to decrease slightly in 2023 in this context. Over the medium-term, baseline growth is assumed to stay at around 1.5 percent, on the back of the historical mild Total Factor Productivity (TFP) growth, lower national savings that limits the investment rate and decreasing population growth. Progress on implementing growth-enhancing structural reforms, including those related to trade openness, market competition, and business environment can help to boost TPF and increase potential growth.

12. **The current account (CA) deficit is projected to reach 3.2 percent of GDP in the medium-term as external conditions adjust and growth returns to its pre-pandemic trend.** In 2023, the CA deficit is projected to decrease to 2.4 percent of GDP. The deceleration of the Brazilian economy is expected to result in lower

domestic investments and reduced imports of intermediary and capital goods. This will reduce the CA deficit, despite the impacts of the expected normalization of commodity prices that will diminish Brazilian exports value. Despite the positive impacts of the global economic recovery on Brazilian exports in 2024, the acceleration of the imports volume aligned with the domestic economic recovery is expected to increase the CA deficit to 3.2 percent of GDP by 2025. However, the deficit is expected to be fully financed by net FDI flows, as intercompany lending will benefit from higher interest rates spreads and equity and investments funds will improve with global market conditions.

13. **Inflationary pressures are expected to ease in 2023 and 2024, encouraging the Central Bank to gradually ease monetary policy in the second semester.** Inflation is expected to decelerate to 4.9 percent in 2023 and converge to 3.5 percent by 2025, close to the Central Bank target of 3 percent, aligned to the lagged effects of monetary tightening and stabilization of commodities prices conditions. The Central Bank is expected to gradually ease the monetary policy as inflation declines.

14. **Baseline fiscal projections assume the implementation of the new fiscal framework proposed by the federal government to replace the current spending cap rule.** The new fiscal framework was approved on August 30, 2023, and combines a spending rule with a primary balance rule. The spending rule will limit federal real primary spending growth to 70 percent of the real primary recurrent revenue growth (i.e., excluding one-off revenues). Expenditures real growth should be within 0.6 to 2.5 percent. The primary balance targets will be defined for four years in the annual budget guidelines law, with a 0.25 tolerance interval. The annual budget guidelines law will also include a medium-term fiscal framework, with emphasis on the expected effect of the fiscal targets on the public debt trajectory. With the new fiscal framework, the Government foresees zeroing the federal primary deficit in 2024, obtaining primary surpluses of 0.5 and 1.0 percent of GDP in 2025 and 2026 respectively, while stabilizing the debt/GDP ratio by 2026. The new fiscal framework will require revenue measures to meet the primary balance targets. An important feature of the framework is the need for additional public revenues at around 0.7 – 1.0 percent of GDP between 2023 and 2026.[9] According to the Independent Fiscal Institute (IFI) of Brazil estimates, the package of revenue measures announced by the government is sufficient to meet this gap.

Table 1: Measures announced by the Government to recover revenues, impacts estimated by the government and impacts considered by IFI in their projections*

Policy Measure	Gov. Estimates (BRL bn)			IFI Estimates (BRL bn)**		
	2023	2024	2025	2023	2024	2025
Revenue from the transfer of PIS/PASEP[10] resources to the Treasury	23.0	-	-	23.0	-	-
Return of PIS/COFINS[11] on financial revenue	4.4	6.0	6.0	4.4	6.0	6.4
Return of PIS/COFINS on gasoline and alcohol, including tax on the export of crude oil	28.9	54.5	54.5	28.9	34.7	58.2
Return of PIS/COFINS on diesel, cooking gas and aviation kerosene	1.5	18.6	18.6	1.5	19.8	21.2
Collection of PIS/COFINS on ICMS credits within the scope of states and the DF	31.9	58.0	61.2	-	-	-

[9] According to the Independent Fiscal Institute (IFI) of Brazil estimates, primary revenues would need to grow by at least 0.8 percent of GDP for the government to be able to comply with the primary balance target in 2024.
[10] PIS/PASEP - Social Integration Program (*Programa de Integração Social*).
[11] COFINS – Contribution for Social Security Financing (*Contribuição para o Financiamento da Seguridade Social*)

Collection of IRPJ and CSLL on tax benefits under ICMS	47.0	47.0	47.0	7.1	12.5	18.8
Taxation on income earned abroad	3.3	3.6	6.8	3.3	3.6	6.8
Updating the exemption range value of the monthly income tax	-3.2	-5.9	-6.3	-3.2	-5.9	-6.3
Multinationals Taxation Review regarding transfer pricing	-	70.0	70.0	-	20.0	26.2
Total	**136.8**	**251.8**	**257.8**	**65.0**	**90.7**	**131.3**
% of GDP	**1.3%**	**2.2%**	**2.4%**	**0.6%**	**0.8%**	**1.2%**

Source: IFI, Finance Minister
* (BRL billion adjusted by the change in nominal GDP)
** According to the IFI Fiscal Follow-up Report of June 2023, there are uncertainties regarding the materialization of tax collections, especially the Collection of IRPJ and CSLL on tax benefits under ICMS and transfer pricing.

15. **Supported by revenue measures, a decline in interest payments and anchored in the new fiscal framework, the primary deficit is expected to turn into a surplus over the medium term.** The projected primary deficit of 0.9 percent of GDP in 2023 for the general government reflects the effects of higher social transfers authorized by Constitutional Amendment 126/2022[12] for the year and the reduction of revenues due to lower one-off revenues and lower inflation. For the coming year, the primary balance is expected to gradually increase until it achieves a surplus of 1.1 percent of GDP by 2026. The overall fiscal deficit is projected to increase to 7.3 percent in 2023 (from 4.6 percent in 2022) before gradually declining to 3.3 percent of GDP by 2026, in line with lowering interest payments caused by easing monetary policy and lower financing needs. The federal financing of the federal fiscal deficit is expected to focus on domestic debt issuances, in line with the National Treasury Annual Borrowing Plan[13] for the federal public debt in the market (87.5 percent of the federal debt is domestic and over 90 percent is in local currency) and the Central Bank monetary strategy for the repo operations.

16. **Public debt is projected to peak at 77 percent of GDP by 2024 under the baseline before trending downward to 71 percent by 2030.** The main macroeconomic shocks that pose risks to debt sustainability include lower than projected primary balances,[14] lower GDP growth[15] and real interest rates increase.[16] On the other hand, as the foreign currency-denominated debt is small, a real exchange rate depreciation would reduce the debt-to-GDP ratio.[17] A combined shock would have the largest impact on public debt. Public gross financing needs are expected to decrease from 25.5 percent of GDP in 2023 to 22.6 percent in 2026, on the back of lower interest payments and increasing primary balances. Still, government debt exposure to exchange rate risks is low, as FX-denominated government debt represents 5.7 percent of GDP and 94.8

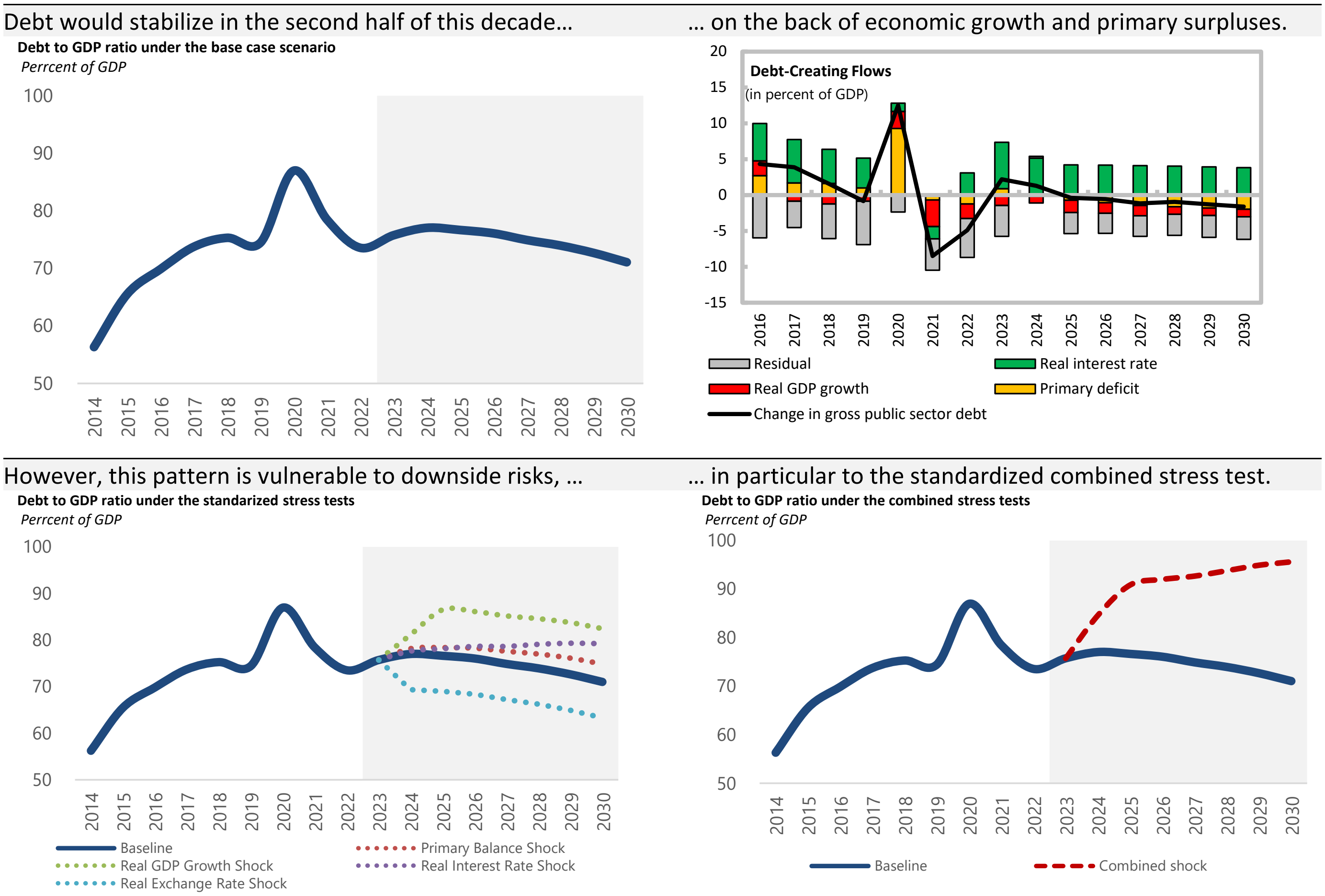
[12] Through the Constitutional Amendment No. 126 (EC 126), the federal government will finance 1.35 percent of GDP in social transfers (mainly, the *Bolsa Família* program) and several other expenditures (real increase in the minimum wage, and in programs such as the *Farmácia Popular* and *Merenda Escolar*, among others), and 0.25 percent of GDP in public investments. Federal government also granted and increase of 9 percent in the salaries of the public civil servants, which will cost 0.11 percent of GDP in 2023.
[13] The Annual Borrowing Plan is available at *https://www.tesourotransparente.gov.br/publicacoes/annual-borrowing-plan-abp-ingles/2023/114*.
[14] An accumulated deterioration in the primary balance of about 3.1 percentage points of GDP between 2024 and 2025 would increase debt to 83 percent by the end of the decade, 5 percentage points above the base case scenario. This scenario also assumes that every percentage point of GDP of less primary balance increases the interest rate by 0.25 basis points.
[15] A drop of 2.9 percentage points in GDP growth between 2024 and 2025, the standard deviation between 2012 and 2022, would lead to a sharp increase in public debt to around 90 percent of GDP by the end of this decade, 13 percentage points higher than the baseline scenario. This scenario also assumes that every percentage point of less economic growth reduces inflation by 0.25 basis points and increased the real interest rate by 0.25 basis points.
[16] A permanent increase in the average interest rate of 200 basis points would steadily increase public debt to 95 percent in 2030.
[17] A 47 percent real exchange rate depreciation in 2024, the largest change between 2012 and 2022, would reduce the debt-to-GDP ratio to 70 percent in 2024, remaining around this level until 2030. This scenario assumes a pass-through to inflation of 0.25.

percent of debt was held in the domestic market in April 2023. And rollover risks are mitigated by sizeable federal cash balances (16.2 percent of GDP in May 2023) and a deep domestic public bonds market.

17. **Macroeconomic risks are mainly driven by concerns with the pace of fiscal consolidation, low productivity growth and deteriorated external conditions.** Compliance with the targets of the proposed design of the new federal fiscal framework will be critical to stabilize debt in the medium term and avoid a loss in market confidence, especially, in an alternative stressed macroeconomic scenario. However, this new framework implies a need for additional revenue collection efforts that may not completely materialize, requiring tighter expenditures control. Public debt sustainability is vulnerable to the pace of the fiscal adjustment as well as growth and real interest rate shocks, so the macroeconomic adequacy of this DPF may become less adequate during the life of the operation. Risks of extended demand for public transfers (mainly social transfers and public servants' salaries increase) could further delay the fiscal adjustment needed to ensure medium-term debt sustainability. The dissipation of the cyclical factors (mainly inflation) that spurred revenue growth in 2021 and 2022 and high debt service costs can raise public financing needs from 2023 onwards. Despite the recent adoption of important reforms, steady growth in recurrent and rigid spending (such as public sector pay and pensions) still crowds out critical public investment and poses challenges for long-term debt sustainability (less than 10 percent of public expenditures). Productivity growth has been concentrated in primary sectors but has been absent in manufacturing and services. The highly complex tax system (highly reliant on consumption of goods and services) has been also an important contributor to the high costs of doing business in Brazil. On the external side, persistent inflationary pressures in advanced economies could keep global interest rates elevated for a longer time and reduce global economic activity, trigger higher investor risks aversion and reducing capital inflows, weaken the Brazilian currency, put additional pressures on domestic inflation, as well as limit investments and exports growth.

18. **Overall, Brazil's macroeconomic policy framework is deemed adequate for this proposed operation.** Brazil's macroeconomic framework is characterized by a high government's cash balance positions, low public debt exposure to exchange rate fluctuations, strong external accounts, strong financial sector regulations that supports a solid financial system, a consolidated inflation target system based on an independent Central Bank and a flexible exchange rate regime that is able to anchor inflation expectations, and a new fiscal framework that is expected to contribute to stabilize debt over the medium-term. The scenario of approval of key structural reforms is positive. Two tax reforms under discussion (one focusing on indirect taxes replaced by a simple VAT and the other on income taxation) will probably advance through 2023 and 2024, making taxation more progressive, diminishing the heavy tax burden on the poorest population, while improving business environment and productivity prospects through tax simplification. The recently approved financial sector reforms helped to boost competition in the financial markets, financial inclusion, and market access. The labor market reform enacted in 2017 and recent reforms approved in 2020 and 2021 have supported market entry and private sector participation in key infrastructure sectors (water and sanitation, telecom, and energy). This scenario of reforms and the reduction of the political uncertainty after the general elections in 2022 have reflected in the country risk performance, that has reduced 230 basis points in June 2023 (the lowest level since January 2020). The Central Bank has offered swap contracts to the market to reduce the floating exchange rate volatility and to provide liquidity to the financial market when the Real is under pressure, preventing the Central Bank from losing reserves and keeping them at high levels (17.5 percent of GDP). Brazil recently concluded a Free Trade Agreement (FTA) with the EU and with the European Free Trade Association (EFTA) countries as part of the Mercosur regional trade block (both pending ratifications by countries' legislative houses in EU and Mercosur), which could increase competition and productivity.

Figure 1: Public Debt Sustainability Analysis, Macro-Fiscal Stress Tests



Source: World Bank staff

Table 2: Key Macroeconomic Indicators

	2020	2021	2022	2023e	2024f	2025f	2026f
Real economy	Annual percentage change, unless otherwise indicated						
GDP (nominal - R$ billion)	7,610	8,899	9,915	10,600	11,222	11,930	12,595
Real GDP	-3.3	5.0	2.9	2.1	1.3	2.4	2.0
Per Capita GDP (In real US$)	8,252	8,613	8,802	8,827	8,953	9,083	9,214
Contributions (supply side):							
Agriculture	0.3	0.0	-0.1	0.4	0.1	0.1	0.1
Industry	-0.5	0.9	0.3	0.0	0.2	0.2	0.2
Services	-2.3	3.2	2.5	1.7	1.0	2.1	1.7
Indirect taxes	-0.8	0.9	0.2	0.0	0.0	0.0	0.0
Contributions (demand side):							
Consumption	-3.8	3.1	3.2	2.4	1.0	2.1	1.7
Investment	-0.3	3.0	0.2	-0.5	0.4	0.3	0.3
Net exports	1.0	-0.8	0.7	0.2	-0.1	0.0	0.0
Statistical discrepancy and change in inventories	-0.2	-0.4	-1.0	0.0	0.0	0.0	0.0
Imports, GNFS	-9.5	12.0	0.8	-1.0	2.0	2.0	2.0

Exports, GNFS	-2.3	5.9	5.5	1.0	1.5	2.0	2.0
Unemployment rate (ILO definition)	13.8	13.2	9.3	9.0	10.3	9.9	8.7
CPI (end of period)	4.5	10.1	5.8	5.0	3.9	3.5	3.5
CPI (average period)	3.2	8.3	9.3	4.7	4.2	4.0	3.6
Fiscal Accounts	**Percent of GDP, unless otherwise indicated**						
Expenditures	45.7	40.1	40.8	41.5	40.6	39.5	39.0
Revenues	32.4	35.8	36.2	34.2	35.3	35.5	35.7
Overall Balance	-13.3	-4.3	-4.6	-7.3	-5.2	-3.9	-3.3
Primary Balance	-9.3	0.7	1.3	-0.9	0.2	0.7	1.1
General Government Gross Debt (Authorities' definition) 1/	86.9	78.3	72.9	75.7	77.0	76.6	76.0
Selected Monetary Accounts	**Annual percentage change, unless otherwise indicated**						
Base Money	36.3	-5.2	2.6	-	-	-	-
Credit to non-government	15.6	17.8	14.5	-	-	-	-
Interest rate - Selic (period average)	2.8	4.8	12.6	-	-	-	-
Balance of Payments	**Percent of GDP, unless otherwise indicated**						
Current Account Deficit	1.9	2.8	2.9	2.4	2.7	3.2	3.2
Imports, GNFS	15.6	18.6	19.4	18.0	17.3	16.9	16.5
Exports, GNFS	16.1	19.1	19.6	17.7	16.6	15.9	15.2
Net Foreign Direct Investment	2.8	1.8	3.1	3.3	3.3	3.3	3.3
Gross Reserves (in US$, eop)	355.6	362.2	324.7	322.2	329.3	327.4	325.4
In months of next years imports	15.8	18.9	12.7	10.3	10.8	10.4	10.0
As % of short-term external debt 2/, 3/	179.2	208.4	193.7	190.7	189.6	184.7	179.9
External Debt (in US$, eop) 3/	639.3	670.3	681.1	686.2	705.5	719.9	735.0
External Debt 3/	43.3	40.6	35.2	33.6	32.4	31.2	30.2
Terms of Trade (% change)	0.6	7.1	-5.5	-4.7	-2.3	-1.4	0.0
Exchange Rate (average)	5.2	5.4	5.1	-	-	-	-

1/ Brazilian Central Bank definition (2008 methodology), that excludes the Federal securities in the BCB portfolio and includes the stock of BCB repo operations.
2/ It includes the long-term debt repayments due in the next 12 months as short-term debt.
3/ It includes securities issued in Brazil held by foreign residents and intercompany loans.

Table 3: Balance of Payments (percent of GDP)

	2020	2021	2022	2023e	2024f	2025f	2026f
Financing Requirements	**1.4**	**3.1**	**3.4**	**2.4**	**2.7**	**3.2**	**3.2**
Current Account Deficit	1.9	2.8	2.9	2.4	2.7	3.2	3.2
Trade Balance (GNFS) 1/ 2/	-0.5	-0.6	-0.2	0.3	0.8	1.0	1.0
Primary and Secondary Incomes	2.4	3.4	3.1	2.1	2.0	1.9	1.9
Net Errors and Omissions	-0.5	0.2	0.6	0.0	0.0	0.0	0.0
Financing Sources	**1.4**	**3.1**	**3.4**	**2.4**	**2.7**	**3.2**	**3.2**
Capital Account Balance	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Net Foreign Direct Investment	2.8	1.8	3.1	3.3	3.3	3.3	3.3
Net Portfolio Investment	-0.9	0.5	-0.3	-0.3	0.2	0.3	0.3
Net All Other Flows	-1.8	1.6	0.2	-0.8	-0.5	-0.5	-0.5
Change in reserve assets	1.0	-0.8	0.4	0.1	-0.3	0.1	0.1
External Financing Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Nominal GDP (USD billion)	1,475.5	1,649.5	1,935.2	2,045.2	2,179.6	2,308.1	2,420.9

1/ GNFS: Goods and Non-factor Services.
2/ A negative sign in Financial Requirements means a reduction of Financial needs, i.e., a surplus in the account, and vice versa.

Table 4: General Government Fiscal Indicators (percent of GDP)

	2020	2021	2022	2023e	2024f	2025f	2026f
General Government Overall Balance	(13.3)	(4.3)	(4.6)	(7.3)	(5.2)	(3.9)	(3.3)
General Government Primary balance	(9.3)	0.7	1.3	(0.9)	0.2	0.7	1.1
of which: Central Government	(9.8)	(0.4)	0.6	(0.9)	0.1	0.7	1.1
Total Revenues (and grants)	32.4	35.8	36.2	34.2	35.3	35.5	35.7
Total Primary Revenues (and grants)	32.4	35.8	36.2	34.2	35.3	35.5	35.7
Tax revenues	31.4	33.2	31.8	32.2	33.3	33.5	33.6
Taxes on goods and services	13.1	14.3	13.5	13.9	14.6	14.7	14.7
Direct Taxes	6.9	7.8	8.3	8.3	8.6	8.7	8.8
Social insurance contributions	8.8	8.5	7.5	7.4	7.5	7.5	7.5
Taxes on international trade	0.6	0.7	0.6	0.6	0.6	0.6	0.6
Non-tax revenues 1/	1.1	2.6	4.4	2.1	2.0	2.1	2.1
Total Expenditures 2/	45.7	40.1	40.8	41.5	40.6	39.5	39.0
Total Primary Expenditures 2/	41.7	35.1	34.9	35.1	35.1	34.8	34.6
Current expenditures	44.4	38.8	39.5	40.1	39.2	38.1	37.7
Wages and compensation	12.9	11.6	11.3	11.3	11.4	11.2	11.1
Goods and services	5.1	5.0	5.1	5.0	4.9	4.9	4.9
Interest payments	4.0	5.0	5.9	6.4	5.4	4.6	4.4
Current Transfers	22.3	17.3	17.2	17.4	17.4	17.3	17.3
Pensions to the private sector workers	8.1	7.3	7.4	7.5	7.5	7.5	7.5
Pensions to the public servants	5.3	4.6	4.5	4.5	4.5	4.4	4.4
Social Assistance	7.2	3.3	3.4	3.7	3.7	3.6	3.5
Other Current Transfers	1.8	2.1	2.0	1.8	1.7	1.8	1.8
Investments (net)	1.4	1.3	1.3	1.5	1.4	1.4	1.4
General Government Gross Debt (Authorities' definition) 3/	86.9	78.3	72.9	75.7	77.0	76.6	76.0
Domestic Debt	76.1	67.4	63.7	66.2	67.4	67.0	66.5
External Debt	10.8	10.9	9.1	9.5	9.6	9.6	9.5

1/ The pre-salt mega-auction held in 2019 guaranteed one-off revenues of BRL 70.0 billion.
2/ Congress passed a constitutional amendment in 2016 limiting the growth of the federal primary spending to the rate of consumer price inflation of the previous year (measured in June). This spending ceiling will be in effect for 20 years and, as long as nominal GDP growth exceeds consumer price inflation, the federal primary expenditure will decline as a share of GDP in the medium term.
3/ Brazilian Central Bank definition (2008 methodology), that excludes the Federal securities in the BCB portfolio and includes the stock of BCB repo operations.

2.3. RECENT ECONOMIC DEVELOPMENTS AND FISCAL SUSTAINABILITY IN THE MUNICIPALITY OF RIO DE JANEIRO

19. **Rio's economy recovered from the COVID-19 crisis in 2021, but the economy has been stagnant since then.** Rio experienced the second highest number of deaths among Brazilian states' capitals (38,247), only surpassed by São Paulo city (44,921). Rio's economic activity decreased 3.8 percent in 2020 and

increased the municipal's unemployment rate to the peak of 16.4 percent in the third quarter of 2020, mainly due to the impacts of the crisis in the services sector. The vaccination campaign contributed to recovery in the service sector in 2021, and the city's economy recovered by 5.4 percent in 2021.[18] However, the local economy growth has been stagnant since 2017 and Rio's economic activity was about 12 percent below the peak of 2014 in March 2023. Services is the most relevant sector in the local economy, being responsible for 66.4 percent of Rio's value-added in 2020, followed by the public administration, that accounted by 20.1 percent of the value-added. Industry participation in Rio's value-added decreased from 17.2 percent in 2013 to 13.5 percent in 2020.

20. **The improvement of labor markets in 2022 coupled with the increase of social transfers supported the recovery of the most vulnerable population's income over pre-pandemic levels.** In 2021, 16 percent of Rio de Janeiro's citizens lived under poverty (US$6.85/day, PPP17), and 2.8 percent lived in extreme poverty conditions (US$2.15/day, PPP17). At the same time, inequality may have decreased as the bottom 40 percent of the income distribution experienced higher real income growth than the average household (19 percent and 5 percent, respectively), attributed to employment recovery after the COVID-19 crisis and the expansion of the federal social transfers program to the poor that also reached long-standing vulnerable demographic groups such as Afro-descendant women.[19]

21. **The fragile fiscal situation of Rio de Janeiro municipality motivated the - municipal government to restore its fiscal buffers by adhering to the Federal Government Fiscal Equilibrium Plan (PEF) in 2021.[20]** Rising personnel expenditure and shrinking revenues, led to a deterioration of the Municipality's financing, which worsened further during the pandemic. The municipal government committed to join the PEF, a federal program that supports Subnational Governments in strengthening fiscal sustainability through the implementation of rascal reforms and achievement of fiscal targets agreed with the Federal Treasury. The first pillar of the DPL1 supported Rio's adherence to PEF, the new fiscal regime and the pension reform. The concession of the State's Water and Sewage Company (CEDAE)[21] also brought additional temporary revenues to the municipality. Altogether, these measures are estimated to provide fiscal savings of US$ 4.1 bn until 2025.

22. **The municipality of Rio de Janeiro has implemented a fiscal plan that resulted in a fast improvement of the fiscal accounts, that allowed it to reduce the stock of arrears to zero in 2021 and 2022.** Rio also upgraded its credit rating under the Federal Treasury methodology (the CAPAG methodology), from C in 2020 to B in 2022. Most of fiscal measures implemented in 2021 have medium-term fiscal effects and will continue to benefit the municipal's fiscal consolidation between 2023 and 2026, as showed in the Bank's fiscal projections for this period (see Table 5) and will support the maintenance of the creditworthiness rating at the B level during this period.

Table 5: Estimated savings per kind of fiscal adjustment measure (2021-2025)

Savings (in US$ millions of 2022)	2021e	2022e	2023f	2024f	2025f	Total Savings

[18] Source: *Observatório Econômico do Rio* (*https://observatorioeconomico.rio/iae-rio/*)
[19] From January to July 2022, the program paid BRL400 to beneficiary families, and, from August, it gave out BRL600, which are equivalent to 27.9 percent and 41.8 percent of B40 workers' average monetary income, respectively.
[20] Rising personnel expenditure and shrinking revenues, led to a deterioration of the municipality's financing, which worsened further during the pandemic. Between 2015 and 2019, revenues declined on average by 1.7 percent per year and the wage bill grew by 2.4 percent per year in real terms. The municipality's debt servicing capacity was rated as CAPAG C under the Federal Treasury methodology, which means that it was not authorized to receive federal guarantees for new loans.
[21] The municipality agreed to the concession of the State Water and Sewage Company of Rio de Janeiro (CEDAE), which assured extraordinary revenues of BRL 4.2 billion to the municipality coffers in 2021 and BRL 1.4 bn in 2022 as part of an agreement that will generate around BRL 6.0 billion in cash-flows until 2025. MRJ will receive BRL 500 mn by the end of 2024, and additional BRL 140 mn per year through revenues from regulatory authorization.

Reducing Recurrent Spending	**439**	**537**	**553**	**570**	**587**	**2,687**
Wage Bill	299	385	400	415	429	1,928
Pensions	0	0	0	0	0	0
Other Current Expenditures	140	151	153	156	158	757
Increasing Revenues	**912**	**190**	**146**	**276**	**208**	**1,733**
Tax Reform	102	93	93	94	95	477
Pension Contribution	14	31	32	33	35	144
Concession (CEDAE)	797	67	21	149	79	1,113
WB's operation impact on Debt Service	**0**	**-1**	**-18**	**-18**	**-21**	**-58**
Total	**1,351**	**728**	**699**	**846**	**796**	**4,420**

23. **The main economic and fiscal risks to the municipality come from the Brazil-level macro.** A slowdown in the services sector can impact the municipality's revenues (mainly ISS and IPTU), worsen Rio's fiscal balances and constrain its ability to continue the fiscal consolidation path. Fiscal decisions at the federal level (such as the increase of the national minimum wage, a raise of the national minimum salary for teachers, a raise of the national civil service salary ceiling or changes in tax rates that impact the sharing of federal tax collections with the states) or judicial decisions that can increase expenses or reduce state revenues, can also pose fiscal risks to the city. Given the high share of mandatory expenditures (mainly, wage bill, pensions, interests, and the minimum constitutional spending limits for health and education), public investments are the first line of expenditures to be reduced in case of a fiscal distress. Incentives to comply with the Fiscal Equilibrium Plan can help to contain the fiscal deficit and increase the fiscal space to ramp-up social, climate and infrastructure investments. The recent recovery of Rio's fiscal balances also provides some buffer to weather negative shocks and meet its financing needs.

24. **Rio's fiscal framework is adequate for this proposed operation.** The fiscal consolidation allowed the Municipality to grant a nominal increase of the public servants' salaries of 4.53 percent in November 2022. Going forward, the government intends to grant annual increases based on CPI inflation if fiscal space permits. The government also introduced a subsidy for public transportation in the city that is estimated to cost R$ 1 billion per year to stem the decline in use of public transport. These decisions were incorporated in the fiscal baseline scenario. Under these assumptions, MRJ is expected to sustain solid fiscal balances and maintain its current CAPAG's B rating until 2026. Proceeds from the two DPFs of this program along with temporary revenues from CEDAE's privatization will provide budget support for much needed investments expenditures in the first two years, slightly increasing the primary deficit. However, MRJ is expected to maintain its current CAPAG's B rating, assuming that mandatory expenditures (especially, wage bill and pensions) remained contained as the municipality seeks to meet the fiscal targets agreed with the federal government under the PEF. The municipality's debt is projected to continuously decrease from 61.3 percent of total revenues in 2022 down to 44.9 percent in 2026.

Table 6: Municipality of Rio de Janeiro Projected Fiscal Balances (2020–26, in US$ millions of 2022)

Estimates Includes Expected Impacts of Prior Actions and Other Measures Required by the Fiscal Equilibrium Plan (accrual accounting)

(in US$ millions of 2022)	2020	2021	2022	2023e	2024f	2025f	2026f
I. Revenues	**5,651**	**6,713**	**6,276**	**6,211**	**6,377**	**6,345**	**6,353**
Own Revenues	3,361	4,365	4,039	3,985	4,148	4,109	4,103
of which: ISS tax	1,362	1,412	1,440	1,430	1,443	1,463	1,497
of which: interests	14	52	216	216	216	216	216

of which: CEDAE's privatization		856	72	22	157	84	25
Transfers	2,289	2,349	2,236	2,226	2,229	2,237	2,251
of which: oil royalties	91	105	173				
of which: COVID-19 related transfers	652						
II. Total Expenditures	**5,752**	**5,401**	**6,208**	**6,163**	**6,323**	**6,173**	**6,201**
Current Expenditures	5,537	5,295	5,694	5,649	5,716	5,784	5,798
Active Personnel Spending	2,259	2,078	2,110	2,095	2,114	2,143	2,192
Pensions	1,275	1,177	1,180	1,195	1,230	1,272	1,328
Interests	65	161	160	118	131	126	111
Other Current Expenditures	1,939	1,879	2,244	2,242	2,242	2,242	2,167
Investment	215	105	514	514	607	390	402
III. Primary Balance (I-II- Interests, net)	**-51**	**1,421**	**11**	**-51**	**-32**	**82**	**48**
% of revenues	*-0.9%*	*21.2%*	*0.2%*	*-0.8%*	*-0.5%*	*1.3%*	*0.8%*
IV. Overall Balance (I-II)	**-102**	**1,312**	**68**	**48**	**54**	**172**	**153**
% of revenues	*-1.8%*	*19.5%*	*1.1%*	*0.8%*	*0.8%*	*2.7%*	*2.4%*
V. Net Financing	**-115**	**-241**	**-211**	**-48**	**-54**	**-172**	**-153**
Loans	15	3	30	202	205	77	82
of which: World Bank Operation				133	129		
Amortizations, net	-175	-252	-246	-255	-263	-254	-239
Asset Sales	46	7	5	5	5	5	5
Pension Fund	0	0	0	0	0	0	0
VI. Gross Financing Needs (IV + Amortizations, net + pension fund)	**277**	**-1,061**	**178**	**207**	**209**	**82**	**87**
% of revenues	*4.9%*	*-15.8%*	*2.8%*	*3.3%*	*3.3%*	*1.3%*	*1.4%*
VII. Financing Surplus/Gap (IV+V)	**-216**	**1,071**	**-143**	**0**	**0**	**0**	**0**
% of revenues	*-3.8%*	*16.0%*	*-2.3%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
VIII. Stock of Arrears	**1,284**	**0**	**0**	**0**	**0**	**0**	**0**
% of revenues	*22.7%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
VII. Stock of Debt	**4,341**	**4,021**	**3,845**	**3,723**	**3,461**	**3,146**	**2,850**
% of revenues	*76.8%*	*59.9%*	*61.3%*	*60.0%*	*54.3%*	*49.6%*	*44.9%*

Source: Municipal Secretary of Finance (SMF). World Bank calculations and projections.
Note: Primary deficit and overall deficit in 2020 without the federal fiscal support to combat the COVID-19 pandemic would be US$ 720 and US$ 764 million, respectively.

2.4. IMF RELATIONS

25. **Federal authorities maintain an ongoing dialogue with the International Monetary Fund (IMF) on Brazil's macroeconomic policy**. On July 31, 2023, the Executive Board of the IMF concluded the Article IV consultation with Brazil. The Bank and the IMF has been closely collaborating with the federal government in the last years, including on public financial management, public investment management, and a Financial Sector Assessment Program. The IMF has also provided technical assistance to Brazilian authorities in other areas, such as fiscal transparency and fiscal frameworks for subnational governments (see Annex 2 on IMF Relations); while the Bank prepared the Public Expenditure Review[22], the intergovernmental fiscal transfers

[22] World Bank (2017), A Fair Adjustment: Efficiency and Equity of Public Spending in Brazil, Report N. 121480, pp. 121–126. *https://documents.worldbank.org/en/publication/documents-reports/documentdetail/643471520429223428/volume-1-overview*

report[23], the Infrastructure report[24], the Poverty and Equity Assessment report[25], and the Amazon Economic Memorandum[26] in collaboration with the federal government.

3. GOVERNMENT PROGRAM

26. **In the Sustainable Development and Climate Action Plan, supported by the first operation of the DPL series, the MRJ reaffirms its commitment to the Sustainable Development Goals (SDGs)** and establishes the first cycle of targets based on GHG neutrality by 2050. In 2021, Rio became one of Brazil's first cities to have a Climate Action Plan, with goals and actions aligned with low-carbon development and aiming for emissions neutrality by 2050. This plan sets a target of reducing GHG emissions by 20 percent by 2024, along with other measures aimed at enhancing the city's capacity to adapt to the impacts of climate change. It has also established actions to address inequalities and prepare for pandemics in the context of the city's medium and long-term development.

27. **The municipality's 2021-2024 Government Strategic Plan (PE) and the 2022-2025 medium-term plan (PPA)[27] aim to improve quality of life, while promoting sustainable development and fiscal responsibility.** The government prepared the PPA with social participation from public authorities and civil society, based on the 2021-2024 Government Strategic Plan, to guide the municipality's actions under the same strategic areas. Initiatives and targets are divided into six cross-cutting themes: (i) longevity, well-being and connected territory; (ii) equality and equity; (iii) economic development, competitiveness, and innovation; (iv) climate change and resilience; (v) cooperation and peace; and (vi) governance. Central to the government's strategy, and in line with the long-term 2050 Sustainable Development and Climate Action Plan, is accelerating the city's transition to a low-carbon growth path. Both PE and PPA focus on topics such as decarbonizing the transport sector, nature-based solutions, accelerating the green energy transition, and positioning of Rio as a green economy hub. Rio de Janeiro's long-term goals and plans are aligned with global objectives of reducing emissions and climate agenda, as in Rio +30.[28]

4. PROPOSED OPERATION

4.1. LINK TO GOVERNMENT PROGRAM AND OPERATION DESCRIPTION

28. **The Development Objective of this DPL series is to support the MRJ in: (i) strengthening fiscal management to improve medium-term fiscal sustainability and (ii) accelerating the transition towards a low-carbon, resilient and inclusive urban development**. The pillars of the proposed programmatic DPL series

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[23] World Bank (2022a), Brazil - Diagnostic and Reform Options for the System of Intergovernmental Fiscal Transfers to Brazilian States. *https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099840012022217210/p17256005c59380580899d0adaa453775b3*

[24] World Bank (2022b), Brazil – Infrastructure Assessment: Synthesis Report. *https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099140006292213309/p1745440133da50c0a2630ad342de1ac83*

[25] World Bank (2022c), Brazil Poverty and Equity Assessment. *https://openknowledge.worldbank.org/server/api/core/bitstreams/19298bfa-067d-504c-8e34-00b20e3139d2/content*

[26] Forthcoming.

[27] The Strategic plan (PE) is a tool designed to guide the objectives, actions, and monitoring of public policies to be implemented during the four-year government term. It must be presented within the first hundred days of the elected government's tenure. On the other hand, the Multi-Year Plan (PPA) encompasses programs, actions, and investment goals of the government, which are in effect from the second year of the mandate until the end of the first year of the subsequent mandate.

[28] Rio+30 is an international conference that occurred in the second half of 2022 in MRJ to celebrate and reassure the commitments made by several countries during the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992.

are closely aligned with the guiding themes of the government's PE and PPA: improve the quality of life, while promoting sustainable development and fiscal responsibility. Pilar 1 is related to the PE and PPA area of Governance, as it supports the strategic initiatives to strengthen fiscal responsibility and increase the accountability and efficiency of public spending. In addition, Pilar 1 is also aligned to the areas of Economic Development, Competitiveness and Innovation, and Climate Change and Resilience, through the promotion of the carbon market in the city. Pillar 2 supports several initiatives across the six strategic areas under the PE and PPA, including: quality of the transport system and public space, safe traffic and transportation, women and gender equity, downtown revival ("Reviver Centro"), low emission district and climate management, and resilience and risk management. The DPL is also aligned with the 2050 Sustainable Development and Climate Action Plan.

29. **This operation is aligned with the goals of the Paris Agreement**. First, the DPL reform program is consistent with the country's climate commitments, including its Nationally Determined Contributions (NDC), Long Term Strategy (LTS), and National Adaptation Plan (NAP). An increased reliance on sustainable mobility modes is central to Rio being able to achieve its overall climate goals, thereby contributing to the fulfillment of Brazil's carbon emissions mitigations targets as outlined in its second Update on the First Submission of the NDC in 2020 under the United Nations Framework Convention on Climate Change (UNFCCC). Second, none of the prior actions included in the operation are likely to cause a significant increase in GHG emissions or persistent barriers to transition to low-GHG emissions. Similarly, on adaptation and resilience goals, risks from climate hazards are not likely to have significant adverse effects on any of the prior actions' contributions to the PDO although the implementation of measures under PA5 (improving public transport serving the *favelas*) and PA7 (Cycleway Plan) is exposed to some risk. Overall, adaptation risks are or have been reduced to low. All prior actions of the proposed DPL program are therefore aligned with the adaptation and resilience goals of the Paris Agreement. A detailed review is presented in Annex 5.

30. **The design of the second DPL in the series incorporates lessons learned from previous DPL subnational engagements in Brazil.** Over FY09-22, the Bank approved more than 27 subnational DPLs in Brazil. Lessons learned suggest that: (i) fiscal measures need to focus on key fiscal outcomes and be front-loaded to limit moral hazards; (ii) ownership and leadership at the highest levels of government are needed to successfully implement reforms, and the beginning of the political cycle is the most promising time for reforms; (iii) selectivity in the choice of sectors is key to keep the operation focused and deliver meaningful results; (iv) the Bank's role as a provider of expert technical knowledge as part of the policy analysis and dialogue underpinning the operation can support country policy makers effectively in policy development, design, and implementation; and (v) close collaboration with relevant federal agencies (particularly the National Treasury) strengthens the design of a fiscal program and the monitoring of subnational governments' fiscal status. These lessons are reflected in this DPL series.

31. **The project is compliant with the MFD approach due to activities under Prior Actions 2 and 4.** As detailed below, these PAs will enable private sector participation and investment through, respectively, incentives to support the carbon credits market and changes in the operating model of the BRT system.

4.2. PRIOR ACTIONS, RESULTS AND ANALYTICAL UNDERPINNINGS

Pillar I: Strengthening fiscal management to improve medium-term fiscal sustainability

32. **The fiscal reforms implemented in Rio de Janeiro in 2021 effectively improved the municipal's fiscal condition.** DPL1 of this series focused on a package of fiscal measures for fiscal consolidation[29]. Together

[29]The package included the reduction of tax exemptions, the approval of a pension reform to increase the pension contributions and set a complimentary fund and the adherence of the municipality to the federal fiscal equilibrium plan.

with other fiscal reforms implemented in 2021, it enabled the municipality to improve its fiscal condition, recovering its credit rating from CAPAG C[30] in 2020 to B in 2021 and complying with the targets of its fiscal equilibrium plan with the Federal Treasury.[31]

33. **The first pillar of DPL2 supports actions to secure the results of MRJ's fiscal consolidation through reforms in its public management systems while enabling the achievement of climate mitigation outcomes in Rio.** The quality of public accounting and accountability in the MRJ has been a subject of concern. The municipality has faced challenges in ensuring accurate and reliable financial reporting, which has implications for transparency, accountability, and fiscal sustainability. By reducing administrative costs and improving operational efficiency, fiscal consolidation can be achieved without compromising the quality of public services. In this sense, improving auditing procedures (PA1) is crucial to assure that financial resources are used efficiently and effectively. A municipal reform aiming to centralize the management of the public pension granting system into one single agency (PA3) will reduce fragmentation, waste, and inefficiency. In addition, the introduction of a tax incentive to firms that achieve climate mitigation outcomes will use fiscal space opened through the fiscal consolidation to introduce green fiscal policy measures (PA2), thus contributing to the city's green agenda.

34. Table 7 summarizes the proposed PAs for DPL2 as stated in DPL 1 and the proposed PAs as stated in this DPL2 in Pillar 1. An update on the implementation status of each PA is included.

Table 7: Changes in the Proposed PAs for DPL2 in Pillar 2

Proposed PAs for DPL2 as stated in DPL 1	Proposed PAs as stated in this DPL2	Status
Indicative Policy Trigger 1: The borrower has enacted a set of decrees and resolutions to improve accountability of the Government through: (i) the adoption of the international public sector accounting standards (IPSAS); and (ii) the strengthening of the internal audit capacities of the Municipal Comptroller General (CGM).	**Prior Action 1:** To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM.	**Part (i) dropped.** The MJR is addressing PA (i) through other means, by implementing the IPSAS progressively in its annual financial statements, according to the federal government schedule.
Indicative Policy Trigger 2: The borrower has enabled the development of a low-carbon sustainable economy by providing fiscal incentives for promoting investments in mitigation outcomes.	**Prior Action 2:** To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market.	**No changes**
Indicative Policy Trigger 3: The Borrower has enacted a set of decrees and issued regulations to improve unified pension record management and enable more efficient audits.	**Prior Action 3:** To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits.	**No changes**

[30] This is considered an SNG in fiscal distress.

[31] The Fiscal Equilibrium Plan (PEF) was established in 2021 to support the fiscal consolidation of states and municipalities (SNGs) which are in fiscal distress but that are not highly indebted. The plan offers borrowing federal guarantees for SNGs that are not creditworthy (those with CAPAG C or D) in exchange for the ex-ante implementation of fiscal adjustment measures prior to joining the plan, and compliance with a set of fiscal targets while the plan is in place. The PEF is designed to be aligned to the political cycle. Thus, it can last up to four years. Ideally, an elected governor or mayor can promote a fiscal adjustment at the beginning of their mandate, receive federal guarantees to take credit operations during their mandate, and recover a CAPAG A or B rating by the end of the four-year cycle. Note that the SNG could join the PEF at any moment during the time in office of a governor/mayor, but the program will end at the end of the mandate.

Prior Action 1: *To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM.*

35. **Rationale:** The role of the internal government audit for the accountability of public spending and prevention of corruption was established in the Brazilian Federal Constitution of 1988. However, Brazil has shown a lower level of compliance on internal controls, even when compared to lower-middle-income economies. According to the National Internal Control Assessment based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and to the Internal Audit-Capability Model (IA-CM) report[32], in 2020, 88 percent of Brazilian institutions were classified as IA-CM Level 1 (the lowest of 5 levels), with the remaining 12 percent falling under Level 2, suggesting that they have no sustainable, repeatable audit capabilities. Based on the IA-CM Diagnosis, the internal audit activity in Rio is solely carried out by CGM, without the involvement of line secretariats. As a result, Rio has not achieved maturity level 2 of the IA-CM.

36. **Substance of Prior Action 1**: To enhance fiscal accountability and transparency the MRJ has strengthened its internal audit capacities, by applying the Internal Audit Capability Model (IA-CM). The new CGM's general internal audit statute issued on July 6, 2023 formally adopts the IA-CM, an internal audit 3-Lines of Defense Model developed by the Global Institute of Internal Auditors (IIA). CGM shall provide independent and objective assessment and advice on the adequacy and effectiveness of governance and risk management for the first two lines of defense. This model establishes a disciplined and systematic approach to evaluating and improving the effectiveness of risk management, control, and governance processes. For early implementation of the IA-CM, CGM has established an Internal Audit unit.

37. **Expected results**: The MRJ is expected to achieve an IA-CM level 2 Key Performance Areas (KPA) by December 2025. The achievement of level 2 requires the full implementation of 66 essential activities of the IA-CM methodology until 2025. It is expected that 80 percent (53 activities) are completed by December 2024, compared to 38 percent (25 activities) in 2022. The strengthening of the internal audit capacities of the Municipal Comptroller General is essential to properly account, report and monitor the execution of public expenditures, increase transparency, and generate consolidated financial statements. Ultimately, enhanced accounting standards and internal auditing are expected to increase the municipality's effectiveness and efficiency of its policies and programs.

Prior Action 2: *To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market.*

38. **Rationale:** Rio de Janeiro has significant potential for developing a voluntary carbon market, and projections indicate that this market could reach US$50 billion globally by 2030. As part of the *Bolsa Verde Rio* (Rio Green Stock Exchange) working group, and with the support of AirCarbon Exchange[33], the world's largest platform of carbon credit transaction volume, the world's first micro-mobility carbon credits auction took place in May 2022[34]. This was also the first action under the methodology for calculating mobility carbon credits stipulated by the UNFCCC and registered by Verra, the international development and program management body for combating climate emergency. Carbon credit markets can play a crucial role in supporting Rio de Janeiro's green agenda by providing fiscal/financial incentives for reducing GHG emissions

[32] https://documentsinternal.worldbank.org/search/33253600
[33] AirCarbon Exchange, the company that accounts for approximately 10 percent of the global voluntary market, has installed a headquarters in Rio.
[34] The auction offered credits generated from Rio's shared bike scheme run by Tembici.

and promoting sustainable development. Carbon credit markets can be regulated or voluntary. When carbon markets are established through voluntary means, spontaneous commitments are made publicly to reduce emissions, subsequently constituting the incentive for trading.[35]Well-designed fiscal and financial incentives for credit carbon markets can attract investment, help the Municipality reach its emissions reduction targets, and ultimately foster Rio's transition towards a low-carbon economy.

39. **Substance of Prior Action 2:** To support the carbon credit market, the MRJ approved Law No. 7,907, dated June 12, 2023. This law includes in Article 33 of Law 691 of 1984 a provision that states that the rate of the Tax on Services of Any Nature (ISS) that affects the activities of development and auditing of carbon credit projects, registration, and certification of such credits, the availability of carbon credit transaction platforms, as well as greenhouse gas emission inventory and greenhouse gas inventory audit services, is reduced from 5 percent to 2.6 percent. In addition, the law creates the Neutral ISS Program, which will allow buyers of carbon credits to receive amortization credits for the Tax on Services of Any Nature payable to the Municipality of Rio. The total amount of this amortization is limited to BRL60 million per year for all beneficiaries. This measure will be of a temporary nature, to last until December 31, 2030, and include annual evaluations regarding efficiency and effectiveness. The supported measures will benefit the entire carbon credit production chain, including marketplaces, certifiers, audits, and related service providers, as well as companies that finance public and private initiatives that reduce carbon intensity within the city of Rio.

40. **Expected Results:** The proposed action, as part of the broader green agenda of the MRJ , will offer a clear incentive for the adoption of climate-smart investments, foster carbon credit markets, and result in a reduction of carbon footprints. The climate-smart investments are expected to be made by the private sector by the nature of it being a carbon market mechanism. This is expected to be achieved through the creation of 600,000 carbon credits (tons) by 2024. The incentive is also expected to improve the business environment as it will (i) allow companies located in the city of Rio de Janeiro to be "Environmental, Social and Governance (ESG) friend" at zero cost, (ii) reduce the complexity of the entire carbon credit production chain, and (iii) facilitate the entry of new actors in a market with significant potential.

Prior Action 3: *To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits.*

41. **Rationale:** Rio de Janeiro operates a pay-as-you-go pension system, financed through civil servant and employer contributions. As the number of retired civil servants with beneficial pre-2003 pension rights grew, the deficit of the unsustainable pension scheme also grew, putting an additional burden on the government's accounts. The financial deficit in the MRJ civil service pension system (for the executive and legislative branches of government) reached BRL1.02 billion in 2021, or 20 percent of the municipality's current revenues. A further challenge persists in pension scheme management. The line secretariats' human resources units manage the granting process of pensions to their employees, whereas the legislative branch has strong autonomy, often refraining from sharing pension granting information with the executive branch. This situation undermines the integrated granting management of the pension system, impedes audits, and complicates forecasts of future pension expenditures. These challenges made pension reform a priority for the municipality in pursuit of a more sustainable fiscal outlook. A first set of reforms to improve the sustainability of the pension scheme was supported under DPL1, but further reforms are needed to enable an integrated management of the pension granting process.

[35] Field, Barry C.; Fields, Martha K. Field (2014). "Introdução à Economia do Meio Ambiente". Porto Alegre: AMGH/McGraw-Hill Education

42. **Substance of Prior Action 3:** Decree No. 51,107 establishes the Municipal Pension System of the MRJ, which will enable for a gradual unification of the record management, processing, granting, and revision of pension benefits within the municipal scope, thus enabling a more efficient auditing of the public pension system in the municipality across the legislative and the executive branches of government. In addition, PREVI-RIO issued a set of ordinances to enhance control and auditing of records focusing on the verification of pension benefits records in relation to the census of inactive employees. Ordinance No. 1,045 regulates the Decree 51,107, including the delegation of the above functions to the Pension and Assistance Directorate of PREVI-RIO, the definition of requirements and procedures for voluntary, compulsory, and disability retirement, and determines that the Secretariat of Finance and Planning and the General Controller's Office would be the first entities to join the unified system. Ordinance No. 1,051 changes the procedure to certify the contribution time for retirement purposes and mandates the issue of a certificate by each agency/entity, while Ordinance No. 1,053 introduces the implementation of the census of inactive employees in a digital format. The centralization of the public pension granting system in RMJ aims to streamline operations to ensure better and more efficient coordination in the retirement concessions and pensions benefits payments with a single agency overseeing the retirement procedures. Moreover, a unified system brings clearer lines of responsibility and improved transparency in the concession of pension benefits, reducing risk of mismanagement or frauds.

43. **Expected Results:** Overall, this measure will improve the fairness and transparency of the pension granting scheme by eliminating disparities across branches and secretariats, allow for auditing and prevention of fraud with standardized procedures. The consolidation of pension granting records and administration is being implemented in phases. The MRJ expects to have all pension granting unified in four years. This measure, when fully implemented, will enable a centralized unit to grant pension and survivor benefits, management of pension funds, and issuance of pension rules and procedures standardized for all branches of government. It is a fundamental step towards a more ambitious integration of human resources and pension scheme management functions, which would allow (i) human resource policy decisions to be informed by pension cost implications in the short, medium, and long term; and (ii) more precise pension liability monitoring by early forecasting of new retiree inflows and their expected benefits. It will also allow for unified administration and management of pension benefits. Recent experiences from other subnational governments in Brazil suggest that pension record audit was greatly simplified by record system unification and improved IT solutions and could yield savings of 10 to 20 percent of pension expenditures.

Pillar II: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development

Since the approval of the first DPL, the MRJ has maintained momentum on policy reforms, incentives, and investments to promote inclusive and sustainable urban mobility. The improvements to the public bus transport system in the MRJ have been addressed through bold actions since early 2021 to attract users back to a revitalized low-carbon transport mode. The municipality has started to implement a new fare collection and digital ticketing system, resulted from an innovative regulation supported by the first DPL. This was accompanied by measures to establish a farebox revenue mechanism along with a subsidy scheme linked to prepare for a performance-based formula for remunerating bus operators. These actions enabled the MRJ to effectively manage the system's revenues and costs and improve the quality of service for users and have set the foundation for a second layer of measures. The active mobility agenda has gained momentum after the expansion of the cycling network and initiatives to improve the walking and cycling conditions in the surroundings of schools.

44. **This second pillar of DPL2 will help the MRJ to shift to a low-carbon, safe, and inclusive urban mobility system and put in place institutional arrangements for multi-sectoral low-carbon development in central Rio**. It will support the MRJ in improving public and non-motorized transport and enhancing the integration of low-emission transport modes to avoid the migration of riders to internal combustion cars and motorcycles. Reforms will also strengthen the Municipality's cross-sectoral strategy to reduce GHG emissions and foster mitigation of climate change. The package of reforms includes measures to improve the operational efficiency of the BRT system (PA4), actions that improve public transport services most used by low-income populations and the overall integration of the city's public transport system (PA5), measures to facilitate the access by female survivors of domestic violence to referral services via free public transport (PA6), measures to promote low-carbon non-motorized transport through regulations that expand the cycling network and improve safety for all road users (PA7), and actions that establish a governance and monitoring and evaluation framework to promote low-carbon and climate-resilient mobility, energy, and waste management in a Low Emission District (PA8).

45. Table 8 summarizes the proposed PAs for DPL2 as stated in DPL 1 and the proposed PAs as stated in this DPL2 in Pillar 2. An update on the implementation status of each Prior Action is included.

Table 8: Changes in the Proposed PAs for DPL2 in Pillar 2

Proposed PAs for DPL2 as stated in DPL 1	Proposed PAs as stated in this DPL2	Status
Indicative Policy Trigger 4: The Borrower has enacted a legal framework to foster a more competitive and low-carbon bus sector market by separating bus operation from fleet provision in the BRT system.	**Prior Action 4:** To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model.	**No changes**
	Prior Action 5: To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration.	**New Prior Action.** This strengthens recuperation and modernization of MRJ's public transport, by promoting increased access to the most vulnerable population.
	Prior Action 6: To enable female survivors of domestic violence to access the referral services of the *Rede Especializada para Combate à Violência Doméstica contra Mulheres* (Specialized Network for Combating Violence Against Women in the Municipality), the Borrower has strengthened the "Cartão Move Mulher" (Move Women Card) program.	**New Prior Action.** This strengthens the MRJ's commitment to combat gender-based violence through a transport allowance that removes the accessibility barrier.
Indicative Policy Trigger 5: The Borrower has enacted a legal framework to expand low-carbon mobility and connect low-income areas, by adopting the Municipal Cycleway Plan, with a framework to expand and consolidate a comprehensive cycling network.	**Prior Action 7:** To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability framework to expand and consolidate its implementation, and (ii) established the Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety.	**Prior Action Strengthened**. The Prior Action now includes policy measures to increase road safety for all road users and to improve cycling conditions.
Indicative Policy Trigger 6: The Borrower has enacted a regulation to	**Prior Action 8:** To further strengthen the green transformation of the Low Emission District, the Borrower has	**No changes**

strengthen the green transformation of the Low Emission District, by establishing a governance structure and a M&E methodology of local GHG emissions.	established a governance structure across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and reduction of vehicle emissions, and a M&E system of GHG emissions.	
Indicative Policy Trigger 7: The Borrower has passed regulations to decrease GHG emissions and energy use by: (i) establishing instruments to accelerate fleet electrification and (ii) introducing mechanisms to green the Government's energy consumption.		**Prior Action Dropped**. The MJR is addressing this through other means, by seeking renewable energy supplies and initiating a shift to e-vehicles

Prior Action 4: *To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model.*

46. **Rationale:** The transport sector, driven by road transport,[36] is the MRJ's single largest GHG emitter, with a worrying trend towards a shift to private motorized mobility. Over 2015-20, the city saw an increase of 11 percent in the car fleet and of 30 percent in the motorized two-wheeler fleet.[37] A key barrier to reversing this trend is the declining quality of the city's public transport system. Since 2014, Rio's BRT system has struggled to retain passengers, consequently failing to earn sufficient tariff revenues to cover capital and operating costs[38]. Another challenge to decarbonizing the sector is that, while electric buses offer much lower operating costs, most operators (who are private sector and must finance operations out of user fees, without a government subsidy) do not have access to credit to cover the higher upfront capital costs; thus, the current operational model delays the deployment of greener public transport. This approach has proved to be unsustainable and disadvantaged the poor, as it encouraged operators to prioritize the most profitable routes, neglecting the needs of the most vulnerable populations. Cities at the forefront of urban mobility have been successfully testing different operational models that unbundle bus operation services from fare collection and fleet provision to leverage the specialization of each agent.[39] In addition, some are compensating operators for services rendered through subsidies that supplement passenger fares. Rio has already taken a first step by bringing the control of the fare collection and ticketing system to the Municipality.[40] To allow further changes in the operational model, in 2022 the MRJ terminated the contracts of current concessions on contractual noncompliance grounds and put the system under the temporary responsibility of the municipal company Mobi-Rio, until new concessionaires take over the operation of buses. Follow-up regulations were needed to materialize the change in the operational model.[41]

47. **Substance of Prior Action 4:** To continue the transformation of the BRT system's operational model and, thus, enhance its efficiency and opportunities for decarbonization, the Borrower has adopted measures that separate bus operation from fleet provision and provide a performance-based remuneration model. The

[36] 64.5 percent of the transport sector, a 1.7 percentage point increase from 2017.
[37] Ministério da Infraestrutura, Secretaria Nacional de Trânsito (SENATRAN), Registro Nacional de Veículos Automotores (RENAVAM). https://www.gov.br/infraestrutura/pt-br/assuntos/transito/conteudo-denatran/estatisticas-frota-de-veiculos-denatran
[38] Between 2015 and 2019, the bus rapid transit (BRT) system experienced a 32-percent reduction in demand, with a further drop of 49 percent in 2020 because of COVID-19 isolation measures. After the end of those measures, ridership partially rebounded to 85 percent of pre-pandemic levels.
[39] This model has been successfully implemented in Bogota, Santiago, London, and Singapore.
[40] The new Digital Ticketing system, resulting from legislation supported under DPL1, was awarded to a third-party company and is expected to start operating in July 2023.
[41] C40 is supporting the municipality in modelling to include e-buses in the bus system.

publication of Decree No. 116 on March 30, 2023, created a special bidding commission to coordinate the bidding process for the concession of public transport services in the BRT system, including maintenance, operation, and management of the fleet, garages, terminals, and stations assigned by the granting authority. This was followed by the launching of the bidding process for the BRT system operation in March 2023 (Notice of Bidding SMTR No. 01/2023).[42] The MJR will provide the new operators with the entire bus fleet[43] and five public garages. The concessionaires will be responsible for operating the services and will be paid for kilometers traveled and for managing terminals and stations, instead of the payment system based only on the number of passengers transported. A new mechanism will be adopted for monitoring performance indicators, described in items 17 and 18 of the respective Bidding Terms (*Edital de Licitação*)[44], including fleet maintenance and punctuality, to ensure the quality of the service and, thus, attract more passengers to the system. The Municipality will continue to be responsible for planning the services and for managing and monitoring the operation, using automated systems and GPS data.[45] The performance-based contracts will have a duration of ten years and will have the possibility to be renewed.

48. **Expected Results:** By adopting these reforms, Rio expects to improve the efficiency of the BRT system, attract more users to public transport, and eventually advance the electrification of the fleet.

Prior Action 5: *To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration.*

Implementation of the measures will contribute to the modernization and greening of the city's transport system, by improving the frequency and reliability of bus services, improving overall operational efficiency, and leading to an increase in BRT ridership of about 33 percent, from 60.4 million passengers in 2021 to 80 million in 2024.[46] Increased BRT ridership would imply less reliance on higher carbon-intensity private motorized vehicles. The introduction of the model of separating fleet provision from operation will also allow the eventual introduction of e-buses in the fleet. Combined with the measures aimed at modernizing the ticketing system supported by DPL1, these policies are also expected to enhance the quality of the demand data available to the operator to allow for more optimal decision-making regarding route rationalization and other operational decisions, with potentially significant downstream impacts on the overall vehicle-kilometers traveled and carbon emissions.

49. **Rationale:** The tariff policy of Rio de Janeiro's public transport system is inefficient, resulting in longer trips and multiple fare payments for users during a single journey. Despite the municipality's recent efforts to address this issue[47], including a new digital fare collection and ticketing system supported under DPL1, a lack of cohesive fare integration continues to hinder the efficiency of Rio's transportation network. There is

[42] To participate in the bidding process, companies and consortia must meet the technical and economic-financial qualification criteria, and the same bidder can participate in one, two, or all, of the lots. The winner of Lot 1 will operate the Transcarioca corridor and Lot Zero of Transoeste (a stretch between the Jardim Oceânico and Alvorada terminals). Lot 2 refers to the Transbrasil and Transolímpica corridors. The operator of Lot 3 will be responsible for Transoeste (stretch between Santa Cruz and the Alvorada terminal; and Cesário de Melo). The forecast is that the new concessionaires will start operating Lot 1 and Lot 2 this year, and Lot 3 in the first half of 2024.
[43] The municipality has already bid and purchased most of the required articulated and padron buses for the operation.
[44] The Bidding Terms must be read together with the Notice of Bidding.
[45] *https://prefeitura.rio/noticias/prefeitura-do-rio-lanca-edital-de-licitacao-para-concessao-da-operacao-do-brt/*
[46] Excluding the Transbrasil line, to be inaugurated in December 2023.
[47] Through the implementation of an electronic ticketing system in 2004 and the introduction of municipal and intermunicipal cards, such as RIOCARD, Bilhete Único Carioca (BUC), and Bilhete Único Intermunicipal (BU) by the State Government.

no integrated fare that allows for cost reduction when using more than two systems,[48] such as BRTs, Light Rail Transit (LRT), and municipal buses. Furthermore, there is no single fare for all combinations of transportation modes. This situation primarily impacts the population earning up to one (1) minimum wage, who typically reside in peripheral areas and allocate more than one-third of their income towards public transportation.[49] This inequality is also evident in informal settlements (*favelas*), which are home to approximately 1.4 million residents in Rio, accounting for 22 percent of the city's population.[50] These connectivity barriers restrict people's mobility and access to economic and social opportunities.[51] Inadequate access to quality public transport services has led many residents of informal settlements to choose internal combustion moto-taxis and private motorcycles, which emit as much as five times more CO_2 per passenger-kilometer traveled than buses[52] and also incur additional costs, as they are not integrated into the formal public transport system. This trend can result in higher GHG emissions, pollution, and accidents.

50. **Substance of Prior Action 5:** To enhance the public transport system's modal integration and, thus, user experience and reduce mobility related emissions, the Borrower has published Decree No. 52,134 and Decree No. 52,237 to ensure the integration of the Public Bus Passenger Service - SPPO and the BRT System with the Light Rail Vehicle, through the Digital Ticketing System and the Municipal Single Ticket (*Bilhete Único Municipal*). The Decrees have expanded the integration of public transport services in Rio, first, by allowing up to two transfers between various modes of transportation and the BRT system with just one fare. In addition, the ticket remains valid for up to three hours from the first transfer (increasing from two and a half hours), providing passengers with extended flexibility. Complementing this measure, Decree No. 52,095 regulates a modernized disciplinary code for the *Cabritinhos* complementary transportation service serving the city's *favelas*: the updated code aims to improve the mobility and accessibility of transport services to 56 informal settlements in hard-to-reach locations. To ensure the affordability of the service and encourage ridership, the fare price is required not to exceed that of the conventional buses.[53] As per the Decree, the ticketing system's validators are expected to be implemented in the *Cabritinhos* and facilitate intermodal integration by (i) expanding digital payments; and (ii) allowing the municipality to implement a data-based tariff policy integration that would eventually include all municipal transport modes. The Decree also requires vehicles to have GPS systems installed, which increases SMTR's monitoring and control capabilities. The measure establishes clearer and fairer rules and penalties for operators for potential infractions, subject to the specific context of the *favelas.* Finally, the Decree stipulates that operators must undergo training to ensure a safe and high-quality service.

51. **Expected Results:** By regulating informal transport services and by enhancing modal and tariff integration, the supported measures are expected to increase accessibility to public transport to the most vulnerable and contribute to lower-carbon mobility patterns, preventing a shift to private motorized modes. Successful examples of similar reforms can be found in São Paulo[54] and Belo Horizonte.[55] The increase in ridership is expected to compensate the loss in revenue per passenger, hence potentially improving the system's financial sustainability. The expected integration of tariffs in Rio's public transportation system will

[48] The current fare integration allows for two connections (bus+bus or bus+BRT or bus+LRT).
[49] In contrast, individuals who use only two buses per day and live in more central areas spend just 5 percent of their monthly income on transportation costs. Source: Map of Inequality in Rio de Janeiro, 2020. Accessible at: https://casafluminense.org.br/mapa-da-desigualdade.
[50] Based on the 2010 IBGE Census. For comparison, the city of São Paulo has 11 percent of its population living in subnormal clusters.
[51] The mobility index for the population earning up to 2 minimum wages in the municipality is 1.8 trips per day, while the city's average is 2.1 trips per day. Rio de Janeiro Mobility Plan Diagnosis, 2015.
Accessible at: https://www.rio.rj.gov.br/documents/5450795/7289444/IX+.+Resumo+do+Diagn percentC3%B3stico.pdf
[52] Relative Emissions of Urban Transport Pollutants. IPEA. Accessible at:
https://portalantigo.ipea.gov.br/agencia/images/stories/PDFs/boletim_regional/111125_boletimregional5_cap13.pdf
[53] At the time of appraisal at BRL 4.30.
[54] https://www5.usp.br/noticias/sociedade/estudo-da-fflch-analisa-politicas-publicas-de-transporte-em-sao-paulo/
[55] Impact of Tariff Policy on the Collective Public Transportation Systems of RMBH (Metropolitan Region of Belo Horizonte) Study. World Bank, 2022.

optimize the network by facilitating trunk-feed connectivity between mass transportation (BRT and LRT) and the municipal buses and *Cabritinhos*, particularly favoring low-income residents in informal settlements and in the outskirts who frequently transfer between services.[56] Fare integration is also an effective gender equity policy, disproportionately benefiting women who tend to have more complex trip patterns than men (chained trips).[57] A higher level of physical and tariff integration has the potential to attract more users, as shown in several studies.[58] [59]

Prior Action 6: *To enable female survivors of domestic violence to access the referral services of the Rede Especializada para Combate à Violência Doméstica contra Mulheres (Specialized Network for Combating Violence Against Women in the Municipality), the Borrower has strengthened the "Cartão Move Mulher" (Move Women Card) program.*

52. **Rationale:** Data from the National Council of Justice show that over 2016-21 there was an increase of 45 percent in the number of new reported cases of domestic violence,[60] while the number of Urgent Protective Measures (MPUs) awarded by the judicial system grew by 14.4 percent in 2020-21.[61] Between 2016 and 2021, the number of feminicides grew by 44.3 percent,[62] and the simultaneous growth of MPUs and feminicides indicates a possible failure of Brazil in terms of guaranteeing the effectiveness of MPUs and the fundamental rights of the survivors.[63] The available data also shows that, in 2020-21, there was a drop in lethal crimes against women but also a significant increase in reports of intentional bodily harm and emergency calls to 190, both in the context of domestic violence and an increase in femicides.[64] In Rio, the reported cases of threat to women increased by 13.2 percent, compared to 3.3 percent in the country overall. The rape rate in which the victims are women grew by 3.7 percent in Brazil and 7.9 percent in Rio. The MRJ has since 2021 designed a program to prevent and combat gender-based violence, starting with the re-establishment of the Special Secretariat for Women's Promotion Policies (SPM) and the signing of the Pact of Cooperation to Combat Violence against Women with 13 municipal, state, and federal institutions. In 2022, the MRJ created the Municipal Program for Combating Feminicide (Law 7,291/2022), aiming to expand the referral service network for women in situations of violence. The Specialized Network for Combating Violence Against Women is currently composed of eight service facilities, including the Specialized Center to Assist Carioca Women (CEAM).[65] CEAM provides some 250 appointments to women in situations of violence per month and continuously monitors around 130 women. Many of the women who receive assistance from

[56] "Incidencia distributiva de la integracion tarifaria en el sistema de transporte del Area Metropolitana de Buenos Aires", Vezza, E. and Puig, J., Mimeo.
[57] World Bank. (2020). Why Does She Move (pp 59-60).
[58] The impact of Integrated Tariff Systems on public transport demand: Evidence from Italy. Regional Science and Urban Economics. Accessible in: https://www.sciencedirect.com/science/article/pii/S0166046208000689
[59] A review of public transport economics. Accessible at https://www.sciencedirect.com/science/article/pii/S2212012221000010
[60] The rate jumped from 404/100,000 women to 587/100,000 women.
[61] The primary purpose of MPUs is to prevent the escalation and progression of acts of violence against women. In 2020, 323,570 MPUs were awarded, either fully or partially; in 2021, that number jumped to 370,209.
[62] Brazilian Forum of Public Security (FBSP), *Anuário Brasileiro de Segurança Pública 2022*, available at *https://forumseguranca.org.br/anuario-brasileiro-seguranca-publica/*
[63] Indeed, in 2021, the National Human Rights Ombudsman (ONDH) registered 67,779 complaints of domestic violence against women, of which 12% (8,033) related to violence perpetrated in breach of MPUs.
[64] Homicides of women dropped by 3.8 percent in Brazil and 19.9 percent in Rio (reaching a ratio of 3.6/100,000 women in the country and 1.8/100,000 women in Rio); however, while the femicide rate in the country fell by 1.7 percent (reaching a ratio of 1.2/100,000 women), Rio watched an increase of 8.4 percent (reaching a ratio of 0.9/100,000 women. Source: Fórum Brasileiro de Segurança Pública: 2022. Anuário Brasileiro de Segurança Pública 2022. – available at https://forumseguranca.org.br/wp-content/uploads/2022/06/anuario-2022.pdf?v=15.
[65] The Specialized Network also includes three Houses of the Carioca Woman (*Casa da Mulher Carioca*), three specialized service centers (*Núcleos de Atendimento Especializado),* one specialized center for psychotherapeutic assistance, and one confidential shelter designed for women at imminent risk of death.

CEAM reside in remote locations, far from the center. A significant number face social and economic vulnerability, often experiencing un- or underemployment and earning less than the minimum wage.

53. **Substance of Prior Action 6:** The law supported under this Prior Action reflects Rio's strong and continued commitment to improving safety for low-income women and girls and reducing the escalation of domestic violence against them. The *Cartão Move Mulher* (Move Women Card) program was initially created by an executive decree[66] in 2021 and strengthened by Law No. 7,430 in 2022. The *Cartão Move Mulher* program is a transport allowance[67] that aims to help women in situation of social and/or economic vulnerability to break out of the cycle of domestic violence by enabling them to access the referral services of the MRJ's Specialized Network. The law expands the scope of the decree by including all facilities that make up the Network, by allowing the municipal government to enter partnerships with other governments, civil society and private companies, also expanding the potential sources of funding, and by not limiting the role of implementation and coordination of the program to a specific Secretariat, thus making the continuity of the Program independent of the existence of a Women's Secretariat. The program under implementation provides transport allowance to women who, cumulatively (i) are assisted by the survivor-centered services and who need continuous monitoring; (ii) who are 18 and over or are teenage mothers; and (iii) have monthly per capita family income of up to half the minimum wage. Each woman will receive a card[68] charged for up to six bus tickets per month with the possibility of adding another card within a month in case of need.

54. **Expected Results:** The measure is expected to help reduce the escalation of domestic and family violence against women as well as to enhance the efficiency of the protective measures awarded by the State. The transport allowance aims to keep supporting at least 2,000 women annually by 2024, reducing the geographical barriers that separate their homes from the referral services and promoting a greater sense of gender inclusivity within urban spaces. The MRJ's Specialized Network expects to increase by 350 percent the number of services provided from 2021 to 2024.

Prior Action 7: *To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability framework to expand and consolidate its implementation, and (ii) established the Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety.*

55. **Rationale:** Since 2020, Rio's cycleway network expanded from 450 to 480 kilometers, connecting 55 medium and high-capacity public transport stations. However, although Rio has one of the most extensive cycleway networks in Latin America, it is primarily concentrated in wealthier neighborhoods in the South and Central regions of the city. Cycling represents only 1 percent of the total trips in Rio, a significantly lower proportion than in cities like Bogota (6.6 percent). The 2018 National Survey on the Profile of the Brazilian Cyclist found that inadequate infrastructure (50.4 percent) and road safety (29.9 percent) deter *Cariocas* from cycling. Women pay more attention to risk than men when making a choice among transport modes, and the lack of proper infrastructure and safety conditions heavily influence women's decision to cycle, contributing to gender inequity. Exacerbating the situation, the city has been grappling with road safety issues for many years. Over the past decade, the city experienced over 6,000 traffic fatalities, with 585 deaths in 2021, resulting in a mortality rate of 9 deaths per 100,000 inhabitants. Pedestrians and cyclists are particularly vulnerable, accounting for 48 percent of all recorded accidents over 2018-21. The road safety

[66] Decree Rio No. 49,363 dated August 30, 2021.
[67] Currently this allowance corresponds to 6 bus fares per month.
[68] A common card without any characterization linking her to the program.

issue is also a matter of equity, as people with lower incomes are more likely to travel on foot. Women are also disproportionately affected, as they prioritize safety over affordability and speed when choosing transport.

56. **Substance of Prior Action 7:** The Borrower has shown continued commitment to improving road safety and cycling conditions to promote zero-emissions transport modes. Decree No. 52,132 regulates the Cycleway Network and enacts the Cycleway Expansion Plan-*Ciclo.Rio,* fulfilling the requirements expressed in the 2019 municipal law that establishes the Municipal Cycling Plan[69]. It expands the scope of the regulation supported under DPL1[70] and earmarks 602km of roadways for the structural network of cycleways and 491 km for the complementary network. Urban intervention projects that involve those roads must consider the implementation of cycling infrastructure. These will connect the existing cycling network to mass transit stations and many traffic generator nodes, prioritizing areas that are lower-income and less served by public transport. The Cycleway Expansion Plan establishes the technical criteria, data management systems, and governance framework required for implementing the Cycleway Network. Complementing this measure, Decree No. 52,554 establishes the Road Safety Plan to enhance safety conditions in traffic, particularly for non-motorized transport modes. The Plan establishes progressive targets to reduce traffic fatalities and outlines all key actions until 2024 to implement a Safe System approach to road safety management.[71] These include measures to enhance safety, comfort, and accessibility for the users of non-motorized transport modes, such as: reduction of motorized vehicle speeds, monitoring accessibility and safety conditions of sidewalks, studies of critical points for cyclist safety, traffic calming projects, and implementation of pedestrian-only zones. The decree creates the Permanent Committee on Road Safety with responsibilities and periodical obligations to monitor and report the implementation and budget of the plan.[72]

57. **Expected Results.** By implementing the Cycleway Expansion Plan-*Ciclo.Rio* and expanding the Cycling Network, the Borrower aims to achieve at least 40 percent of medium- and high-capacity transport stations featuring cycling connections. By 2030, investment in cycling infrastructure expansion and multi-modal integration is expected to result in a four-fold increase in the number of bicycle trips and an increase in mass transit ridership, and a subsequent reduction in GHG emissions and pollutants.[73] The Borrower expects that the Road Safety Plan will contribute to a 12.5 percent reduction in the rate of traffic deaths by the end of 2024, compared to 2019.[74]

Prior Action 8: *To further strengthen the green transformation of the Low Emission District, the Borrower has established a governance structure across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and reduction of vehicle emissions, and a M&E system of GHG emissions.*

[69] Complementary Law 199 dated January 17, 2019.

[70] While the decree does revoke Rio Decree No. 49.461, dated September 21, 2021, supported under DPL 1, it does so only to evolve and expand the network even further to low-income areas.

[71] International Transport Forum. (2008), Towards Zero: Ambitious Road Safety Targets and the Safe System Approach, OECD Publishing, Paris; Global Road Safety Facility. (2023). Speed Management Hub - Frequently Asked Questions, Note 8.2.

[72] These measures are aligned with international best practices and evidence-based research. Turner, B., Job, S., & Mitra, S. (2021). Guide for Road Safety Interventions: Evidence of What Works and What Does Not Work. World Bank, Washington, DC., USA; and International Transport Forum. (2008), Towards Zero: Ambitious Road Safety Targets and the Safe System Approach, OECD Publishing, Paris.

[73] Sarriera J. and Jakovcevic A. (2022). Identifying and Quantifying the Economic Benefits of Bicycle Lanes, World Bank. *https://www.linux.ime.usp.br/~pedrogigeck/mac0499/monografia.pdf*; Morales *https://thedocs.worldbank.org/en/doc/10f732bd97e07697ae4ff58355dad91a-0190022022/original/Mobility-and-Development-Spring-2022.pdf*

[74] With a target of reaching a 50 percent reduction by 2030, in line with the National Plan for Reduction of Traffic Deaths and Injuries (PNATRANS).

58. **Rationale:** In alignment with Brazil's NDCs,[75] through Complementary Law No. 229, the MRJ established a Low Emission District (DBE) in central Rio, a delimited area of 2.3 square kilometers aimed at implementing actions to reduce emissions of greenhouse gases (GHG).[76] The District, to be implemented in phases by 2030, has strategic national importance by showcasing how policies can be defined and implemented at the city level to help achieve the country's overall NDCs, with a focus on the highest-emission sectors, transport and energy. Along with the other 34 signatory cities of the *C40 Green and Healthy Streets Declaration*,[77] Rio became the first city in Brazil that has pledged to ensure that a major area of the city is zero emission by 2030. The effective operationalization and successive implementation of the district requires the establishment of a clear governance structure across Secretaries and a monitoring and evaluation system for tracking the impacts on GHG emissions.

59. **Substance of Prior Action 8:** The Borrower has shown strong commitment to advancing the green transformation of the city center and has published a legal framework that establishes the district's governance structure and details the implementation process. Decree No. 51,047, dated June 28, 2022, envisions that actions will be integrated and technically coordinated by the Planning Office of the Undersecretary of Planning and Monitoring Results of the Municipal Secretary of Finance and Planning, with the Municipal Secretary of Urban Planning, the Municipal Secretary of Transport, the Municipal Secretary of Environment, and the *Pereira Passos Institute* (IPP) as central entities for project implementation.[78] The implementation of the DBE will take place in phases until 2030. In the first phase (until 2024), the DBE will undergo an urban redevelopment of 35,000 m^2 of public space, with a focus on active and e-mobility, low-carbon, and climate-resilient infrastructure, urban afforestation, and policies that reduce vehicle emissions, and stations for monitoring air quality will be installed in the District perimeter. In addition, a Communications Plan will be elaborated to engage the population and communicate the benefits to be achieved. Finally, in the first phase, the Borrower will develop a methodology for measuring GHG emissions in the district.

60. **Expected Results.** These measures will increase the competitiveness and use of low-carbon and sustainable transport modes and increase afforestation and building energy efficiency, thereby reducing GHG emissions. By end-2024, the Borrower expects that bicycle trips through the city's bike-sharing scheme originating in the district perimeter will reach 85,000, a 30-percent increase compared to 2021. These measures will reduce carbon emissions, improve local air quality, and produce public health benefits. The local pollutant reduction impacts would likely disproportionately accrue to Rio's lower income households, women, and school-aged children – population segments that rely more heavily on walking and biking for their daily travel needs.

61. **The DPL program builds on a range of analytical, data collection, and strategic activities implemented by the client and the Bank and other development partners in support of low-carbon, sustainable, and inclusive urban mobility, and land use planning**. Table 8 below presents analytical underpinnings that informed the reforms and programs supported by the DPL.

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[75] Brazil's Update of the First NDC submission (commits to reducing GHG emissions by 37 percent below 2005 levels in 2025, and by 43 percent below 2005 levels in 2030. Source: Paris Agreement, Brazil's NDC: *https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/Brazil%20First%20NDC%20(Updated%20submission).pdf*

[76] The initiative is substantively similar to Low-Emissions Zones (LEZ) in London, Milan, and other global cities.

[77] C40 Cities Climate Leadership Group comprises 96 cities around the world, representing a quarter of the global economy, focused on fighting the climate crisis and driving urban action that reduces greenhouse gas emissions and climate risks, while increasing the health, wellbeing and economic opportunities of urban residents.

[78] Considering the transversality of the intervention, the implementation of the actions will also rely on other sectoral agencies. For example, CET-Rio will lead the implementation of the cycleway network expansion, while *Companhia Municipal de Limpeza Urbana* (COMLURB) will be responsible for low-emission waste collection using electric vehicles.

Table 9: DPL Prior Actions and Analytical Underpinnings

Prior Actions	Analytical Underpinnings
Operation Pillar 1: Strengthening fiscal management to improve medium-term fiscal sustainability	
Prior action 1 (public sector audit)	• World Bank. National Internal Control Assessment based on COSO and IA-CM, 2020. • The Institute of Internal Auditors. Declaração de Posicionamento do IIA: As Três Linhas de Defesa no Gerenciamento Eficaz de Riscos e Controles, 2013.
Prior action 2 (carbon credits)	• Ecosystem Marketplace, "The State of the Voluntary Carbon Markets 2022 Q3 Briefing," August 3, 2022. • World Bank. 2023. State and Trends of Carbon Pricing 2023. *Both reports provided relevant context and informed the regarding the state, opportunities, and possible outcomes by providing fiscal incentives for credit carbon markets.*
Prior Action 3 (Pension record management / audit)	• Brazil Public Expenditure Review (P154992). *This PA has benefited from sections on pensions.* • Wage Bill & Public Workforce Reform in Brazil (P166281). *The PA has benefited from the analysis of the wage bill and administrative reforms at the federal and subnational levels.* • *Progestão* Series of Projects. *This PA benefits from lessons learnt from the implementation of the unified pension management units in other subnational governments through Progestão series of projects (P178663, P179088, P179046, among others).*
Pillar 2: Accelerating the transition towards a low-carbon, climate-resilient and inclusive development	
Prior action 4 (BRT):	• World Bank. (2023). Country Climate and Development Report (CCDR) for Brazil. *The CCDR addresses the policies for a transition to greener and efficient urban public transport systems*. • Rio Prefeitura et al. (2017). Monitoramento das Emissões de Gases de Efeito Estufa da Cidade do Rio de Janeiro: 2012-2017. *The PA benefits from the data reported on efficiency of service provision on the BRT system.*
Prior action 5 (modal and tariff integration)	• SSATP. (2021). Myths and Realities of "Informal" Public Transport in Developing Countries: Approaches for Improving the Sector. World Bank, Washington, DC. • SSATP. (2023). From complete formalization encompassing Bus Rapid Transit (BRT) to the corporatization of informal Public Transport owner/operators: Cape Town, South Africa. World Bank, Washington, DC. *Both reports informed the rationale for improving informal transport.* • World Bank. (2018). Incidencia distributiva de la integración tarifaria en el sistema de transporte del Área Metropolitana de Buenos Aires. • Impact of Tariff Policy on the Collective Public Transportation Systems of RMBH (Metropolitan Region of Belo Horizonte) Study. World Bank, 2022. *Both reports informed the distributive incidence of tariff integration.*
Prior action 6 (Women Move Card)	• World Bank Group and UNGE. (2020). Why Does She Move? A Study of Women's Mobility in Latin American Cities.
Prior action 7 (cycleway and road safety plans):	• Pucher, J. et al. 2010. Infrastructure, programs, and policies to increase bicycling: An international review. *Preventive Medicine*, 50 (Supplement 1), S106-S125. • World Bank. (2017). The High Toll of Traffic Injuries: Unacceptable and Preventable. World Bank, Washington, DC. *Highlights the high human and economic benefits that could be gained from reducing the incidence of road accidents across developing countries.*
Prior action 8 (Low emission district):	• Ongoing World Bank technical assistance (Global Smart City Program*) is supporting the methodology to estimate and monitor GHG emissions in the Low Emission District.* • World Bank. (2023). Country Climate and Development Report (CCDR) for Brazil. *The CCDR assesses the carbon emissions mitigation potential of urban low-emissions zones.*

4.3. LINK TO CPF, OTHER BANK OPERATIONS AND THE WBG STRATEGY

62. **The proposed DPL is fully aligned with the Country Partnership Framework (CPF) for the period FY2018–23[79].** The World Bank Group FY18-23 CPF for Brazil was prepared against the backdrop of the 2014–16 economic recession that led to a fiscal crisis and increased unemployment and poverty levels. The main premise of the CPF was the need to revisit the country's growth model to improve its sustainability and inclusiveness. The CPF is built on three Focus Areas: (i) fiscal consolidation and government effectiveness; (ii) private sector investment and productivity; and (iii) equitable and sustainable development. The first pillar of the proposed DPL is aligned with Focus Area 1 and Objectives 1.1 (Strengthening Fiscal Management at all levels of government) and 1.2 (Increase fiscal sustainability and fairness of pension system) by strengthening its public management systems though improving internal audit capacity and strengthening the pension record management and audits. The first pillar is also aligned with Focus Area 3, and Objective 3.1 (Support the achievement of Brazil's NDCs) by supporting measures to promote a green economy. The second pillar of this DPL is aligned with Focus Area 2, and Objective 2.3 (Mobilize greater investment in infrastructure to improve services) by focusing on optimizing the transport sector and supporting the mobilization of greater investment in infrastructure to improve services. Pillar 2 is also aligned with Focus Area 3, and Objectives 3.1 (Support the achievement of Brazil's NDCs) and 3.2 (Provide more inclusive and sustainable urban services) by revamping the BRT system, making the public and active transport more accessible to the most vulnerable, and supporting the implementation of a Low Emission District (DBE).

63. **In line with the CPF, this proposed operation is part of a series of subnational DPLs to support fiscal adjustment and sustainable low-carbon and climate-resilient development in subnational entities.** The proposed operation is the sixth under this framework, following the Mato Grosso Fiscal Adjustment DPL (P164588), the First Amazonas Fiscal and Environmental Sustainability Programmatic DPL (P172455), the State of Goias Sustainable Recovery DPL (P177632), the Rio de Janeiro Adjustment and Sustainable DPL (P178729), the first of this series, and the BR State of Ceará Sustainable DPL (P180497), which is under preparation. The Mato Grosso DPL aimed to support the State to implement institutional reforms for fiscal sustainability; and consolidate efforts to protect forest assets while promoting agricultural productivity in line with the State's development strategy. The Amazonas DPL supported fiscal discipline, climate-informed decision making, and an integrated approach to forest conservation and development to help the State improve its recovery after COVID-19 and protect the Amazon Forest. The Goiás DPL aimed to support the state in improving fiscal sustainability and adopting climate-smart, resilient, and inclusive policies for its agricultural sector. The First Rio de Janeiro DPL supported the municipality in strengthening fiscal management to improve medium-term fiscal sustainability and accelerating the transition towards a low-carbon, resilient and inclusive urban development. The Ceará State DPL supports efficiency improvements in public resource management and sustainable development through clean energy and skills development.

64. The proposed DPL series is closely aligned with the World Bank's and Latin America & Caribbean's respective Climate Change Action Plans (CCAP) 2021-25, which aim to advance the climate change aspects of the GRID approach, thereby promoting poverty eradication and shared prosperity with a sustainability focus. Moreover, the policy priorities supported by the series align with the objectives and priorities outlined in the Country Climate and Development Report (CCDR) for Brazil.

4.4. CONSULTATIONS AND COLLABORATION WITH DEVELOPMENT PARTNERS

65. **Public consultations on the proposed reforms in the municipality of Rio de Janeiro took place both during the development of the policies, and while they were being reviewed by the Municipal Council (*Câmara de Vereadores*).** In the case of Municipal laws, consultations follow the procedures in the Organic

[79] The CPF was endorsed by the World Bank's Board of Executive Directors on July 13, 2017 (Report no. 113259-BR).

Law of the municipality (*Lei Orgânica do Município do Rio de Janeiro*). The consultation process increases the legitimacy of policies, while allowing authorities to benefit from advice and technical knowledge. The municipality of Rio de Janeiro confirmed that the program supported by this DPL operation is based on a broad consultation process with a variety of stakeholders, including civil society and business chambers.

66. **The World Bank collaborated with Brazil's Federal Treasury in the design of pillar 1.** On the fiscal adjustment component of the operation, the World Bank team worked in close partnership with the Federal Treasury (*Secretaria do Tesouro Nacional*, STN), which is the federal government's agency responsible for supervising the fiscal affairs of subnational governments. Representatives of the STN and the World Bank team discussed the development of the program under pillar 1, the modeling of its fiscal impact and the relevance of the Municipality' adherence to Fiscal equilibrium plan to support the city's fiscal consolidation.

67. **The policies under the second pillar of the operation were thoroughly discussed with interested stakeholders and civil society.** The MRJ developed the new disciplinary code for the complementary transportation *Cabritinhos* after extensive dialogue with the communities and operators (PA5). The development of the *Ciclo.Rio* (PA7) was a joint collaboration between the Secretary of Transport, CET-RIO, Municipal Secretariat of Environment, and several non-governmental organizations. *Ciclo.Rio* underwent consultations with cycling groups, civil society, and delivery riders; workshops were held in the five planning areas of the city to enable face-to-face dialogue with bicycle users and businesses. An online survey was also available for broad public participation. WRI-Brazil (World Resources Institute) and *Instituto Cordial* supported the preparation of the Road Safety Plan (PA7), through technical cooperation agreements signed with CET-Rio, and in collaboration with the Municipal Transportation Council, universities, NGOs, specialists, and the general public. The Plan also underwent consultations and involved a survey conducted online, which attracted the participation of approximately 1,400 people. In the context of the Low Emission District (PA8) discussions, the Downtown Upgrading Plan for Rio de Janeiro (Reviver Centro[80]/) was developed based on extensive discussions held by the Downtown Upgrading Working Group, established by Decree no. 48.348 of January 1, 2021. Although the *Reviver Centro* Program, of which the Low Emission District is part, has been criticized by some civil society organizations – mainly on the potential risks of gentrification – these concerns have been addressed by the inclusion of investments in social housing in the Program. Results from public surveys with more than 8,000 respondents indicated that participants consider improvements in security, lighting, public transport, and accessibility as priorities for the central area of the city. The Program was also discussed in a public hearing in the House of Representatives and in the Municipal Council of Urban Policy.

68. **Finally, the World Bank collaborated with IFC on developing new business models that promote the implementation of e-buses in Brazilian cities.** The Bank's transport team and the IFC Upstream team have jointly provided technical assistance to Brazilian cities to develop business models that leverage private sector participation to facilitate the deployment of e-buses. These assessments have informed the discussions with the MRJ about the business models that can leverage the introduction of e-buses in the future, such as the unbundling of bus operations and vehicle provision services (PA4).

5. OTHER DESIGN AND APPRAISAL ISSUES

5.1. POVERTY AND SOCIAL IMPACT

69. **Overall, most prior actions included in this operation have the potential of positive equity and social impacts.** Policy changes included in the first pillar are expected to allow the municipality to improve the efficiency of their spending. Policy changes related to the adoption of improvements in the pension

[80] https://reviver-centro-pcrj.hub.arcgis.com/

record management and audit system may open more fiscal space for public investments on the government's priorities which are likely to support the provision of basic public services, benefiting social groups in the bottom of society and boosting equality of opportunity. Policy changes included in the second pillar have poverty and social impacts. Improvements in the public transportation system, on which the low-income population disproportionately relies, will positively impact the wellbeing of Rio residents by lowering the pecuniary and non-pecuniary transportation costs of connecting to the city's economic opportunities. Direct positive social impacts are expected from the support to women suffering domestic violence. Other policies are expected to have indirect positive effects through the reduction of congestion and pollution.

70. **Prior actions in the first pillar are expected to improve the municipality's Public Management system, therefore improving the efficiency of spending, while creating fiscal space for improved provision of public services and investments in a green urban development.** PAs 1 and 3 under Pillar I will contribute to the efforts made by the Municipality of Rio de Janeiro towards fiscal recovery. The improvements in the auditing process and in the pension record management systems are expected to have positive – though indirect – poverty and social impacts because they are expected to contribute to keep the Municipality's high level of budgetary allocations to provide basic public services. Notably, between 2020 and 2022, the Municipality has allocated an average of 26.9 percent of the city's revenues on education and 18.0 percent on health, both above the constitutional requirements of 25 percent for Education and 12 percent for Health. Fiscal space to continue this expenditure allocation will benefit the most disadvantaged and vulnerable social groups, which rely the most on these public services.[81] PA2 is not expected to have any negative effects on poverty. While it is not straightforward to estimate the total amount of fiscal space that these PAs will create, taking the lower bound estimate from improvements in the pension system in the Santa Catarina's example, a 10 percent reduction in pension expenditures would equate to BRL 594 million (15 percent of the municipality's total budget), which would be enough to fund the municipal Health activities or 5 percent of the BF recipients in the municipality.[82]

71. **The poverty and social impacts of the Prior Actions supported under Pillar II are more direct and positive.** PAs 4 and 6 are expected to expand the use of public and non-motorized transport, contributing to greening the transport system and reducing the city's carbon footprint. These three Prior Actions combined are expected to bring benefits for the low-income population who: a) face more restrictions in their mobility and access to both economic opportunities and basic public services in the city; b) are more dependent on public transportation for their mobility c) have limited options of public transportation and d) devote a significant part of their daily hours commuting between home and work. By improving the frequency and reliability of bus services and reducing the average headway, PA4 will contribute to lowering transaction costs for users and more than proportionally those dependent on the system to access jobs. PA5 will effectively constitute an in-kind transfer for BRT riders, who are typically low-income, as they are no longer required to pay an additional fare for a third mode of transportation. This change thus represents a 50 percent decrease in transportation costs to all riders who require three modes of transportation.[83] The new transport code of *Cabritinhos* (PA5) will also improve transportation services among one of the most vulnerable populations in Rio, the residents of informal settlements (so-called *favelas)*. PA6 will have substantial social impacts by eliminating a possible barrier for low-income female survivors of domestic violence to access the support of the Specialized Network for Combating Violence Against Women in the Municipality. The *Cartão Move Mulher*'s focus on women with income that is less than half a minimum wage

[81] Data from PNS (2019).
[82] According to Portal de Transparência, there are 1,443,879 beneficiaries in RJ. Assuming an average benefit of R$672, this implies an annual budget of R$ 11,643 million.
[83] Before the new regulation, a rider had to pay R$4.30 for the first two modes of transportation, and an additional fare R$4.30 for the third mode.

further concentrates its positive effects among a particularly vulnerable group.[84] By increasing road, walking, and cycling safety, PA7 is also expected to benefit the mobility of low-income population who is more likely to travel on foot and, particularly, the mobility of women who rely even more on walking and prioritize safety when moving across the city. The direct effects on poverty of PA8 are expected to be minor, with potential indirect positive impacts from the reduction of carbon emissions on local air quality and, consequently, the prevalence of respiratory illnesses.

5.2. ENVIRONMENTAL ASPECTS

72. **The prior actions supported by this DPL are likely to have positive effects on the environment through the significant emission reduction measures.** The DPL is designed to promote a strengthening fiscal management to improve medium-term fiscal sustainability (under Pillar I) and the transition towards a low-carbon, climate-resilient and inclusive urban development (Pillar II), which overall it is expected to generate positive impacts to the environment.

73. **The first pillar contains two prior actions that are not likely to cause direct negative impacts on the environment and one prior action that is designed to foster the low carbon economy.** PA 2 offers tax incentives to private sector activities in the carbon market and to individuals purchasing carbon credits. This measure is expected to have positive environmental impacts by promoting carbon emissions offset within the economy. Prior Action PA1 supports enhanced internal auditing capacity of Rio's Municipality, which is unlikely to result in negative environmental impacts. Prior action PA3 is designed to support more efficient management of MRJ's pension fund, and it is unlikely to result in negative environmental impacts.

74. **Under the second pillar, significant positive environmental impacts are expected.** PA4 fosters a more competitive and low-carbon option of public transportation, promoting the restructuring and enhancement of Rio's BRT system, which is expected to generate positive environmental impacts (lower GHG and other pollutant emissions) and more efficient use of energy resources. This DPL also supports low-carbon public transportation in the low-income communities and increased modal integration (PA5), which likewise it is expected to generate positive environmental impacts and more efficient use of energy resources. PA6 supports a dedicated system of low-carbon choice of public transportation for women victims of domestic violence, which also it is expected to generate only positive environmental impacts and social co-benefits. PA7 aims to support the expansion and consolidation of a comprehensive and safer municipal cycling network, which is an affordable choice of low-carbon mobility for the population from low-income areas. These measures are also expected to generate positive environmental impacts and social co-benefits by shifting from CO_2 emitting to zero emissions modes of urban mobility (NMT). In addition, PA8 fosters enhanced governance structures to promote lower emissions across Rio's Low Emission District, which is also expected to generate positive environmental impacts, on urban air quality and significant climate benefits.

5.3. PFM, DISBURSEMENT AND AUDITING ASPECTS

75. **The overall integrated fiduciary risk of this operation arising from the Municipality of Rio de Janeiro's (MRJ) public financial management (PFM) and public procurement system[85] and the FOREX**

[84] Half a minimum wage is the threshold for families to be able to register in the social registry (Cadastro Unico) – the government's system to monitor and approve the provision of social programs for low-income individuals and families. The work on Lara Ibarra et al. (2021) found that half a minimum wage is close in value to the cost of affording a basket of basic needs in Brazil.

[85] PFM aspects are supported by the following analytical work: Brazil Public Expenditure Review (PER); Country Policy and Institutional Assessments (CPIA); Brazil Public Expenditure and Financial Accountability (PEFA) Report; Last two published annual audit reports and financial statements of the Municipality of Rio de Janeiro; Observatory of Public State Finance; 2019 MMD-QATC (Supreme Audit Institution Performance Measurement Framework); and IMF Fiscal Transparency Evaluations/Reviews and Code of Good Practices on Fiscal Transparency.

control environment is Moderate. A well-developed legal framework—including the Federal Constitution, the Fiscal Responsibility Law (LRF) and other laws and regulations—underpins the MRJ PFM and established Institutional PFM arrangements are being strengthened within the Municipal Secretariat of Finance's departments. Improvements are noted in the external oversight mechanisms, including participation by key stakeholders and sector agencies that follow federal rules consistent with the best international standards. There is timely availability of budget execution information for public access, primarily through the Internet.

76. **The MRJ is undertaking important PFM reforms to improve the quality and relevance of financial information for decision making, while simultaneously focusing on measures to bolster credibility, transparency, accountability, and efficiency within PFM.** The MRJ is actively promoting appropriate behavior among public sector officials and working to mitigate the risk of public corruption, irregularities, and fraud. These include: (i) implementing the Integrated Budget, Financial and Administrative System (*Siafic*)[86]; (ii) implementing the MCASP (Manual of Accounting Applied to the Public Sector) aligned with the International Public Sector Accounting Standards (IPSAS)[87]; (iii) enhancing internal controls and commitment controls to mitigate the lack of budget realism, cash flow unpredictability, off-budget expenditures, inobservance of budget rules and legal fiscal limits[88]; (iv) implementing recommendations made by oversight institutions; (v) strengthening the Municipal Government's accounting and budget execution system (FINCON) along with the Contract Management System (FCTR) to improve the quality and transparency of accounting information[89]; (vi) observance of the use of the Single Treasury Account (STA) model of cash management and ensuring its proper implementation and clear allocation of responsibility for its management; and (vii) reforming the CGM by implementing the internal audit standards in the public sector and strengthening the internal audit function.

77. **However, despite the progress made, the MRJ's Public Financial Management (PFM) system still requires further improvements to address remaining weaknesses.** Certain limitations persist in the system concerning public sector investment management and the provisions for investments and recurrent costs. These limitations continue to hinder the quality and efficiency of public expenditures. To tackle these challenges, the following areas need to be prioritized: (i) a training program for managers at all levels of the PFM framework, including about their roles and responsibilities; (ii) an action plan to address deficiencies in the procurement function and in the management of government supplies and inventories; and (iii) a continuous enhancement of audit standards[90] in the Municipal Comptroller General.

78. **Internal Oversight**. The Municipal government has internal rules and commitment controls. The Municipal Comptroller General supports the Municipal's direct and indirect agencies on legal and procedural compliance in public contracts, access to information, anticorruption, and transparency in public administration. The CGM has sufficient independence to perform its role. The CGM's internal structure establishes the main internal control functions (internal control, ombudsmanship, and inspection) following a risk-based approach and the "three lines", in compliance with international best practices and recommendations made by the Federal Audit Court (TCU) through Normative Instruction (*Instrução Normativa*) IN 63/2010. However, greater emphasis needs to be made to strengthen the internal audit and inspection functions to meet international standards and prevent misuse of funds.

79. **External Oversight.** The Municipal Audit Court, *the Tribunal de Contas do Município do Rio de Janeiro*, TCM-Rio reports to the legislative branch and is responsible for performing financial, compliance and

[86] A software that must be used by the executive, legislative, and judiciary powers, with a shared database and integrated with the Municipal FMIS (FINCON). The Government should hire the firm by the end of CY2023.
[87] Portaria STN nº 548/2015 - *Plano de Implantação dos Procedimentos Contábeis Patrimoniais – PIPCP*, to be fully implemented by December, 2024.
[88]Lei Complementar 235 enhances PFM controls to avoid off-budget expenditures.
[89]The ranking shows the quality of accounting and fiscal information and is monitored by the National Treasury Secretariat.
[90] Implementing the Internal Audit Capability Model (IA-CM) to strengthen the internal audit in all entities that execute the Municipal budget.

operational audits and special reviews of budget execution and the quality of government expenditures at the Municipal level. The TCM-Rio audits have a reasonable scope and are generally issued with only minor delays. As part of its strategy to strengthen its institutional framework, the TCM-Rio will implement the *Sistema Aprimore* aiming to monitor and track the performance of the MMD-QATC indicators.[91]

80. **Accounting and Financial Reporting.** The MRJ has been able to prepare timely financial statements, with reasonable observance of the deadlines established to implement MCASP/IPSAS. The MRJ publishes the annual estimates of Revenue and Expenditure on its website; the Year-end financial statements and audit reports are also accessible, but only after they have been submitted to the legislature for approval. The latest approved audit of the Municipality's accounts covers the 2021 fiscal year. This report confirmed the observance of the agreed action plan, with respective improvement over the municipality's budget execution. Although some weaknesses remain, they were not considered substantial and do not compromise the overall consistency and usefulness of the financial statements. To increase the quality of its financial reporting, thereby enhancing transparency and accountability of the use of public funds, the MRJ has committed to continue implementing the recommendations made in the latest audit reports.

81. **The federal framework of laws and regulations for procurement is solid and transparent and is familiar to both public officials and to the private sector**. These laws and regulations take precedence over those for the subnational levels. States and municipalities may complement federal legislation but not contradict it, nor may they create new procurement methods. Open competitive bidding is the default procurement method, as defined by Article 37 of the Constitution, and provides fair opportunities for bidders to contest decisions including through appeal to an independent entity. All procurement opportunities, regardless of estimated cost, are published via the internet and official gazettes. Companies are required to have local representation to bid on government contracts. This involves establishing a local office or designating a local agent to serve as local representative and obtaining a taxpayer identification number or CNPJ (National Registry of Legal Entities). Once incorporated in Brazil, foreign companies are treated as locals and subject to the same rules and conditions as domestic companies. In terms of national e-procurement system, the *Pregão Eletrônico* is the main procurement method used in the Municipality. E-Reverse auctions remain as the method of choice for off the shelf goods and readily available services. In Rio de Janeiro, for the past three years 73 percent of all the procurement processes made in the Municipality were *Pregão Eletrônico*. This represents around 61 percent of the amount procured (BRL 800 million). These numbers and the consolidated legal framework for e-procurement in Brazil confirm the reliability of the instrument.

82. **The provisions in the federal Brazilian legal framework governing fraud and corruption are also binding on state and municipal public administrations.** The Bank's assessment is that they are adequate. The Federal Constitution and Laws to combat Fraud and Corruption define various categories of misconduct and provide for such sanctions as the suspension of political rights, removal from public office, freezing of assets and financial compensation for damages caused to public treasury for personal and firms. The Constitution also stipulates that there is no statute of limitations when seeking reparations for damages caused to the public treasury by government officials. Legal action can be filed in court by the public entity that suffered the losses or by the *Ministério Público*. Any person can file a complaint requesting an investigation of suspected wrongdoing. The Constitution and Anti-Corruption Laws have been complemented by other federal and state legislation inter alia regulating citizens' access to information and establishing a code of ethics for state officials.

[91] *Programa Qualidade e Agilidade dos Tribunais de Contas* (MMD-QATC), is a diagnostic tool developed by Brazilian Supreme Audit Institutions Association - ATRICON, to assess the quality and performance of the Brazilian Supreme Audit Institutions. MMD QATC is based on the International Organization of Supreme Audit Institutions (INTOSAIs) Performance Measurement Framework (SAI-PMF).

83. **Based on the positive assessment of the Municipality's Public Financial Management (PFM) environment**, including the implementation of action plans to address identified PFM system weaknesses, the PFM system has been determined adequate. The identified weaknesses pose low risks to the achievement of development objectives, therefore no additional fiduciary arrangements will be put in place for the operation.

84. **The loan proceeds will be disbursed based on satisfactory implementation of the DPL supported program.** Once the loan is effective and against satisfactory implementation of the program (specified prior actions achieved) and maintenance of an adequate macroeconomic policy framework, the borrower will request the World Bank to disburse[92] in local currency, the equivalent amount of the loan proceeds into a local currency denominated bank account opened by the Municipal Government at the *Banco do Brasil* branch in Rio de Janeiro. The *Banco do Brasil* is deemed acceptable to the World Bank, as it is: (i) financially sound, in good standing, audited regularly, receiving satisfactory audit reports, and can execute many transactions promptly; (ii) performs a wide range of banking services satisfactorily; (iii) provides detailed bank statements; and (iv) is part of a satisfactory banking network and charges reasonable fees for its services.

85. **Written Confirmation.** Within 30 days after receipt of the loan proceeds into the Brazilian Reais denominated account mentioned above, the Municipal Government will confirm to the World Bank that (i) the loan proceeds were received into the local currency denominated account, and (ii) the amount has been recorded in the Municipality's accounting and budgeting management system/records. If loan proceeds are used to finance excluded expenditures as defined in the Loan Agreement, the World Bank will require the Municipal Government to refund the amount.

5.4. MONITORING, EVALUATION AND ACCOUNTABILITY

86. **The Municipal Finance and Planning Secretariat (SMFP) is responsible for collecting and monitoring information related to program implementation and progress toward the achievement of the results.** SMFP is responsible for coordinating actions among the agencies involved in the reform program supported by this DPL. SMFP will be directly responsible for the first pillar of the operation in coordination with other municipal agencies. The Secretary of Transport and the SMFP oversee policies and coordinates different institutions under the second pillar of the program. The Bank team has worked closely with the above agencies to define results indicators that are clearly spelled out and measurable, giving preference to those that are already collected by the municipal Government on a regular basis to avoid duplication.

87. **Grievance Redress**. Communities and individuals who believe that they are adversely affected by specific country policies supported as prior actions or tranche release conditions under a World Bank Development Policy Operation may submit complaints to the responsible country authorities, appropriate local/national grievance redress mechanisms, or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit *www.inspectionpanel.org*.

88. **Brazil and MRJ have a robust legislation on access to information and grievance redressing.**[93] The 1988 Federal Constitution (Art. 103 and Art. 130) and Constitutional Amendment 45/2004 provide for the creation of Ombudsmen at all levels of government. The MRJ restructured its Municipal Ombudsman System through Decree Rio Nº 44,746/2018. The System comprises the Institutional Ombudsman, 6 ombudsman offices and 167 ombudsman agents. The Ombudsman is the second instance of relationship between the municipality and the citizen. It receives complaints of requests addressed to the municipality through the 1746 platform, but which were not carried out in time or with the desired quality. Compliments, suggestions, and complaints can be filled directly through the Ombudsman. The operation of the Municipal Ombudsman System is publicly reported and since 2021 incorporates a virtual dashboard[94] that is updated just in time. The efficiency of the system has improved. In 2020, 53.4 percent of complaints were solved within the legal deadline; this rate rose to 60 percent in 2021 and reached 69 percent in 2022. The Ombudsman ensures the protection of the identity of the author of complaints in compliance with Law 12,527/2011.

6. SUMMARY OF RISKS AND MITIGATION

89. **The overall risk of this operation is rated as moderate**. The principal risks to the objectives of this operation are stakeholder risks, which are substantial. A wide range of stakeholders could be affected by the supported reforms. The municipality recently terminated the contracts of current BRT concessions on contractual noncompliance grounds and a judicial agreement was reached with operators. Operations are being temporarily run by the municipal transport authority (*Mobi.Rio*) until new concessions are awarded. These reforms could face opposition from incumbent local bus operators which may delay the bidding process. The authorities are aware of these risks and are engaging actively with all relevant stakeholders, mainly with operators and fleet providers, civil society organizations, the private sector, and with the legislative and judiciary branches. In addition, although the regulations for expanding cycling infrastructure and improving road safety have been developed in collaboration with numerous stakeholders, their implementation could still face opposition, including from businesses and car drivers. To mitigate these risks, MJR is maintaining a participatory implementation approach with a consistent communication plan. Finally, introducing low emission zones is often politically challenging. Consequently, the governance and monitoring mechanisms of the Low Emission District should rely on a broad consensus between stakeholders with distinct vested interests and build support that is strong enough to pass through successive governments.

Table 10: Summary Risk Ratings

Risk Categories	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Low
4. Technical Design of Project or Program	● Low

[93] Including: Constitutional Amendment 19/1988, Federal Law 12,527/2011, Federal Law 13,460/2017, Federal Decree 9,492/2018, and Normative Instruction Ministry of Transparency and Federal Comptroller General (CGE)/Union General Ombudsman Office (OGU) 5/2018.

[94] *https://www.1746.rio/hc/pt-br/p/relatorios*

5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	Low
Overall	Moderate

ANNEX 1: POLICY AND RESULTS MATRIX

Prior actions		Results		
Prior Actions under DPL 1	**Prior Action under DPL 2**	**Indicator Name**	**Baseline**	**Target**
Pillar 1-- Strengthening fiscal management to improve medium-term fiscal sustainability				
Prior Action 1: The Borrower has enacted legislation to improve fiscal sustainability by: (i) joining the federal government's plan for the fiscal recovery of subnational entities (*Plano de Promoção do Equilíbrio Fiscal*), and committing to reduce current savings and improve liquidity; and (ii) adopting a new fiscal framework with revenue and expenditure adjustment measures that are triggered in case of fiscal distress, as evidenced by (i) Complementary Law (*Lei Complementar*) No. 235, dated November 3,2021, published in the Borrower's official Gazette on November 4 2021, and (ii) an official letter from the Mayor (*Ofício GBP*) No. 406, dated December 14, 2021 with the attached Borrower's *Plano de Promoção do Equilíbrio Fiscal*.		**Results Indicator 1:** Current savings (current spending as percentage of current revenues - CAPAG indicator) **Results Indicator 2**: Liquidity (Financial Obligations from Non-Earmarked Resources as percentage of gross cash balance, CAPAG indicator)	100 (2020) -188 (2020)	Less than 95 (2024) Less than 100 (2024)
	Prior Action 1: To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM, as evidenced by Ordinance No. CGM-RIO 9, dated July 6, 2023, published in the Borrower's Official Gazette on July 7, 2023, that approved the Statute of CGM´s internal audit unit.	**Results Indicator 3:** Percentage increase in the number of essential activities implementation of the IA-CM level 2 (%)	38 (2022)	80 (2024)

Prior actions		Results		
Prior Action 2: The Borrower has enacted legislation and decrees to mobilize tax revenues and improve its business environment by: (i) allowing taxpayers to regularize ISS (Tax on Services) debts wrongfully paid to other municipalities via debt write-offs (program popularly known as *De Volta para Casa*); (ii) improving its settlement mechanism for tax administrative disputes between the tax authority and the tax debtors (*transação tributária*); (iii) simplifying ISS withholding rules; and (iv) revoking certain ISS exemptions, as evidenced by (i) Chapters I and V of Title I, Chapter I of Title II, and Title III of Law No. 7,000, dated June 23rd, 2021, published in the Borrower's official Gazette on July 26, 2021, and regulated by Decree No. 50032, dated December 16, 2021, published in the Borrower's official Gazette on December 17, 2021, and (ii) Decree No. 50039, dated December 20, 2021, published in the Borrower's official Gazette on December 21, 2021.		**Results Indicator 4:** ISS revenue (Millions of 2021 Real)	6,482 (2020)	6,689 (2024)
	Prior Action 2: To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market, as evidenced by Law No. 7,907, dated June 12, 2023, published in the Borrower's official Gazette on June 13, 2023.	**Results Indicator 5**: Number of carbon credits generated in Rio de Janeiro (Tons)	0 (2020)	600,000 (2024)
Prior Action 3: The Borrower has enacted legislation to reduce the public pension deficit by: (i) increasing the contribution rate to civil servants (active and inactive ones, pensioners, and beneficiaries of the special pension) from 11 percent to 14 percent; and (ii) establishing a contribution-based complementary pension scheme for civil servants from the executive and legislative branches of the government, as well as from the Audit Office (*Tribunal de Contas*), which would reduce medium term public pension liabilities, as evidenced by (i) Article 6, Paragraph 1 of Law No. 6,852, dated April 14th,2021, published in the Borrower's	**Prior Action 3:** To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits, as evidenced by (a) Decree No. 51,107, dated July 12h, 2022, published in the Borrower's Official Gazette on July 13, 2022; (b) Ordinance PREVI-Rio No. 1,045 dated August 15, 2022, published in the Borrower's Official Gazette on August 15, 2022; (c) Ordinance PREVI-Rio No. 1,051, dated February 16, 2023, published in the Borrower's Official Gazette on	**Results Indicator 6:** Pension Contributions in real terms (Millions of 2021 Real)	4,241 (2020)	4,676 (2024)

Prior actions		Results		
official Gazette on April 15th, 2021; and (ii) Law No. 6,982 dated June 29th, 2021, published in the Borrower's official Gazette on June 30th, 2021, and regulated by Decree No. 49370, dated September 1st 2021, published in the Borrower's official Gazette on September 2nd, 2021.	February 23, 2023; and (d) and Ordinance PREVI-Rio No. 1,053, dated April, 28 2023, published in the Borrower's Official Gazette on May 2, 2023.			
Pillar 2--- Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development				
Prior Action 4: The Borrower has enacted legislation to improve service efficiency and safety of the BRT system, thereby reducing modal shift to high-emission private vehicles by: (i) separating the system's fare collection management from the bus operation, thereby facilitating the digitalization of the electronic ticketing system and intermodal integration, and increasing data transparency; (ii) instituting a gender program to prevent and address sexual harassment in its public transport system, as evidenced by (i) Law No. 6,848, dated March 25, 2021, published in the Borrower's official Gazette on March 26 2021; (ii) Decree No. 48580, dated March 5, 2021, published in the Borrower's official Gazette on March 8th 2021, (iii) Law No. 6,938, dated June 14 2021, published in the Borrower's official Gazette on June 16th 2021, whereas the two latter are regulated by the joint Resolutions No. 52, 53, and 54, dated December 29, 2021, published in the Borrower's official Gazette on December 30, 2021.	**Prior Action 4:** To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model, as evidenced by (a) Decree No. 116, dated March 30, 2023, published in the Borrower's Official Gazette on March 31, 2023; and (b) Notice of Bidding SMTR No. 01/2023, dated March 31, 2023, published in the Borrower's Official Gazette on April 4, 2023. **Prior Action 5:** To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration, as evidenced by (a) Decree No. 52,134, dated March 9, 2023, published in the Borrower's Official Gazette on March 10, 2023; (b) Decree No. 52,237, dated March 28, 2023, published in the Borrower's Official Gazette on March 29, 2023; and (c) Decree No. 52,095, dated March 3, 2023,	**Results Indicator 7:** Ridership in the BRT system (Number of passengers) **Results Indicator 8:** Percentage of sexual harassment complaints in the transport system submitted to the new tracking and response system that are addressed and responded (%)	60.4 million (2021) NA (2020)	80 million[95] (2024) 75 (2024)

[95] Excluding the *Transbrasil* line, to be inaugurated in December 2023. RI 7 target revised from an increase in 40 percent to an increase in 33 percent in BRT ridership to reflect the slight delay in the BRT operation bidding process.

Prior actions		Results		
	published in the Borrower's official Gazette on March 6, 2023.			
	Prior Action 6: To enable female survivors of domestic violence to access the referral services of the *Rede Especializada para Combate à Violência Doméstica contra Mulheres (*Specialized Network for Combating Violence Against Women in the Municipality), the Borrower has strengthened the "Cartão Move Mulher" (Move Women Card) program, as evidenced by Law No. 7,430, dated June 23, 2022, published in the Borrower's Official Gazette on June 24, 2022.	**Results Indicator 9:** services provided by the Specialized Network for Combating Violence Against Women[96]	2,346 (2021)	8,200 (2024)
Prior Action 5: The Borrower has enacted regulations that incentivize the use of active mobility rather than high-emission vehicles, thereby reducing transport related greenhouse gas emissions by: (i) expanding its Mobility System by Bicycles, which includes earmarking public land to increase the number of cycleways connecting to neighborhood centers, key public facilities, and structural transport stations; and (ii) establishing the program On the Way to School 2.0 (*A Caminho da Escola 2.0)*, to improve the walking and cycling safety conditions in the surroundings of schools, as evidenced by (i) Decree No. 49461, September 21, 2021, published in the Borrower's official Gazette on September 22, 2021; and (ii) joint Ordinance SMTR/CET-RIO No. 1, dated January 26, 2022, published in Borrower's official Gazette on January 27, 2022.	**Prior Action 7:** To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability framework to expand and consolidate its implementation, and (ii) established the Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety, as evidenced by (a) Municipal Decree No. 52,132, dated March 9, 2023, published in Borrower's Official Gazette on March 9, 2023; and (b) Municipal Decree No. 52,554, dated May 22, 2023, published in the Borrower's Official Gazette on May 23, 2023.	**Results Indicator 10:** High and medium capacity mass transit stations connected with cycleways (%) **Results Indicator 11:** Rate of traffic deaths per 100,000 inhabitants	20 (2020) 9 (Dec 2019)	At least 40 (2024) 8[97] (Dec 2024)
Prior Action 6: The Borrower has enacted legislation to establish a low emission district in the city center that promotes, *inter alia*, low- and zero-emissions mobility,	**Prior Action 8:** To further strengthen the green transformation of the Low Emission District, the Borrower has established a governance structure	**Results Indicator 12:** Monthly bicycle trips in the Low Emission District	65,000 (Sep 2021)	85,000 (Sep 2024)

[96] Provided by the following 8 units in 2024: *2 CEAMs, 1 Abrigo Sigiloso, 2 NEAPs and 3 NEAMs.*

[97] The target required an adjustment in relation to target stated in the May 2023 Road Safety Plan decree because of the new partial Census data published in June 2023. Initial numbers show an unexpected population reduction in Rio de Janeiro for the first time. The baseline will be kept as 9 as it was published, but it is being revised up as the population size was smaller than originally projected. Therefore, the working target for the operation is a reduction of 13 percent of traffic fatalities, which is aligned with international targets.

Prior actions		Results		
urban afforestation, climate-resilient infrastructure, building energy efficiency, and sustainable solid waste management, as evidenced by Section I of Chapter VI and Annex I of the Complementary Law (*Lei Complementar*) No. 229, dated July 14, 2021, published in the Borrower's official Gazette on July 15, 2021.	across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and reduction of vehicle emissions, and a M&E system of GHG emissions., as evidenced by Municipal Decree No. 51,047, dated June 28, 2022, published in the Borrower's Official Gazette on June 29, 2022.	(Rio's Bikesharing Scheme)		
Prior Action 7: The Borrower has issued a decree to, *inter alia*, promote the transition toward electric mobility, incentivize the use of renewable energy and promote energy efficiency, and enhance disaster risk prevention and preparedness by establishing its Sustainable Development and Climate Action Plan, in line with the United Nation's Sustainable Development Goals and the Paris Agreement, as evidenced by Decree No. 48940, dated June 4, 2021, published in the Borrower's official Gazette on June 7, 2021		**Results Indicator 13:** Reduction in GHG emissions (%)	- (2017)	5 (2024)

ANNEX 2: FUND RELATIONS ANNEX

PRESS RELEASE

PR23/280

IMF Executive Board Concludes 2023 Article IV Consultation with Brazil

FOR IMMEDIATE RELEASE

Washington, DC – July 31, 2023: The Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Brazil.

In the first months of 2023, growth was supported by very strong agricultural output, while manufacturing and services were subdued. Slowing private consumption and falling investment point towards further growth moderation in the remainder of the year. Headline inflation has rapidly declined from last year's peak, but core inflation remains elevated, and inflation expectations are above target. Tightening financial conditions have been partially offset by a structural broadening of credit in some sectors.

Growth is projected to moderate from 2.9 percent in 2022 to 2.1 percent in 2023, and then reach staff's estimated potential rate over the medium term. Headline inflation is expected to reach 5.4 percent by end-2023 and converge to target by mid-2025, while core inflation is projected to come down more gradually. The current account is expected to narrow to about 2.3 percent of GDP this year and remain broadly stable over the medium term.

Strong buffers support resilience in the face of prevailing downside risks. On the external front, downside risks include an abrupt global slowdown, a sharp tightening of global financial conditions, and commodity price volatility. On the domestic front, risk mainly stem from renewed fiscal uncertainty and more persistent inflation. More ambitious fiscal consolidation; approval and implementation of the indirect tax reform; and green growth opportunities bring upside risks. Recent progress in the legislative agenda—with the tax reform, new fiscal framework, and the strengthening of the administrative review of tax disputes making strides—sends a positive signal. A sound financial system, adequate FX reserves, large public sector cash buffers, and a flexible exchange rate regime support resilience.

Executive Board Assessment[2]

Executive Directors noted that after a rapid recovery from the pandemic, supported by ample buffers and proactive policies, Brazil's economic activity is converging towards potential levels. Directors noted the downside risks related to the uncertain external environment, but many emphasized that the balance of risks has shifted, with domestic risks now tilted to the upside.

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[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.IMF.org/external/np/sec/misc/qualifiers.htm.

700 19th Street NW
Washington, DC 20431
USA

IMF.org

In this context, they encouraged the authorities to continue with their fiscal consolidation and price stabilization efforts, while sustaining their structural reforms agenda to promote a sustainable, inclusive, and green economy.

Directors welcomed the authorities' commitment to improve the fiscal position to maintain debt sustainability and support monetary policy's disinflation effort. They encouraged the authorities to aim for an ambitious fiscal effort to put debt on a clear declining path, supported by an enhanced fiscal framework, a broader tax base, and spending reforms. Directors welcomed the proposed indirect tax reform and plans to reform direct taxes and streamline tax expenditures, noting that additional revenue mobilization will help secure fiscal sustainability and create space for priority spending. Some Directors noted that the Debt Sustainability Assessment might have been overly pessimistic in recent years.

Directors commended the central bank's proactive monetary policy response consistent with the inflation targeting framework. Noting the slow decline in core inflation and still above target inflation expectations, they considered the current monetary stance appropriate and called for continued forward looking and data-dependent monetary policy. Directors also welcomed the recent decision to adopt a continuous inflation target that should improve monetary policy effectiveness and commended improvements to BCB autonomy. They emphasized that a flexible exchange rate regime and adequate FX reserves remain important shock absorbers going forward.

Directors noted that the financial sector remains resilient, with adequately capitalized, profitable, and liquid banks. They welcomed steps to address household debt vulnerabilities and promote financial literacy. Directors commended the successful initiatives on the instant payment system Pix and Open Finance environment, as well as the plans for the Digital Real, while underscoring the importance of being mindful of potential financial stability risks related to digitalization. They also emphasized the need for carefully managing a bigger role for public banks to mitigate risks for fiscal sustainability and monetary policy transmission.

Directors commended the authorities' structural reform priorities focused on raising productivity, reducing informality, and promoting green growth. They emphasized the need for continued efforts to foster innovation, trade integration, and competitiveness, upgrade investment and skills, and promote greater female labor force participation. Continuing efforts to strengthen the effectiveness of the anti-corruption and AML/CFT frameworks is also important. Noting Brazil's prominent role in the international efforts to cope with climate change challenges, Directors welcomed plans to strengthen climate resilience, halt illegal deforestation, and decarbonize the economy.

ANNEX 3: LETTER OF DEVELOPMENT POLICY

PREFEITURA DA CIDADE DO RIO DE JANEIRO
PREFEITURA DA CIDADE DO RIO DE JANEIRO / PCRJ

OFÍCIO Nº GAB-OFI-2023/03365

Rio de Janeiro, 07 de julho de 2023.

Ao Sr. JOHANNES ZUTT
Diretor do Banco Mundial para o Brasil
Região da América Latina e do Caribe
The World Bank
Sces - Trecho 3 - Lote 5 - Polo 8 - sn
Brasília - DF
Cep: 70.200-003

Assunto: PROGRAMAÇÃO ORÇAMENTÁRIA

Senhor Diretor,

O Município do Rio de Janeiro - MRJ expressou na Carta de Políticas Públicas, encaminhada a esse Banco Internacional para Reconstrução e Desenvolvimento - BIRD, em 07/04/2022, por meio do Ofício GBP Nº 47, sua disposição e determinação em implantar um conjunto de medidas de políticas de ajuste fiscal e sustentabilidade econômica e socioambiental.

A parceria estabelecida com o Banco constitui-se pilar de extrema relevância, consolidada com a primeira tranche do Development Policy Loan - DPF já efetivada (Contrato de Empréstimo Nº 9410-BR), e nesse contexto, a continuidade das ações e metas estabelecidas na segunda etapa do Projeto de Ajuste e Desenvolvimento Sustentável do Rio de Janeiro amplificará o êxito perseguido no tocante ao equilíbrio das contas públicas, a elevação da capacidade de investimentos e poupança, somada a uma gestão ambiental próspera e sustentável.

Contexto

O município do Rio de Janeiro (MRJ) entrou em dificuldades fiscais antes da pandemia devido ao rápido crescimento dos gastos com pessoal (que cresceu 2,4 por cento ao ano em termos reais entre 2015 e 2019), receitas estagnadas e altos custos do serviço da dívida.

A pandemia do COVID-19 afetou as finanças públicas do Rio, prejudicando ainda mais a capacidade do município de promover investimentos em favor de seus objetivos ambientais, sociais e econômicos, incluindo desenvolvimento urbano de baixo carbono, resiliente e inclusivo. Os investimentos caíram de um pico de R$ 5,2 bilhões em 2015 para apenas R$ 746 milhões em 2019.

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SIGA

A perda de emprego e produção impactou diretamente a arrecadação de impostos, com ênfase no ISS - principal tributo municipal. As medidas de distanciamento impostas pela Pandemia da Covid-19 impactaram diretamente a arrecadação desse tributo a partir de março 2020. Diante desse quadro de dificuldades, acentuado pela pandemia, o MRJ encerrou o exercício de 2020 com o resultado de caixa negativo em R$ 4,1 bilhões nessa fonte de recursos. A disponibilidade de caixa e dos restos a pagar do Poder Executivo (valores referentes após a inscrição de RPN) resultaram em uma insuficiência de R$ 5,5 bilhões em 2020.

Diante da crise fiscal, econômica e sanitária, em que se encontrava o Município do Rio de Janeiro, a atual gestão, iniciada em 2021, iniciou um programa de ajuste fiscal que possibilitasse soluções que respondessem às demandas da sociedade relativas à geração de emprego, atração de investimentos e melhoria de indicadores sociais, além da promoção de investimentos em favor de seus objetivos ambientais

O MRJ, como parte desses esforços, aderiu ao Plano de Promoção do Equilíbrio Fiscal (PEF), no âmbito da Lei Complementar Nº 178, de 13/01/2021, que previa o estabelecimento de metas e compromissos a serem pactuados, com vistas ao alcance de melhoria nas respectivas capacidades de pagamento.

Paralelamente ao desenvolvimento do PEF do Município, foi desenhado o Programa de Ajuste e Desenvolvimento Sustentável do Rio de Janeiro (DPF), em parceria com o BIRD, destinado a apoiar o Município do Rio de Janeiro em: (i) fortalecer a gestão fiscal para melhorar a sustentabilidade fiscal de médio prazo; e (ii) acelerar a transição para um desenvolvimento urbano de baixo carbono, resiliente ao clima e inclusivo, tendo como pano de fundo o impacto da COVID-19 e os esforços do governo para alcançar a Agenda dos Objetivos de Desenvolvimento Sustentável de 2030.

Como resultado das reformas apoiadas pelo primeiro DPF e o PEF, o balanço fiscal do Rio já melhorou significativamente em 2021 e 2022, assim como as dívidas foram integralmente pagas. O Rio melhorou sua classificação de crédito de acordo com a metodologia da Secretaria do Tesouro Nacional (CAPAG), passando de C em 2020 para B em 2022. A maioria das medidas fiscais implementadas em 2021 tem efeitos fiscais de médio prazo e continuará a beneficiar a consolidação fiscal do município entre 2023 e 2026.

Em paralelo, é importante ressaltar que o Rio de Janeiro tem um histórico de ser um importante centro de governança climática global, tendo sediado a Rio 92 até a recente presidência do C40, e por ser a primeira cidade da América Latina a possuir um inventário de emissões de gases de efeito estufa (GEE). Ainda assim, tem uma importante contribuição para a pegada de carbono do Brasil. Como a segunda cidade mais populosa do Brasil, o setor de transporte do Rio é a principal fonte de emissões da cidade, com 42% de suas emissões totais, tornando-o central para a agenda de mitigação climática do Rio. No entanto, a sustentabilidade do sistema de transporte do Rio foi desafiada por uma rede de transporte público deficiente, impedindo o investimento em veículos verdes de transporte público e contribuindo para uma perda constante de passageiros desde 2015, especialmente entre mulheres e famílias de baixa renda. Por fim, o Rio de Janeiro também enfrenta desafios de adaptação ligados à sua geografia, o que o torna suscetível a desastres relacionados ao clima, como chuvas severas e inundações. As políticas apoiadas no primeiro DPF da série programática já trazem resultados, com o fortalecimento do transporte público e ativo e aumento do número de passageiros no sistema de BRT de 60 para 72 milhões por ano entre 2021 e 2022, assim como o início da implementação do Plano de Desenvolvimento Sustentável e Ação

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Climática, reconhecido recentemente na Cúpula para um Novo Pacto Financeiro Mundial, e do Distrito de Baixa Emissão.

Nesse contexto, o Plano de Promoção do Equilíbrio Fiscal e o DPF Programático se complementam e se reforçam para dar sustentabilidade à recuperação e desenvolvimento do MRJ.

O apoio do Banco - *Development Policy Financing* (DPF 2)

Considerando que em "DPFs Programáticos" cada operação subsequente se baseia na anterior, o apoio do Banco Mundial ao MRJ no DPF2, também será voltado para o fortalecimento da gestão fiscal com foco na melhoria da sustentabilidade fiscal de médio prazo, e para políticas para acelerar a transição para um desenvolvimento urbano de baixo carbono, resiliente ao clima e inclusivo. O consequente aumento do saldo financeiro do município, que já está sendo observado após as primeiras reformas no DPF1, permitirá que a cidade abra espaço para criar incentivos fiscais para estimular os investimentos em adaptação e mitigação do clima apoiados na segunda operação.

Área Fiscal:A adesão do MRJ ao PEF, que exige o cumprimento de metas fiscais anuais, está em estrita consonância com o propósito do DPF que também apoia reformas na área fiscal, previdenciária e tributária nesta segunda operação.

1 - Fortalecimento da contabilidade do setor público e capacidades de auditoria interna. Nessa segunda etapa propõe-se a adoção das normas internacionais de contabilidade do setor público (IPSAS), evidenciado pelo relatório de auditoria das contas de 2021 do Tribunal de Contas do Município emitido em 2022, e de modelo para fortalecimento das capacidades de auditoria interna da Controladoria-Geral do Município (CGM), melhorando a qualidade, consistência e transparência dos relatórios financeiros do Município do Rio de Janeiro, como evidenciado pelo novo Estatuto da Auditoria Geral, publicado no D. O. Rio, em 07 de julho de 2023, por meio da Portaria "N" CGM-Rio nº 9, de 06 de julho de 2023 e portaria CGM nº 3 de março de 2023.

2 - Incentivos fiscais para o mercado de créditos de carbono. Outro objetivo a ser perseguido refere-se à Lei nº 7.907 de 12 de junho de 2023 para promover o desenvolvimento de uma economia de baixo carbono, com incentivos fiscais aos contribuintes e às atividades empresariais relacionadas ao mercado de créditos de carbono, que objetivam impulsionar investimentos para mitigar os efeitos da mudança climática e uma economia verde.

3 - Centralização da gestão previdenciária. Com relação à área previdenciária, o Decreto Rio nº 51.107 de 12 de julho de 2022, regulado pela Portaria Previ-Rio nº 1045 de 14 de agosto de 2022, e complementado pelas Portarias Previ-Rio nº 1.049, 1051 e 1053, de 26 de dezembro de 2022, 16 de fevereiro de 2023 e 28 de abril de 2023, respectivamente, aprovam a unificação do sistema de gestão de registros, processamento, concessão e revisão de benefícios de pensão pública dentro do âmbito municipal, permitindo assim uma auditoria mais eficiente do sistema de previdência no município.

Desenvolvimento Urbano Sustentável e Inclusivo: Em termos de sustentabilidade ambiental, as políticas públicas municipais finalísticas selecionadas para comporem a Tranche da segunda operação de crédito estão associadas ao desenvolvimento urbano de baixo carbono, resiliente ao clima e inclusivo.

4 - Novo modelo de governança e operacional do sistema BRT. As medidas propostas no DPF2 para o setor têm como objetivo reduzir as emissões de CO2 e a poluição do ar ao atrair mais passageiros para o sistema, com foco na promoção de um setor de transporte mais competitivo e de baixo carbono, por meio da separação da operação dos ônibus do fornecimento da frota para o sistema BRT, e do novo modelo de governança, que considera a remuneração baseada em desempenho. Envolve também a adoção de medidas que consolidam a transformação do modelo financeiro e operacional do BRT para promover a qualidade e a consistência do Sistema de Transporte Público por Ônibus, visando uma rede de mobilidade mais segura, eficiente, resiliente e inclusiva, bem como a requalificação da gestão e regulação do sistema. Essas políticas são evidenciadas pelo Acordo Judicial nº 0045547-94.2019.9.19.0001 de 25 de maio de 2022 entre a Prefeitura da Cidade do Rio de Janeiro, o Ministério Público do Estado do Rio de Janeiro e os operadores, o Decreto Rio "P" nº 116 de 30 de março de 2023 e o Aviso de Licitação SMTR nº 01/2023 de 31 de março de 2023 da nova operação do BRT.

5 - Expansão do acesso ao transporte público. Complementado as ações acima que fortalecem o sistema de transporte de massa, o MJR também aumentou o acesso ao transporte público para populações de mais baixa renda ao expandir a integração tarifária, permitindo até três transferências entre diferentes modos de transporte com o sistema BRT com apenas uma tarifa e aumentando o tempo para as transferências. São políticas evidenciadas pelos Decretos Rio nº 52.134 de 9 de março de 2023 e nº 52.237 de 28 de março de 2023. Além disso, por meio do Decreto Rio nº 52.095 de 3 de março de 2023, o MRJ criou novo código disciplinar para transporte complementar conhecido como "cabritinho", que serve 56 comunidades de baixa renda do Rio.

6 - Cartão Move Mulher. Reforçando uma ampla agenda de prevenção e combate à violência contra a mulher, o MRJ tornou o "Cartão Move Mulher", que oferece transporte público gratuito para mulheres sobreviventes de violência doméstica para que acessem os serviços da rede especializada de combate à violência contra a mulher, uma política de Estado por meio da Lei nº 7.430 de 23 de junho de 2022.

7 - Incentivos à Mobilidade Ativa e à Segurança Viária. Ainda no setor de transporte, o apoio do Banco abrange o Plano de Extensão da Rede Cicloviária do Rio de Janeiro, através do Decreto Rio nº 52.132 de 9 de março de 2023, de forma a estimular cada vez mais o uso deste meio de locomoção, interligar toda a cidade e facilitar a conexão aos centros de bairros, grandes equipamentos urbanos e, sobretudo, à rede de transportes. De forma complementar, o Banco apoia também o Plano de Segurança Viária, por meio do Decreto Rio nº 52.554 de 22 de maio de 2023, para orientar ações coordenadas da gestão municipal e, até o fim de 2024, reduzir em 20 por cento a taxa de mortes no trânsito a cada 100 mil habitantes, em relação a 2019, que tem alta incidência em pedestres e ciclistas.

8 - Distrito de Baixa Emissão. Outro tema de grande relevância, refere-se à implantação da primeira fase do Distrito de Baixa Emissão (DBE) no MRJ, envolvendo a requalificação de logradouros na área do DBE no Centro do Rio, com soluções sustentáveis para a redução de emissões de gases de efeito estufa e resiliência às mudanças climáticas, perpassando o monitoramento de gases de efeito estufa, monitoramento da qualidade do ar, aumento da malha cicloviária, incremento da infraestrutura verde e plano de mobilidade limpa. O Decreto Rio nº

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PREFEITURA DA CIDADE DO RIO DE JANEIRO
PREFEITURA DA CIDADE DO RIO DE JANEIRO / PCRJ

51.047 de 28 de junho de 2022, apoiado nesta operação, regulamenta a Lei Complementar nº 229 de 14 de julho de 2021, com o objetivo de implementar ações para redução de emissões de Gases de Efeito Estufa - GEE na Cidade do Rio de Janeiro, alinhando-a às metas assumidas na 21ª Conferência do Clima - COP e no Acordo de Paris.

Neste contexto, o apoio financeiro do Banco Mundial para implantação do "Projeto de Gestão Fiscal e Desenvolvimento Sustentável do Rio de Janeiro" (DPF2), no valor de US$ 135.238.245, tem particular relevância na estratégia de financiamento da Prefeitura, razão pela qual agradecemos antecipadamente por sua colaboração no sentido da dar prosseguimento às gestões internas no Banco Mundial, visando à aprovação da segunda operação de crédito, que, associada ao Plano de Promoção do Equilíbrio Fiscal, continuará contribuindo para a construção de uma trajetória de reequilíbrio das contas públicas municipais e para acelerar a transição para um desenvolvimento urbano de baixo carbono, resiliente ao clima e inclusivo.

Decerto, esta Gestão entende a necessidade da adesão a novas ações estruturantes para o crescimento socioeconômico e ambiental do Município. É nosso compromisso, portanto, implementar medidas de políticas complementares à sustentabilidade fiscal e à transformação da cidade, direcionadas ao desenvolvimento urbano de baixo carbono e mais inclusivo, por meio de uma mobilidade mais sustentável e de estratégias para mitigação de impactos e adaptação às mudanças climáticas.

Ao agradecer ao Banco Mundial por seu contínuo apoio, aproveito esta oportunidade para expressar minha consideração e estima.

EDUARDO DA COSTA PAES
PREFEITO
Matrícula: 1608058
PCRJ

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[Unofficial translation] LETTER OF DEVELOPMENT POLICY

To Mr. JOHANNES ZUTT
Director-Brazil
Latin American and the Caribbean
The World Bank

Subject: Budget Programming

Dear Director,

The Municipality of Rio de Janeiro - MRJ expressed in the Letter of Development Policy, forwarded to the International Bank for Reconstruction and Development - IBRD, through Official Letter GBP No. 47 dated April 7, 2022, its willingness and determination to implement a set of fiscal adjustment and economic and socio-environmental sustainability policies.

The partnership established with the Bank constitutes a pillar of utmost relevance, consolidated with the first tranche of the Development Policy Loan - DPL already implemented (Loan Agreement No. 9410-BR). In this context, the continuity of actions and goals established in the second stage of the Rio de Janeiro Fiscal Management and Development Project will amplify the pursued success regarding the balance of public accounts, the increase in investment and savings capacity, combined with prosperous and sustainable environmental management.

Context:
The municipality of Rio de Janeiro (MRJ) faced fiscal difficulties prior to the pandemic due to the rapid growth of personnel expenses (which increased by 2.4 percent per year in real terms between 2015 and 2019), stagnant revenues, and high debt service costs.
The COVID-19 pandemic further affected Rio's public finances, exacerbating the municipality's ability to promote investments in line with its environmental, social, and economic objectives, including low-carbon, resilient, and inclusive urban development. Investments declined from a peak of BRL 5.2 billion in 2015 to only BRL 746 million in 2019.
The loss of jobs and production directly impacted tax revenue, with a particular emphasis on the ISS (Municipal Service Tax), the main municipal tax. The distancing measures imposed by the COVID-19 pandemic directly affected the collection of this tax starting from March 2020. Faced with this difficult situation, further exacerbated by the pandemic, MRJ ended the year 2020 with a negative cash result of R$ 4.1 billion from this revenue source. The cash availability and the outstanding payables of the Executive Branch (values referred to as RPN inscription) resulted in a shortfall of R$ 5.5 billion in 2020.

Given the fiscal, economic, and health crisis in which the Municipality of Rio de Janeiro found itself, the current administration, which began in 2021, initiated a fiscal adjustment program that aimed to provide solutions that would address society's demands regarding job creation, attracting investments, improving social indicators, and promoting investments in line with its environmental objectives.

As part of these efforts, MRJ joined the Fiscal Equilibrium Promotion Plan (PEF), under Supplementary Law No. 178 of January 13, 2021, which envisioned the establishment of goals and commitments to be agreed upon, aiming to improve its respective payment capacities.

Parallel to the development of the PEF, the Rio de Janeiro Fiscal Management and Sustainable Development Program (DPF) was designed in partnership with the IBRD to support the Municipality of Rio de Janeiro in: (i) strengthening fiscal management to improve medium-term fiscal sustainability, and (ii) accelerating the transition to low-carbon, climate-resilient, and inclusive urban development, taking into account the impact of COVID-19 and the government's efforts to achieve the 2030 Agenda for Sustainable Development Goals. As a result of the reforms supported by the first DPF and the PEF, Rio's fiscal balance has significantly improved in 2021 and 2022, and debts have been fully paid. Rio has improved its credit rating according to the methodology of the National Treasury Secretariat (CAPAG), moving from a C rating in 2020 to a B rating in 2022. Most fiscal measures implemented in 2021 have medium-term fiscal effects and will continue to benefit the fiscal consolidation of the municipality between 2023 and 2026.

Additionally, it is important to highlight that Rio de Janeiro has a history of being an important center of global climate governance, having hosted the Rio 92 summit and more recently held the presidency of C40, as well as being the first city in Latin America to have a greenhouse gas emissions inventory. Nevertheless, the city contributes significantly to Brazil's carbon footprint. As the second most populous city in Brazil, Rio's transportation sector is the city's main source of emissions, accounting for 42% of its total emissions, making it central to Rio's climate mitigation agenda. However, the sustainability of Rio's transportation system has been challenged by a deficient public transportation network, hindering investment in green public transportation vehicles and contributing to a steady decline in ridership since 2015, especially among women and low-income families. Furthermore, Rio de Janeiro also faces adaptation challenges related to its geography, making it susceptible to climate-related disasters such as heavy rains and floods. The policies supported by the first DPF of the programmatic series are already yielding results, with the strengthening of public and active transportation and an increase in the number of passengers in the BRT system from 60 to 72 million per year between 2021 and 2022, as well as the initiation of the implementation of the Sustainable Development and Climate Action Plan, recently recognized at the Summit for a New Global Financial Pact, and the Low-Emission District.

In this context, the Fiscal Equilibrium Promotion Plan and the Programmatic DPF complement and reinforce each other to provide sustainability to the recovery and development of MRJ.

The support from the World Bank - Development Policy Financing (DPF 2)

Considering that in "Programmatic DPFs" each subsequent operation builds upon the previous one, the World Bank's support to MRJ in DPF 2 will also be focused on strengthening fiscal management with a focus on improving medium-term fiscal sustainability and implementing policies to accelerate the transition to low-carbon, climate-resilient, and inclusive urban development. The resulting increase in the municipality's financial balance, which is already being observed after the initial reforms in DPF 1, will allow the city to create fiscal incentives to stimulate investments in climate adaptation and mitigation supported by the second operation.

Fiscal Area: MRJ's adherence to the PEF, which requires the fulfillment of annual fiscal targets, is in strict alignment with the purpose of the DPF, which also supports reforms in the fiscal, pension, and tax areas in this second operation.

1. **Strengthening public sector accounting and internal audit capabilities.** In this second phase, the adoption of International Public Sector Accounting Standards (IPSAS) is proposed, as evidenced by the audit report of the municipality's accounts for 2021 by the Municipal Court of Auditors issued in 2022. Additionally, a model for strengthening the internal audit capabilities of the Municipality's Office of the Comptroller-General (CGM) is being implemented, aiming to improve the quality, consistency, and transparency of the municipality's financial reports. This is further exemplified by the new General Audit Statute, published in the Official Gazette of Rio on July 7, 2023, through CGM-Rio Ordinance "N" No. 9, dated July 6, 2023, and CGM Ordinance No. 3, dated March 2023.

2. **Fiscal incentives for the carbon credit market:** Another objective pursued is the promotion of a low-carbon economy through Law No. 7,907, enacted on June 12, 2023. This law provides fiscal incentives to taxpayers and business activities related to the carbon credit market, aiming to drive investments in mitigating the effects of climate change and fostering a green economy.

3. **Centralization of pension management.** In the area of pensions, Decree Rio No. 51,107, issued on July 12, 2022, regulated by PREVI-Rio Ordinance No. 1045, dated August 14, 2022, and complemented by PREVI-Rio Ordinances No. 1,049, 1,051, and 1,053, dated December 26, 2022, February 16, 2023, and April 28, 2023, respectively, approves the unification of the management system for records, processing, granting, and review of public pension benefits within the municipal scope. This allows for a more efficient audit of the pension system in the municipality.

Sustainable and Inclusive Urban Development. In terms of environmental sustainability, the selected municipal public policies included in the tranche of the second credit operation are associated with low-carbon, climate-resilient, and inclusive urban development.

4. **New governance and operational model for the BRT system.** The measures proposed in DPF 2 for the sector aim to reduce CO2 emissions and air pollution by attracting more passengers to the system, with a focus on promoting a more competitive and low-carbon transportation sector. This includes separating the bus operation from the fleet supply for the BRT system and implementing a new governance model that considers performance-based remuneration. It also involves adopting measures to consolidate the transformation of the financial and operational model of the BRT to enhance the quality and consistency of the Bus Public Transportation System. The goal is to create a safer, more efficient, resilient, and inclusive mobility network, as well as requalifying the management and regulation of the system. These policies are evidenced by Judicial Agreement No. 0045547-94.2019.9.19.0001, dated May 25, 2022, between the City of Rio de Janeiro, the Public Prosecutor's Office of the State of Rio de Janeiro, and the operators, as well as Rio "P" Decree No. 116, dated March 30, 2023, and SMTR Tender Notice No. 01/2023, dated March 31, 2023, for the new BRT operation.

5. **Expansion of access to public transportation.** In addition to the actions that strengthen the mass transportation system, MRJ has also increased access to public transportation for lower-income populations by expanding fare integration. This allows up to three transfers between different modes of transportation

within the BRT system with only one fare, and extended transfer times. These policies are exemplified by Rio Decrees No. 52,134, dated March 9, 2023, and No. 52,237, dated March 28, 2023. Furthermore, through Rio Decree No. 52,095, dated March 3, 2023, MRJ created a new disciplinary code for complementary transportation known as *Cabritinho*, which serves 56 low-income communities in Rio.

6. ***Cartão Move Mulher***. Reinforcing a comprehensive agenda for the prevention and combat of violence against women, MRJ has established the *Cartão Move Mulher* which provides free public transportation for women survivors of domestic violence to access specialized services in the network combating violence against women. This policy has been made into a state law through Law No. 7,430, enacted on June 23, 2022.

7. **Incentives for Active Mobility and Road Safety.** In the transport sector, the Bank's support encompasses the Plan for the Extension of the Bicycle Network of Rio de Janeiro, through Rio Decree No. 52,132, dated March 9, 2023, aiming to further encourage the use of bicycles as a means of transportation, interconnecting the entire city and facilitating access to neighborhood centers, major urban facilities, and, above all, the transport network. Additionally, the Bank supports the Road Safety Plan through Rio Decree No. 52,554, dated May 22, 2023, to guide coordinated actions by the municipal government and, by the end of 2024, reduce the traffic fatality rate by 20 percent per 100,000 inhabitants compared to 2019, with a focus on reducing pedestrian and cyclist fatalities.

8. **Low Emission District.** Another highly relevant topic pertains to the implementation of the first phase of the Low Emission District (DBE) in MRJ, involving the requalification of public spaces in the DBE area in downtown Rio. This initiative focuses on sustainable solutions for reducing greenhouse gas emissions and enhancing resilience to climate change. It includes monitoring greenhouse gas emissions, air quality monitoring, expanding the cycling infrastructure, increasing green infrastructure, and implementing a clean mobility plan. Rio Decree No. 51,047, dated June 28, 2022, supported by this operation, regulates Supplementary Law No. 229, enacted on July 14, 2021, with the aim of implementing actions to reduce greenhouse gas emissions in the City of Rio de Janeiro, aligning it with the commitments made at the 21st Conference of the Parties (COP) and the Paris Agreement.

In this context, the financial support provided by the World Bank for the implementation of the "Rio de Janeiro Fiscal Management and Sustainable Development Project" (DPF2), in the amount of US$ 135,238,245, is of particular importance in the municipality's financing strategy. Therefore, we would like to express our advance gratitude for your collaboration in advancing internal processes at the World Bank, with the aim of approving the second credit operation. This operation, in conjunction with the Fiscal Equilibrium Promotion Plan, will continue to contribute to the construction of a path towards rebalancing the municipal public accounts and accelerating the transition to a low-carbon, climate-resilient, and inclusive urban development.

Undoubtedly, this administration understands the need to embrace new structural actions for the socio-economic and environmental growth of the municipality. It is our commitment to implement complementary policy measures for fiscal sustainability and city transformation, focused on low-carbon and more inclusive urban development through sustainable mobility and strategies for mitigating and adapting to climate change impacts.

As we express our gratitude to the World Bank for its ongoing support, I would like to take this opportunity to convey my consideration and esteem.

Eduardo da Costa Paes
Mayor

ANNEX 4: ENVIRONMENT AND POVERTY/SOCIAL ANALYSIS TABLE

Prior Actions	Significant positive or negative environment effects	Significant poverty, social or distributional effects positive or negative
Operation Pillar 1: Strengthening fiscal management to improve medium-term fiscal sustainability		
Prior Action 1: To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM.	PA1 is expected to have nor adverse impact on the environment, neither positive impact.	PA1 is expected to have no negative impact on poverty. It is expected to increase transparency and accountability, benefiting citizens in general. Indirect positive impacts on poverty may occur if the created fiscal space leads to investments in public services (such as education and health).
Prior Action 2: To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market	PA2 is expected to have no adverse impacts on the environment. PA2 is otherwise expected to generate positive impacts to the environment promoting the carbon emissions offsets in the economy.	The development of a low-carbon economy is expected to create new opportunities for skilled workers city and expand the local economy, with indirect positive impacts on distinct income groups. The incentive to purchase carbon credits by ISS taxpayers is expected to have small to null effects on prices, and hence on the purchasing power and poverty of MRJ residents. The impacts on poverty are expected to be minimal.
Prior Action 3: To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits.	PA3 is expected to have nor adverse impact on the environment, neither positive impact.	PA1 is expected to have no direct negative impact on poverty. Indirect positive impacts on poverty may occur if the pension system savings lead to investments in public services (such as education and health).
Operation Pillar 2: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development		
Prior Action 4: To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model.	PA4 is expected to have no adverse impacts on the environment. PA4 otherwise has potentially positive environmental impacts with the reduction of air pollution and CO_2 emission rates. The BRT revamping should attract users, especially women. It is hoped that the improved service will promote a modal shift with environmental benefits, reducing emissions.	Positive social impacts are expected, as well as indirect positive effects on income due to better connectivity. The increased operational efficiency through, say, a reduction in headway times can particularly benefit the low-income population. The poor in Rio are more dependent on public transportation, since only 17 percent of them have a car at their households and only 5 percent have a motorcycle (POF[98] 2017/18), compared to 40 percent and 5 percent of the

[98] POF - Consumer Expenditure Survey (*Pesquisa de Orçamentos Familiares).*

		non-poor respectively. This action could thus improve the mobility of low-income population and consequently allow them to reach jobs and basic public services (schools, hospitals, other health facilities, etc.) in a less costly way.
Prior Action 5: To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration.	PA5 is expected to have no adverse impacts on the environment. PA05 supports low-carbon option of public transportation in the "favelas" (low-income communities), which is expected to generate positive environmental impacts and more efficient use of energy resources.	The positive poverty and social effects expected from PA4 will be enhanced under PA5, which will improve the access of the most disadvantaged and vulnerable dwellers of irregular settlements (favelas) to public transport at lower costs (due to tariff integration) and with enhanced safety. This action could also directly improve the mobility of low-income population as the unique fare for three transportation modalities equate to a significant in-kind transfer to public transportation riders. This enhanced and cheaper connectivity will allow them to reach jobs and basic public services (schools, hospitals, other health facilities, etc.) in a less costly way.
Prior Action 6: To enable female survivors of domestic violence to access the referral services of the *Rede Especializada para Combate à Violência Doméstica contra Mulheres* (Specialized Network for Combating Violence Against Women in the Municipality), the Borrower has strengthened the "Cartão Move Mulher" (Move Women Card) program. .	PA6 is expected to have no adverse impacts on the environment. PA6 supports a dedicated system of low-carbon choice of public transportation for women victims of domestic violence, which it is also expected to generate only positive environmental impacts and social co-benefits.	This PA is expected to have significant and positive impacts for low-income women that survived episodes of domestic violence, by enhancing their access to survivor's referral services provided by the Municipality and, consequently, breaking the progressive cycle that starts with verbal aggression, humiliation and embarrassment, and can evolve into physical aggression and femicide. This PA will also contribute to the Municipality's Plan for Sustainable Development (PDS) – the city's major reference for mitigation and adaptation to climate change. Cooperation and Peace is one of the six axis of this Plan and the reduction of violence is one of the key strategies under this axis, which includes the goals of reducing the homicide rates of women and increasing the capacity to assist women in situations of domestic and family violence in units of the municipal network.
Prior Action 7. To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability	PA7 is expected to have no adverse impacts on the environment. PA7 has a potential positive environmental impact by shifting from CO_2 emitting to zero emissions modes of urban mobility (NMT). Improved sustainable development sector governance and	This PA is expected to have positive social effects for low-income men and, particularly, women and children who are more likely to travel on foot and are expected to be more encouraged to choose cycling as conditions of safety in bicycle lanes are improved.

framework to expand and consolidate its implementation, and (ii) established the Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety.	enforcement of zero emission provisions is expected to provide incentives for climate change mitigation, creating a more dynamic sector.	The historical records of traffic accidents and fatalities in the city of Rio de Janeiro shows that speed reduction and enforcement have contributed to a significant decline in mortality rates since the peak in 2007 when the rate was 15 deaths per 100,000 inhabitants, but the decrease in the number of accidents has been slow, failing to meet global safety targets.[99] It also shows that pedestrians (among which people with lower incomes are overrepresented) and cyclists are particularly vulnerable, accounting for 48 percent of all recorded accidents between 2018 and 2021. The economic costs related to injury and loss of life from traffic crashes include money needed to treat injuries, loss of hours worked, vehicle repair costs, insurance or third-party costs, and costs caused by increased congestion when a crash occurs. Indeed, simulations suggest that halving road crash deaths and injuries could generate additional flows of income, with increases in GDP per capita over 24 years as large as 7.1 percent in Tanzania, 7.2 percent in the Philippines, 14 percent in India, 15 percent in China, and 22.2 percent in Thailand.[100] Therefore, the road, walking and cycling safety improvements and the expanded use of bicycle lanes supported under this Prior Action are expected to save lives, reduce the severity of crash injuries and bring substantial economic benefits – of which, as suggested by analysis in other Latin American cities suggest, health benefits would account for 60 percent.[101]
Prior Action 8: To further strengthen the green transformation of the Low Emission District, the Borrower has established a governance structure across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and	PA8 is expected to have no adverse impacts on the environment. PA8 is likely to have significant positive effects on the environment, on urban air quality and huge climate benefits, but to the success of this PA, the governance arrangements and monitoring mechanisms of the Low Emission District have to rely on a broad consensus between stakeholders with	The direct effects on poverty are expected to be minimal, with potential indirect positive impacts on public health due to improvements on air quality. The Low Emission District is also expected to promote a more attractive environment for housing developers, leading to the construction of social housing complexes in the central city area that concentrates jobs.

[99] Road Safety Plan. Rio de Janeiro, 2023.
[100] World Bank. (2017). The High Toll of Traffic Injuries: Unacceptable and Preventable. World Bank, Washington, DC.
[101] Morales Sarriera, J., A. Jakovcevic. (2022). Identifying and Quantifying the Economic Benefits of Bicycle Lanes. Mobility and Development, World Bank, Washington, DC.

reduction of vehicle emissions, and a M&E system of GHG emissions.	distinct vested interests and build support that is strong enough to pass through successive governments.	

ANNEX 5: PARIS ALIGNMENT ASSESSMENT TABLE

Program Development Objective(s): To support the Municipality of Rio de Janeiro in: (i) strengthening fiscal management to improve medium-term fiscal sustainability; and (ii) accelerating the transition towards a low-carbon, resilient and inclusive urban development.	
Step 1: Taking into account our climate analysis (e.g., Country Climate and Development Reports or CCDRs), is the operation consistent with the country climate commitments, including for instance, the NDC, NAP, LTS, and other relevant strategies?	**Answer** Yes. **Explanation**: The operation is directly aligned with Brazil's Update of the First Nationally Determined Contribution (NDC) submission (December 2020) and the climate action policy documents published by the Rio Municipality, such as the Sustainable Development and Climate Action Plan (PDS) and Strategic Plan 2021-2024.
Mitigation goals: assessing and reducing the risks	
Prior Action 1. To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: This prior action is not likely to cause a significant increase in GHG emissions.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 1: The measures supported by the prior action are not likely to have any direct mitigation or emissions generating impacts.	
Prior Action 2. To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measure will not cause an increase in emissions; in fact, its objective is to help reduce GHG emissions.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA

Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 2: The measures supported by the prior action are not likely to have any emissions generating impacts.	
Prior Action 3. To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measures supported by the PA are not expected to have any direct or indirect impacts on emissions. The measures are universally aligned.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 3: The measures supported by the prior action are not likely to have any direct mitigation or emissions generating impacts.	
Prior Action 4. To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The prior action promotes the competitiveness and efficiency of public transport, a low-carbon mode. The prior action is helping transition Rio's mobility to a lower-emissions pathway by enabling shift from private motorized modes to efficient public transport. While in the current model the BRT system will use diesel buses due to the insufficient timing in the context of the urgent intervention and revamping of the system and the lack of local market readiness, the unbundling will serve as a test for the regular municipal bus system, for which the Municipality is conducting feasibility studies for implementing e-buses.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA

Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 4: The measures supported by the PA are expected to generate net emissions reductions.	
Prior Action 5. To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measure is aligned. The measure will help increase the ease of using public transport and therefore contribute to emissions mitigation.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 5: The measures supported by the PA are expected to generate net emissions reductions.	
Prior Action 6: To enable female survivors of domestic violence to access the referral services of the *Rede Especializada para Combate à Violência Doméstica contra Mulheres* (Specialized Network for Combating Violence Against Women in the Municipality).	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measure is aligned. The measure will facilitate the use of public transport by a specific population group and therefore not contribute to emissions generation.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 6: The measures supported by the prior action are not likely to have any direct emissions generating impacts.	
Prior Action 7. To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability framework to expand and consolidate its implementation, and (ii) established the	

Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measure is aligned. The prior action promotes cycling (including its safety), which is a zero-carbon mode.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 7: The measures supported by the PA are expected to generate net emissions reductions.	
Prior Action 8. To further strengthen the green transformation of the Low Emission District, the Borrower has established a governance structure across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and reduction of vehicle emissions, and a M&E system of GHG emissions.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step M2.1: Is the prior action likely to cause a significant increase in GHG emissions?	**Answer:** No. **Explanation**: The measure is aligned. The prior action is helping the Municipality achieve its goal of at least one zero-carbon district by 2030, thus expected to result in net GHG reductions through transport, building energy efficiency, afforestation, and other initiatives.
Step M2.2: Is the prior action likely to introduce or reinforce significant and persistent barriers to transition to the country's low-GHG emissions development pathways?	**Answer:** NA
Step M3: Is the risk of the prior action introducing or reinforcing significant and persistent barriers being reduced to low after mitigation measures have been implemented?	**Answer:** NA
Conclusion for PA 8: The measures supported by the PA are expected to generate net emissions reductions.	
Mitigation goals: *All prior actions are aligned on mitigation.*	
Adaptation and resilience goals: assessing and managing the risks	
Prior Action 1 To improve its fiscal accountability and increase the transparency, effectiveness, and efficiency of its policies and programs, the Borrower has adopted the IA-CM to strengthen the internal audit capacities of the CGM.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer:** No. **Explanation**: This prior action's development impact is not expected to be threatened by climate risks.

Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 1 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 2 To promote the development of a low carbon economy, the Borrower has provided fiscal incentives to taxpayers and to business activities related to the carbon credit market.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer:** No. **Explanation**: This prior action's development impact is not expected to be threatened by climate risks.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 2 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 3 To enable streamlined operations and more efficient auditing of the municipal public pension granting system, the Borrower has unified the record management, processing, granting, and revision of municipal public pension benefits.	
Pillar Objective: Strengthening fiscal management to improve medium-term fiscal sustainability	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer:** No. **Explanation**: This prior action's development impact is not expected to be threatened by climate risks.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 3 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 4 To foster a more competitive and low-carbon bus sector, the Borrower has taken action to separate bus operation from fleet provision in the BRT system and provide a performance-based remuneration model.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer:** No. **Explanation**: The impact of separating fleet provision from operation (improved BRT system operational efficiency) is not directly threatened by climate risk. Climate risks do affect Rio's transport system; however, the BRT network design will consider these risks. Moreover, the city has in place an early warning system (*Alerta Rio*). Depending on the intensity of rainfall and winds, operational stages are declared. During these stages, warnings are issued to the relevant municipal agencies involved in damage mitigation, along with alerts

	and recommendations to the public through the internet and the press.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 4 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 5 To increase public transport access and affordability to the lower-income population, the Borrower has (i) expanded the ticket integration of different public transport modes under a single municipal ticket; and (ii) regulated the complementary transportation service in informal settlements to establish quality and safety standards as well as capped tariffs and new validators allowing for digital payments and data-based tariff policy integration.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer** Yes. **Explanation**: Climate risks, including floods and landslides, do affect Rio's transport system, and are more relevant for the bus routes serving the low-income settlements (favelas).
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** Yes. **Explanation:** Rio's Sustainable Development and Climate Action Plan will put in place measures to reduce climate vulnerability, including in the favelas (including by improving overall institutional capacity and coordination), such as the implementation of several Blue Corridors to reduce flood risk and significant reforestation (>3,500 ha by 2030) to reduce the risk of landslides. Nature-based solutions are planned to increase the climate resilience of infrastructure, such as the revitalization of streets and public spaces with sustainable urban drainage and extensive tree planting. The city also has in place an early warning system (*Alerta Rio*). Depending on the intensity of rainfall and winds, operational stages are declared. During these stages, warnings are issued to the relevant municipal agencies involved in damage mitigation, along with alerts and recommendations to the public through the internet and the press.
Conclusion for Prior Action 5 This prior action's development impact is not expected to be threatened by climate risks considering the risk mitigation measures in place. The adaptation risks have been reduced to low.	
Prior Action 6 To enable female survivors of domestic violence to access the referral services of the *Rede Especializada para Combate à Violência Doméstica contra Mulheres* (Specialized Network for Combating Violence Against Women in the Municipality) the Borrower has strengthened the "Cartão Move Mulher" (Move Women Card) program.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer:** No. **Explanation**: This prior action's development impact (domestic violence survivors' access to referral services) is not expected to be threatened by climate risks. While the public transport system in Rio is exposed to some climate risk, the measure of the prior action itself (free

	public transport allowance for a limited population segment) is not.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 6 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 7 To expand low-carbon mobility in the MRJ and connect the city's low-income areas, the Borrower has (i) regulated the Cycling Network and adopted the Municipal Cycleway Plan that establishes requirements, responsibilities, and an accountability framework to expand and consolidate its implementation, and (ii) established the Road Safety Plan, with targets for reducing traffic fatalities, requirements for speed reduction and physical interventions, and the creation of a Permanent Committee on Road Safety.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	
Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer** No. **Explanation**: Climate risks do affect Rio; however, the cycling network design will consider these risks. The network covers the entire city, and it is unlikely that any single climate event would threaten the usability of all or most segments. The Cycleway Plan discusses the natural risks that need to be considered and presents data on the need for paving the cycleway infrastructure or improve its maintenance (measures that would significantly reduce the impact of floods on the usability of the network). The city's Sustainable Development and Climate Action Plan envisions the implementation of several Blue Corridors to reduce flood risk and Green Corridors to reduce the heat island effect. Moreover, the city has in place an early warning system (*Alerta Rio*). Depending on the intensity of rainfall and winds, operational stages are declared. During these stages, warnings are issued to the relevant municipal agencies involved in damage mitigation, along with alerts and recommendations to the public through the internet and the press.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 7 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Prior Action 8 To further strengthen the green transformation of the Low Emission District, the Borrower has established a governance structure across Secretaries and other relevant institutions, enabling the renewal of public space with a focus on e-mobility, low-carbon and climate-resilient infrastructure, urban afforestation, and reduction of vehicle emissions, and a M&E system of GHG emissions.	
Pillar Objective: Accelerating the transition towards a low-carbon, climate-resilient and inclusive urban development	

Step A2: Are risks from climate hazards likely to have an adverse effect on the prior action's contribution to the Development Objective(s)?	**Answer** No. **Explanation**: This prior action's ultimate development impact (reduced emissions through energy efficiency, municipal waste, and other measures) is not threatened by climate risks even if the area of the low-emissions district is exposed to some risk. The specific measure of the prior action concerns the governance of the low-emissions district, which is not directly affected by climate risks.
Step A3: Does the design of the prior action reduce the risk from climate hazards to an acceptable level, considering climate adaptation good practices applicable to the country context?	**Answer** NA
Conclusion for Prior Action 8 This prior action's development impact is not expected to be threatened by climate risks. The adaptation risks are low.	
Adaptation and resilience: *All prior actions are aligned on adaptation and resilience. The adaptation risks are low.*	
OVERALL CONCLUSION OF PARIS ALIGNMENT ASSESSEMENT: The operation is aligned with the goals of the Paris Agreement.	

ANNEX 6: INTERGOVERNMENTAL FISCAL ARRANGEMENTS IN BRAZIL

1. **Brazil is a highly decentralized federation, with subnational governments being responsible for the delivery of most public services.** The Brazilian Constitution gives State and municipal governments substantive fiscal autonomy and large spending responsibilities. Municipalities provide primary education and health care, and States fund most secondary schools and hospitals. Public universities are mostly federal, but many States also maintain public universities of their own. States are the primary providers of policing and public security. State and municipal governments are also in charge of building and maintaining local and regional infrastructure and delivering social protection programs.

2. **States and municipalities also raise significant tax revenues of their own.** The Brazilian Constitution assigns taxation powers to different levels of government. Brazil's largest tax by revenue, the ICMS (*Imposto sobre Circulação de Mercadorias e Serviços*), is an indirect tax levied by States on goods and selected services (intermunicipal transport and communication). The States also tax motor vehicles (IPVA), and inheritances and donations (ITCMD). Municipalities levy a service tax (ISS) on services not covered by the ICMS, and tax urban properties (IPTU) and real estate transactions (ITBI). State and local governments have full autonomy to define their tax bases and rates. States also share 25 percent of the ICMS and 50 percent of the IPVA with municipalities.

3. **In order to provide public services, subnational governments receive intergovernmental transfers.** The federal government shares its tax revenues with States and municipalities through two general-purpose unconditional transfer funds, respectively the FPE (*Fundo de Participação dos Estados e do Distrito Federal*) and the FPM (*Fundo de Participação dos Municípios*). These are constitutionally mandated, and their allocation is based on demographic factors, with less developed States and municipalities receiving higher per capita allocations. As a result, these funds are the predominant source of revenue for poorer States, and

poor rural municipalities. The federal government also provides specific transfers for education (FUNDEB[102]) and health care (SUS[103]), as well as capital transfers for specific programs.

4. **Fiscal rules for subnational governments are enshrined in the 2000 Fiscal Responsibility Law (LRF—*Lei de Responsabilidade Fiscal*).** With a view to reducing moral hazards in intergovernmental fiscal relations, the LRF explicitly prohibits debt refinancing operations between different levels of government. Complementary Senate resolutions also prohibit subnational borrowing if certain fiscal thresholds are not respected. The recent subnational fiscal crisis made it evident that the LRF and State-federal fiscal adjustment programs (PAFs) need strengthening. In response, the federal government approved: (i) a Fiscal Recuperation Regime for bankrupt States (LC 159/2017); and (ii) debt amortization extensions for States facing liquidity problems (LC 156/2016), conditional on fiscal adjustment measures. Following the tendency of improvement of the intergovernmental fiscal relations, Congress modified and approved fiscal rules to support fiscal adjustment at subnational governments (LC 178/2021). The main innovations of this law are: (i) the improvement of the FRR by changing LC 159/2017; (ii) creation of the Fiscal Equilibrium Plan (PEF-*Plano de Equilíbrio Fiscal*), which was designed to support the adjustment of subnational governments with limited debt, but that were facing liquidity problems; (iii) clarified the definition of some limits of the Fiscal Responsibility Law, such as the one for personnel spending.

ANNEX 7: MAIN REFORMS PURSUED BY THE FEDERAL GOVERNMENT

1. **The government proposed a new fiscal framework that combines a spending rule with a primary balance rule to stabilize debt in the medium-term.** The new framework will combine a spending rule with a primary balance rule. As the spending rule, it will limit federal real primary spending growth to 70 percent of the real primary recurrent revenue growth, allowing expenditures to grow above inflation but at a slower pace than revenues. If revenues plummet, the increase in expenses would respect a floor of 0.6 percent. On the other hand, real expenditure growth would be limited to 2.5 percent in a revenue boom and any additional revenue would improve the primary result or directed towards public investments. Also, it has fewer exceptions on the spending limit (from 13 on the original text to 5), including health and education spendings following their minimum constitutional obligations and minimum wage real adjustments, even if the Government does not achieve its primary balance goals. As the primary balance rule, there will be a range for the primary balance target each year. If the increase in revenue and the minimum expenditure growth result in primary below of the band, the limit of spending growth drops to 50 percent. A series of automatic triggers were inserted in the original text in case the target for public accounts is not met. In the event of non-compliance with the primary balance goal for one year, there will be a ban on creating positions, readjusting mandatory expenses, creating or increasing aid and granting, or expanding tax benefits, among other measures. The rules become tougher in case of non-compliance for two consecutive years. If this occurs, in addition to all the previous measures, the triggers prohibit salary readjustments and admission of personnel. If the targets are again achieved, the measures cease to be valid. Investments will have a minimum value, around BRL75 billion, to be corrected for each year's inflation. The Budget Guidelines Law (LDO) for 2024 was sent to Congress based on the existing spending rule, linked only to the CPI inflation. As the new

[102] FUNDEB - Fund for the Maintenance and Development of Basic Education and the Enhancement of Education Professionals (*Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização dos Profissionais da Educação*).
[103] SUS – Unified Health System (*Sistema Único de Saúde).*

fiscal framework is approved in Congress, the government will adjust the 2024 budget accordingly. Additionally, there will be a medium-term fiscal framework, with projections for the main fiscal aggregates that make up the reference scenarios, with emphasis on the expected effect of the targets on the public debt trajectory.

2. **One of the main concerns regarding the new fiscal framework is the implicit required revenue increase to meet the primary balance targets.** The Government has announced a set of measures that could raise federal revenues by up to BRL 251.8 bn if fully implemented. Among those measures yet to be approved on Congress and in the Senate are: (i) the return of the casting vote on CARF (*Conselho Administrativo de Recursos Fiscais* - Federal Administrative Council of Tax Appeals), which encompass tie-breaking vote in favor of the Union in tax disputes with taxpayers (BRL 50 bn in 2023), (ii) Extraordinary debt installment program, called *Litígio Zero* program (between BRL 35 billion and BRL 50 billion this year), and (iii) the withdrawal of ICMS from the calculation base of PIS/COFINS tax credits, reducing the tax credit to which the taxpayer is entitled (BRL 30 bn yearly). Also, the Government has stated that plans to (iv) tax electronic betting market on sports (BRL 12 to 15 billion per year), (v) tax e-commerce that circumvent Federal Revenue rules by not paying taxes (BRL 7 billion to BRL 8 billion per year), and (vi) correct "tax distortions", prohibiting companies with tax incentives granted by states, via ICMS, from deducting this credit from the federal tax calculation base, and only allowing deductions if they are destined to investments, and not to funding (up to BRL 90 bn per year). Moreover, the Government already approved an increase in taxes (PIS, COFINS and CIDE[104]) on fuels sales and, for four months, on crude oil exports (both measures sum up to BRL 28 bn in 2023), in addition to a review of multinationals companies' taxation regarding transfer pricing.

3. **The government also committed to advance tax simplification reforms this year.** Two taxation reforms have been prioritized by the authorities for 2023 (one focusing on indirect taxes replaced by a simple VAT and the other on income taxation). These three high profile reforms are critical for reinforcing fiscal credibility and improving the business environment. Their prospects are boosted by the Brazilian congress' strong demand for an adequate fiscal anchor and the appointment of Bernard Appy – the main author of one the tax reform proposals currently in congress - as a Special Secretary for Tax Reform. These reforms are expected to make taxation more progressive while improving the business environment and productivity prospects through tax simplification. The January 8th riots may have expanded the new government's political capital and opened a "window of opportunity" to advance this reform agenda according to Brazilian analysts. Yet, these are complex reforms and may require time to attain technical and political consensus before advancing, given the election of new governors and congresspersons in 2022. According to the Extraordinary Secretary for the Tax Reform, studies show that the GDP could grow from 12 to 20 percent in 15 years after the approval of the VAT tax reform, through gains in productivity.

4. **The Minister of Finance announced on April 20, 2023, a set of measures to stimulate investments in infrastructure and improve the country's credit and insurance markets.** The Government expects to expand access to credit, capital and insurance markets and stimulate investments in the infrastructure sector, by providing more legal and financial stability and reducing transaction costs and inefficiencies that hold back Brazil's long-term economic growth. For the infrastructure area, the focus is to improve the process of using guarantees. In the credit market, measures are focused on modernizing legislation and eliminating barriers and inefficiencies. The 13 measures are: (i) Union guarantee for state and municipal PPPs; (ii) Incentivized debentures for social and environmental infrastructure; (iii) New Framework of Guarantees; (iv) Guarantee with social security resources; (v) Credit simplification and reduction of bureaucracy; (vi) Access to tax data;

[104] CIDE - Contribution for Intervention in the Economic Domain (Contribuição de Intervenção no Domínio Econômico).

(vii) Authorization of banks and digital currency; (viii) Bank Resolution System; (ix) Over-indebtedness (Existential Minimum); (x) Protection of investors in the capital market; (xi) Financial market infrastructure; (xii) Expansion of the activities of insurance cooperatives and (xiii) Legal framework of private insurance.

5. **The current administration's commitments to climate action and to protect the Amazon open a new window of opportunity for the European Union (EU) and Mercosur trade deal to increase competition and productivity.** Brazil has a relatively closed trade regime (trade was 39 percent of GDP in 2021, compared to an average of 55 percent for the LAC region). This reflects Brazil's high tariff barriers, widespread non-tariff measures, and restrictions to services trade. The EU-Mercosur trade agreement would increase Brazil's global integration and boost competition in domestic markets. Negotiations concluded in 2019 but the deal's ratification stalled under Brazil's previous administration, given EU concerns over agri-food and environmental practices in the Amazon. Brazil is also negotiating FTAs with other key partners such as Korea, Singapore, and Canada. With this new generation of FTAs, the country could make significant progress in terms of the breadth and depth of FTAs, which include provisions in several policy areas beyond tariffs, such as technical barriers to trade, regulations on services, government procurement, and competition, areas that are not only important for international integration but also the domestic business environment. Beyond goods trade, promoting reforms that reduce the costs of services.